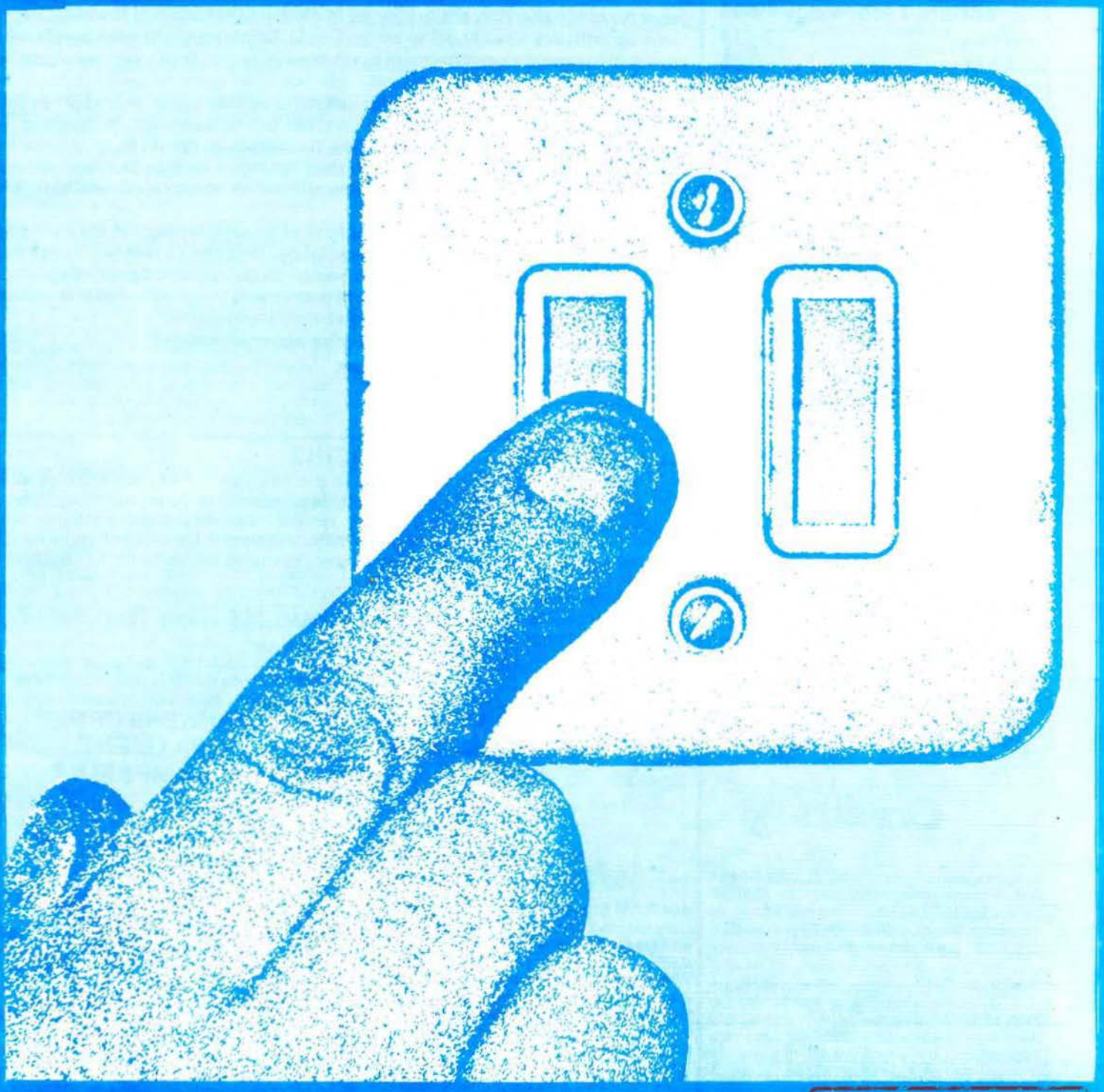
SCRAM ENERGY BULLETIN

NUCLEAR POWER? NO THANKS

No 27

30p



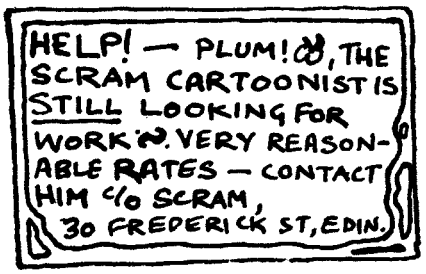
Switch to Renewables

Ditch Nuclear Power

Contents

Copy date for next issue:
Tuesday, December 29th, 1981

This new badge will shortly be available from SCRAM for 25p — discounts for groups and bulk orders. Contact the Smiling Sun Shop, 37 West Nicholson Street, Edinburgh. 031-667-6203.



Credits

This magazine is produced for the British Anti-Nuclear campaign by the **Scottish Campaign to Resist the Atomic Menace, 30 Frederick Street, Edinburgh EH2 2JR. 031-225-7752.** We welcome contributions.

ISSN 0140 7340

Printed by Aberdeen People's Press, 163 King Street, Aberdeen. (0224)29669.
Typesetting by Joy Leys at S.C.P., 30 Grindlay Street, Edinburgh 3. 031-229-3574.
Distribution by Full Time Distribution, Building K. Albion Yard, 17 Balfe Street, London N1. 01-837-1460; and by Scottish & Northern Books Distribution Co-op, 48a Hamilton Place, Edinburgh 3. 031-225-4950.

Comment

Making Links

This issue of the Bulletin seems mostly to be about 'Links'. Not just the links between nuclear power and nuclear weapons, that SCRAM's been pointing out for the past few years — but also the links between working against the nuclear menace and working for sane energy systems.

For the past year the Energy Bulletin has given a regular two pages to news of developments in alternative energy. In this issue Dave Elliot looks [on the centre pages] at the need for anti-nuclear people to be actively involved in appropriate energy campaigning. Over the past few months we in SCRAM have been looking at ways of doing this. It's gratifying to discover that many of the ideas we've come up with are already being worked on in Edinburgh, often by people who have come to see the need for them as consumers rather than from more general opposition to energy policy.

The words 'nuclear free zone' also seems to appear again and again in this Bulletin. SCRAM is getting actively involved in this campaign in Scotland — particularly in trying to bring home how dangerous is the myth of 'Atoms for Peace'. Maybe soon it'll be possible to start linking in local authorities' opposition to nuclear technology with promoting alternative energy. It'll take time, but the potential is enormous.

And, of course, these wider activities have to be complements to the hard slog of repelling the onslaughts of the nuclear lobby. On page 7, Jennifer Armstrong describes the lessons learnt in the campaign to get Suffolk County Council to actively oppose Sizewell. And on page 11 people who travelled to Basel to oppose the Nuclex nuclear industry trade fair give their impressions.

Oh — and a happy Solstice to all out solar-powered readers!

SUBSCRIBE TO THIS MAGAZINE

The cost of subscription is going up in the new year so why not beat inflation and renew/subscribe **now**! We always need money to fund our campaigning work, especially so after the Summer 'recess', therefore any donation will be gratefully received. The Standing Order Form below is for those of you who can afford a regular donation by bankers order. We need the certainty of regular income to survive.

Please be generous.

Send off your subscription now to: **SCRAM, 30 Frederick Street, Edinburgh EH2 2JR. [031-225-7752].**

SUBSCRIPTION FORM /SCRAM MEMBERSHIP

Your Name:.....

Address:.....

.....Tel:.....

SCRAM Energy Bulletin Subscription only.
Annual sub for 6 issues:- Ordinary £4 ☐; Foreign £6 money order ☐; Institutions £9 ☐;

SCRAM Membership only.
Members receive a 6-monthly review of the campaign. Annual membership:- Minimum £2 ☐.

Supporting Membership [Combined].
Supporting members receive 6 issues of the SCRAM Energy Bulletin **and** the 6-monthly review. Supporting memberships:- Ordinary £6 ☐; Foreign £7 money order ☐; Life(!) Membership £30 ☐; Household £50 ☐.

Affiliation. Groups and organisations are invited to send for an Affiliation form ☐.

BANKERS ORDER PAYMENT SCRAM CAMPAIGN FUNDS

Your Name:.....

Address:.....

.....Tel:.....

To the Manager.....Bank,

Address.....

.....A/C No:.....

Please pay on .....(1st payment) to Royal Bank of Scotland, 142 Princes Street, Edinburgh (83-51-00) the sum of
for the credit of SCRAM CAMPAIGN FUND 262721 and make similar payments monthly/yearly until cancelled.

Signed.....Date.....

Deadly Deals

Recent months have seen bizarre developments in the international web of nuclear trade deals and treaties. The American administration, in its search for plutonium at any price for its weapons programme, has finally laid to rest the myth of "Atoms for Peace". And it has emerged that the English nuclear authorities are trading in enriched uranium with the USSR — a 'commercial' deal which could have much wider implications.

The renewed supply of British plutonium to the US does more than cement the link between civil and military nuclear power. It shows that Britain, as well as acting as the 'unsinkable aircraft carrier' for the American military, is actively helping to make the nuclear weapons which will lead, if not stopped, to our total destruction. Here Sheila Durie looks at the plutonium deal and its implications, and Mike Holderness at the enriched uranium contract.

Recent proposals by the US Department of Energy to use plutonium in stocks of civil spent nuclear fuel for nuclear weapons have raised a political storm both in America and Britain.

The US wants to manufacture 14,000 new nuclear weapons in the next 8-10 years, particularly for its MX system. But it is critically short of plutonium. At present, the US Department of Energy (DOE) has three reactors and the Savannah River reprocessing plant producing plutonium specifically for the military, but these plants are 30-40 years old. The reactors (like Chapelcross in Scotland) produce tritium for weapons at the same time as plutonium, but demand for tritium will also increase. Thus the DOE will have to find an alternative source of plutonium, especially since the Reagan administration is pledged to reactivate the fast breeder programme, which also requires plutonium.

US Atoms for War...

On September 3rd the US Secretary for Energy, James Edward, advocated the use of spent fuel from nuclear power stations to provide plutonium for weapons.

The DOE could modify its Savannah River plant to reprocess both military-reactor and civil spent fuel. And it could use the Laser Isotope Separation (LIS) technique to extract pure plutonium-239 from civil fuel. This technique, developed at the Lawrence Livermore Laboratories, is advanced enough to be put into production. Some 4,000 tonnes of civil spent fuel have accumulated at Hanford, Washington State. If treated by LIS these would yield some 70 tonnes of pure plutonium-239.

Both of these possibilities have been fiercely attacked in the US as destroying the carefully-fostered image of nuclear power as having nothing to do with nuclear weapons. The US exported supposedly 'civil' nuclear technology with the justification that it could not be used to make nuclear weapons. Now they are doing just that, thereby undermining any remaining 'anti-proliferation' credibility. Sigvard Eklund, Director-General of the International Atomic Energy Agency, is reported to be highly alarmed by the US proposals. He predicts that such moves could unleash the hostility now directed at nuclear weapons towards 'Civil' nuclear power as well.

... or buy British

The US predicament over its plutonium shortage has already led to the re-activation of a defence agreement with Britain (previously operated, 1958-1979). Under this US enriched uranium and tritium were swapped for British plutonium. The enriched uranium was used in British nuclear submarine reactors and H-bombs. The swapped plutonium was supplied by the reactors at Calder Hall and Chapelcross (dubbed Britain's first 'commercial nuclear power stations', though they were primarily plutonium-producing defence establishments).

This official claim is a bad enough breach of the Atoms for Peace image. But it is possible that plutonium from the British Magnox stations were also used by the US.

The nuclear industry claims that such 'reactor-grade' plutonium is 'unsuitable' for use in nuclear weapons. The irradiation of uranium-238 in a reactor initially produces plutonium-239. With longer irradiation, this is increasingly converted to other isotopes, notably Pu-240. This fissions spontaneously, so high amounts may cause a weapon to 'pre-ignite' (misfire).

However, in 1977 the US admitted it had tested a weapon made of 'reactor-grade' plutonium. Such material **can** be made to yield as 'efficiently' as 'weapons-grade' plutonium.

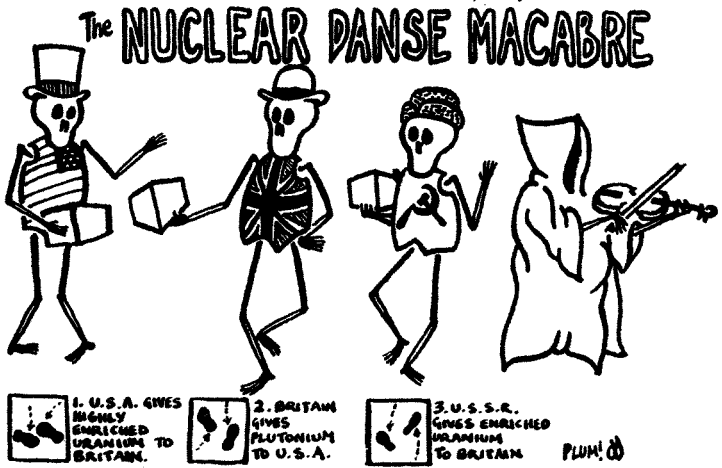
Thus with one stroke, President Reagan has finally destroyed the myth that there is a 'peaceful atom' — finishing a job we in the anti-nuclear campaign have been trying to do for years.

Uranium Shuffle

One point that has not been explored in press coverage of the new plutonium agreement is what Britain will get out of it. Previously, it was highly enriched uranium (HEU). It is hinted that it could now be cash. It was recently announced that an expansion at Capenhurst to produce more HEU for submarine reactors has been delayed. Is this because the US supply has resumed — at American behest — or has other capacity been freed by a deal with the USSR?

The Central Electricity Generating Board (CEGB) signed a contract with the Soviet Union in 1975. Under this 70,000 pounds a year of enriched uranium for Advanced Gas-cooled Reactors are produced at a Sovtech plant 'somewhere in the Urals'. A CEGB spokesperson says that this amount represents 'about 10%' of their annual purchase of enriched uranium, and that the reason for the deal was to 'maintain a competitive edge' in their dealings with their main supplier, British Nuclear Fuels' Capenhurst plant. BNFL refused to make any comment.

About the only thing that's certain about this deal is that it represents a major transport hazard. Since the contract was activated 18 months ago, large amounts of natural uranium have been shipped to the USSR in the form of liquid uranium hexaflouride. This is a very nasty sustance. It will rot its way through almost anything except 'Teflon'. It is transported under pressure to maintain it as a liquid. No accidents have yet been reported to the many shipments between Springfields (where it is made) and Capenhurst. But the long sea journey to the Black Sea (an informed guess would be that it is taken through Hull docks) may be a different matter.



Anyway, there is nothing to stop fuel being shuffled around in 'civil' reactors to produce 'weapons-grade' plutonium (pure in Pu-239). And plutonium from **normal** Magnox spent fuel contains 75% Pu-239 — it is potential bomb material as it stands. Thus 'commercial' Magnox fuel from Britain could be attractive to the Americans on the hunt for plutonium for weapons.

The US is also interested in buying reactor-grade plutonium from the Magnoxes for its Fast Breeder programme. Even if the plutonium does go to the Fast Breeder, the civil nuclear industry is still aiding the US arms race — plutonium earmarked for the FBR in the US would then be released for their weapons programme.

It is unlikely that even the Soviet Union's reported offer to undercut Western enrichment prices by 10% would explain the decision to trade in a sensitive substance with a country that the military openly refers to as 'the enemy'. And it's embarassing to the USSR; at least some of the uranium comes from the illegal Namibian mining operation.

More embarassing still, is the fact that the Soviet deal could have been designed to free Capenhurst capacity for producing HEU... perhaps as part of Ministry of Defence moves for 'independence' in nuclear materials (alongside the Chapelcross tritium plant). Is the MoD now faced with a surplus of HEU — or are they stockpiling for Trident already?

News News

Barrow

At a public meeting in Barrow-in-Furness on October 17th, over 70 local people pledged to carry on their opposition to the use of Barrow as Britain's main port for importing spent nuclear fuel. This followed the failure of Barrow Action Group's attempts to take legal steps against the British Nuclear Fuels (BNFL) developments in the docks (see Energy Bulletin 24).

Barrow Council passed a motion in May opposing the transport of nuclear waste through the town. However, they had apparently previously implicitly accepted that BNFL did not need planning permission for their facility to unload waste from ships in the Ramsden dock. Barrow Action Group's aim was to prove that permission **was** needed, and that construction should be stopped pending a proper application, and possibly an enquiry.

The case was due to be heard in London on July 23rd. However, on July 22nd their leading counsel, who had not been involved in the preparations, told them he thought they should withdraw — contradicting the impression they had gained from their lawyers in the preceding months.

The October meeting decided that the money raised should be used in further attempts to legally oppose BNFL. As the Bulletin went to press it was not clear what would be happening about demands for legal costs for the case.

Devil's Kitchen

Lancashire transport firm Edmonsons, who transport uranium ore for British Nuclear Fuels Ltd., have applied to use an area of their Morecambe depot for storing 'yellowcake'. The firm achieved some notoriety with their 'secret' transportation of Namibian uranium to Springfields from Marseilles. A bizarre note was struck by the use of lorries painted as though they belonged to fictitious kitchen cabinet or fruit and vegetable companies. **Objections** should be made by January 4th (quoting application number 1/81/1144) to: Lancaster County Council Planning Dept., Sugar House Alley, Lancaster. **Contact:** Half-Life/Sue Cowgill, Lancaster (0524) 751361.

TANC Office

On Sunday October 11th the Tyneside Anti-Nuclear Campaign unveiled its new office in Newcastle, with the aid of 'Better Active Today than Radioactive Tomorrow' helium baloons lifting a rainbow-coloured canopy from the front entrance and a performance by Hexham Gutter Theatre. The group plans to use this opportunity to plan more effectively and go on the offensive more than reacting to 'Their' initiatives. **Contact:** TANC, 1 Charlotte Square, Newcastle-upon-Tyne (0632) 616143.

Windscale

On October 4th there was (another) leak of radioactive material to the air from the Windscale reprocessing plant. The fact that this wasn't publicly reported for four days — and the local MP heard of it through the press — fuelled local anger, with the natural suspicion that a 'cover-up' was going on. A report issued on November 11th stated that the release of Iodine-131 was due to the accidental reprocessing of 'hot' fuel elements. Workers at the Oldbury nuclear power station were said to have accidentally sent a load of spent fuel off to Windscale before it had 'cooled off' for the necessary time.

Cheaper PWR

The British PWR programme is back on schedule after Walter Marshall's 'task force' spent the summer designing a cheaper PWR reactor system — to be 'consistent with meeting UK safety requirements'. The Central Electricity Generating Board is expected to be able to say before the end of 1981 whether the new design meets its own safety requirements and whether it will be (as they hope) 20-30% cheaper than an Advanced Gas-cooled Reactor of similar capacity. Early in 1982 the Nuclear Installations Inspectorate will begin its safety evaluation so that its report can be ready before the Sizewell public enquiry — though probably not long enough before for the kind of detailed assessment groups like Friends of the Earth want to do.

OOPS!

The United States Navy has admitted to having dropped a Poseidon nuclear warhead at its Holy Loch submarine base on the Clyde. The warhead dropped 12 feet, and the standard press release about there being 'no danger to the public' was issued. This is thrown into doubt by information from America which indicated that about half the Poseidon warheads in service contain an unstable chemical high explosive which can be detonated by a mechanical shock. Should an accident to a nuclear weapon cause such chemical explosion, radioactive material could be scattered over a wide area.

Nuclear-Free Lothian?

Lothian Regional Council has been proud to call itself a nuclear-free zone, but the experience of the Regional Labour Party shows how the meaning of 'nuclear-free' can be blurred. Its meeting on November 1st rejected a motion from Berwick & East Lothian constituency party that would demand reference to nuclear-free **armaments** zone — many members in that area are still convinced by 'atoms for peace' arguments or even that nuclear power can provide local jobs.

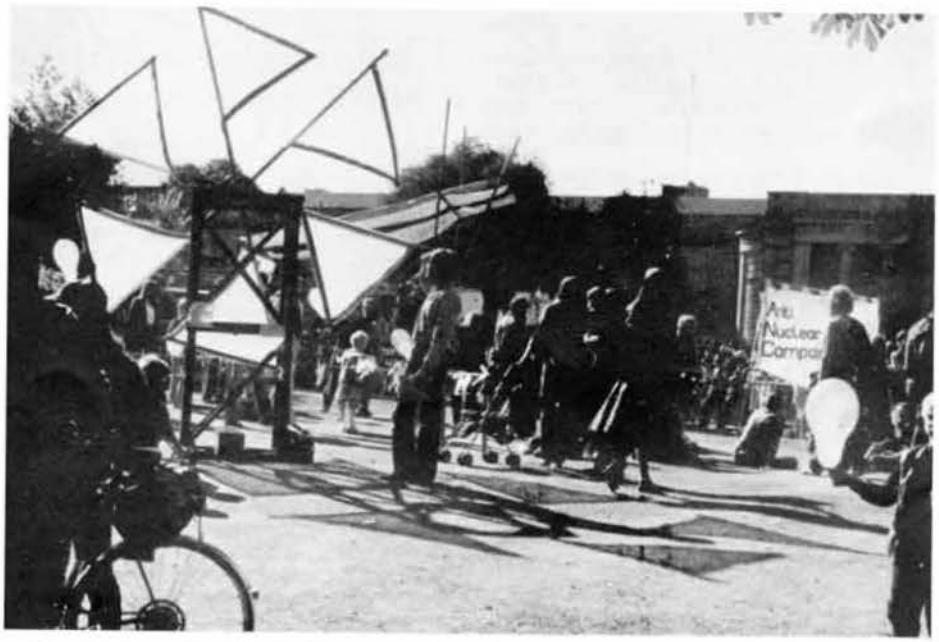
Meanwhile, the meeting accepted amendments to the Regional Party's manifesto recommendations for the 1982 elections, adding opposition to 'nuclear fuel' being 'manufactured, deployed or positioned' within the Region and noting the role of any nuclear power station at Torness as a major nuclear target.

RTZ

In a 16 page pamphlet Chris Whitehouse has brought together the main arguments for disinvesting from RTZ, the giant British-based multinational responsible (!) for supplying most of Britain's uranium for both civil and military purposes. Nuclear Free Zone authorities who have shares in the company should be particularly easy to persuade. In Scotland these are: Fife Region; Glasgow Health Board; Highland Health Board; Central Region.

A full list of shareholders, including all the local authorities in Scotland, England and Wales, is available from: PARTIZANS, 218 Liverpool Road, London N1. 01-609-1852. The pamphlet is also available from this address.

PARTIZANS stands for People Against RTZ and Subsidiaries.



Over 3000 people attended September's anti-nuke festival in Sheffield, home of ANC and heart of nuclear-free South Yorkshire. Music, games, craft stalls and sunshine combined to make the day a success.

Ghost Hunting

Estimates of world uranium reserves could be five per cent or more over the real amounts. This follows from a United Nations Nuclear Energy Agency discovery that meters used to log gamma radiation in prospecting boreholes are over-calibrated by up to 20%. The effect may look small, but it could discourage companies from mining 'marginal' deposits.

Sweden

On September 17th the Swedish State Mining Company LKAB announced the scrapping of its uranium mining plans in Lappland — but the company still plans to test drill elsewhere in Sweden. The Swedish Prime Minister and ruling party oppose all uranium mining in Sweden, and in a 1980 referendum, the country voted to phase out nukes by 2010.

Nuclear Mexico

Following a local 5-month protest campaign, plans to build a nuclear research centre at Lake Patzuaro have been scrapped — but a sea coastal site has now been selected instead. Anti-nuclear activity in Mexico is complicated by strong left-wing pressure for the development of an 'autonomous nuclear industry'. Two power plants are already nearing completion, and France, Sweden and Canada are competing to build the next two. Uranium is already being dug, and much exploration is underway.

The authorities are planning for nuclear sources to supply 77% of Mexico's electricity by 2000.

Contact: CODEMICH, Galeana 57, Morelia, Michoacan, Mexico.

Financial support to: Bancomer, Sucursal San Angel 44, Mexico DF, cuento de ahorra en dolares no. 100488.

...and Venezuela

Three UK engineering companies are bidding to sell Magnox reactors to Venezuela to assist in oil recovery. The companies involved are GEC Energy Systems, Taylor Woodrow Construction and Foster Wheeler Power Products. A GEC spokesman said that 1,000 MW, £300 million plants would be a cheaper source of the steam essential to oil recovery than the oil-fired boilers at present used by the Venezuelan oil industry. The country might need as many as 100 reactors eventually, and the sale of 20 UK plants was 'possible'.

....and Brazil

On October 13th it was announced that the British/German/Dutch consortium URENCO is to supply enriched uranium to Brazil. This is for use in its Angra 1 plant, scheduled to open this year after a history of problems including land slippage, destruction of buildings through the vibration of generating rotors, and arson. The URENCO contract follows breakdown of attempts to renew a contract with the USA, abandoned in 1978 because Brazil had not signed the non-proliferation treaty. The uranium will probably be supplied from Capenhurst.

PWR Problems

The US Nuclear Regulatory Commission has found that, in 13 PWR's, the thick steel shell surrounding the core is becoming so brittle that some plants could become unsafe to operate by the end of the year. A further 46 plants could be affected. The problem is caused by the effect of neutron radiation on the metal used to weld the steel plates of the shell together. Major modifications to plants, or even closure long before the end of their lifespan may become necessary. Otherwise, in an emergency, shut-down could lead to a melt-down, due to the brittle metal's inability to withstand sudden temperature changes.

In the US's first cancellation of a nuclear project while under construction, the Northern Indiana Public Service Co. announced in August that they were abandoning completion of the Bailly plant near Gary, Indiana. A coalition of local citizens and union groups had been challenging construction from the beginning on grounds of the plant's location (30 miles from Chicago) and structure. A utility spokesperson claimed that $205 million had been spent on construction, litigation and materials — though the plant was only 1% complete.

A "design fault" was given as the reason for the surprise shut down of the Diablo Canyon, California reactor just before testing was due to begin (Energy Bulletin 26). This turns out to have been, in the words of a Nuclear Regulatory Commission spokesman, "a first rate screw-up". Diagrams used in stress analysis of piping hanger systems in each of the two reactor units got switched around. So each piping support system was built as a mirror-image of itself! As a result, NRC are investigating five key safety systems in each unit, and are also examining the plant's ability to withstand an earthquake — a central concern of Abalone Alliance, who had just ended their two-week blockade of the reactor site when the fault was discovered. The hold-up, says Pacific Gas & Electric, is costing $2.5 million a day.

European Waste

European anti-dumping groups have continued the summer's activities (Energy Bulletin 26) with September demos in Belgium and Portugal. On September 10th, Dutch ships left Zeebrugge, Belgium, carrying Dutch, Belgian and Swiss waste to the Atlantic dumping grounds 700 km north east of Spain. Greenpeace's **Sirius** had planned a protest presence, but couldn't make it. The Spanish fishing boat **Ujelo** took its place.

A German civil court ruled in September that licensing procedures for the Gorleben waste storage facility were invalid and have to start again. The new procedures have to be based on atomic regulatory codes not on ordinary building codes as before. Construction, due to begin in September, will now be delayed for months or even years. An occupation of the site planned for Oct. 1-4 was called off, but an informative gathering planned instead.

On September 3rd, a Darmstadt court cancelled permits allowing waste storage in pools at Biblis A & B power plants. German nuclear regulatory codes require strict separation of reactors and storage facilities.

The plant operator has appealed. German anti-nukers are demanding a moratorium on the use of all such pools until a final decision is reached. This could affect the running of a number of reactors.

Contact: Aktions-Gemeinschaft Umweltschutz, Lauteschlagerstr. 24, 61000 Darmstadt, W. Germany.

Pylon Study

Following public pressure and a 3-year hearing on a 765,000 volt overhead power line in which evidence of biological hazards was revealed, New York State is to fund a five-year, $5 million programme to study the biological effects of low-frequency (60 Hz) electromagnetic radiation emitted by electricity transmission lines. The ten US scientists who are co-ordinating the programme are seeking proposals from genetics, cell and organ culture, nervous system, psychology and behaviour specialists. The study programme, the first of its kind to be carried out in the West, could have far-reaching effects on power-line construction policy.

Barsebäck

On October 20th, 25 thousand people demonstrated in Copenhagen against the Swedish nuclear plant at Barseback, less than 20 km away. Local union support for the demo was high, because of new legislation forcing public service workers to play a compulsory role in any emergency evacuation.

Councils Make Links

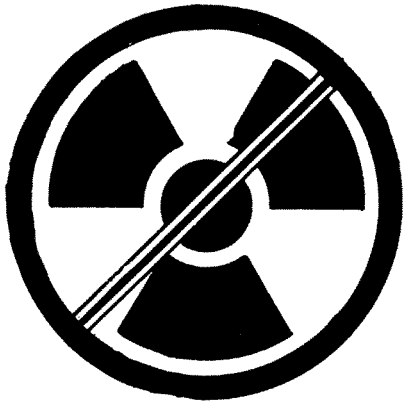
Seventy-five UK local authorities were represented at the October 21st Manchester Nuclear-Free Zones Conference. Another 58 sent letters indicating support, making a total of 133 councils who had by then formally expressed opposition to nuclear weapons. That in itself is an exciting development in British politics, and a hopeful sign for the growth of a very broadly-based movement strong enough to resist the imposition of new nuclear weapons.

Equally interesting, from the point of view of the development of that movement, was the strong case put for councils to include the whole nuclear chain, and the apparent sympathy for this move.

South Yorkshire County Council presented a paper outlining the links between 'civil' and military nuclear power, explaining clearly how they are interdependent and how nuclear power has served as a front for weapons production. Councillor Gillespie of Tyne & Wear backed this up strongly during the meeting, talking particularly about waste transport — which is, after all, the physical link between power stations and (via Windscale) weapons.

Some delegates wanted to press for changes in the law to give councils powers to oppose waste transport and new developments — or even just to give them the right to be informed of what was being done in their areas. Others proposed collective disobedience of laws which are 'contrary to the rights of... people' — particularly in resisting participation in the con of 'Civil Defence'.

The most energising part of the conference was delegates' descriptions of what their councils are doing, or plan to do, to draw attention to the



military nuclear threat. Many ideas are by now familiar ... Bradford is planning to introduce 'Peace Studies' into secondary schools, Sheffield is refusing co-operation to military recruiting exercises.

Councillor Leach of Dumbarton made an eloquent plea for Welsh and English authorities to support the 16 Scottish Councils which are already opposing the planned Coulport Trident missile base: 'If there is no enquiry, then the people of Dumbarton, and their council will take to the streets and lie in front of the bulldozers to stop them building it'. He said that Strathclyde Region would 'go to the brink of the court steps' before they supplied any water or sewerage to the site.

A 'Steering Committee' is being formed to consider questions for a second conference to be held in the New Year. There was an attempt to exclude nuclear power from this body's remit, but this was obviously an unpopular move and was unsuccessful.

The potential for this movement of locally elected representatives is enormous — particularly if more councils can be persuaded that any effective nuclear-free zone policy must take account of the **whole** nuclear chain. But councils have virtually no legal powers over any kind of nuclear development. What matters now is that local people take up the campaign — with the real political support councils can offer — to resist nuclear developments in their areas, working towards creating **real** Nuclear-Free Zones.

Mike Holderness

More information

Copies of the South Yorkshire 'links' paper, and of a paper debunking the myth that nuclear power developments create jobs, are available from SCRAM for 20p towards costs and postage.

T.U.C.

The TUC's Fuel and Power Committee chaired by Frank Chapple has finally completed its two year deliberation and published the 'Review of Energy Policy'.

The review favours a Conservation Agency to 'coordinate and promote conservation measures'. The agency would aim to give conservation an equal weight in the formation and implementation of energy policy. The Committee want to see spending boosted to £1 billion over four years, with £200 million going into coal conversion schemes, £450 million on improving energy efficiency in the public sector, and £200 million on initial work on district heating and combined heat and power stations.

The Fuel and Power Committee is essentially a coalition between miners and various electrical trade unions. The Review gives an interesting insight into the development of TUC energy policy. Economic Growth, the TUC argue, should be at least 3% per annum until the end of the century. Energy consumption would then increase from the present 340 million tonnes of coal equivalent (mtce), to about 550mtce. This figure is higher even than the current Department of Energy predictions. The TUC does not say how it arrived at this figure and it rejects low growth scenarios. These they say represent a "high risk strategy" because they rely on "a number of, as yet, unproven technologies."

These predictions allow the Committee to call for increased coal production while allowing a 'reasonable' nuclear programme. If their energy growth predictions had been much lower there would have been a fight

over whether the TUC favoured coal at the expense of nuclear power or vice versa. This situation maintains the delicate balance between miners and electrical unions. However, a split over nuclear power now looks inevitable. With Arthur Scargill likely to be the next President of the NUM and several other unions expressing reservations about nuclear power, the argument cannot remain suppressed for much longer.

Sizewell

By the time you read this, an important early stage in the campaign against the proposed Sizewell Pressurised Water Reactor [PWR] will be over. Local authorities in the area will have decided their stances for the major Public Enquiry due in 1982.

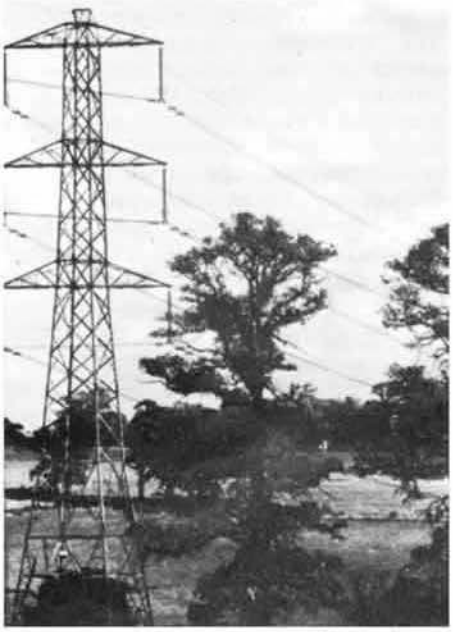
The Government is committed to holding an enquiry into the first PWR, although the Central Electricity Generating Board [CEGB] already has planning permission for other types of reactor at Sizewell. However, this doesn't guarantee any kind of fair hearing. Many groups are considering boycotting the enquiry because of its inherent bias. And on November 27th, 1981, Suffolk County Council will look at Suffolk Coastal District's recommendation that they make only a 'technical holding' objection to the proposal. Here Jennifer Armstrong of the East Anglian Alliance Against Nuclear Power [EAAANP] looks at the background to that decision and the lessons to be learnt by others facing the threat of a PWR.

1] Earlier Planning Permission for other Reactors on the Site

This turns out unexpectedly to be their trump card. In legal or common sense terms, there is certainly no commitment to a PWR. The consultations on the last permission (for a steam-generating heavy water reactor) took place in 1973. If the CEGB had believed the earlier permissions to be valid, they would simply have treated the change in reactor-type as an 'amendment'.

However, by arguing that there is a 'moral commitment' to the 1973 agreement, the local authorities have succeeded in ignoring the principle of the station and involved themselves only in the details of the design.

2] CEGB-Owned Land. The CEGB's problems in Cornwall will reinforce its stated desire to build concentrations of nuclear power stations on the sites where they already have plant and spare land. Beware Dungeness, Bradwell, Hinkley etc. Their effort to buy a further 60 acres adjacent to Sizewell site was rapidly shelved when it became public knowledge.



3] Transmission Capacity. There is capacity for both a B and a C station. New lines would bring a whole new dimension to the debate, involving many more people and emotions. There would be opposition from big landowners; not an attractive proposition for the CEGB.

4] Abundant Cooling Water

There were two more important reasons for choosing Sizewell.

a] 'Remote' Site, in Nuclear Installations Inspectorate Jargon. When questioned publicly about the choice of Sizewell for the first PWR, Gammon from the CEGB stated 'We don't know if it's safe enough now. We need the experience.' You probably know that, until the announcement that the new programme included PWRs, Portskewett in South Wales was the favourite site for the next nuclear power station. But that is 'too close to Bristol or Cardiff' for an experimental reactor type. Gammon assured us, however, that once they'd had a bit of practice on we rural folk, they'd be heading towards urban sites with their PWRs.

b] The CEGB did not anticipate Local Authority Objections.

This unique characteristic of Sizewell is based partly on the 'moral commitment' affair explained above, and partly on something which is much more sinister in terms of local democracy. Long before the official consultations, tête-a-têtes took place between the local authorities, the CEGB and MPs. A deal was struck whereby a vote of 'no objection' to Sizewell B (or C) would remove the nuclear threat hanging over Orford Ness. This is a large MoD site about 12 miles south of Sizewell.

The idea of a local authority placing faith in such a deal may be touching, but it defies common sense. In view of the mounting opposition elsewhere, who would really blame the CEGB for using, to the utmost, a council which was prepared to breach all of its conservation policies; Sizewell and Orford Ness are in an 'Area of Outstanding Natural Beauty'.

The Need

Before the application was submitted, we urged the authorities to question the need for Sizewell. Even before it was received, they resolved to accept Government policy as it emerged. This question of need has been central to our campaign. It is gratifying to note that Northumberland County Council, for example, will certainly demand a full regional need justification for proposals at Druridge Bay. The Conference of Local and Regional Authorities of Europe has recommended that assessments of local energy requirements be an integral part of plant proposals. The Suffolk Preservation Society has taken to the Ombudsman the Council's failure to consider this critical aspect.

There is immense local opposition to Sizewell B. There have been over 4,000 letters of objection, and 150 from organisations including some from other local authorities, petitions of over 10,000 names from East Anglians and a local referendum result of 4:1 against. When this was brought to the councillors' attention, some went to considerable lengths to explain that they were 'delegates' not 'representatives' — once elected they didn't have to abide by constituents' wishes. The (Tory) MP is still maintaining that, on balance, 'I feel my constituents do not object...'

Some of you may feel that our sustained campaign with the local authorities was a waste of time, and that we should have known this from the start. Firstly, by participating in this way, we have achieved and maintained a high level of debate and reporting in the local press. With many scientists around the country contributing to the debate, the public has obtained a large amount of information on the subject. In Suffolk at least, Sizewell is now a household word, and the Alliance has a rightful credibility. Secondly, at this early stage in the fight, there are a few alternative courses of action in a situation where the land is already in CEGB ownership.

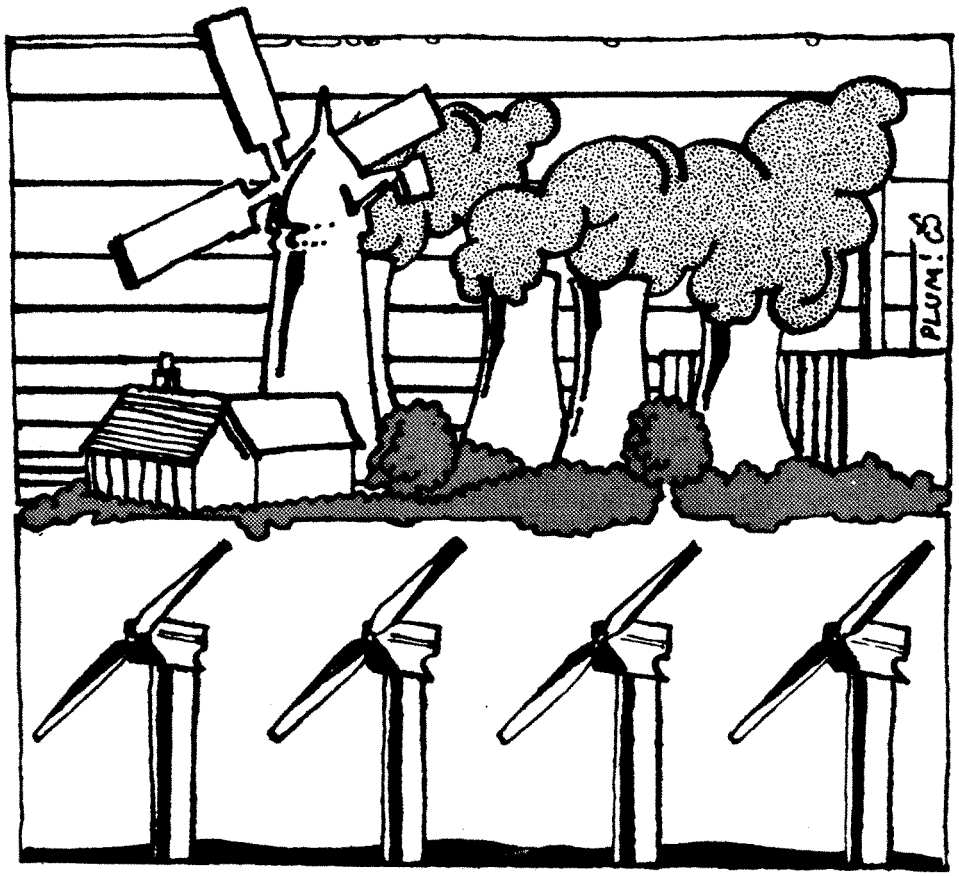
And Now

As we continue to discuss our response to the local authorities' increasingly discredited stance, we also move on to the next step of the campaign — the run up to the Public Enquiry. The Alliance has not yet decided on the matter, and intend to draw on the views and experiences of as many people as possible before we do so. We have been saddened by the lack of widespread support from around the country. We need your support now and one day you may well need ours. If you are interested, or experienced in this stage of the campaign, please get in touch. We hold monthly meetings around E. Anglia. We also have an office in Ipswich, where Roy Thompson works Mondays - Wednesdays.

Poll says No

In an October referendum in Leiston, Suffolk, near the site of the proposed Sizewell PWR, a 30% turnout voted 877 against, 229 for the development. The poll had been actively supported by CEGB. Leiston Council are to consider the result in November.

Contact: EAAANP, 67 Upper Orwell Street, Ipswich (0473)-214308; or Jennifer Armstrong, Old Post Office, Higham, Colchester (020-637)-241.



Switch to Alternatives

Anti-nuclear campaigners have always faced a question about the balance to strike between opposing nuclear developments and working for a 'safe and sane energy future'. For many of us, the possibility of making positive practical proposals makes the thought of getting involved in resistance to the nuclear monster much more attractive. But much energy is inevitably taken up with reacting to dangerous nuclear developments. It would not be unfair to say that little alternative energy campaigning by anti-nuclear people has got beyond the stage of 'what-if' ideas.

But meanwhile, one way or another, the idea that a more secure future can be built on the wiser use of energy, and ultimately on renewable energies, has reached a much wider audience. As Dave Elliot says in this article, there are now 300 low energy/solar energy houses in local authority projects. Tenants' anti-dampness and Fuel Rights groups are getting stronger. Nine UK cities have agreed to co-operate so that they may all start district heating/Combined Heat & Power schemes. Plans for energy advice schemes and insulation projects are proliferating. And so on... sometimes without anti-nuclear groups becoming aware of these schemes until they're quite advanced.

It's exciting to discover the breadth of interest in energy issues — but it's not enough for anti-nuclear people to be pleased that these things are happening. After all, what we're ultimately working for is human survival — the removal of the nuclear threat and the creation of a livable future. The opportunities to balance opposition and positive action are there — and they need to be taken.

It is not difficult to be afeared of and incensed by those who would destine us to a nuclear future. There is no shortage of specific issues on which to mobilise in order to defeat them. SCRAM, the Anti-Nuclear Campaign, the Socialist Environment and Resources Association and Friends of the Earth have all made important contributions to the anti-nuclear campaign, nationally and locally. And there is, of course, much more to do.

But at the same time I feel we should open up a new flank — by campaigning in a more concerted way **for** the alternatives to nuclear power.

Alternatives Campaign

There are several advantages to this approach.

Firstly, 'on the doorstep' it's relatively easy to win an anti-nuclear argument. But then people say, 'what do you say we can use in its place?'. Now, this question may be based on a mistaken view that we **need** something to substitute for nuclear electricity. But for many people 'Energy' means 'what comes out of the wall socket'. If it's not nuclear, what is it? Generalisations about 'end-use' conservation, energy efficiency and low growth are all very well — but an argument which can start off by saying 'well, we could supply all you want from renewables' has a great advantage. You can then say that an anti-nuclear future doesn't automatically mean 'frugality' or a 'low-growth economy'. There then might be some **optional** social, environmental or political advantages (as well as technical and economic ones) in opting for less emphasis on conspicuous consumption and centralisation.

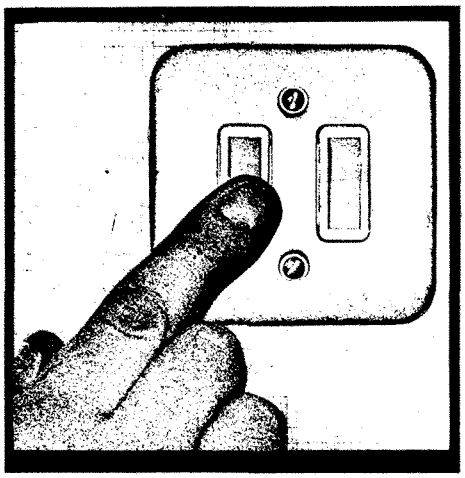
Secondly, you can be more **positive**. The anti-nuclear message is often based on fear and paranoia — not without cause. But it's negative. It may mobilise people into action, but surely it's better thereafter to organise on the basis of **hope** rather than fear. This doesn't mean you have to be utopian. There are, now, plenty of examples of sensible, viable alternatives which you can point to. For example, there are already some 300 local authority solar/low energy council house projects underway or completed in the UK. A network of community-based 'local energy groups' is growing up (for more details see 'Community Action and Alternative Technology' NATTA £2).

Reduces Risk

Thirdly, more subtly, you can help dispel the gloom and pessimism about the future that exists at present, especially in relation to nuclear war.

Try this argument: The advanced

western and eastern countries are hooked on oil — and competing for military and political control over it. This is a major source of tension. Those in power look to 'nuclear' as a solution in two ways. One is via nuclear weapons, to threaten the Middle East, or the USSR — ie. the rival power. The other is via nuclear power plants to provide an alternative source of energy. The problem is that **both** approaches tend to increase international tension and the risk of nuclear war. (As far as nuclear power plants are concerned, via proliferation, nuclear hi-jack, terrorism, etc.)



The way out — well, it's to develop our own renewable resources. If the 'advanced' countries did this, then:

a they would need less oil
b the dangers of nuclear proliferation would decrease
c they would probably stimulate an employment boom at home
d they could help the third world to develop its own renewable resources.

Obviously, this is a 'ground view', but it does seem to offer hope for a secure and substainable future. Of course, you can back all this up with a recital of the negative aspects of nukes — and the fact that uranium reserves are guaranteed for 40 years at the most (unless Fast Breeder Reactors work) — while the renewables go on forever.

Future Hopes

But I think the next stage is to go into more detail on the alternatives. Chiefly because I think they are inherently fascinating; people can grasp the ideas and become enthused. I've spoken to audiences of 'hard-line' engineers, ostensibly on 'Nuclear Power' — but I've found it easy to move them on to a discussion of renewables. By the end they were so keen they didn't want to talk about nukes any more. Maybe that's trading on (male) techno-fetishism, but it's one way to open the door to more progressive thinking.

At the 'grass roots' level, focussing on specific practical AT (Alternative Technology) options obviously pays off. Not only in the sense of creating enthusiasm and practical self-help projects, but also politically in terms of creating a new political constituency.

For me, the issue of the 80's and beyond will not be 'nuclear or not', but rather 'how should we develop the renewables?'. If we leave it to the existing power structure (in both senses), then we could be headed for disaster — with the multi-nationals and monopolies cleaning up on wind, wave and tidal power. Or small fly-by-night cowboy firms flogging shoddy planned-obsolescent solar collectors to gullible consumers. Or workers producing AT hardware in the usual alienated way, and all the fun of the capitalist fair.

It's vital then that we start now to develop grass-roots power, experience and confidence — both in the community and within the Trade Union and Labour Movement. With this we can try to bring the development of AT under democratic control. Otherwise we will move from the frying-pan of nuclear to the fire of socially exploitative, totally centralised and possibly environmentally inappropriate AT.

NATTA

There are, obviously, many key technical and social issues here. For example: do we want large scale, centralised, grid-linked tidal, wave, or off-shore wind systems? What about small-scale 'community technology?' Can we develop more democratic forms of control over big technology?

These are among the issues that NATTA (the Network for Alternative Technology and Technological Assessment) was set up to discuss. Formed in 1976, we have around 400 members around the country and a bi-monthly newsletter, packed full of hard technical news and commentary. We seek not just to promote AT but also — as our name implies — to stimulate a public debate on how to develop AT appropriately — in social, political and environmental terms. NATTA can provide publications, speakers, slide-sets, exhibitions and technical advice on all aspects of AT.

We have affiliations from most of the AT research groups around the country — including the Centre for Alternative Technology, Northumbrian Energy Workshop, and Friends of the Earth's Earth Resources Research offshoot. We also have affiliations from SERA, Undercurrents and, of course, SCRAM. We believe that campaigning critically for AT is a vital compliment to campaigning against both nuclear power and nuclear weapons.

natta

Membership of NATTA costs £5 a year, which entitles you to receive the newsletter. Why not join?

NATTA c/o Alternative Technology Group,
Faculty of Technology,
Open University,
Milton Keynes, Bucks.

It's going to be cheap - the Boeing Model II 2½ megawatt windmill is expected on mass production to generate electricity at 1.5 to 1.7 pence per kilowatt-hour. Check your electricity bill...

It can meet our needs - the ultimate potential of renewable sources in the UK has been estimated by the Energy Technology Support Unit as 200 million tons of coal equivalent (mtce) a year or thereabouts, indefinitely. Nuclear contributes only 14 mtce at present. Wave and offshore wind could, between them, generate 92 mtce a year, equivalent to 80% of UK electricity consumption.

It can help stimulate local control - NATTA estimates that eventually we might obtain about 100 mtce a year from small-scale community based systems.

It would be job creating - the development of AT would stimulate employment in just those industrial areas hardest hit by the recession.

It can be safe - if we plan it sensibly, the risks are likely to be far less than those associated with the nuclear fuel cycle.

The only problem is that last year the UK Government spent just £9 million on renewable energy Research and Development, compared with £170 million-plus on nuclear research and development — and the promise of £1 billion a year in nuclear capital investment.

For a more detailed analysis see **Alternative Technology: an answer to the energy crisis** NATTA 1980. 80p. For a review of the problems see **Alternative Technology: an assessment of technical, environmental and institutional problems.** NATTA (forthcoming 1982).

Group News

STUDENTS AGAINST NUCLEAR ENERGY!

Students Against Nuclear Energy, Scotland, (SANE), kicked off this academic year with a speaking tour of Scotland. The tour took in all the major colleges in Edinburgh, Dundee, St. Andrews, Glasgow, Paisley and Aberdeen. New contacts were made and old ones revived. All in all, it proved a very good exercise for co-ordination and for an assessment of future anti-nuclear prospects throughout Scotland's colleges.... so this year should see some anti-nuclear activity in Scotland's colleges.

It would seem that some campaigns are more appropriate to student groups than others. SANE has identified three main areas where it feels students can play an effective part in the anti-nuclear movement by taking it into their college.

The first, which we feel is of major significance, is the anti-recruitment campaign. Every year, companies engaged in the nuclear industry (such as UKAEA, BNFL, "the forces" etc.) visit the careers centres of many colleges with the purpose of recruiting graduates. Since the government is investing billions on military-nuclear expansion while cutting back elsewhere, graduates are increasingly faced with the choice of nuclear employment or no employment. The nuclear industry is totally dependent on skilled personnel. This indicates the possibility of effective action being taken against the nuclear merchants — last year BNFL were chased off the campus in Edinburgh! This year, information will be widely distributed in the form of leaflets, films, tribunals, before the visits, with autonomous actions taking place in February 1982 during the visits.

The second campaign is primarily a research project. In 1974, CND published a pamphlet called 'Study War No More' which revealed the staggering amount of military research, funded by NATO and the Ministry of Defence, undertaken in colleges. We are co-operating with CND in updating the information on the civil programme too, and making the links between civil and military programmes. With the results of this research, students will be able to identify particular focuses for action in their colleges — and from there to take action!

A third area is to take up the issue of energy efficiency within colleges. It is widely recognised that we do not, at present, make the most efficient use of energy resources. With cut-backs in education, it would make sense to save energy and money. We intend to take up this issue with student unions, informing them of the grants available. Action could be taken to counteract university attempts to cut student union finances and thus be of advantage to student unions and the anti-nuclear movement. With this positive action, we hope to make students aware that there are non-nuclear 'desirable alternatives' which are practical, safe, inexpensive and relatively cost-effective, and to demonstrate them at a practical level rather than in dream-like TV and newspaper reports.

With these three campaigns, we hope to illustrate the civil-military link and to carry out anti-nuclear campaigning alongside campaigns for more positive energy usage. In addition, we'll be having our usual films, bookstalls and keeping an eye out for nuclear lectures.

We'll be publishing an information pack on these issues and campaigns in January. A Scottish students anti-nuclear conference is planned for 16-17th January in Edinburgh. For more information, write to: **SANE Scotland, c/o 37 West Nicolson Street, Edinburgh.**

People's Waste Enquiry

In October it was suddenly announced that a public enquiry into test-drilling for nuclear waste disposal in the Vale of Belvoir would take place on November 24. Moves to get a pre-enquiry meeting, to have the enquiry postponed to allow time for preparation, and to get the enquiry to visit villages in the affected area, were all refused.

Nottingham Women Oppose Nuclear Technology, and Safe Energy Group therefore organised a series of five 'People's Enquiries' in the area between November 17th and 24th. Nottinghamshire County Council (which has declared itself a nuclear-free zone and will be making some form of opposition at the 'official' enquiry) donated use of halls for some of these. They included a slide-show and speakers on the problems of waste dumping and nuclear technology in general.

The groups point out that 'the public is being fooled into thinking that public enquiries provide a chance to take part in making important planning decisions' and that discussion of the wider implications of radioactive waste is severely restricted. With the steamrollering on dates, 'this is totally unjust'. In contrast, the People's Enquiries aimed to provide an opportunity for everyone — for and against the drilling — to contribute.

AntiNuclear CAMPAIGN!

The Anti-Nuclear Campaign's second annual jamboree took place during the last weekend of September. One of its major interests lay in making characterless names into people. The mood was fairly lighthearted, especially during the race against the clock on Saturday afternoon. Mo from Newcastle did a wonderful job of chairing the session.

The conference verged on a farce during an amendment to the Steering Committee's Standing Orders. Standing Order amendment number 6 was 'Add new standing order: Normal rules of procedure will apply'. But what is meant by normal? The proposer obviously didn't know. In a fashion typical of a veteran politician he proceeded to tell us why we needed them; not what they are!

In a more serious vein, strong arguments were put forward for a change in the Steering Committee's decision making procedures. From now on a vote will be taken. The main argument against consensus decision making is that it requires too much of a very limited resource-time. It was revealed by one Steering Committee member that some decisions in the past had been taken to the vote. Surely this was unconstitutional? But that is in the past. Now — voting rules OK.

The Constitutional amendments were followed by racing through many of the motions at a speed comparable to that of light. The major issue to be clarified at Sheffield was the campaigning priorities for the next year. Some time was spent deciding the best tactics for the Sizewell PWR campaign. Should we participate in a Public Inquiry? Comparisons were made with successes at minor road inquiries. But the general feeling was to wait awhile, until it becomes clearer **exactly** what the terms of reference will be. Other areas prioritised were the trade union campaign, nuclear power — weapons links and the consumer campaign.

On Sunday a series of workshops were held. Disappointingly there was no report back to the full meeting at the end.

No major battles surfaced during the weekend despite the widely different perspective of ANC's constituents. The conference was mainly positive. It is a shame that we get together but once a year.

Claire Holman

Nix Nuclex

Nuclex '81 — The International Trade Fair and Exhibition of Nuclear Technology — took place in Basel, Switzerland, on the 6th - 9th October. These 'Fairs' have been organised once every 3 years.

A group of six went from Edinburgh to lend support to Swizz anti-nuclear sentiments and to take part in the 7th International anti-nuclear Coordinating Conference [I.C.C.] on Sunday, 4th October.

THE I.C.C.

The anti-nuclear power movement seems to be at its lowest ebb for five years, and the attendance at I.C.C. meetings, at one time excellent forums, is now dwindling. The discussion at this meeting centred on whether the I.C.C. should continue to exist. Some points agreed on were:

- the impetus is now with the anti-weapons (peace and Eco) groups.
- nuclear power is international, yet our strength is based nationally and only a few people are prepared to work at an international level.
- international meetings are valuable to exchange information, but this function could be entirely devolved to the World Information Service on Energy (W.I.S.E.).

The decision taken was to suspend the I.C.C. for now, but to leave a skeleton structure (one secretary and a Swiss office); the secretaryship to be open to any applicant and subject to election. This would allow a meeting to be called fairly easily if an issue arose that required one.

The Anti-Nuclear Campaign of the U.K. is organising an international activitists meeting in London during April or May 1982 on the links between nuclear power and weapons. Notice was also given of a demonstration planned for next summer at the site of the fast-breeder reactor at Malville, France.

Nuclex '81

Most countries with any involvement in 'civil' nuclear power programmes had some representation, however minimal. The largest sections were taken by the U.S.A., U.S.S.R., and Japan. The old con, the 'Atoms for Peace' slogan, has been quietly dropped by everyone except the Soviets. The link between the 'civil' technology on display and nuclear weapons manufacture, was clearly obvious from information supplied by Rockwell International, one of the largest corporations at the nuclex fair, in their Annual Report. They are intimately involved in the production of the new American Cruise and the large MX missiles.

British representation was relatively sparse, consisting of:

1. Nuclear Engineering International - Sutton, Surrey, SM2 SAS.
2. Nuclear Enterprises Ltd. - Reading and Edinburgh.
3. Rockwell International: Flow Control Division - Slough SL1 6BB.
4. Telespec Ltd. - Guildford, Surrey
5. VG Micromass Ltd - Winsford, Chesire.
6. Vokes Air Filters Ltd; Burnley, Lancashire.

If you live near one of these firms, by all means go and see them and give them the seasons greetings:

STOP, YOU'RE KILLING ME!

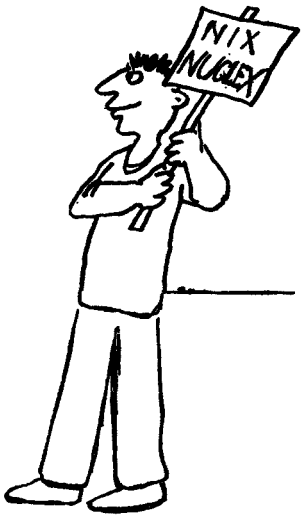
Nix Nuclex

An ad hoc group called Nix Nuclex was set up to organise counter events to the Nuclex Fair. They adopted essentially non-violent tactics: propaganda and symbolic actions. The propaganda was well organised. Nix Nuclex produced a counter-information pamphlet, badges, stickers, posters and leaflets; and during the three weeks prior to Nuclex, organised 4 counter information meetings. These were well received by an interested local population, 70% of whom have expressed their opposition to nuclear power in a past referendum.

Counter-Nuclex

The actions were less well organised and effective. The march on Saturday 3rd October, attacted over 2,000 people. It ended with a rally outside the Nuclex Hall. But in the planning meetings for this event, it was not clearly decided what form of action was to take place. Most people seemed to have come expecting the usual speeches, but members of the Swiss Autonomous Youth Movement wanted to adopt more militant tactics. During the speeches a small group, of suspected agents provocateurs, made a half-hearted attempt to get inside the hall, smash windows and set up a barricade against the slowly advancing riot police. Fire crackers and smoke bombs were thrown in their direction, to which the police replied by firing cans of CS gas. The rally was instantly dispersed. Some local fascist youths (called 'faschos') were seen to assist the police by grabbing and beating up some protestors.

Nix Nuclex also called a blockade of the entrance to the Nuclex Hall for the opening day. But the first planning meeting for the blockade took place on the preceding Sunday. This was too late to plan and build for a protest action which required a large number of people, acting solidly together in the face of a heavy police presence. Similar actions outside power stations in the U.s. have been pre-planned for many months and have involved some measure of non-violent action training. This was lacking in Basel. As a result, the police prevented the demonstrators from even getting into position. One person who moved to sit down was picked up by the hair and dragged away. The rest were dispersed by another dose of CS gas plus rubber bullets. One person was hospitalised by a blow from a police butt to the head.



A similar blockading action was called for the following morning. About 30 people arrived, and 25 were arrested. A funeral procession away from the Hall was organised to coincide with the end of the 'Fair'.

Certainly the massive, armed police presence, both inside and outside the Hall made the Exhibitors aware of anti-nuclear sentiments. But if such pro-nuclear propaganda exercises are to be prevented/disrupted, then anti-nuclear protestors will have to get better trained and organised. If we are going to advance, we must learn from past mistakes.

Appropriate Technology

NATTA Conclusions

'Renewable energy sources can play an important part in supplying Britain's future energy needs — but we are failing to get this message across to the public.' This was one conclusion of the fourth annual conference of Network for Alternative Technology and Technology Assessment (NATTA) held in London in November.

The meeting was in a mood for taking a critical look at both the renewable energy options available and at its own failure to develop a strong lobby for the renewables. Several speakers stressed that we should be putting our most immediate efforts into lobbying for conservation and energy efficiency. It was also felt that the 'big versus small' debate was causing an unnecessary distraction. We should be going for both large scale and small scale renewables. It was emphasised that if we aim just for small scale we would hardly dent the energy scene.

The barrier to serious development of renewable energy sources is no longer a technical one. It is more to do with financial, institutional and political constraints. To take just one example, it was strongly felt that responsibility for research and development of renewables should be taken from the Energy Technology Support Unit (ETSU), which is based at Harwell — the home of the UK Atomic Energy Authority — and given to a truly independent body.

Other issues raised at the conference will be covered in future issues of the **Energy Bulletin.**

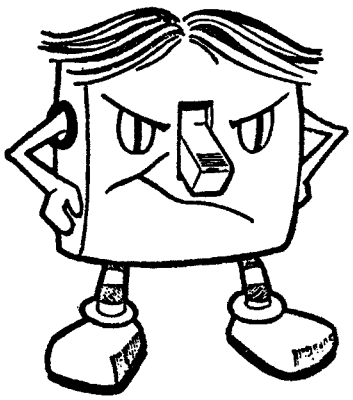
More information from: NATTA, Alternative Technology Group, Faculty of Technology, Open University, Milton Keynes, Bucks.

Windmill in Grid

The Open University, working closely with the Eastern Electricity Board, is hoping to connect a small 5kW windmill into the Grid. The project is being carried out on a small holding at Ely, Cambridgeshire and will be using an existing windmill not currently in use. The house has been used to develop other energy saving projects and only requires half of the windmill's electrical output.

A specially modified inverter will be used to covert the three-phase supply from the windmill to a single-phase for supplying the Grid. Built into the inverter are several safety mechanisms to ensure the safety of its supply, including voltage, current and frequency limiting devices.

Electrical Review 16.10.81



Leva Lighton

A naughty little waster, always to be found where he's not wanted. He leaves lights switched on in rooms with nobody in them day or night. I think he should be more thoughtful and 'Switch On' to saving energy, don't you? Conservation publicity from Chester County Council.

A.C.E. Conservation

A new trade association has been formed to promote conservation. The Association for the Conservation of Energy (ACE) has been formed by insulation manufacturers Cape Industries, computer giant Honeywell Control Systems, draughtproofing specialists Kleeneze and the research and development wing of Wimpey. The aim of ACE is to "promote vigorously both the technology and practical application of energy conservation." ACE intends to be more than just another trade association and will take its message to government, business and financial institutions.

ACE is critical of current government policies, and intends to commission independent research into the potential for conservation. Its first report is out now, entitled 'Domestic Energy Conservation and the Economy'. Contact ACE at 3 Pleydell Street, London EC4Y 8DB.

Energy Manager, October '81.

Mersey Barrage

A report by the 'Enterprise Forum', a group of industrialists, trade unionists and others, concluded that a tidal barrage across the Mersey with a capacity of 240-400MW, costing £400 millions could aid the regeneration of Liverpool.

The report proposes a £75,000 study by a combined team from Liverpool, Manchester and Salford Universities, which would take less than a year to complete.

Electrical Review, 16.10.81

Leach Report

Gerald Leach has presented his report 'Insulating British Houses: Trends, Savings and Costs' to the House of Commons Select Committee on Energy which is currently investigating energy conservation in the U.K. The report's main conclusions are:-

1. To bring all lofts up to an insulation standard of about 100mm could cost between £540 and -1,200 millions — less than the cost of one power station.
2. This would save about 2 million tonnes of oil equivalent per year and it would take less than five years to pay back the investment.
3. To insulate all cavity walls would cost between £1,060 and £3,025 millions. This would save about 3.8 million tonnes of oil equivalent and take just five years to pay back the investment.
4. Insulating all lofts and cavity walls would reduce peak demands on a typical winter day at a small fraction of the cost of providing the equivalent capacity, whether gas or electricity.
5. Costs for insulating individual dwellings are more than double those for insulating several houses under the same contract. This fact has major implications for conservation policy.

If schemes could be initiated for the group insulation of private houses then the cost of the insulation would be cut dramatically. Many possibilities exist, including projects set up by voluntary groups or local authorities. These projects could be encouraged by central government. A recent announcement that the Department of Energy will give grants to voluntary insulation schemes is a step in the right direction, but the sum involved is a derisory £105,000.

Energy Manager, October '81.

Heat Gain

A three-fold growth in heat pump sales is predicted by the Building Services Research and Information Association. Nearly 75% of all heat pumps sold are for heating and air conditioning, but the fastest growing markets at present are swimming pools and hot water.

In 1978 a survey identified 29 companies in the heat pump field, whether as manufacturers, importers or agents. This year the number of firms has increased to 76.

Electrical Review 16.10.81

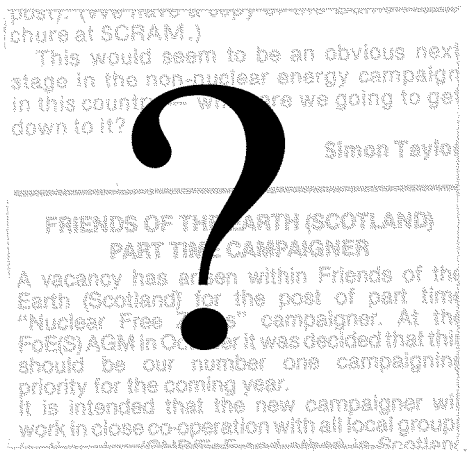
Appropriate Technology

Focusing Waves

A new way to extract energy from waves is being developed by engineers in Norway. The scheme is based on a (now abandoned) British idea of allowing waves to run up a ramp and spill over into a reservoir. As the water runs back out of the reservoir it drives sets of turbines.

The Norwegians have improved on this idea by focusing the waves (see diagram). Long low waves are focused into short high waves, which are powerful enough to climb a chute and fill a reservoir some 50m above sea level. Horizontal steel plates moored at different depths in 30-50m of water are used to focus the waves, just as a lens is used to focus light.

The efficiency of extracting energy from the waves is increased in this system and costs reduced. Electricity prices would be comparable with conventional sources according to the engineers, who plan to start building a full-scale system towards the end of the year — to convince sceptics!



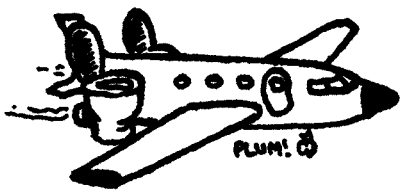
Orkney Cable !

The North of Scotland Hydro Board are throwing away an opportunity to make the Orkney Islands self-sufficient in energy. Despite the fact that private consortium is at present planning the erection of a 3MW windmill on the Islands, the Board has decided to spend £8 millions connecting the Islands to the National Grid.

A submarine cable will be laid by early 1983, and the Board hopes to save between £1 and £2 millions worth of oil every year. The existing 28MW diesel station in Kirkwall will be retained for standby generation.

Some cynics suggest that the windmill, which is being erected by Taylor Woodrow, British Aerospace and GEC, companies with a vested interest in nuclear power, is nothing more than a con.

Electrical Review 16.10.81



Pigs can Fly

American business plane manufacturers Beechcroft Aviation are building a methane-powered light aircraft. They expect a 15% specific fuel consumption saving over conventional aviation fuel.

The Potentials of Bracken

"Bracken could contribute significantly, and cheaply, to the rural energy economy" according to recent work by researchers at the Institute of Terrestial Ecology (ITE) in Cumbria. The potential is greatest in Scotland, where over 2000 square km of bracken represents about 4.5% of Scotland's primary energy requirements.

Farmers regard bracken (a tall perennial fern) as a noxious weed and government grants are paid towards its eradication. If instead this 'weed' were harvested it could be turned into a useful source of energy. The way to manage bracken as an energy crop has been investigated by workers at ITE in a study funded by the Department of Energy and the EEC.

The best time to harvest bracken would seem to be in the autumn, when it starts to die back. At this time most of the nutrients, on which the bracken depends, have returned to the roots (rhizomes). This reduces loss of nutrients during harvesting and so cuts down on the need to use fertilizers. Costs are therefore kept down.

Autumn cut bracken could be burnt as a solid fuel — after being compressed into briquettes — or made into methanol, a liquid fuel suitable for mixing with petrol. On the other hand fresh bracken cut during the summer (with a higher yield but also a greater nutrient loss) would be more suited to bio-gas digesters. These would produce methane gas.

The ITE study concludes that bracken fuel would best be developed on a local, rural, scale. In this way it would produce energy cheaper than electricity and calor gas. An estimate has been made that a farm of 100 hectares (1 square km), with about 20% of its area under dense bracken, could easily be self sufficient in energy. There should in fact be a considerable excess, so allowing the farm to sell bracken locally. In this way poor, highly subsidised, upland farms could receive a new injection of income at the same time as contributing to future energy needs.

NI Tides

The Northern Ireland Economic Council has asked the NI Electricity Service to include a proposal for a 200MW, £300 millions, tidal power station at Strangford Lough in its future plans.

80% of Northern Ireland's electricity is provided by oil-fired power stations with the cosequence that electricity prices are 30% higher than the UK average. Annual energy production of the tidal power station is estimated at 528Ghrs (1 Gigawatt-hour = 1000 Megawatt-hours) at a cost of 3.9p/kWhr compared with present (subsidised) costs to the consumer of 5.1p/kWhr.

A study by Binnie and Partners has estimated the costs of tidal energy at five other estuaries in the UK: Solway Firth, Morecambe Bay, Dee, Humber and the Wash. The total output is calculated at 23,000 GWhr at costs varying from 3p/kWhr for Morecambe to 4.7p/kWhr for the Wash.

Electrical Review 2.10.81

Swedish Sewage

Recent studies in Sweden have shown that the sewage from ten families could provide space heating for one home, if suitably upgraded by heat pumps.

One plant is already operating near Malmo in southern Sweden, which recovers heat from 3,000 flats and 120 houses, and ten more plants are under construction.

Although the temperature of sewage varies during the year from 22°C in Summer down to 10°C in Spring when it carries melting snow, it is possible to provide useful hot water at 60°-70°C. from the average sewage temperature of 12°C with an electrically driven heat pump.

The biggest heat-from-sewage plant which has been given the go-ahead is for a 10MW heat pump at Uppsala, and if such large systems prove viable, the heat output could be connected to existing district heating schemes.

Electrical Review 2.10.81.

Overkill

Overkill, by John Cox. Penguin £1.75. [SCRAM Mail Order + 25p p&p].

Dr John Cox was first elected to the CND executive in 1961. He was chairperson for six years and a vice-chairperson until this year. In Overkill, he puts his wealth of knowledge in print for the use of campaigners and interested individuals.

Overkill was first published in 1976 when The Bulletin of Atomic Scientists described it as "very close to a primer on the nuclear arms race." The new 1981 edition has been fully updated and covers all the hideous weapons including new material on cruise missiles, Trident submarines, the neutron bomb and Civil Defence.

The book covers nuclear energy in a scientific manner, including the nuclear fuel cycle and the development of the bomb. Unfortunately, nuclear weapons aren't the only weapons which need to be considered in a manual of this type. Chemical and Biological weapons merit a chapter of their own.

The real strength of the book lies in its description of the new weapons systems and their strategic implications, the role of the so-called 'theatre nuclear weapons', and Britain's role in the nuclear arms race. Treaties and arms control negotiations have achieved little, compared to the work which still needs to be done. The UN Disarmament Committee can produce watertight treaties at the drop of a hat, and satellite observations and other inspection methods have proved more than adequate, yet the political will for disarmament just does not exist.

Meanwhile the development costs of nuclear power has made it inevitable that nuclear states should seek customers throughout the world. Britain is not engaged in any negotiation for nuclear disarmament, as is required by Article IV of the non-proliferation treaty. Worse still Britain sells so-called peaceful nuclear reactor know-how and uranium to countries which have not signed the N.P.T.

So what can be done? Overkill's final chapter gives a potted history of CND, which is thought provoking and helpful in thinking of activities which can further the cause of disarmament. Many new campaigners may be able to see where they are going more clearly, if they know what CND has achieved in the past.

Reading this book could give a new boost to your enthusiasm; you'll need it anyway as a quick reference guide to all the facts.

Pete Roche

Secret Fallout

Secret Fallout: Low Level Radiation from Hiroshima to Three-Mile Island, Ernest Sternglass, McGraw-Hill, 1981, £4.50.

Sternglass is a discredited name on the nuclear scene, even in some anti-nuclear circles. So I approached this book with scepticism. I am now an enlightened sceptic. The words of George Wald, in an introduction to the book, probably best sum up my thoughts on the scientific content: Statistics "are highly individual. Sternglass has an exuberant way with them. At times in this book I had the feeling he was going a little too far. But then I never could be sure, once I had read over carefully what he was saying, that it was too far."

Sternglass' main argument is that exposure of pregnant women to low levels of radioactivity, in particular to radioactive iodine, results in considerable damage to unborn children. The radioactivity taken in by the mother becomes concentrated in the foetus. In consequence the exposed populations show an increased rate of deaths amongst new born children. The book is littered with numbers to support the case, although it is not necessary to be a scientist to follow the argument. It is written in a style that makes it easy to follow, and the points are emphasised by reiteration.

Probably the main strength of the book, however, lies not in its scientific arguments but rather in its role as an unintentional study of the politicisation of a scientist. There are a growing number of examples of once moderate scientists becoming more and more outspoken, in response to the hostile reaction of the establishment to any criticism of official thinking, be it that 'low level radiation is safe' or 'low levels of lead in children are perfectly harmless'. The result is often that these scientists strive harder to prove their case, grasping at any strand of evidence which may give support. In consequence many are pushed into extreme positions, often overstating their case. They thus become easier to discredit, which in turn makes them fight harder to support their arguments.

This book presents a fascinating account of the obstructions designed to topple the critical scientist — the official secrecy, the underhand dealings, the deliberate fiddling of the data. A witness to the power of the establishment is that Sternglass is so widely discredited. Their smear tactics have been a success. It is exceedingly hard in these circumstances to judge the science. One way is to read this book and make your own judgement, but remember he may be wrong. After all, Sternglass claims to find an effect from 14 curies of iodine 131 released at Three Mile Island, whilst no effect has been found from an estimated 20,000 curies of iodine 131 released from Windscale during the 1957 accident.

Duncan Laxen

Nuclear Nightmares

Nuclear Nightmares: An investigation into possible wars. Nigel Calder. Penguin 1981. £1.50. [Available from SCRAM Mail Order]. [Include 30p for post.]

In a detailed, but readable way Nigel Calder writes about the most likely triggers that could precipitate a nuclear war. Though he thoroughly describes the development and current array of nuclear weapons in the world, he is of the opinion that military doctrine is more significant than the weapons technology.

Refreshingly, he tries to avoid the usual fussing over the technical details of weapons or strategic forces; describing this pursuit as a self-distraction from the possible atrocity.

Would a conventional war in Europe escalate? After all, it is NATO (US) policy to use 'tactical' nuclear weapons if, eg. Germany were invaded by Russia. Would America risk all, to defend its European allies? The obvious danger of the rampant proliferation, which the USA has callously fuelled, is obvious; the more countries that have nuclear weapons, the greater the potential risk.

The author feels that the USA and the USSR have different attitudes to counterforce; ie. the former increasingly talks about how much we should sacrifice to 'win a war'; whilst the Russians, remembering the slaughters and shame of Barborossa etc., do not consider a nuclear war worth winning.

Another appalling factor is how appealing the notion of using 'first strike', has become. This, on America's part, is due to how vulnerable they feel over the inadequacies of their minutemen and of their command and control system. Being that headquarters are prime targets and less effectively protected than missiles, would a nation's leader make it to his command airplane? What happens if not... one concludes that a nation's leader, envisaging the organisational crisis ensuing from an attack, may well decide that he had to get his blow in first.

Nigel Calder always reminds you of the background issues to this cold war, ie. the ultimate confrontation between the beliefs of capitalism versus communism. Neither side wishes to renege their "big brother" stances, that they've developed since WW2. The deterrence con was basically a warmongering, dependent on fear and on keeping the other side frightened. The essential of "deterrence" is to sustain the pretence that you believe in it. Or as someone in Brussels said "to keep the Russians guessing, will the West be as mad as it always promises to be."

I found the postscript interesting, though maybe optimistic. Whatever the ineffectiveness of previous treaties, this conversation of peace must go on. Their success in working out a comprehensive limiting pact depends on the sincerity of either side in wanting peace and perhaps some restructuring of the power blocks? As for Britain, does it still want the prestige of being the most combative nation on earth, having been involved in more wars than anyone else in the past 150 years; and now seems curiously valiant to be one of the countries most intensely targetted for Armageddon?

I do feel that people should read this book, as it gives an informative, objective, but not dispassionate view of our situation.

Berni Graham

Mass Leaflet

The Danes have done it — and now the West Germans are about to do it: produce and distribute to **every** household in the country a colourful booklet on nuclear-free energy strategy for their country. The booklet will at the same time go over all the main arguments against nuclear power. It will be called 'There are other ways!'

Early next year, when the first print-run of 50,000 comes off the press, there will be a concerted distribution campaign in selected towns and regions. This will include meetings, talks, films, etc. The first print-run will cost approximately £24,000 and appeals for money are already going out. The booklet itself will also include an urgent appeal for funds. It is hoped that, as in Denmark, not only will the cost of the first run be met, but also that money will be raised for the next one.

The booklet is very impressive; 15 A3 pages, lots of good pictures and graphics, easy-to-read and informative. The only noticeable gap concerns the links between civil and military nuclear power. The inextricable link between the two was not mentioned at all in the first section, 'Eleven good reasons to oppose nuclear power'.

The final draft of the booklet, which was widely distributed for comment to interested groups and individuals, is available from: Bremer Buergerinitiative gegen Atomlagen, St. Pauli Strasse, 10/11, 23 Bremen, W. Germany (cost £1 including post). (We have a copy of the Danish brochure at SCRAM.)

This would seem to be an obvious next stage in the non-nuclear energy campaign in this country — when are we going to get down to it?

Simon Taylor

FRIENDS OF THE EARTH (SCOTLAND)
PART TIME CAMPAIGNER

A vacancy has arisen within Friends of the Earth (Scotland) for the post of part time "Nuclear Free Zones" campaigner. At the FoE(S) AGM in October it was decided that this should be our number one campaigning priority for the coming year.

It is intended that the new campaigner will work in close co-operation with all local groups (anti-nuclear/CND/FoE and other) in Scotland and local district and regional councillors to press for local nuclear free zones throughout the country.

The post will be based in either Glasgow, Dundee or Edinburgh — this to be finally decided later, once the campaigner has been appointed.

It is hoped that we shall have enough funding for the campaigner to be able to start work on 1st January 1982. (In the meantime the campaign is being run from the SCRAM/FoE office at 30 Frederick Street).

Please apply for details to this office.

Solution to October / November Crossword

ACROSS: 6. Heysham. 7&9. Water Wheel. 8. Impends. 11. Stakeness. 14. Solar Cell. 17. Snows. 18. Igneous. 19. Psalm. 20. Station.

DOWN: 1. Fermi. 2. Ashen. 3. Yardstick. 4. Washing. 5. Decease. 10. Skylights. 12. Torness. 13. Harwell. 15. Leats. 16. Muton.

Due to popular request, pressure of work and lack of support the crossword has been temporarily discontinued — no-one entered the last competition! It may reappear in the New Year.

Letter

Impressions of Bonn

During mid-October over 1,000,000 people marched against nuclear weapons in Europe... in Brussels, Rome, Paris, Bonn, Helsinki... In the following weeks there were [state-sponsored] marches in Eastern Europe. On November 14th, half a million people marched in Madrid against Spain joining NATO. Many Energy Bulletin readers will have had first-hand accounts of the London march, so here are some impressions of the Bonn rally the week before, from a letter by Ulla Euschen.

The demonstration lasted from 10.30 to 6 p.m... I'm actually so exhausted that I could weep with relief, because everything went so well and with such discipline. And because it was incredibly impressive to take part in this big thing. I think I would have regretted for ever not taking part, or just watching it on TV.

On the way, a lot of coaches with banners and posters inside joined in the traffic going towards Bonn. A lot of cars overtaking us were obviously going there too. When we arrived we already knew from the radio that most people were already there and everything had gone smoothly. After a few difficulties finding our section of the march, we joined in. There were five different marches starting from different points on the outskirts of the city, all converging towards the park where the speeches were made.

In spite of the occasional showers, the march was very amusing. We were close to a group with instruments and sang peace songs most of the time. I noticed that some window shutters were closed, but a lot of other spectators had banners hanging from their windows, with greetings and solidarity statements, or were just standing on their balconies and waving.

A few people appeared on the pavements with posters saying 'better red than dead, said the lobster before being put in the cooking-pot'—but they were mostly ignored. Several demonstrators were banging rhythmically on empty barrels... it sounded ghastly.

I was very impressed by the five minutes' silence — when we were warned by the megaphones, all the singing and shouting stopped abruptly, all was dead quiet... When we got to the park after 1½ hours we couldn't see the stage for the crowd, but we could hear the singers and speakers from the loudspeakers. Petra Kelly and Coretta King (Martin Luther King's widow) spoke... there were speeches all afternoon, some very interesting. People around me were really happy and enjoying themselves... I think it was partly due to the attitude of the police. There were very few around, and when you saw any, they were in normal uniform (not riot gear) and some were carrying flowers!

At the very end the whole crowd sang 'We shall overcome', which really created an intense atmosphere of unity, it was really beautiful.

Luxulyan

On October 31st the occupiers at Luxulyan in Cornwall had a farewell party. They'd been thwarting the Central Electricity Generating Board [CEGB] plans to test-drill the site for a nuclear power station since May 13th. In July the CEGB took the Devon and Cornwall police to court, trying to force them to remove the occupiers. In October the Appeal Court ruled, reluctantly, that the occupiers were as peaceful as the police said and that the police could not be forced to act unless there was a 'breach of the peace'.

The decision to move out was not an easy one, and only came about following a long, packed meeting. Here George Pritchard **of the Cornwall Anti-Nuclear Alliance explains their present stance and frame of mind.**

Many people have asked why it was decided to withdraw from the occupation at Luxulyan, when we were on a winning streak. I hope that this brief summary will help others to understand that decision.

After the Appeal Court judgement, CEGB-police consultations confirmed that they would probably try to move us, requesting a police presence for the eventuality of a 'breach of the peace'. We had heard the CEGB's case in court and the Appeal Court judges' remarks about 'self-help'. It was obvious that CEGB provocation would be an effective way of ensuring retaliation — and thus a 'breach of the peace'.

There ensued a discussion among the participants of the occupation, which lasted several hours. Two basic options presented themselves:

1. To stay put and risk a confrontation and be carried off;
2. To withdraw in our own time, leaving the CEGB in suspense as to our strengths and weaknesses.

The decision was made that our long-term objectives could best be achieved if the CEGB had the rug pulled from under them. By us refusing to go into the corner that they were pushing us into, they will be unable to ascertain our 'support', in terms of 'hard-core activists' or with the general public. If in future a site is announced and an occupation ensues, they will be unable to discredit it with 'you were carried off last time'. Nor can they discredit the movement by forcing a violent confrontation at this early stage.

Anyone reading the local papers (as the CEGB do) is aware of the opposition at all three sites under investigation. There has also been a marked increase in the (now regular) articles on waste disposal, transportation, environmental impact, etc... We announced our withdrawal at a press conference, which got our views across to an even wider audience. It also gave the lie to the accusations the CEGB had made in court — that the drilling contractors had been 'in fear of their lives' coming onto the site, when in fact they'd been drinking tea with the occupiers! This matter is being taken up by our MPs.

I hope that you might realise the difficulties and are now assured that we have not given up. Our object is to stop them building a reactor here. We are approaching this by many different lines of attack. One battle is over, but the war has just begun!

Little Black Rabbit was very honoured to be sent by SCRAM to report on the Space Shuttle launch. Thanks to the rocket's autistic computers, she was able to spend a leisurely week drinking NASA bourbon and collecting freebies.

Included in the souvenier kits doled out to the assembled smear of hacks was a little non-stick frying-pan — a reminder, she was told, of how the space programme has had useful spin-off into real life.

This, she thought, was very odd. What on earth could polytetraflouroethene (PTFE, more pronounceably known as 'Teflon' coating) be used for in a space rocket? The ubiquitous Public Relations people seemed to find themselves in a 'briefing-document absence situation'.

Could it be, she wondered, that there was more to the decades-old story of the origins of non-stick frying-pans? So she consulted a passing chemist. Teflon, it seems, isn't only very slippery. It's also amazingly resistant to chemical corrosion. In fact, at least at the time of the Manhattan Project, it was the only known substance that wouldn't be eaten away by uranium hexaflouride.

Now, if you're going to build nuclear weapons from uranium-235, you have to enrich natural uranium, which is overwhelmingly uranium-238. To do that, you need to make some compound of uranium that's a gas at some reasonable temperature, and preferably a liquid at some lower reasonable temperature as well. Uranium hexaflouride is the only compound that fits the bill. But 'hex' is very corrosive stuff — it'll eat its way through **almost** anything.

So, if the Manhattan people were going to make uranium-235 bombs, they had to build enrichment plants, and they had to invent Teflon to line them with. And this fact was supposed to be a major obstacle to any other group building bombs. But there was obviously a big commercial market for this wonderful slippery stuff — so some other story had to be invented to conceal its sordid and dangerous past. Thus Little Black Rabbit's useful little memento of Cape Canaveral.

She's frequently impressed by the wonderful ways of Public Relations but this seemed to be a Grade A example of how to create an effective modern folk-tale. Almost as good as the Shuttle itself — the PR people seemed to have 'forgotten to bring their figures' on just how many of its future loads would be for the military. Or just what great benefits its civilian loads (10%?) were going to bring humanity — maybe the distribution of frying-pans to underdeveloped countries from the air? Would [illegible] risk?