SCRAM
ENERGY BULLETIN

NUCLEAR POWER? NO THANKS

No22 **30p**

SOUTH OF SCOTLAND ELECTRICITY BOARD

V.A.T. Reg. No. 259 5478 11

ARREARS BILL

Please read notes overleaf carefully.

Any enquiry regarding this Bill should be made IMMEDIATELY to your District Of

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06 NOV 80		SEP 80	04 NOV 80

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DON'T PAY FOR NUCLEAR POWER

Consumer Campaign Feature

Contents

Credits

This issue is mainly the work of Claire, Duncan, Marion, Mary, Pete, Rob, Sheila and Stuart.

Copy date for next issue: 15th March 1981.

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Comments

One of the best ways of showing your disapproval of nuclear power is to withhold the nuclear portion of your next electricity bill. This hits the electricity boards where it hurts most — in their pockets, and causes disruption to their administration. The more people who participate in the consumer campaigns, the more effective they will become. The feature on the Consumer Campaigns (page 8) will tell you more about it.

Over the past year there has been an enormous revival of interest in CND. SCRAM have always maintained that there are inextricable links between the civil nuclear power programme and nuclear weapons. In the next issue of the SCRAM Energy Bulletin we will show just how close these links are, and how, if you are opposed to nuclear weapons, you must support the anti-nuclear power movement.

CND

A CND group is being started up in Milngavie. The attendance of the inaugral meeting was fairly encouraging, but we need many more members. For more information contact Gordon McAnsh, 0360-50455.

Opinion Polls

Somerset Anti-Nuclear Alliance have recently completed an opinion poll on the attitudes of the local people to radioactive waste and nuclear power. From a random sample of 988 people, 81% were opposed to the burial of waste in Somerset while only 8% were in favour. A slightly smaller number (70%) were opposed to the Somerset County Council giving permission to test drilling to find sites for burying the radioactive waste. When asked whether they were in favour, or opposed to, Britain having more nuclear power stations, 29% were in favour, 53% were opposed and 19% didn't know.

The same questions were asked to 349 people in the Tewkesbury district In that opinion poll, 78% were opposed to the burial of radioactive waste in the district, and 68.5% think that the District Council should oppose test drilling to find sites for the burying of waste. In the Tewkesbury poll, 30% were in favour of, 47% opposed and 23% didn't know, when asked whether they were in favour of, or opposed to, Britain having more nuclear power stations.

Conference

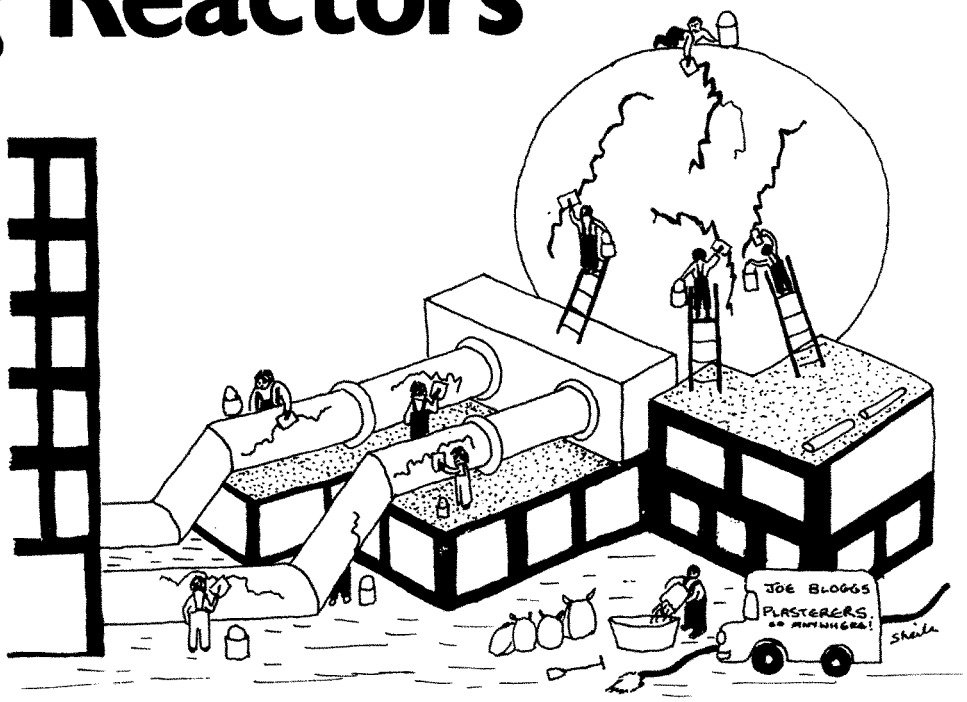
The Scottish Council for Civil Liberties are holding a conference on March 7th, to discuss missiles, reactors and civil liberties. The day's events will include a continuous showing of Dr. Helen Caldicott's lecture 'Nuclear Madness' plus a lunch time showing of the 'War Game'.

Speakers will include Stuart Hall, Brian Wynne, Peter Thompson and Colin Sweet. The two sessions will be chaired by Robin Cooke and Judith Hart.

The conference costs £4, unwaged, OAP and students £1.50. For more information and a booking form contact **SCCL, 146 Holland Street, Glasgow. 041-332-5960.**

Friends of the Earth 'brainwashing' event outside the Nuclear Power Information Group offices. A giant brain was scrubbed by workers from the 'Nuclear Brainwashing Company', wearing radiation suits and chanting mindless, pro-nuclear slogans.

Cracking Reactors



In 1978 it was first suspected that there were flaws in the cooling circuits of one of the Magnox nuclear reactors. A year later, the CEGB's fears were confirmed by the use of a new sophisticated monitoring devise. Since then, this new ultrasonic technique has revealed similar defects in six other magnox reactors.

In January 1980—nine months after the cracks were first confirmed at Dungeness—the public were informed of the problem. Since then it has been revealed that in one of the primary cooling circuits defects over three metres long were found, and in another, over 100 'minor' cracks were discovered.

Have they always been there?

The CEGB who operate these stations say that the defects have emerged primarily as a result of better inspection techniques, and that they were probably present since the reactors were built. However, this can only be optimistic speculation, as confirmation that the cracks are stable, or for that matter, information of the rate at which they are developing, can only emerge after the new technique has been employed in successive inspections over a number of years.

In a magnox reactor, the cooling gas, carbon dioxide, is circulated in gas ducts which are several feet in diameter. When the reactor is working the heavy steel piping vibrates and flexes as the hot pressurised gas is pumped around. The flaws in the ducts are inside the steel bellows that are inserted in six places in the circuit to allow it to flex without breaking. Although the gas inside the piping should only be slightly contaminated by radioactive particles, its integrity must be assured, both in normal operation, and especially in a reactor emergency, because the gas could be vented to the atmosphere.

One of the engineers from Berkley Power Station is reported as having said 'If a feeback of steam occurred into the primary circuit, which would be possible from a tube failure, then the bellows unit would have blown wide open and **we would have serious problems on our hands**'. Failure of the cooling circuit could result in a serious overeating of the reactor core, and a possible release of radioactive material.

Inspection

Inspection of the bellows is not an easy undertaking. Someone has to climb 80 or 90 feet of scaffolding inside the piping, wearing protective clothing and carrying an ultrasonic probe. The probe then has to be applied, at awkward angles, to every inch of the suspected weld. The results then have to be validated, and finally **a means of repeating the procedure exactly** has to be devised.

Remedial Programmes

There are two remedial programmes open to the CEGB. Firstly the gas cooling circuit can be rebuilt at huge cost. From the engineers point of view this would have great merit in that a fresh start could be made, with components that have been tested to the latest standard. But the only way the CEGB could justify such a huge expenditure would be by extending the stations' operational life from 20 to 25 or even 30 years. Alternatively, the few feet of piping where the bellows are could be replaced. At Bradwell, the engineers are presently concentrating on identifying the extent of the problem before deciding what form of remedial action to take. At Dungeness, the suspect bellows are being replaced by new units built by Parsons of Newcastle from 'Ducol', a type of stainless steel used for its flexibility.

Expensive

Not only is it expensive to repair the cracks in the cooling circuits, but also expensive to keep the reactors closed down while the lengthy process of inspecting all the welds takes place. It has been estimated that the cost of finding alternative energy supplies is £⅓ million for each reactor per week. This might account for why one of the reactors at Hinkley Point was returned to service last year before all the welds were inspected, and on the basis of an internal technical assessment which was not seen by the CEGB's safety committee.

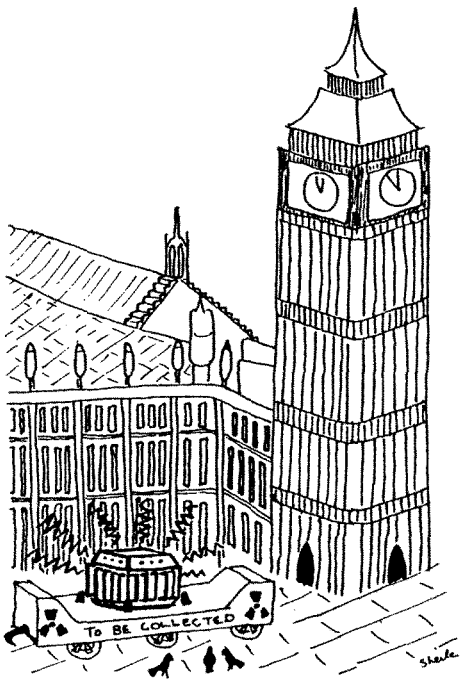
Although similar cracks have been reported by the press in several of the other magnox nuclear power stations operated by the CEGB, the board refused to confirm which ones were affected, only naming the reactors which are presently out of service. In Scotland, James McGuire, Public Relations Officer of the SSEB, gave the following statement "I can assure you that the plant of both of board's power stations at Hunterston is continuously monitored, and nothing has been discovered which would give cause for concern". Given the long delay before the CEGB made public that there are cracks in its reactors, would the SSEB tell us even if they are concerned?

~

Affected Reactors

The situation at the Magnox Reactors.
Bradwell, Essex: First reactor taken out of service in May 1979 for overhaul, period extended for inspection and repairs. Second reactor taken out of service in February 1980 for inspection and repairs. Both expected to be back in service in 1982.
Dungeness, Kent: First reactor taken out of service in April 1979 for overhaul and repair. Second reactor out in January 1980 for overhaul and inspection. Both are due back late this year.
Berkeley, Gloucs.: First reactor out of service from Fberuary 1980 for overhaul and repair. Due back early this year.
Hinkly Point, Somerset: Second reactor out of service for an unknown period of time. Now back in service.

Home



Early Day Motion

An Early Day Motion has been tabled by John Tilley, M.P. for Lambeth Central. 'This House calls on the Government to establish a public inquiry into the safety aspects of transport of nuclear waste products within the United Kingdom' — E.D.M. No.16. So far over forty MPs have signed the motion.

The Greater London Council recently called for nuclear waste to be re-routed around London, and both Tory and Labour Boroughs in London are calling for a public inquiry, as are Worcester and Ipswich.

Groups all around the country are organising write-ins, and all people active in the anti-nuclear movement are urged to write to their MPs.

Draft letters are available and also a leaflet on starting a campaign with your local council. **Available from LRWTC, c/o 15 Klea Avenue, London. SW4.**

PWR

Britain is secretly building a PWR, for military and NATO use at the Ministry of Defense establishment, HMS Vulcan, near Thurso in Nothern Scotland. It should be completed by 1984 and will replace an older reactor at the site.

The reactor will not be producing any electricity, and Rolls Royce Associates, who are working on the project, have refused to give any details of the reactor and its size.

Barrow Evening Mail, 13.11.80

Windscale

BNFL have recently made an outline planning application to Cumbria County Council and Copeland Borough Council for a new waste treatment complex at Windscale. The plants would be outside the present boundaries of the site.

The proposed development comprised of three plants. One for storing, treating and decontaminating material and preparing for its disposal. The second, for treating process residue and the third is planned to be a new development facility.

The waste treatment plant will prepare and package active waste that is presently stored at Windscale and Drigg, in drums for disposal at sea.

BNFL News, January '81

Stornoway

The Public Inquiry into the developments proposed at RAF Stornoway by the Ministry of Defence will begin on March 16th, in the Council Chambers Sandwick St., Stornoway.

The Reporter is to be Mr. Alexander Bell, who was the Reporter at the Torness Public Inquiry in 1974. The inquiry will consider the objections made by the Western Isles Council and others relevant to the local planning issues.

Mr. Bell has said that he would consider, if relevant, evidence on all the probable local consequences following the proposed development. He would not hear evidence or arguments on this country's defense role and commitment to NATO.

It is though that the Inquiry might last two weeks.

Press and Journal, 9.1.80

Trials — Part 8

On Friday, January 9th, part eight of theTorness trials took place in Haddington, Scotland, following the arrests which were made after a demonstration at the nuclear power site on May 3rd, 1980.

Subsequently, 9 of these arrested were summonsed, mainly on charges of 'breach of the peace' and 'attempting to rescue a prisoner'.

The latest trial, against Hans from London, also included an 'offensive weapon' charge. But even the Sheriff thought that the purpose of possessing a knife during a camping weekend was probably for cutting bread and cheese, rather than for stabbing members of the Scottish security force, and therefore dropped it. He disagreed with the plea of not-guilty of attempting to rescue a prisoner. Despite a defense witness who could testify that Hans was trying to find out the name of the arrested person, rather than holding on to that person's leg — which the police claimed to be the truth. The Sheriff has no doubt who to believe.

Fines so far have passed the £500 mark, and are expected to be around £600 after the last trial takes place on February 12th. Donations are urgently needed. **To Torness Public Parks Dept., Box 23, c/o 163 King St., Aberdeen.**

UKAEA Cracking Up

The UKAEA is cracking up under the relentless pressure of reasoned argument from the anti-nuclear movement. The Director of fast reactor studies, Mr. Jack Moore, resigned at the end of last year, because of uncertainties about the future of the fast reactor programme.

Rumours that others are about to leave have been re-inforced recently in an interview with Dr. Tom Marsham, Managing Director of the nothern division of the UKAEA. He told **The Scotsman** (22nd Jan.) that the UKAEA need a major policy announcement (presumably to go ahead with the fast reactor) within 18 months if his team is to be kept together. "I know of no way of keeping high technology teams in cold storage. I just can't tell them to read books in the library for a year, or go away and do something else."

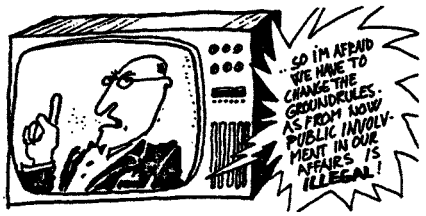
The promised public inquiry into a commercial demonstration fast reactor is at least 4 years off. The UKAEA seem, therefore, to have adopted the tactic of trying to frighten the Government into premature action. The trouble is that the UKAEA have had it too easy for too long. Now that they have come under public scrutiny and are being asked to justify themselves they resort to acting like spoilt children.

Japan

In early December, 6,000 anti-nuclear demonstrators clashed with a large force of police at Kashiwazaki in north eastern Japan. Seven protestors and three policeman were injured.

The demonstration was outside a hearing on the building of two 1100 megawatt reactors. The hearing was organised by the Ministry of International Trade and Industry to hear the opinions of local people and to get their support. The hearing was, however, not open to the general public. Twenty people of different occupations had been selected in advance to ask questions and 252 more were picked to be the audience.

WISE, 16.11.80



Cancelled

The Virginia Electric and Power Corporation (VEPCO) in the United States has recently announced that it would not complete the construction of its North Anna 4 nuclear power station. This is the most recent of several cancellations of plans and orders of nuclear installations in U.S.A.

The North Anna 4 cancellation is significant because the construction has already begun. The VEPCO announced that they plan to pass on the losses resulting from their decision to their customers in the form of higher electricity bills over the next ten years. The VEPCO President said "The investment was made for the benefit of the customers and we feel that the customers should bear it".

VEPCO now plan to make all future power plants coal fired.

WISE, 26.11.80

Brokdorf

The German Minister for the Interior has given permission to continue the construction of the nuclear power station at Brokdorf, near Hamburg.

Three years ago the building of the plant was stopped by the regional court which stated that the building could not continue until solutions have been found for the problems of waste disposal and decommissioning. Now, the Government states that the requirements of the court have been fulfilled by the nuclear industry.

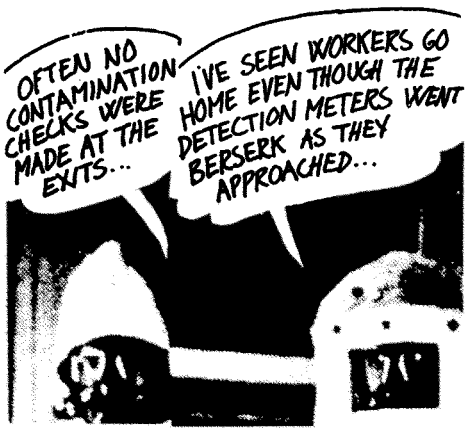
WISE, 26.11.80

Fire at Cap La Hague

Cogema, which operate the reprocessing plant at Cap La Hague in France, have so far experienced six serious incidents at the plant. These incidents include the fire, last April, which resulted in the complete loss of electricity in the plant, and an accident last September that lead to radioactive water being spilt and getting outside the plant. Sampling of the nearby St. Helene river, organised by the local anti-nuclear group, showed that the river had been contaminated. The water of the river is drunk by cows in this milk and cheese producing area.

The sixth incident occurred at the beginning of January, when another fire broke out. The latest fire occurred in a solid waste storage silo, where the graphite cladding of the spent nuclear fuel was burnt. At La Hague, unlike at Windscale, the spent fuel is cooled using air rather than water.

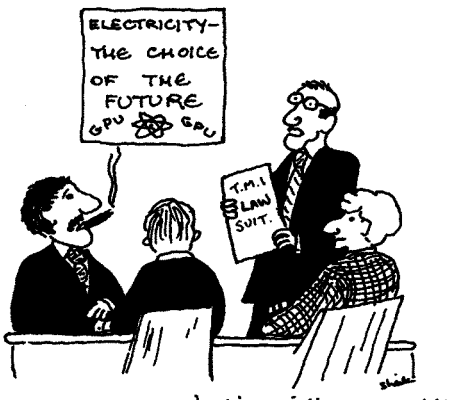
During the fire, radioactivity escaped from the silo. Cogema announced that the radioactivity did not exceed **one-fifth of the maximum permissible dose.** However, the next day, the La Hague Hygiene and Security Committee revealed that in parts of the site radiation had in fact reached the maximum permissible levels. The unions also claim that the radiation at the plant's medical centre, some 200 metres from the main road, **reached a level of 10 times** that allowed outside the plant; a figure which is not disputed by Cogema.



Nineteen workers were found to be contaminated, including a painter who received above the maximum permissible dose of 5 rems, and a number of firemen who were contaminated as they put out the fire.

Although the fire was put out, after fifteen hours, the question that still has to be answered is, what caused the fire in what was considered to be a stable, sealed silo?

Abroad



I think we're dealing with reasonable men... but then again, they may be just like us.

Harrisburg

General Public Utilities [GPU], the corporation that owns the Three Mile Island [TMI] nuclear power station near Harrisburg, are claiming that the U.S. Government should pay for the cost of the accident - $4 billion.

GPU have put the blame for the accident on the Nuclear Regulatory Commission (NRC). The argument goes something like this. The utility that operated TMI (Metropolitan Edison) were 'induced' by the NRC to rely on the government to review the equipment, operating procedures and staff training programmes at the plant. The NRC failed to keep their side of the bargain.

The key to the complaint is an accident at the Davis-Besse nuclear power station, 18 months before the TMI accident. Both plants were built to a Babcock and Wilcox design. The accidents were strikingly similar in detail, but as the Davis-Besse plant was only operating at 9 per cent of capacity at the time of the incident, **no serious damage was done.**

Over a year after the Davis-Besse accident, the **NRC revised the operating procedures for the plant.** However, the failure of the relief valve to close was a **generic problem**, common to all Babcock and Wilcox plants, including the TMI.

Even though NRC realised that there were flaws in the reactor design, it **did not warn other utilities**. According to GPU, this negligence was one of the causes of the TMI accident. Had the NRC done its job, the accident would not have occurred.

However, it appears as though GPU are just trying to get someone else to foot their bill because the details of the Davis-Besse accident were well known within the industry. Also Metropolitan Edison had experienced similar problems with the relief valve before the accident.

New Scientist, 1.1.81

Dumping News

Mullwharchar

Noel Charlton, Co-ordinator of the local Friends of the Earth Group, reports about the campaign in Galloway and Ayrshire following the Public Inquiry last year.

Galloway and Ayrshire still wait to hear Secretary of State George Younger's decision on whether nuclear waste test drilling will go ahead in the mountain Mullwharchar. The final report from the Public Inquiry Reporter went to George Younger in November and it was widely feared that an announcement in favour of drilling being permitted would be slipped in during the pre-Christmas frenzy period. This tactic was not used and we hear that copies of the report have gone to London for study by the Ministry of the Environment. It now looks as if the decision may not be made public until the spring — minimising the time objectors would have to plan opposition before the drilling teams could find suitable conditions in the mountains for moving in.

Low Ebb

Interest among the general public is at a low ebb. Four years of argument, campaigning, anger and frustration have left most local people tired and disillusioned. The inactive period since the Public Inquiry closed in March 1980 has allowed other issues such as unemployment to become paramount. For the organised groups in the area — the Campaign Opposing Nuclear Dumping (based in Dalmellington) the Friends of the Earth groups in Stranraer, Newton Stewart and the Machars, the Stewartry of Kirkcudbright, and Dumfries, SCRAM South-West, and the Dalry based Scottish Conservation Society, this is a time of recruiting strength, planning and training. To plan at all one must assume an unfavourable decision and FoE and C.O.N.D. are co-ordinating planning for a demonstration involving Dalmellington and the access roads to the drilling sites which will follow shortly after any such decision is announced. Plans have been made for immediate response to the announcement — especially aimed at alerting the local Councils to the long-term implications of any permission to drill. Scottish Conservation Society is arranging an ambitious fund-raising project for the Mullwharchar Fighting Fund: an auction of gifts from various show-business personalities (a victorian lace petticoat from Julie Christie, a tie from Stanley Baxter, other clothing and gifts from Lena Zavaroni, Tom Conti, Paul Daniels, Isla St. Clair, and a Bing Crosbie wallet). These will be paired with "heirlooms" given by other Friends of Mullwharchar and sold at a Grand Auction in March.

Surveillance

There are non-violent direct action training groups going in Newton Stewart, Kirkcudbright and Dumfries. FoE car-stickers reading "Nuclear Drillers — Out!" are appearing throughout the region, and there is to be an all groups co-ordination meeting in Ayr at the end of January. Groups are preparing for a long campaign — if and when the drillers do get in to the sites. The main objective will be to achieve continuous surveillance both to protect sensitive parts of the environment and to ensure that any deviation from the conditions of planning consent are observed and reported. We are aware that these are the early stages of a long fight. The A.E.A. regard Mullwharchar as a prime site for a waste dump. We see it as the very centre of the Galloway Hills — the inner sanctum of the last wilderness area in the south of Scotland. We are all resolved that it shall remain inviolate.

Buy it

A new move is planned for the fight against nuclear dumping at Mullwharchar, in the Galloway Hills. Plans initiated by the Scottish Conservation Society, are to try to buy the 1,000 acre site earmarked as a possible atomic dustbin. The Society want to turn the area into Scotland's first national park.

The site is owned by the Forestry Commission, who have been given new powers to sell parts of their land for forestry or recreation. Mullwharchar is unplanted, and is of great interest to nature enthusiasts, mountaineers etc.

A working group will be set up to plan this project. The Forestry Commission have been approached for plans and maps, and it is hoped to be able to negotiate.

For further details contact S.C.S. **Kathleen Miller, The Manse, Dalry, Kircudbrightshire. Tel. 06443-380.**

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Elsewhere

Applications to test drill in a clay and a shale site in Leicestershire and Nottinghamshire have both been turned down so far.

As for the drilling applications in Somerset, Sedgemoor District Council have voted unanimously against test drilling. Somerset County Council are to make a final decision at the end of January.

How to get the best Price

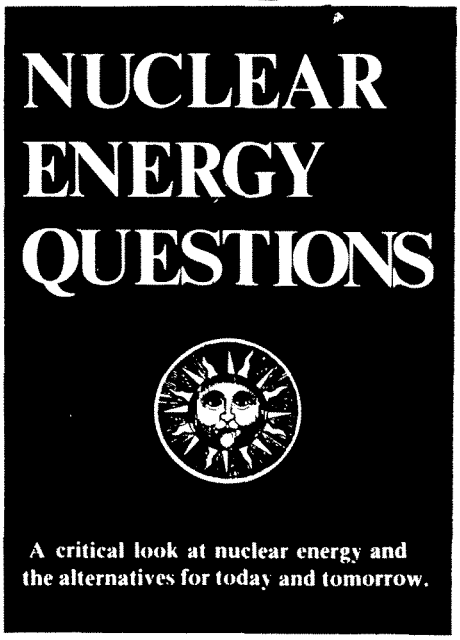
Public Utility Boards are under no obligation to ensure that you take advantage of the lowest terms applicable to your individual circumstances. A customer does not automatically get the lowest possible price from the Boards.

The electricity boards, for example, have 12 or so advertised tariffs. If you are a domestic consumer you will have fewer to choose from (domestic, white meter etc.), but if you are running a business and trying to keep your energy costs down, it can be quite a difficult task deciding which electricity tariff you should use.

This has led to the establishment of a new breed of consultants — 'the tariff consultant'. There are now several tariff consultancies operating in the U.K. There is usually some saving which a tariff consultant can make for any business, particularly if they use a lot of electricity. Some of the smaller consultancies may also give you advice on saving energy, but this is not their speciality.

If you would like more information about tariff consultants then contact **Pete Roche** at the **SCRAM office**, and see if your business, radical bookshop or whatever can save some money, which could certainly be put to better use.

Study Pack



Pro-Nuclear Propaganda

Over the last year there has been an unprecedented boom in pro-nuclear propaganda. The industry-run Nuclear Power Information Group has hawked its bland and plush exhibition through most cities in Britain (at a cost of £40,000 each stop) and filled pages of magazines and newspapers with unctuous advertisements featuring the nuclear family in search of information ("Don't join the train until you know where it's going"). The UK Atomic Energy Authority has held numerous so-called educational sessions in Schools throughout the country. The South of Scotland Electricity Board, typically breaking new ground in bad taste, has put on a cinema advertisement with a woman dancing frenziedly around deep freezes and cookers and announcing that electricity is "Today's 1st Choice for the Future". Just recently two new children's 'educational' books have been published purporting to give an objective view of nuclear power, while, as New Scientist has pointed out, "strongly endorsing the case for nuclear power". One is by someone called Michael Longstaff — who used to work for the UKAEA — the other is by a C.A. Mann who still works for British Nuclear Fuels Ltd. The total cost of this whole exercise is hard to assess, but one estimate suggests that it amounts to a massive £5 million every year—about half of which is spent in Schools. (Times Educational Supplement, 10th October 1980).

Nuclear Energy Questions

With far fewer resources, at much less cost, the anti-nuclear movement is now preparing to fight back hard. The newly-formed educational trust, Information Service on Energy (ISE), whose aim is to promote safe and rational energy sources, is to launch its first publication, **Nuclear Energy Questions**, at the beginning of March 1981 in Edinburgh. **Nuclear Energy Questions**, which was part-funded by a £2,000 grant from the Commonwork Land Trust, is a concise and impressive package of information on energy issues, designed primarily for schools. There are separate booklets covering the whole nuclear fuel cycle and alternative energy sources, on Uranium Mining, Reactors and Radiation, Nuclear Waste, Future Energy Choices and Alternatives Now, all of which are clearly written and presented with an unusual and refreshing absence of jargon. They are accompanied by a Resources Handbook which directs readers to further sources of information; a Work Book which suggests a series of imaginative projects designed to help children find out about energy; a map of actual and proposed nuclear installations in Britain; and two colour posters, one illustrating a depressing nuclear future, the other a safe energy future. At just under £5.00 it is an excellent buy, and a vital tool for teachers and parents, as well as all others anxious to counter the growing spell of official misinformation.

NUCLEAR ENERGY QUESTIONS

*A critical look at nuclear energy and the alternatives for today and tomorrow.

* An information pack for the old and young alike.

will be available from Information Service on Energy (ISE), 2a Ainslie Place, Edinburgh 3. for £4.95, or £5.60 including postage, from the beginning of March 1981.

ORDER YOUR COPY NOW!

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More Propaganda

The British nuclear industry is taking the anti-nuclear movement very seriously these days. Firstly, the UKAEA have produced a similar, question and answer leaflet, to Ecoropa's 'Nuclear Power — the facts they don't want you to know'. It goes systematically through the points raised by Ecoropa, giving their answers to the same questions.

More recently, the January issue of Atom, the UKAEA's glossy, monthly magazine, devotes nine pages out of 36 to a detailed criticism of Ecoropa's booklet 'Nuclear Power: What it means to you' (see SCRAM Energy Bulletin No.21 for our review) and SANE's new pamphlet 'Anti-Nuclear Now... or Never'. The length of the review is justified by 'a responsible and response industry can do no less'!

The industry have put considerable effort into their criticism of these two pamphlets, with no less than 35 references. The responses to the various issues discussed in Ecoropa's and SANE's publications are the standard ones. However, they go over the board in trying to refute that early advocates of nuclear power ever said that 'nuclear power will be too cheap to meter'. The article cites the considerable amount of detective work that was undertaken to find the source of this quote. You would think that they would have better things to do!

Uranium

A page from the Uranium Mining Booklet.

What has nuclear power got to do with the way North America Indians feel about their land?

The story is a long one but it starts with uranium.

The fuel used in nuclear reactors is uranium, which like other minerals is found in the earth's crust. Until the 1930's it was an unimportant metal sometimes used to produce a yellow colour in pottery glazes and glass. During the nuclear arms race in the 1950's, it's potential as a new source of energy was made use of - the uranium boom had begun.

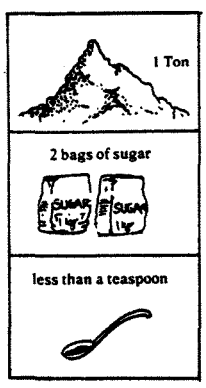
The uranium in British nuclear reactors takes a long, complicated and expensive journey before it can be used as fuel. Let's start at the beginning with a closer look at it.

Pure uranium metal is actually a mixture of two types or isotopes of uranium. It is mostly made up of **uranium 238**. Only a tiny fraction (less than 1%) is **uranium 235** which has special properties and is the basis of nuclear power and nuclear weapons. The booklet '*Radiation and Reactors*' covers this in more detail.

Before it begins its travels, the uranium is mixed in with rock and earth in the earth's crust as uranium ore. There are only a few places where it is found in sufficient concentrations to make it worthwhile mining. Even in these areas, the uranium is only found in small quantities.

One ton of uranium ore only contains 2 kilogrammes of uranium metal (about the weight of 2 bags of sugar). The 'special' uranium 235 forms less than 1% of this so out of your 2 bags of sugar you end up with less than a teaspoonful of uranium fuel.

As there is such a tiny fraction of 'special' uranium in the ore, many millions of tonnes have to be mined to get enough to fuel reactors.



Don't Pay For

Nuclear power is expensive and unnecessary. As consumers it is we who pay for this folly. High interest rates are escalating the massive costs of nuclear constructions. The cost of decommissioning alone, it was recently estimated by US Congress, will equal the cost of construction. Alternatives exist which are cheaper, more appropriate, and create more jobs, to say nothing of the safety aspect. As consumers we are 'meant' to be powerless, and to pay for nuclear power whether we want to or not. The Consumer Campaign is an attempt to reverse this situation and to gain some consumer and community control over the electricity industry.

There are now over 10,000 people taking part in the German Consumer Campaign, which involves paying the 'nuclear portion' of their electricity bills (10%) into trust accounts. The Campaign there is known as **Strobo**, which is an abbreviation of **Stromzahlungsboycott**, meaning a boycott of electricity payments. It has been running for over three years and there have been hundreds of court cases. Over 80 lawyers actively support about 100 **Strobo** groups throughout the country. German electricity utilities sue consumers participating in the campaign. In contrast, in Britain, the boards, after a certain amount of 'arrears' has built up (usually £10), simply threaten with disconnection, so it is up to us to take them to court.

Court Victories

So far, only 2 cases have been won by **Strobo** in West Germany. The judgement in their favour was based on the Right to Withhold, part of the Germany Civil Law Code. This states that a partner in contract has the right to whithhold money owed if the other party is acting in breach of contractual obligations. One of the obligations which an electricity board in West Germany has to look after the welfare of their customers. The court was satisfied that the electricity board concerned was not fulfilling this obligation by supplying nuclear power. Reasons given included continuous emission of radiation during normal operation of reactors; increased tendency of nuclear power stations to break down; the massive threat to the environment in the event of a serious accident;the lack of satisfactory waste disposal, waste transport and decomissioning arrangements; and the lack of effective medical therapy to deal with radiation damage.

At the time of this court case the licensing of the local nuclear power was being legally contested, and the right to withhold of the two accused was granted at least till the outcome of this case. This is a good example of how one court action can support another. The quicker these issues are aired in our courts the better — and on as many fronts as possible.

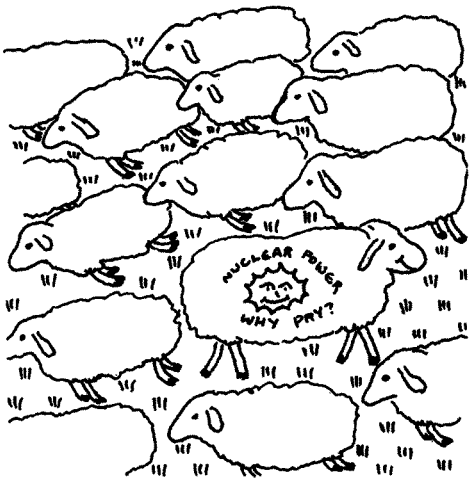
Strobo Bashing

An important court case is now in progress. The electricity board, besides suing for the withheld amount, is seeking to stop Johannes Anft from encouraging others to take part in the campaign. He could be fined up to £100,000 or given 6 months' imprisionment for being active in **Strobo**. In British terms this would make groups such as **NAG, SCRAM** or the **ANC** Consumer Campaign group illegal.

Parish Support

In August 1980 the Council of a Lutheran parish of about 5,000 in the Ruhr, voted by 11 votes to 1 to join **Strobo**. The Lutheran Church is the established church of North Germany. The action of the **Strobo** parish was, of course, immediately condemned by the Church authorities.

In a country which has, mainly through civil disobedience and legal suits, brough nuclear expansion pratically to a stand-still, the STROBO has played and continues to play, a vital role in challenging the powerful nuclear lobby, and in directing public attention towards the whole energy issue. It has also provided a focus for many different types of action.



How It Works

The Trust Fund holds the 'nuclear portion' (now in South Scotland over 20%) of each bill until the SSEB guarantee to stop all work at Torness and cease production of nuclear-generated electricity, to invest realistically in research; development and use more environmentally, socially and economically acceptable means of electricity production; and to show a genuine commitment to conservation. In practice, to date, withholders with 'arrears' usually over £10 are threatened with disconnection. They have then been paying their arrears from the Trust Fund, and then start withholding again. The longer you wait before paying up, the more disruption you cause, and the more forcefully you are saying no to nuclear power. Individuals are also planning to take out an interim interdict (injunction) against the SSEB when a disconnection notice is received. This may be granted, although a full interdict, which would indefinitely forbid the SSEB access to disconnection, would probably not be granted. However, the publicity which this would gain would be considerable. There are even some people prepared to go through with disconnection. That should make quite a media event!

For more information regarding disconnection, and the various stages involved, see page 10, or please send SAE to NAG.

Trustees and sponsors include Julie Christie, Lady Kathleeen Oldfield, Rev. Andrew Ross, Rev. Gordon Strachan, and representatives of the Labour, Liberal and Ecology Parties and the SNP.

NAGging the SSEB

NAG, a small Edinburgh group, drew up a trust in early 1980, and it was launched in June 1980 when Rev. Andrew Ross, Dean of New College, Edinburgh, signed the Trust Deed in front of Press and TV cameras. Since then it has been growing slowly but surely — at the last count there were over 60 households, comprising over 200 people in all, using the trust. These include William Wolfe, President of the Scottish National Party; Edinburgh Women's Aid, and Laurieston Hall. But there must be more anti-nuclear electricity consumers in Southern Scotland! In fact, there must be enough to make a noticeable impact on the SSEB's precious cash flow, even if people eventually pay up when threatened with disconnection.

Nuclear Power

SANE Action

At Edinburgh University Students Against Nuclear Power (SANE) have recently collected a petition of over 2,000 signatures, demanding that Edinburgh University join the Consumer Campaign. 2,000 students represents 20% of the whole student body — **the largest petition ever collected at the University**. At the same time the Student Representative Council sent out leaflets to all the student houses urging them to withhold the nuclear portion of their bills, just in case the University does not join the Consumer Campaign.

~

HANG the Hydro Board

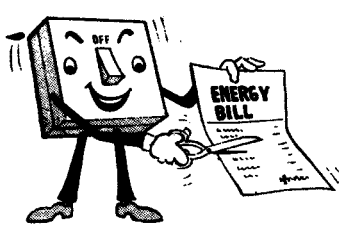
Stan Reid of Inverness H.A.N.G. [Highland Anti Nuclear Group] writes about the Consumer Campaign - Hydro Board style!

For the past few years some of us have been taking part in a small Consumer Campaign of our own. Spurred on by the efforts and enthusiasm of the **NAG** group down south, we decided to adopt the irritating tactics of withholding the nuclear percentage of our electricity bills. We wrote off to 'important' people e.g. the Prime Minister and Roy Berridge of the SSEB, with a request that the nuclear portion be redirected to research into alternative sources of energy. Our money was simply returned with bland replies.

Just recently our tactics within the Campaign have altered slightly. Now each time a bill is received we pay only the non-nuclear portion as before, and then ask certain leading questions to the board. Although the board does not itself run any nuclear power stations, it fully supports the nuclear industry, it buys nuclear-generated electricity from the SSEB and the UKAEA, and it has financially assisted British Nuclear Fuels Ltd., with their 'Atoms for Energy' exhibition.

At present there are only a few individuals (to our knowledge) nagging the Hydro people. **Inverness H.A.N.G.** would like to establish a trust fund in this area, too, but it would only be worthwhile if more people start withholding.

Recently we have already seen one consumer campaign against the Hydro Board succeed — when the Islands refused to pay the 11% surcharge which the board placed on their electricity. Within months the Hydro Board removed the surcharge. If you are interested in the anti-nuclear Consumer Campaign in Hydro territory, and in setting up a trust fund, please contact **Inverness H.A.N.G.**



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And the CEGB

The very first British Consumer Campaign was started a few years ago by the Gloucester Alternative to Nuclear Power (GANT). Co-ordination in the CEGB area, with 12 separate boards, was difficult, especially as no trust fund was set up. However this is all about to change in the new few months: the ANC Consumer Campaign Group are planning on setting up a Trust fund along the lines of the NAG Campaign. Anti-nuclear consumers will be able to put their 15% into accounts for each of the boards. It is planned to be launched in early March. Local and regional support groups are being set up. For more details contact the address below.

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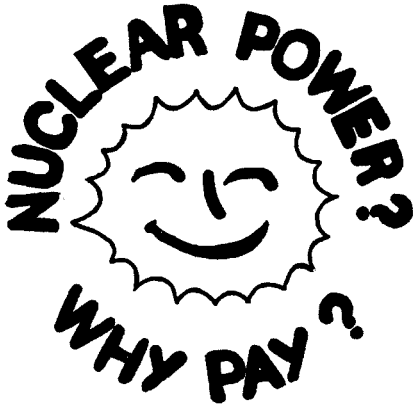
ADDRESSES

S.S.E.B. - NAG, c/o P.O. Box 4, 43 Candlemaker Row, Edinburgh.
Hydro Board - Inverness H.A.N.G., c/o 1 Attadale Road, Inverness, Inverness 38349 (evenings).
C.E.G.B. - ANC Consumer Campaign, c/o 322 Mill Road, Cambridge, 0223-40293 or ANC Office, 256 Battersea Park Road, London SW11.
Strobo - c/o Bruscher, Willem-van-Vlothen Str. 55, 460 Dortmund 30, West Germany.

Serious Act

Taking part in the Consumer Campaign is an act of civil disobedience, and as such should not be entered upon lightly. It is stepping outside the law for the sake of principles — not an easy, and often scarey thing to do. These things must be acknowledged by all those thinking of joining the Consumer Campaign. It can feel lonely being a Consumer Campaigner, especially when threatened with disconnection, so **NAG** puts people in touch with others nearby who are also withholding, and brings out a newsletter (irregularly) which all Consumer Campaigners receive.



Political Analysis

After three years of experience in the Consumer Campaign in West Germany, Theo Hengesbach of the Environmental Sciences Institute, Stuttgart, analyises the importance of the **Strobo** in his country.

- Opponents of nuclear power are provided with a structure both locally and nationally which will keep them together in the long term. At the same time people are included who would otherwise have little to do with the anti-nuclear movement due to lack of time or energy, or because they live far from an active group.
- Electricity boards are the main operators of nuclear power stations. Through the Consumer Campaign the boards are directly challenged at the point of contact between electricity supply and consumer. This makes it one of the most direct forms of action against nuclear power and for a safe, sane energy future.
- It has successfully compelled the electricity board to a fully-fledged debate with opponents of their nuclear policies — in public, in the press and inthe courts.
- As the electricity boards themselves admit, this debate, as well as the Consumer Campaign itself, obstruct and disrupt them. The boards have no smooth-running system for dealing with the Campaign.
- People who refuse to pay part of their electricity bill, even for a Limited period, are both symbolically and in fact withdrawing co-operation from what they are opposing. Thus they show they have recognised one of the main ways in which they support nuclear power and that they want to end this support and construct alternatives.
- Even cases which are lost still provide a public forum for full debate on the energy issue, forcing the electricity boards to take a stand, and also to give rise to broad discussions on civil disobedience. In this way the action, and the anti-nuclear movement in general, gain new perspectives.

How to Join NAG

This is What You Do!

1. When your bill arrives deduct 20% from the total. The arrears you accumulate will appear as a separate figure on every subsequent bill: "Balance due from previous account." Please remember to deduct your percentage from the first figure only and not from the total. If you are paying by standing order, we adivse you to cancel it.

2. Send the reduced amount to Roy Berridge, Cathcart House, Glasgow, G44 4BE, enclosing a covering note

3. Send the 'nuclear portion' made payble to the SSANC Trust, to **NAG, P.O. Box 4, 43 Candlemaker Row, Edinburgh EH1 2QB.** Enclose an SAE for receipt.

4. Don't panic if you receive a letter containing a vague threat of disconnection. The normal practice is that before disconnection you will receive a red bill, then a letter giving a dateof disconnection.

5. When you want to pay off your accumulated arrears and to withdraw your money write to NAG, enclosing SAE, giving your name and the amount you wish to withdraw. A cheque made payable to the SSEB will be sent to you. Allow one week for delivery. In emergencies phone Ken Fisher or Shirley Henderson, 031-557-2175, or Rosa Tomany, 031-229-4355.

6. If the worst comes to the worst, you can pay the arrears to the person who comes to disconnect you.

Appeal

NAG needs money for publicity, administration, legal costs. Even if you are unable to withhold, please support this important action through a donation (cheques payable to **NAG**). Also, if you live in or near Edinburgh, and are interested in helping with the Campaign, please contact us — we need **YOU**!

Torness

The first of the major contracts for Torness and Heysham have been announced. The main civil engineering and building works at Torness will go to McAlpines, and GEC will supply, deliver and errect 2 x 660 megawatt turbine generators plus the condensing and feed heating plants. At Heysham, Northern Engineering's subsidiary, C.A. Parsons will build the turbine generators and the civil engineering works will be done by Taylor Woodrow.

Another Northern Engineering subsidiary, Clarke Chapman, has got 80% of the boiler work with the rest going to Babcock International.

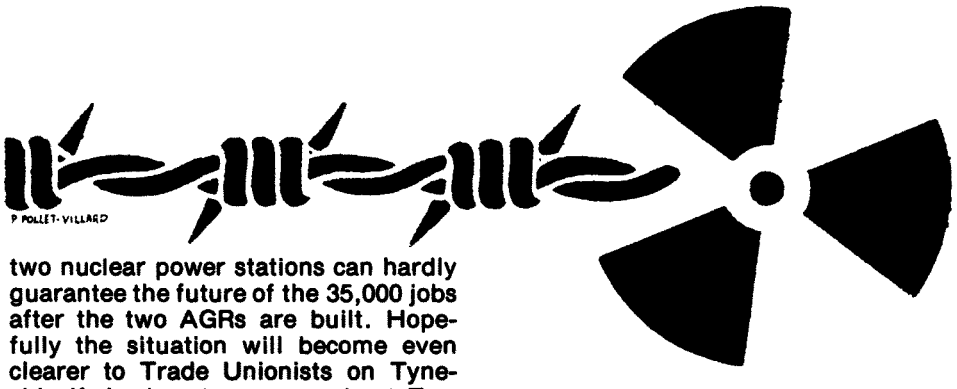
These orders should guarantee the jobs of 35,000 workers on Tyneside and in Scotland through the early 1980s. But Nothern Engineering is having to **weather difficulties** caused by the shortage of orders for boilers and conventional power station equipment. Power station business only account for 30% of Nothern Engineering's turnover, and they are pushing ahead with diversification away from the old electrical and mechanical engineering businesses into electronics and mining equipment.

Closures

With the announcement by the CEGB of the **closure of 22 fossil fuelled** power stations, and the SSEB mothballing **two-thirds of Inverkip and Kincardine**, Northern Engineering are not the only ones who are worried. The Power Engineering Industries Joint Trade Union Committee (PEITUC) stated support for a programme of diversification into Combined Heat and Power in 1979.

The construction of Torness and Heysham could seriously **jeopordise the future of the coal industry** and coal fired power stations. Contracts for two nuclear power stations can hardly guarantee the future of the 35,000 jobs after the two AGRs are built. Hopefully the situation will become even clearer to Trade Unionists on Tyneside if the latest rumours about Torness prove to be true. The story begins in June, when it was announced by the North of Scotland Hydro Board that **Craigroyston was to be postponed.** Because this is a pumped storage scheme, and because the SSEB has a large overcapacity, this was on integral part of the Torness development. It was originally thought that at a time of low demand electricity from Torness would be used to pump water back to the reservoir at Craigroyston. So what will the SSEB do with all this extra electricity? The SSEB will possibly sell this surplus to the CEGB — not much help for the workers at the CEGB's 22 threatened power stations, and not much use to CHP enthusiasts on Tyneside.

It is also rumoured that the Select Committee of Energy might try to give Torness some justification by suggesting that the CEGB and SSEB are amalgamated — giving the CEGB the chance to close even more power stations?



Week of Action

There is to be a Week of Action at Torness this year. The dates are May 9-17 inclusive. This action depends on YOU. Are your group interested in planning a specific action during the week? Please let us know if you can. SCRAM has taken on responsibility for timetabling the events, so please can you let SCRAM know the date of your group's action before the next planning meeting.

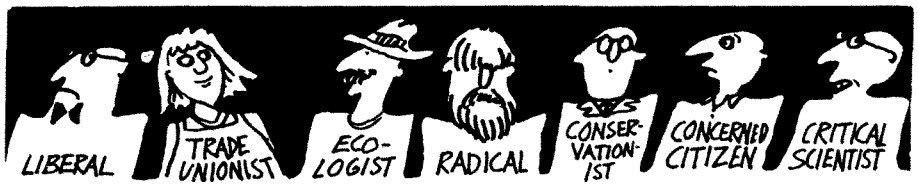
Next planning meeting is on February 28th, at the SCRAM Office, 2A Ainslie Place, Edinburgh.

As part of this week of action, **SCRAM** are hoping to organise a women and children's event on Sunday, May 10th. All interested women are invited to come to a planning meeting on March 4th, 7.30 p.m., 2a Ainslie Place.

SNP March Against Torness

Kirkintilloch S.N.P. are organising a march through Kirkintilloch (near Glasgow) to a park overlooking the **SSEB's grid control centre.** The main theme will be anti-nuclear power — particularly anti Torness, but CND are being invited to provide a speaker as well. Although this is an SNP organised event, non-SNP people are also invited to join in this day of united anti nuclear action. March 28th is the likely date. Further details available nearer the time.

Irish Uranium Keep it in the Ground



HELL NO, WE WON'T GLOW...

The uranium companies have taken a hammering on all fronts during the last few months in Co. Donegal. Northgate, one of the multinational uranium mining companies recently announced that it was cutting back on planned prospecting work in the area. The company blamed a combination of local opposition and unimpressive results for the decision.

This position is in contrast to last year when it regarded the type of mineralisation it had encountered as having "the potential to produce uranium in economic concentrations".

Bye Election

During the Donegal bye-election, Irish Base Metals (subsidiary of Northgate) and Munster Base Metals (subsidiary of Anglo United which has South African connections) tried to bribe all the candidates with offers of money. One candidate was offered £600, another £200... they were refused. The uranium companies claimed that they were interested **"in supporting democracy over tyranny"**. This blatant attempt to bribe democratically elected representatives shows what these multinationals really do think of democracy, but then its the same everywhere, when these companies get a foothold in an area.

Petition

Over 3,000 people from the uranium exploration areas signed a petition in protest against further uranium prospecting taking place. In early December 34 farmers in the Traw Ennagh area near Finntown **prevented uranium prospecting** on their farms and informed the companies that they would never allow them onto their lands. Following this Anglo United also announced that exploration is to be reduced to a single drilling machine.

Open Letter

The people of Donegal are continuing to fight the threat of having uranium mines on their doorsteps. The following open letter was sent to Mr. George Colley, the Irish Minister for Energy, spelling out the issues involved. The letter was signed by 13 anti-uranium groups, including the Donegal Uranium Committee.

The following is a shortened version of the letter.

Dear Mr. Colley,

You might wish it to be otherwise, but it is a fact that the decisions which you will have to make about uranium development in Ireland will be far reaching — ½ million years will elapse before the waste from a uranium mine will no longer need active management to protect the public from the radioactivity of the uranium decay products.

Yet you consistently refuse to even discuss any information pertinent to, or emanating from the uranium mining industry. Current government policy is that only uranium exploration can be discussed at this stage.

Everyone's first concern is of course the possible health hazards from radiation. We are told that the levels recorded at the exploration sites in Donegal are within the accepted limits. But these limits are based on those set by the International Commission on Radiological Protection (I.C.R.P.) which is not in line with current medical thinking. For example, some of the radiation readings taken in Donegal would be unacceptally high under the American System, which splits the work done by the I.C.R.P. between two agencies; the Committee on the Biological Effects of Ionizing Radiation which assesses the risks, and the Environmental Protection Agency which decides what is socially acceptable. We urge you to critically examine the ways in which the I.C.R.P. standards were established.

As well as our concern about your use of the controversial I.C.R.P. standards, we must record our dismay at the scant and elementary report on the monitoring work which as been done in county Donegal so far. In the Dail you said "The Nuclear Energy Board has advised me that there is no evidence that prospecting operations associated with exploration for uranium lead to any radiation hazard... Final results of analysis of samples taken from the scene of exploration in Co. Donegal, confirm the Board's advice." But the report sent to Donegal County Council contained only the Beta and Gamma content of eleven water samples, and non-quantitative assurances that the radon content in ten of them was below a given standard. Assurances based on such evidence are worthless. If you have more evidence than this, then please release it. When the N.E.B. started their monitoring activities it was made clear that their main objective was to reassure the Donegal public. So far, they have failed to do this, not least because it has been clear from the outset that they pre-judged the outcome of their investigations. It is not possible to conduct an objective and critical monitoring programme and at the same time set out to reassure the public that there is no risk.

If our first concern is for those who might suffer ill-effects resulting from exploration for uranium, our major concern is that exploration should not, under any foreseeable circumstances, lead to mining. The operation in Donegal is not an academic geological survey. It is the commercial evaluation of one or more uranium ore-bodies, and as such can only be justified if you admit, as you do, that uranium mining is a possibility. This being the case, you must be prepared to discuss it. Looked at from a future perspective, if uranium mining for whatever reason, is ruled out, then the present operations would be considered economic madness, bolstered as they are by massive European funds. So please let us have a major debate on mining now. The argument that exploration should be banned because it leads to mining has been decisive for British Columbia, Orkney, New South Wales, and now a number of Town and County Councils in New Jersey. In the light of this, how can you continue to refuse even to discuss it?

We have not touched on the multitude of profound questions that hand over Uranium mining itself. Our sole intention in this instance, has been to demonstrate that realistic decisions on exploration cannot be based on a narrow view of what is happening at present. Only a full debate on the implicit end point of exploration, namely mining, will suffice.

We await your reply with interest and concern.

Yours sincerely,

Appropriate

Windmills

At long last it looks as though wind power is to be taken seriously in Britain. It is about time too, considering how far Britain is behind other western countries in this field.

In 1979 the Department of Energy and the Science Research Council spent £1 million on research into wind power between them. This contrasts strongly with the U.S.A., who have been spending some $60 million each year, and now plans a $1,000 million 'demonstration and commercialisation' programme. In Germany, Denmark and Sweden, large programmes are already under way with a large number of megawatt size windmills constructed or in the process of being constructed.

In Britain, the new initiative is not coming from the Government directly, but from the generating boards. The Central Electricity Generating Board (CEGB) is planning to build a medium sized wind powered generator alongside the **Carmarthen Bay** coal fired power station to gain experience before embarking on a more ambitious programme. The next step will be the establishment of a 'wind farm' of about 10 windmills, each capable of generating 1-4 megawatts of electricity. Two sites are presently under consideration; **Bradwell** in Essex (ironically, near to the site of CEGB's first nuclear power station) and a disused airfield at **Wigsley** near Lincoln.

First Step

The medium sized windmill, standing about 150 feet high will generate between 50 and 200 kilowatts of electricity, and should be in service next year. There are about 20 designs from which the CEGB could choose, but for its first step into wind power, it seems likely that the choice will be a relatively conservative design, mounted on a **horizontal axis** - like the 10,000 or so traditional windmills that were scattered around Britain in the nineteenth century.

The three sites being investigated at present are not on exposed hill tops, where the wind speeds are higher, but are lowland sites. This is probably due to the greater environmental impact of hill top sites, which could prove crippling to wind power's future developments.

Offshore Windmills

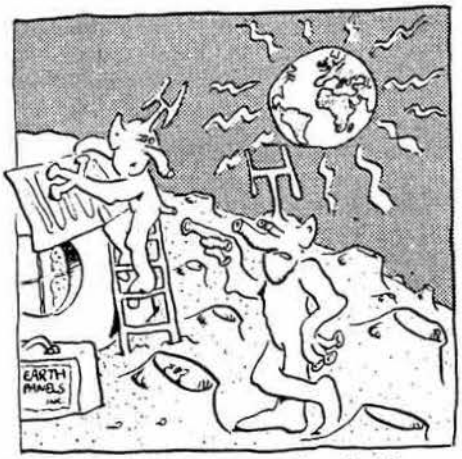
Another way round the problem of environmental impact would be to site the windmills in **clusters in shallow waters offshore.** The Department of Energy, after a study of the possibilities has found **no serious difficulties** apart from higher costs. It has identified, as the two most promising sites, the Burnham Flats off the Wash and Shell Flat, Morecambe Bay. Both could easily accommodate a cluster of up to 200 large windmills, with a total output equivalent to that of a modest power station.

The CEGB is not the only generating board in Britain to be showing interest in wind power. The North of Scotland Hydro Board, which was facing a rebellion by the thousands of islanders over an 11% surcharge to cover rising diesel prices, announced last August that it is to place orders for windmills to serve up to 300 customers.

The South of Scotland Generating Board agreed to operate a windmill that has been designed with funding from the Department of Energy. The 3.7 megawatt, horizontal axis windmill is awaiting a Government decision, expected early this year, as to whether or not it is to be built.

And more recently the NSHB have announced a joint project with the Department of Energy, to construct two prototype windmills in Orkney. The larger of the two, will be 198 feet high with blades about 180 feet in diameter. It is hoped that work will start on it this year and that it will be completed by 1983 or 1984. Its capacity of 3MW will be enough to supply about 1,000 domestic customers.

The smaller of the windmills, 53 feet high with blades about 60 feet in diameter, and with a capacity of 250KW, will be built first, and should be completed by the end of the year.



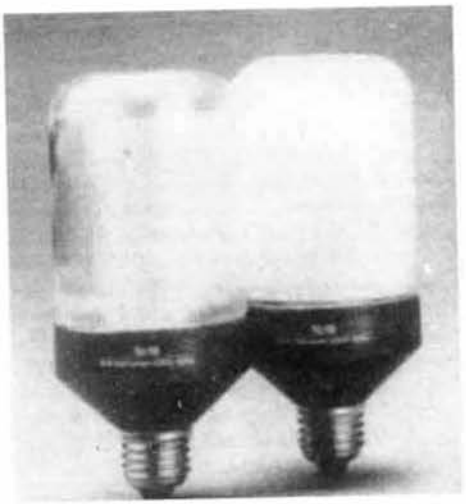
"You'll have to find an alternative – I reckon earth power will run out in twenty years!"

Bright Lights

Philips has just released a new light bulb, the SL 18, which is over four times as efficient as ordinary light bulbs. Compared with a 75 watt filament light bulb, which it replaces, the Philips SL 18 gives more light and lasts approximately five times as long, while using only 18 watts of electricity.

Cost

The initial cost of the lamps is higher. The trade price is £5, and after the addition of VAT and the mark up, the retail price comes to about £6.50. However, since in their 5000 hour lifetime they save £9 of electricity, as well as the cost of five filament bulbs, they are a good buy. Philips estimate the savings in running costs to be 25% for domestic users.

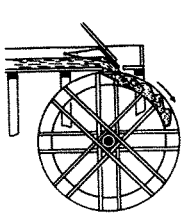


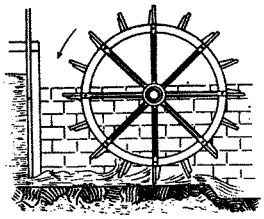
Ordinary filament bulbs are only about 5% efficient, so that a 75 watt bulb gives only 4 watts of light and the other 71 watts is given off as heat. The Government last year rejected a committee recommendation that light bulbs should be marked with their light output and efficiency as well as their electricity input.

The SL18 lamp is not available in shops yet, but can be ordered through any electrical wholesaler in the yellow pages. Specify whether you want the standard bayonet cap (B22) or screw cap (E27) type and whether you want the standard prismatic envelope, or the slightly less efficient, opal envelope which gives a more diffuse light. Later this year Philips will be addding the SL 11, SL 13 and SL 25 lamps, which give equivalent light output to 40w, 60w, and 100w filament lamps respectively.

The new lamps give a slightly rosier light than ordinary filament or fluorescent lamps. Also, after switching on they take 30 to 60 seconds to build up their full light output.

Technology





Hydro-Electricity

Ross and Cromarty District Council are pressing Secretary of State for Scotland, Mr. George Younger, and the North of Scotland Hydro Electric Board, to give the go-ahead for a plan to construct a hydro-electric scheme near Loch Maree in Wester Ross.

The plan first appeared in 1963, but was shelved two years later. It could provide enough electricity for 23,000 domestic consumers. In Ross and Comarty district there are 18,000 houses.

The scheme would initially be labour intensive, with possibly up to 600 jobs involved. Once built, the cost would be minimal. A council spokesperson said "Water is a free natural resource, of which all possible use should be made. Similar hydro-generation schemes built 20 years ago produce electricity at a cost of 0.7p a unit compared to other forms of generation which cost 2p a unit. The average lifespan of these schemes is 80 years, but they could last for a hundred or more".

West Highland Free Press 5.12.80

Sun Power

Preliminary studies by the Department of Energy have suggested that passive solar heating could contribute the equivalent of 5-10 tonnes of coal a year to the UK energy supply.

So what is passive solar heating? All buildings benefit to some extent from heat from the sun being transmitted through walls. Careful attention to the design and layout can increase this contribution. This is what is known as passive solar heating.

Although some aspects of passive solar heating design have been practised for several centuries, it has only been recently that the potential for this type of heating in countries with a climate such as ours has been realised.

Direct-Gain

Passive solar design uses the south side of a building as a solar collector, and the building structure itself for heat storage. Direct gain systems use large windows to the south and reduces windows to the north. The rooms which need most heat are situated on the south side while the kitchen, staircase and toilet would be on the north side. Some form of thermal storage is essential and it is typically provided by internal walls built from dense block board.

Conservatories

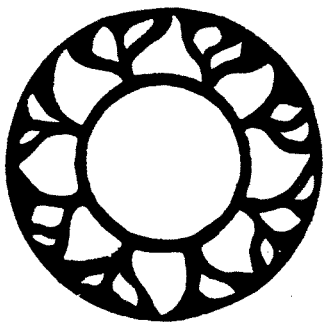
Conservatories built on the south sides of houses can also be used as passive solar collectors. The heat from the conservatory is transferred to the house through open windows and doors and special air ducts, and by conduction through the walls. The major disadvantage with this system is that if the back wall of the house is to be used to conduct heat into the house, it cannot be insulated in the usual way. The house will then lose more heat through this wall at night and in the winter that it would through a normal wall.

Roof-Space Collectors

Roof space collectors are essentially conservatories built into roofs. The air warmed in the roof space is drawn down into the house using an electric fan. The loft floor can be insulated in the usual ways, so that roof space collectors do not increase the rate of heat loss from the house.

Trombe Walls

The other type of passive solar design are Trombe Walls. A Trombe Wall has a dark outer surface and is glazed, with an air space a few inches wide between the wall and the glazing. Vents through the wall at top and bottom connect the air space to the house. Sunlight is absorbed by the dark wall and heat is transferred into the house partly through the air spaces and partly by conduction through the wall. Unlike the other types of passive solar design, Trombe Walls have an unusual appearance. They also have the highest capital cost of all the systems considered by the Department of Energy. In a mass housing estate they would typically cost about £1,000.



Carburol

The French Government is planning to introduce a new fuel for cars named Carburol. It will contain 10-50% alcohol. The alcohol will be extracted from either combustible raw material such as coal, timber, gas or from plants (straw, maize, sugarbeet, ferns and even jerusalem artichokes).

France is planning to spend just under £10 million on the project this year, and hopes to introduce 10% methanol fuel in a couple of years. If France eventually goes ahead with a full scale implementation of these plans, it will have to devote 5% of its cultivatable surface to the right sort of plant. However, the Argiculture Minister has pointed out the France used to devote 20% of its agricultural output to feeding horses — so there is a precedent.

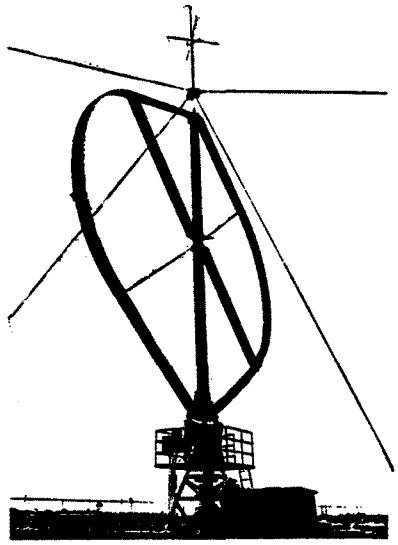
Those cynical of the government believe that the move towards alcohol fuel for cars is a ploy to gain extra votes in the presidential elections in April. The plans, which have a distinctly ecological ring, might attract the support of the Green movement, and the promised market for crops, the farmers support. However, it seems unlikely that the former would support the government with its strong commitment to nuclear power.

The companies that will be involved in implementing the plans are non-committal on whether the new processes required will be economically viable in the medium or long term. Most think that the 20-50% methanol levels the government plans for the second half of the 1980s will mean substantial modification to vehicle engines as well as setting up expensive distribution networks. Existing engines may not be able to handle too high methanol content fuel, or at the very least, may consume so much fuel that it would become pointless.

The government is also cautious about whether the scheme will actually work. A number of pilot plants will get under way in the next two years or so to synthesise methanol, to gasify wood and to produce vegetable methanol. Despite this pessimistic outlook for France, Brazil already uses an alcohol/petrol fuel, Germany uses a 15% mixture in racing cars and America has sent a goal of displacing 10% of all petrol consumption with alcohol by 1990.

Mainly from **New Scientist, 22.1.81**

Book Reviews



Alternative Technology

Alternative Technology: An answer to the Energy Crisis, Network for Alternative Technology and Technology Assessment, Open University, Milton Keynes, 1980, 80p. [Available from SCRAM, 80p + 15p p&p].

The other day I was after the official estamtes for the contribution of the energy alternatives (wind, wave, solar, tidal, geothermal) by the year 2000. I only wish I had had a copy of this useful pamphlet, which gives just such information. At only 80p I will certainly be buying a copy (SCRAM cannot afford to give free review copes!)

The pamphlet starts with a discussion of energy forecasts and the expected 'energy gap'. It then examines the various views, from optimistic to pesimistic, of the potential contribution of the alternatives towards filling the 'gap'. Also considered are the cost of these alternatives, their employment opportunities and finally a round up of the current status of research and development on them. Throughout comparison is made with the potential role of nuclear power.

Unfortunately the authors weaken the case for the alternatives by developing the arguments in an unnecessary way. Firstly, a strong case is made that there is unlikely to be an 'energy gap', but then this seems to be forgotten and they assume a massive 'energy gap' by the year 2000. Can the alternatives be used to fill this 'gap'? is the question then asked, but the answer seems to be no. This silly situation could easily have been avoided. It does not really help that nuclear power cannot fill the 'gap' either.

Secondly, why could they not stick to units of delivered energy rather than primary energy. The latter is particularly unhelpful for a comparison with nuclear energy, as it undervalues the contribution that the alternatives could make, a point emphasised by the authors.

The pamphlet does, however, finish with an excellent summary of the political context in which the alternatives are struggling to establish a decent foothold.

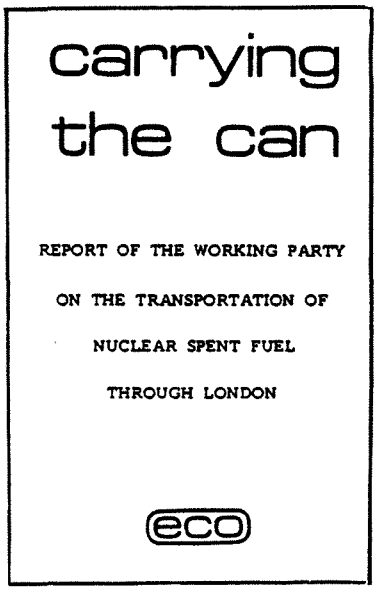
Living in the Dark Ages

"Living in the Dark Ages" by Rob Edwards and Alistair Grimmes, Scottish Fuel Poverty Action Group, 18/19 Claremont Crescent, Edinburgh, EH7 4QD, 1981, £1.20 [including p&p].

Every seven minutes of each working day, a household in Scotland is disconnected by the electricity boards. They argue that disconnection is 'necessary' and that they are 'sympathetic' to cases of real hardship.

The evidence does not support this, however, in **Living in the Dark Ages** (an expression used by a disconnected mother to describe her situation) the authors produce cases and statistics to demonstrate that the electricity boards are not responsible enough to handle the draconian powers they have over those in debt to them.

The authors also recommend a variety of legal, financial, and social measures for improving the situation in Scotland.



Carrying The Can

Carrying The Can: Report on the Transportation of Nuclear Spent Fuel Through London, ECO £1, 1980.

The report sets out to consider the implications of spent nuclear fuel shipments for London and concentrates exclusively on the transport of Magnox fuel. The local bias does not prevent the report being of use to those concerned about the waste transport issue in other parts of the country as all the technical material and most of the argument presented is equally applicable elsewhere.

The authors desire not to replicate the "juvenille outlook, inadequate research, and bad production" which they associate with "a large amount of the anti-nuc. literature" (!) has resulted in a very thorough and technically accurate piece of work Contradictory evidence on technical detail and emergency preparedness from various parts of the nuclear industry is presented in depth. This leaves little room to doubt that safety standards and tests are far from adequate and that the industry's 'confidence' in these tests has meant that Comprehensive emergency planning has not been entered into. The cost associated with this approach, however, is not inconsiderable.

The report is long and the amount of detail requires a fair degree of prior knowledge, some determination and will-power to propell the reader from page one to the end. The small print face and somewhat confusing referencing system, which requires the reader to flip back and forth between the the references at the end of each section, add to this problem. It is quite unlikely that an M.P. or local Councillor would have the time available to read such a report should it be presented to them as a briefing document. BUT to the dedicated anti-nuclear pamphleteer the report is a mine of useful facts and figures for the preparation of such briefs.

The Secret Constitution

The Secret Constitution by Brian Sedgemore, Hodder & Stoughton, £7.75.

The Author was Tony Benn's Parliamentary Private Secretary at the Department of Energy for two years, and his book reveals the way the nuclear establishment, as well as every other sort of establishment, worked to undermine the policies of cabinet ministers.

Perhaps the most interesting story is that of how Benn's leading civil servants pressed in 1977 for him to chose the PWR rather than AGR, producing their own reports to contradict his expressed policy, and withhold important information. Benn himself later spoke of the unparalleled pressures on him at the time, despite having the support of the CEGB, SSEB Electricity Council, National Nuclear Corporation and the bulk of the supplying industry. On the PWR side were lined up, among others, Sir Arnold Weinstock and the Shah of Iran. Weinstock wanted the PWR because it would give his company, GEC, a chance to develop turbines to abroad. The Shah, possibly with nuclear weapons in mind, offered to buy up to 20 reactors from Britain, but only if the Government went for PWR. A leading advocate of the PWR has Walter Marshall, now Chairman of the UKAEA, who at the time held the lucrative post of Safety Advisor to the Shah's nuclear programme — a a programme whose existence depended on Britian going for the PWR.

The inexorable power of the nuclear industry is illustrated in other power struggles. Sedgemore says that the only reason Benn was able to fight these battles with his own department was that he was already an expert on energy, and an unusually strong-minded political figure.

This book is a telling advert for the extra-parliamentary pressure and direct action as the only ways to escape the nuclear trap, and makes sobering required reading for anyone with illusions about the possibility of changing nuclear policy by force of reason alone.

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SCRAM continues to play an important part in the British anti-nuclear campaign. It acts as a national organisation, co-ordinating the campaign in Scotland, producing the **SCRAM Energy Bulletin** (the only anti-nuclear magazine in Britain) as well as answering numerous technical and general questions on nuclear power and alternative energy. In addition, **SCRAM** continues to work on local issues such as the developments at Torness.

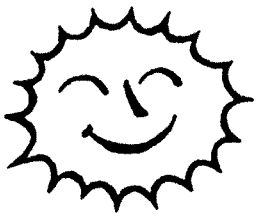
All this, as you are no doubt aware, costs money. This is where you can help. By giving **SCRAM** a regular donation, we can continue this vital work. We need the financial certainty of standing orders to enable us to plan for future activities.

Otherwise you can help us continue our work by joining **SCRAM**. An ordinary membership costs £2 or more if you can afford it, for which you receive an introduction to the campaign and a members newsletter every six months.

Alternatively you can subscribe to the **SCRAM Energy Bulletin**, which will cost you £4 for a year (six issues).

If you wish to join **SCRAM** and receive the **SCRAM Energy Bulletin**, you can become a supporting member. You will also receive the member's newsletter. This costs £6 for a year.

As we are always short of money, we must stress that these are minimum subscriptions. If you are able to give more, please do so.



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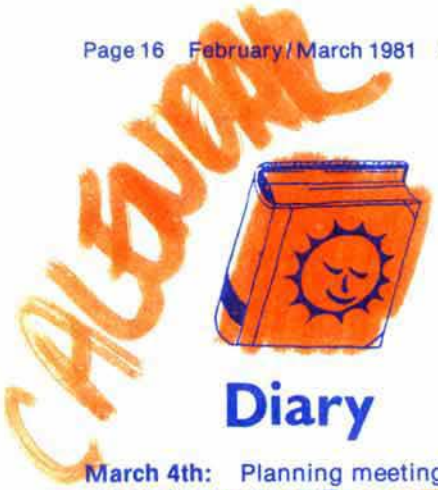

Diary

March 4th: Planning meeting for the women's event at Torness on May 10th, 7.30 p.m., SCRAM Office, 2a Ainslie Place, Edinburgh.

March 7th: Whose survival? Third World First day school on power, energy and arms. The Societies Centre, Hill Place, Edinburgh. Contact **Third World First, 232 Cowley Road, Oxford.**

March 7th: SSCL Conference 'Against the Nuclear State'. The Moir Hall, Mitchell Theatre Company, Granville Street, Glasgow. 10 a.m. - 6 p.m. **Contact SSCL, 146 Holland Street, Glasgow.**

March 14-15th: Avon Valley Energy Alliance Conference 'Plan Without Nuclear Power — a Safe Energy Policy for the South West'. **Contact Avon Valley Energy Alliance, 132 Bloomfield Road, Bath. 0225-310534.**

March 16th: Public Inquiry into MOD developments at Stornoway begins 1 p.m. Council Chambers, Stornoway.

March 28th: CND Trade Union Conference, contact **CND, 11 Goodwin St., London N4 3HQ.**

April 11th: CND Youth Conference, contact **CND, 11 Goodwin St., London N4 3HQ.**

April 14th: CND March Across the Sky, a send off in West Yorkshire for the END Trans-Pennine March, contact **Bradford END c/o Ruth Overy, 7 Albert Terr., Wyke, Bradford, BD12 9BS.**

April 12th - 18th: Easter Anti-War March. A regional and international anti-nuclear protest. The first stage will be a Trans-Pennine march starting in Manchester and arriving in Leeds on April 16th. Similar regional marches are planned in other parts of the country. The second stage will be in Brussels on Easter Saturday, April 18th, where demonstrations will take place outside the NATO Headquarters and the American and Russian Embassies. Contact **Sebastian Halliday, Pennine Anti-Nuclear Co-ordination Committee, Laneside, Woodtop, Hebden Bridge, West Yorkshire.**

May 4-11th: RTZ week of action, contact Partizans, 218 Liverpool Road, London N.1

May 9-17th: Torness week of action.

July 27th-August 2nd: Ecology Party Summer Gathering, Worthy Farm, Pilton, near Glastonbury, Somerset. **Contact Christina Crossingham, 11 Stanley Road, Bristol.**

While Little Black Rabbit was up in the North of Scotland for the New Year, she had a long chat with her friends, the moles of Dounreay. She was told some disturbing news about human disregard for animal life. Apparently, an electrician was putting in cables etc., at Dounreay, when he discovered a mouse with radiation burns. He brought the matter to the attention of the Health and Safety Officer who agreed that they were in fact radiation burns. But, there was nothing to worry about, after all, it was only a mouse.