

## Jubilee birthday honours

MR. A. M. Allen, Authority Member for Finance and Administration, is one of five Authority men who received awards in the Queen's jubilee-year birthday honours, announced on June 11. He becomes a Commander of the Order of the British Empire (CBE).

At Harwell, Mr. N. G. Stewart, head of the Environmental and Medical Sciences Division, becomes an Officer of the Order (OBE).

Mr. Allen began his career in the Treasury where he became private secretary to the Financial Secretary. He joined the Authority as private secretary to Lord Plowden, who was then Authority chairman.

After a short return to the Treasury he became director of personnel and administration in the old Development and Engineering Group, later Reactor Group, in 1959.

### Rejoined

He left the Authority in 1963 to become general manager of the British Waterways Board and, in 1965, a Member of the board, but rejoined in 1968 as Authority personnel officer. He became Secretary of the Authority and Member for Administration in 1971.

Mr. Stewart joined Harwell in 1948 and became head of the Health Physics Division at Dounreay ten years later. He returned to Harwell in 1960 to head the Health Physics Division there.

Also at Harwell, Mr. W. E. Sparrow is awarded the British Empire Medal. He started work at the site in 1952 and since 1953 has been head operator in the High Voltage Group.

Winfrith's grounds superintendent, Mr. N. L. Andrews, also gets the BEM. A professional gardener since 1928, he joined Aldermaston as grounds supervisor in 1955 and worked at Harwell for five years before moving to Winfrith.

A third BEM goes to Mr. G. Lightfoot, a foreman in the Special Materials Section at the Springfields Nuclear Power Development Laboratories. Mr. Lightfoot gets the award for his work with mentally-handicapped people.

## Essay on country craft

MR. G. H. D. Darwall, of Winfrith's Computer Group, won the £250 first prize in an essay contest run by the *Sunday Times* as a memorial to writer and broadcaster Kenneth Allsop.

His essay was an appeal for new life in the ancient country craft of hurdle-making. Because hurdles are made from hazel, it would be a good way of keeping alive England's vanishing hazel coppices, he said.

## Crowning glory



THE Jubilee Belle of an Oxfordshire town is the 15-year-old daughter of a Harwell couple.

She is Carol Jolly, whose father, Jack, works in the Nuclear Physics Division, and whose mother, Joyce, is in the General Services Division.

Carol was picked Didcot Jubilee Belle from 22 contestants and her winner's crown and gown were placed on her by the Mayor of Didcot, Major Arthur Clewes.

Carol, who is studying for her GCE O-levels at Didcot Girls' School, lists swimming, cookery and music as her hobbies. After leaving school she says she will work in a bank dealing with foreign currency.

One of the two attendants of the Jubilee Belle is 17-year-old Cindy Humphreys, whose father, Philip, is shift supervisor at Harwell's Engineering Scientific Support Division.

## A SWEDISH FELLOW



DR. Walter Marshall, deputy chairman of the Authority, and chief scientist in the Department of Energy, has been elected a Fellow of the Royal Swedish Academy of Engineering Sciences for his contribution to science.

The academy has 400 Swedish members — among them prominent engineers, scientists, economists and sociologists. Another British member is Sir Euan Maddock, former chief scientist at the Department of Industry.

IN THE PICTURE the Swedish Ambassador in London, Olof Rydbeck (left) talks to Dr. and Mrs. Marshall after informally presenting his diploma of fellowship this month.

# INQUIRY HAS 'THREE BASIC QUESTIONS'

THREE basic questions have to be answered at the public inquiry into British Nuclear Fuels Limited's proposal to build a £600-million reprocessing plant at Windscale, the inquiry chairman said on its first day.

Mr. Justice Parker said it had to be decided —

- whether oxide fuels from British reactors should be reprocessed in Britain at all;
- if the answer was "yes", whether such reprocessing should be carried on at Windscale;
- if "yes" again, whether the reprocessing plant should be about double the estimated size required to handle British fuel and spare capacity should be used for reprocessing foreign fuels.

### Three months

The inquiry, expected to last up to three months, opened to a packed hall at Whitehaven Civic Centre, north of Windscale.

The BNFL plant, if built as proposed, would reprocess spent oxide fuel, extracting plutonium for use in fast reactors, which advocates say would plug the energy gap when oil and gas run out.

Apart from reprocessing British fuel, BNFL hopes to win £600 million of foreign business from Japan and elsewhere.

The chairman asked objectors to answer the three basic questions when making their case because it was these questions on which the Secretary of State would ultimately decide.

### Already done

Lord Silsoe, QC, opening for British Nuclear Fuels Limited, said reprocessing of spent fuel from nuclear power stations enabled the uranium and plutonium in it to be re-used.

Reprocessing of uranium fuel and some oxide fuel had already taken place at Windscale.

"Skills exist there and the site has been subject to monitoring and control for a long time," he said.

The Nuclear Installations Inspectorate took the view that the proposed plant could be built to a high standard of safety and it saw no reason to oppose construction on health and safety grounds.

If the option of developing fast reactors was to be developed, reprocessing would be essen-

tial. Fast reactors would use fuel about 50 times more efficiently, and limits on the supply of uranium could increase the country's need to rely on fast reactors.

On terrorism, he admitted: "One cannot exclude the possibility of evil men stealing enough fissile material to make a crude nuclear device and explode it. It would be difficult for them to do".

### Island fear

But he added: "There are many other means which terrorists do now pursue, and banning reprocessing would not end terrorism or its problems."

George Dobry, QC, for the Isle of Man Government, said that the island's people feared "the accumulation of waste discharged into the Irish Sea where it will remain active for thousands of years."

The concentration of so many nuclear installations on one site increased the risk of sabotage and nothing like

enough was known about long-term effects of radioactivity.

Raymond Kidwell, QC, for the Friends of the Earth, said: "The application is ill-conceived, premature, inadequately guaranteed by foreign money and technologically unproven."

Iain Glidewell, for Cumbria County Council, said the council was "generally favourable."

Copeland, the local council, which also supported the application, was happy with the safety and environmental standards, but would welcome improved monitoring of the plant's performance.

### Film nights

Film evenings in the Authority's London headquarters, revived last winter, may again become a regular feature of the London Office Recreation Association's programme, members were told at their annual meeting.

Choose with confidence

## Dodson Bull

Discount and Service to members since 1961

### CARPETS-FURNITURE-FABRICS

## 15% TO 33 1/3% DISCOUNT

In the Barbican Furnishing Centre we have a comprehensive range of carpets, furniture and fabrics by all leading manufacturers, on display in room settings. All our showrooms have a wide range of display in room settings. All our showrooms in Bristol and Manchester have carpets on show — in addition Bristol and Manchester have furniture showrooms. All goods can be obtained from any branch. Just discuss your requirements with the manager — he will be pleased to help. We maintain substantial stocks for immediate delivery — free of charge — anywhere in the U.K. Full fitting service for carpets throughout the country.

ABERDEEN: 11 Exchange St., AB1 2NH. Tel: 54055/6  
BIRMINGHAM: 164 Edmund St., B3 2HB. Tel: 021-236 5862  
BOURNMOUTH: 268 Old Christchurch Rd., BH1 1PH. Tel: 21248  
BRIGHTON: 2-5 North Road, BN1 1YA. Tel: 66402  
BRISTOL: 2-3 Royal London Hse., Queen Charlotte St., BS1 4EX. Tel: 28857  
EXETER: 157 Fore St., EX4 3AT. Tel: 32019  
FALMOUTH: 35 Killigrew St., TR11 3PW. Tel: 313855  
GLASGOW: 166 Howard St., G1 4HA. Tel: 041-221 3278  
LEEDS: 12 Great George St., LS1 3DW. Tel: 41451  
LONDON: 100 Aldersgate St., EC2Y 8AE. Tel: 01-628 7020  
MANCHESTER: 55-61 Lever St., M1 1DE. Tel: 061-236 3687/8/9  
NEWCASTLE-upon-TYNE: 90-92 Pilgrim St., NE1 6SE. Tel: 20321/21428  
WESTCLIFF-on-SEA: 495 London Rd., SS0 9LG. Tel: Southend 46569  
Write: phone or call for details to Dept. ATN

**Dodson Bull Ltd**  
Barbican Furnishing Centre (Opposite Barbican Underground Stn.)  
100 Aldersgate Street, London EC2Y 8AE Telephone: 01 628 7020

A. K. Longair, one of the team who helped to choose the old RAF station at Harwell as the site of Britain's first nuclear research establishment, is now living in retirement in Canada. He confesses—

# I destroyed a piece of history

A SEARCH of the wartime files of Tube Alloys Research to see what preparations had been made in case the Germans had developed an atomic weapon to use against Allied troops after they had landed in Europe on D-Day — June 6, 1944 — would lead you to the conclusion that nothing had been done.

This was nearly true, but not quite.

I have to confess that eleven months after D-Day, as history was being made by the official declaration of the end of fighting in Europe, I was busily destroying history as I effaced all record of what had been done.

All the work which we did on atomic energy during the 1939-45 war was done in extreme secrecy. There was no Department of Atomic Energy. Tube Alloys Research was the code name under which we worked as part of the Department of Scientific and Industrial Research.

There was an impression in some circles that those associated with the development of the atomic weapon plunged madly ahead without considering the effects of the radiation from the explosion and its by-products.

This impression is quite wrong. The radiation problem was raised in the earliest Tube Alloys papers and strenuous efforts were made during the war to enlist the help of the small number of doctors who held degrees in physics as well as medicine to investigate the fundamental processes in the reaction of human tissue to ionising radiation.

Radiation dangers were everywhere in the research work. Important research at Liverpool University was handicapped by having to shut down the cyclotron at times so as not to irradiate the first-year physics class.

Tube Alloys had to pay for the installation of a water shield in 1942.

British Intelligence had very good contacts in Europe and they were reasonably sure that the Germans had got nowhere on the road to an atomic weapon. However, "reasonably sure" was hardly good enough.

So, soon after D-day a request was made to provide some sort of radiation detection equipment to the Allied armies.

In the Physics Department at Liverpool University there was a number of radiation meters which had been constructed earlier in the war

## Laboratory models

They were very much laboratory models, including the large glass accumulators so common in physics departments then.

Why not use medical instruments? For one thing the radiation rates to be expected were very different from those used in medical examination or therapy.

Why not have special ones made? The importance of security was overwhelming and to have had unusual radiation meters constructed commercially would in itself have been a security leak.

In such conditions of iron-clad security, there fell into my lap the problem of finding operators who could, in an emergency, use the instruments which were available.

I was also required to organise the arrangements for such an emergency operation. It was July-August 1944 and anything I did must not disclose the nature of Tube Alloys to anyone who did not already need to know.

It seemed to me the only thing to do was to select people who were accustomed to using scientific instruments and — without telling them — arrange to have them picked up for duty if the emergency arose.

The selection had to be made from a scientific population which was static, so that if the emergency arose the men were likely to be found at their laboratory benches or at their homes.

As I had been on the staff of the National Physical Laboratory at Teddington, Middlesex, it was natural that I should look there

I put my idea to Sir Edward Appleton, Secretary of the Department of Scientific and Industrial Research. He immediately telephoned the director of the National Physical Laboratory, Sir Charles Darwin, whom I knew well, to say he was sending me down to Teddington for a special purpose which I would explain.

Darwin listened to me carefully, then rang for the Secretary of the laboratory and instructed him to give me the NPL personnel card index and to ask no questions.

At the end of the afternoon I had 50 names. I did not select any "elderly" staff — that is to say anyone about 15 years younger than I am now.

There remained the mechanics of alerting the people on the list and of instructing them what to do. It was arranged through security services that a team of despatch riders would be made available to me at any time of the day or night to deliver such instructions.

So now I wrote a letter to be sent to each individual saying he was required for urgent national duty and that he should report immediately to a specified place warmly dressed and

heavily shod, and that he should tell his family that he would be gone for a week or more.

To invest this letter with as much authority as I could muster, it had to be signed by both Sir Charles Darwin and Sir Edward Appleton.

To maintain secrecy I personally cut the stencil of the letter; carried the stencil to Appleton and Darwin for signature;

operated the duplicating machine; typed addresses on the letters and the envelopes;

obtained large-scale maps of the area around the National Physical Laboratory and marked each address on them; typed my instructions to the despatch riders;

sealed the whole lot in an envelope marked TOP SECRET and put it in the Tube Alloys safe;

destroyed all other reference to my weekend's work.

The emergency never happened. On VE day — 8 May 1945 — I went to the office, opened the safe and burned the sealed envelope unopened, thus leaving no trace whatever that any action had been taken.

Why? I was convinced then, as I am now, that I had persuaded Appleton and Darwin to sign a letter which exceeded their authority. To move people into the war zone, the letter should have been signed for the Minister of Labour and National Service in whom lay the authority to move manpower. But, of course, I could not approach that department because of the secrecy.

It was therefore with a sense of relief that I destroyed a package which could conceivably have embarrassed two distinguished scientists, both now dead.

Knowing my former colleagues at NPL, I believe most of them would have turned out without question when asked. But it would still have been a bluff.

Published by arrangement with HARLEQUIN, Harwell's leisure magazine.

## FIRST TO SET THE ATOM IN MOTION

THE public inquiry into British Nuclear Fuels Limited's plans to build a big new fuel reprocessing plant at Windscale opens this month at Whitehaven within a few miles of the home of the man who first put an atomic theory on paper.

He was John Dalton, of Eaglesfield, near Cocker-mouth, Cumbria.

John's father, a weaver, was a poor man and a Quaker. Although John went at first to the local Quaker school, he started teaching when he was 12 because the schoolmaster retired.

After two years he found farm work paid better but he continued his own education with help from Elihu Robin-



John Dalton

son, also a Quaker and a distant relative.

Later John helped his cousin George Bewley to run a school in Kendal, 40 miles away, and he was 19 when he became joint manager of the school with his elder brother Jonathan.

Always interested in meteorology, John used whipcord to make hygrometers to measure the humidity of the air and various barometers and thermometers.

In 1793 he moved to Manchester and became professor of mathematics and natural philosophy in New College. He was one of the first men to explain that the aurora borealis — the northern lights — is "purely electrical in origin."

His atomic theory — basically that all materials are made of atoms — attracted little attention when it was first published.

Dalton did not find it easy to get on with people. Asked about his researches, he is said to have replied: "I have written a book on that subject. If you wish to inform yourself about it you can buy it for 3s 6d."

Only illness prevented him becoming president of the British Association in 1842. After he died, two years later, scholarships were founded in his honour.

## Loosening up dry bearings

WHAT do you do to a bearing when you can't lubricate it with oil? That is a problem which a course at Risley will help to solve on July 6. Four experts will discuss dry bearings at the National Centre of Tribology there. They are Dr. E. J. Robbins, deputy manager of the centre; Dr. J. F. Archard, of Leicester University; Dr. J. K. Lancaster, from the Royal Aircraft Establishment at Farnborough, Hants, and Mr. G. C. Pratt, of the Glacier Metal Company.

## TURBOTS GET THREE YEARS

TURBOT can be reared in warm water provided by the Wylfa nuclear power station in Gwynedd.

An experiment is just beginning to see whether the turbot will do better than trout which did not thrive three years ago, maybe because Wylfa is too near the sea, experts think.

In the same tanks the trout disliked, the turbot will be reared by Shearwater Fish Farming Limited — a subsidiary of the British Oxygen Company Limited — for three experimental years.

Then the fish company and the Central Electricity Generating Board will decide whether to go ahead on a commercial scale.

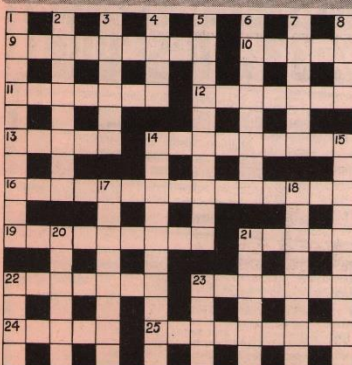
## Atom News

The employee newspaper of the United Kingdom Atomic Energy Authority, 11 Charles II Street, London SW1Y 4QP. Published on the second Friday of each month. TELEPHONE: 01-930 5454. Editorial extensions 302 and 456. Circulation extension 376.

**CORRESPONDENTS**  
Culham David Dancy (extension 483); Downreay John Peat (7405); Harwell Dennis Tyler (2527); Reactor Group Headquarters John Pennington (2824); Springfield Eric Johnson (7254); Winfrith Public Relations Office (3252); British Nuclear Fuels Limited —

Headquarters Brian Potts (3284); Springfield Denis Tootell (7458); Windscale Dr. Derek Ockenden (569).  
**ADVERTISEMENTS**  
D. A. Goodall Ltd., 27 Empire House, St. Martin's-le-Grand, London EC1A 4DR. Telephone 01-606 0577 and 01-606 6136.

## CROSSWORD



### ACROSS

- 9 Order cups to be assembled by the manufacturers. (9)
- 10 Does a staggering amount of winding up? (5)
- 11 The rotter has Mother take one in for making control rods. (7)
- 12 Be hospitable to thieves? (7)
- 13 All that money for a sucker! (5)
- 14 Daylight bloomer. (9)
- 16 They may make all the difference. (15)
- 19 It makes a light return. (9)
- 21 Work-time entertainment. (5)
- 22 Dog taking the side of the miner. (7)
- 23 He provides what the consumer wants. (7)
- 24 All-round attack. (5)
- 25 Like old what's-his-name, for instance? (9)
- 14 Be prepared to employ his skill. (10)
- 15 In-place for eaters-out. (10)
- 17 Just one of those things. (8)
- 18 Exaggerate the value of excessive speed? (8)
- 20 Take the dirt out of some out-pourings. (6)
- 21 Circle over the wrong point for choice. (6)
- 22 Many demand a lot of drink. (4)
- 23 Unsinkable city. (4)

### MAY SOLUTION

- Across: 1 Gas-cooled, 6 Packs, 9 Ne-gate-d, 10 Central, 11 Real-m, 12 Brotherly, 13 Treasure, 15 Edge, 19 Race, 20 Yourself, 23 Plutocrat, 24 To-pic, 26 Ex-tract, 27 Incense, 28 Serge, 29 Resultant.  
Down: 1 Generator, 2 Sig-ma, 3 Opti-mist, 4 Ladybird, 5 Doc-tor, 6 Punchy, 7 Carriage, 8 Sally, 14 EN-counter, 16 Efficient, 17 Contains, 18 Critical, 21 For-age, 22 Crater, 23 Press, 25 Panda.

### DOWN

- 1 His prosperity is a gamble. (10)
- 2 King's daughter going round to get car oiled. (8)
- 3 Keeping active this way. (6)
- 4 Light of a smile? (4)
- 5 He has that faraway look. (10)
- 6 A couple allowed to provide adornment. (8)
- 7 Notice of a programme you can see again. (6)
- 8 Man in the Irish Sea. (4)

### LAST MONTH'S WINNER

Book token for R. Brown, of Springfield. Entries this month to Crossword, Room 111, London Office, by July 1. The first correct solution opened wins a £2 book token.

Name .....

Address .....

.....

.....

# A kind of 'tooth-paste tube' wire-maker



So much interest has been shown in Springfields' Conform metal extrusion process that the Department of Industry has agreed that more work should be done on it.

The process can work continuously to produce such things as wire more conveniently than older devices.

It works on the same basic principle as a tooth-paste tube by squeezing metal through a nozzle. But the squeeze comes from a grooved wheel which grips the metal as it revolves to force it through a narrow opening.

More conventional machines can reduce the thickness of the metal by about a fifth and there are limits on the shapes which can be produced.

Conform can reduce the thickness to a 200th of the original size and there are more possible shapes to choose from.

The process was developed after Mr. D. Green, of the old Reactor Fuel Element Laboratories at Springfields,

realised that it was possible to use the friction between the wheel and the metal to force the metal through the die which governs its size and shape.

Conventional extrusion presses, which are more like a bicycle pump, can produce a continuous length of metal only for as long as the material inside them will last. Then they have to stop for reloading.

Already Conform machines have been sold commercially to see how the process can be used in the processing of aluminium and copper.

Conform machines built under licence from the Authority by Marshall Richards Barcro Ltd., Babcock Wire Equipment and the Wanskuk Company of America have been shown to exhibition visitors in America and Europe.

Mr. Green has since died, but work on his brainchild goes on.

**IN THE PHOTOGRAPH:** At work on an early version of the Conform machine at Springfields... Eric Hunter (left) and Frank Riding.

## DAUGHTER COOKED SURPRISE DINNER

**JAMES PRESCOTT**, who retired 14 years ago because of ill-health, has just celebrated his golden wedding anniversary.

James worked as a clerk at Springfields for 13 years until 1963 and spent most of the time in the Health Physics Department. Before that he was a policeman.

And to celebrate 50 years of happy marriage in a happy home — James' own words — there was a surprise dinner party for him and his wife Anne.

It was arranged by her daughter Velma, also a clerk, who works for British Nuclear Fuels Limited at Springfields.

## TYPIST WEDS

LONDON typist Marian Wall left the Authority this month to get married. She hopes to settle in Harlow, Essex.

# 'A vendetta against us'

**WORKERS** in the nuclear industry could easily feel that there is a vendetta against the industry, Dounreay employees have told Tony Benn, Secretary of State for Energy.

The employees wrote to him questioning the wisdom of reporting to the Government even minor incidents at nuclear plants when other industries do not have to report similar incidents.

"There is an irrationality about radiation and inevitably newspaper headlines appear when anything happens at a nuclear installation whether it is a fire which has nothing whatever to do with radiation or if it is a small amount of radioactivity which is totally insignificant compared with the natural background radiation," they said.

"To a certain extent it almost looks as though there is a vendetta against the nuclear industry.

"We have in mind that, for instance, radioactivity is used by many industries as well as the nuclear industry. We see no evidence that you are calling for misuse of these materials to be reported to Parliament."

The employees welcome Mr. Benn's announcement that figures are to be published showing casualties in all the fuel industries in Britain for the last 20 years.

In another letter the employees quote from the monthly magazine *Here's Health* the suggestion that "plutonium in transit would have to be guarded at all times by a para-military force that could afford to take no chances. Anyone who approached too close would be shot."

This, say the employees, "is indicative of the deliberate selection of the nuclear industry for attack."

"Employees in the industry are more than adequately aware of the materials that are readily available which are not in any way guarded which in our view are much more dangerous than the materials that are used in nuclear energy.

"We see no action being taken about the security of such material."

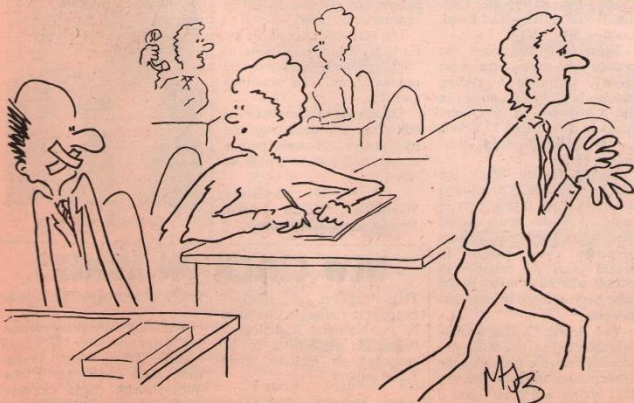
The employees welcome Mr. Benn's announcement that figures are to be published showing casualties in all the fuel industries in Britain for the last 20 years. The figures will "help to put some of the issues in the correct perspective," they say.

## £130 million on research

ABOUT £130 million was spent on nuclear research by the Authority and the Electricity Council during 1976-77.

The total includes work on fusion, Alex Eadie, Parliamentary Under-Secretary in the Department of Energy, told the House of Commons last month.

Another £29 million was spent by the Department of Energy on development contracts with industry and on the British-German-Dutch project to enrich uranium in centrifuges.



"Quite frankly, one gets the impression that he doesn't appreciate your constant whistling!"

# Home Buying?

We're with you wherever you go!



It's all part of our unique national branch co-operation plan. How does it help you?

- Firstly all our branches report money availability to a central clearing house. If funds are short in one area we can top up from another. So wherever you go, we'll have the funds.
- And by opening a building society account through us we will help to ensure access to funds anywhere in the UK.
- Secondly we can advise on reducing the cost of your mortgage through tax relief and lower premiums on capital repayment.
- Thirdly our branches are strategically situated throughout the UK, which means we can help you wherever you are, wherever you go.

Don't delay. Complete the coupon now. Remember, we're with you all the way.

## frizzells

A member of the Frizzell Group.

Norman Frizzell Life & Pensions Ltd., Incorporated Life Assurance Brokers, Frizzell House, Elder Street, London E1 6DF

To Norman Frizzell Life & Pensions Ltd, Frizzell House, 14 Elder St, London E1 6DF. AN 8/77  
Please quote me for a mortgage. I understand that I shall be under no obligation.

Name..... Date of Birth.....  
Address.....  
Telephone (Home)..... (Office).....  
Salary..... Spouse's salary.....  
Address of property being purchased.....  
Age of property..... Cost..... Loan required.....

## Following British Lions

A VISIT to New Zealand and touring with the British Lions Rugby Union team were things that Danny Thomas, staff and administration manager at Springfields, has wanted to do for some time now.

Last month both he and his wife combined the two and flew out with the Lions on their 1977 tour of New Zealand.

Danny retired earlier this year from British Nuclear Fuels Limited.

He first started working at Risley in 1946.

In 1954 Danny transferred to Springfields and personnel work and in August 1959 became the staff manager.

After a one-night stop in Bangkok he began the 15-day tour of New Zealand following the sport in which he has been interested for many years. Before flying home there was a three-day stop in Fiji during which time the Lions played the Fijian national team.

Danny hopes to winter in Spain.

## 'ROOTS' TO START NEW CULT

A HARWELL man hopes that the television series *Roots* will help to get people interested in their family trees. He is Dr. Ralph Atherton, a member of the Programmes Analysis Unit and an amateur genealogist in his spare time.

He has been recording inscriptions on gravestones for more than four years. Most of them are in two graveyards in Wantage where he lives.

Ralph first became interested in genealogy as a schoolboy in Birmingham and research into his own family history back to the middle of the 18th century aroused his interest in social and industrial history.

Ralph discovered that his ancestors included Birmingham metal workers, Worcester nailmakers, Lancashire cotton workers, Cotswold brickmakers and Devonshire farm labourers.

On his father's side of the family Ralph's ancestry is extremely complicated and because of the papers he has written on the subject for the *Genealogists' Magazine* it has become known as a classic example of modern genealogy.

His research continued for nine years before Ralph definitely identified his father's



family. He recommends that anyone interested in tracing a family tree should join their local family history society. Even if they are not living in an "ancestral area" they will benefit from

meeting more experienced genealogists and will have the opportunity of contributing to local research.

Ralph himself is a member of the Oxford Family History Society which has about 160 mem-

bers and whose secretary is Mary Beck, of 90 Hockmore Tower, Cowley Centre, Oxford.

In the photograph: Ralph Atherton traces the inscription on a Wantage gravestone.

## Two men awarded degrees

CUMBERLAND - BORN Wilfred B. Lewis, who is a former senior vice-president of Atomic Energy of Canada Limited, will become an honorary doctor of science at Birmingham University in July.

Now professor of science at Queen's University, Kingston, Ontario, Professor Lewis was head of the Royal Signals and Radar Establishment at Malvern, Hereford and Worcester, before he moved to Canada in 1946 to succeed Sir John Cockcroft as leader of the British-Canadian team working on Atomic Energy.

He stayed in Canada and, said a Birmingham University spokesman, "the great success of the Canadian nuclear power programme is due largely to him".

Birmingham University has



Wilfrid B. Lewis

close working links with Atomic Energy of Canada's Chalk River laboratories and with Malvern.

And Dr. Walter Marshall, Authority deputy chairman and chief scientific adviser to the Department of Energy, is to be made an honorary doctor of science at Salford University, Manchester.

His is one of seven honorary doctorates. Len Murray, general secretary of the Trade Union Congress, is also being honoured.



Dr Walter Marshall



In the photograph: Mac Henderson (right), chairman of the Ormlie Lodge Club, presents Bill Liddle with a Caithness glass goblet engraved with the name of the club and a dancing couple.

## DANCING KEEPS 'EM IN TOP FORM

TWENTY-TWO years ago this month Bill Liddle moved from Hereford to Dounreay. And within a couple of months the man from Hereford was one of a group of three who were busy forming... a Scottish country dancing club.

Now Bill has received an engraved glass goblet — made in Scotland — after 21 years as chairman and leader of the club.

### Presentation

More than 80 guests watched the presentation to Bill, who works in Dounreay's Process Plants Division.

His wife Tommy and Dounreay colleague Colin Stuart, were the other founder members of the club.

Formed as a sub-section of the Ormlie Lodge Club based at the Authority's Ormlie

Lodge hostel in Thurso, it now holds weekly dancing meetings in the town.

During his 21 years as leader Bill has taught Scottish dancing to people of many nationalities who have been in Thurso. They include Germans, Spanish, Italians, Dutch, French, Americans, Scandinavians and Britons who have wanted to take a bit of the Scottish way of life with them when they returned to their homelands.

The club has always attracted a high proportion of men, says Bill. It is always on the look-out for women members. Tom Flowerday, who works in the Authority's Superannuation Office in Thurso and has been a club member for 17 years, commented: "It's an enjoyable way of keeping fit in first-class company."

Dear Sir...

## Loco' not a rusty old heap

A FOWLER showman's locomotive, *Supreme*, was featured in an article in the *May Atom News*.

The engine of which the model has been made is now in preservation and is owned by Jack Wharton, who, I am sure, would take offence at it being called a "rusty real-life Fowler showman's road locomotive" after he has spent a great deal of time and money making it one of the finest of its class in the world.

Mr. Wharton is a mechanical engineer and some very large restoration work was carried out in his factory. — H. Sanders, Safety and Reliability Directorate, Culceth.

● Letters from readers are always welcome but they may be shortened to fit the space available.

## CONGRESS MIX-UP

THE report in the *May Atom News* of the Scottish Trade Union Congress seems, like some of the participants in the debate there, to have confused the fast reactor with nuclear waste.

I did not deal at all with the fast reactor in my speech since the waste from a fast reactor is the same as the waste we have been producing in Scotland for some years now from our commercial nuclear power station at Hunsterston, Strathclyde.

This waste, presently stored in England, is the waste we are considering how best to dispose of in the future.

Talking to a reporter after my speech, I said I was not opposed to consultation just as the people of Caithness had been consulted before Dounreay was built.

The people of Caithness have shown themselves over the last few months to be very firmly in favour of the first commercial fast reactor being built in Caithness. — Max Bancroft, Reactor Division, Dounreay.

## ANOTHER SIDE TO THE FRIENDS

EVEN though the Friends of the Earth may be seen as enemies of nuclear progress, it is perhaps worth reflecting on one other activity in which the FoE are involved.

In London last month the British Heart Foundation, in association with the British Cycling Bureau and Friends of the Earth, announced details of a nationwide sponsored cycling campaign to raise money for heart research.

The campaign began on June 5 and runs to June 30. The beginning was timed to coincide with Jubilee Bike Week and June 5 was also World Environment Day.

Britain's 12 million cyclists have been urged to persuade friends, relatives and colleagues to sponsor them for so much a mile cycled to and from work, school, shopping or for pleasure.

All the money collected will go to finance vital heart research.

Sponsorship forms have been sent to cycle shops and clubs and are available from the British Heart Foundation,

57 Gloucester Place, London W1H 4DH, or the British Cycling Bureau, Greater London House, Hampstead Road, London NW1 7QX.

There are 20 prizes for cyclists who collect the most money, including a cycling holiday in Holland, another in the Cotswolds, a week-end break in Britain and 17 tickets for the Dover-Boulogne Normandy ferry.

During Jubilee Week the FoE have been busy promoting the bicycle by taking part in cycle carnivals, tours of real ale pubs and publicising proposed cycle routes. In recent years, the number of people who have taken to the bike has increased in leaps and bounds.

The British Cycling Bureau and their friends the FoE have steadily been impressing on the Government and local councils that cycling will grow faster if traffic schemes are designed with cyclists in mind.

It is, however, an indictment of the motorist that many people are still too scared to venture into traffic.

The reason for Friends of the Earth involvement is simple: to "fight to conserve, restore and rationally use our environment."

Transport problems in towns and cities are destroying the environment. If more people cycled the problem would be eased.

— G. McCarten, Windscale Nuclear Power Development Laboratories.

## NEW CHECK ON MINERS

THE register of workers exposed to radiation, compiled by the National Radiological Protection Board, is to be extended to include about 1,500 miners.

They are the men who work in Britain's 100 "non-coal"

mines, producing such things as tin.

The miners are being invited to co-operate with the board because they may inhale radioactive radon gas in the mines which could increase their chances of developing cancer.

# ENERGY SHORTAGE DILEMMA

IF THE world is faced with a really serious shortage of energy the consequences are unpredictable: "Certainly wars have been fought with much less reason," Sir Jack Rampton, Permanent Under-Secretary at the Department of Energy, said last month.

But he told the annual lunch of the Electrical Research Association in London that all the major sources of energy "are in varying degrees insecure and uncertain."

There is uncertainty about the amount of uranium in the earth and about political problems which might affect its availability, he said.

There are uncertainties about coal, about getting it mined and about the willingness of countries to export it.

There are uncertainties about oil and the willingness of countries which produce it to meet large demands.

"At this stage there is no commercial fast reactor with proved experience," said Sir Jack.

"There is no certainty about the contribution which wave, solar, geothermal and wind power may make and many of the techniques are unproven or embryonic."

"Fusion is a long way off. We

can't be certain what will be publicly acceptable or about the future extent of environmental issues.

## Disadvantages

"It is possible to find disadvantages about every form of energy and every form will change the environment in some way."

But it looked as if nuclear power would be vital, Sir Jack suggested.

Even at the lowest predicted rate of expansion in Western Europe, by the year 2000 the continent would need to import nearly three-quarters of all the oil then expected to be available.

"No-one could believe that would be possible," said Sir Jack.

"And even that assumes that in each year from 1985 to 2000 Western Europe would bring into operation new nuclear reactors capable of generating 20,000 megawatts of electricity."

"That compares with the present total nuclear capacity of 22,000 megawatts and an annual increase of about 9,000 megawatts," he said.

"So even if the growth in demand were cut to three per cent a year and the rate of nuclear ordering more than doubled, Western Europe would be seeking a share of declining world oil and gas production which no-one could expect it to get."



EXPANSION AT RISLEY

BRITISH Nuclear Fuels Limited is to be a tenant of Warrington Development Corporation's first scheme of advanced offices, which is not yet finished.

The new offices are at Birchwood Science Park near to BNFL's existing headquarters and design offices which are beside the Authority's Risley offices.

The new development will be called Rutherford House after the Nobel-prizewinning physicist whose research in radiation and atomic structure was basic to later developments in nuclear physics. It will give BNFL another 59,000 square feet of floor space.

The company needs the additional space for enlarged engineering, design and project teams required by major capital expenditure plans over the next 10-15 years.

The head office and design offices, with staff of around 1,000, have been at Risley since the company's inception.

Rutherford House is in two blocks, one three- and one five-storey, on a four acre site. The building has pre-cast concrete cladding panels,

## X-ray check in hospitals

A SURVEY of the radiation received by patients who are x-rayed starts this month. It is being made by the National Radiological Protection Board at more than 100 National Health Service hospitals.

A special dosimeter has been developed for the survey and a questionnaire will also be used to find out the age of patients and the kind of examination they are given.

The last study was made more than ten years ago. Now a directive from the European Community makes another one necessary.

The effects of radiological treatment will be studied later. The medical use of radiation

is the largest contribution man makes to the total amount of radiation received by ordinary people. Latest figures, says the NRPB, show that it is about 13 per cent of the total. Natural background radiation from outer space and from rocks on earth contributes more than 80 per cent.

## ELECTED COUNCIL CHAIRMAN

DR. R. W. NICHOLS, deputy head of the Risley Nuclear Power Development Laboratories, has been elected chairman of the International Council on Pressure Vessel Testing.

He took over from Japanese



Dr. Nichols.

Professor Hiroshi Kihara at the end of the third international conference on pressure vessel technology in Tokyo.

His term of office runs to the end of the fourth conference which will be held in Britain in 1980.

## Heart attack

ARTHUR Foster, who worked in the London Office Patents Branch, has died suddenly from a heart attack. He had been with the Authority for over a year.

## Nuke-ship symposium planned

A SYMPOSIUM on the safety of nuclear ships is being organised by the Nuclear Energy Agency of the Organisation for Economic Co-operation and Development.

It will be held in Hamburg, Germany, from December 5 to 9.

So far, says the OECD, there is no agreement on safety and operators of nuclear ships have to make separate agreements about such things as insurance every time a ship enters a foreign port.

"This would clearly be an obstacle to trade if nuclear merchant ships became common."

The symposium should help to get some sort of agreement to make things easier.

## Prize for pollution study man

DR. ARTHUR CHAMBERLAIN, of Harwell's Environmental and Medical Sciences Division, has been awarded the Fitzroy prize of the Royal Meteorological Society.

The award is made every other year and Dr. Chamberlain gets it for his practical work in studying the behaviour in the atmosphere of radioactive gases and dust. Recently he has been studying other forms of air pollution, too.

He has been at Harwell since 1947.

## 'Unique' photo session



The first of its kind in the Authority ... that's this scanning Auger microprobe just installed at the Nuclear Power Development Laboratories at Springfields. It's a machine which uses electrons to analyse and make pictures

of the surfaces of solids.

It was installed after collaboration between the laboratories, Harwell and the French Atomic Energy Commission at Saclay and there to see it working for the first time

were J. A. McElwee, M. Iwatani and T. Sekine, of the Japanese Electronic Optics Laboratory; C. LeGressus, from the French Atomic Energy Commission and M. Turek and I. F. Ferguson, from the Authority.

## Nationalists pick four

FOUR Dounreay employees have been elected to the executive of Caithness and Sutherland Constituency Association of the Scottish National Party.

They are Max Bancroft, who works on the prototype fast reactor and who was appointed secretary; Iain Sutherland, an executive officer who becomes election agent; John Watson, who works in the laboratories and is minutes secretary, and Thomas T. Kay, of the prototype fast reactor, who is auditor.

Leading brands - at low prices!

## Staffords Furnishers

6-STAR SERVICE

ASK US FIRST - we'll deliver at 22 1/2 TO 50% OFF LIST PRICES

- Credit facilities
- Over 400 top brands (can be ordered specially for you)
- Firm price policy
- After sales service 22 1/2 to 34% off Furniture
- Nationwide delivery 24% to 33% off Carpets and furnishing fabrics 25% to 50% off Beds/Divans



Phone, write or call to order, or merely enquire about prices and terms. Remember we're an old-established firm with assets exceeding £400,000!

READING: 17-19 Chatterman St. (off Southampton St.) Reading RG2 3EG and RG9 9PP. ACTON: 3 Horn Lane, W3. 01-992 8851 (7 p.m. Thurs). BIRMINGHAM: 982 Tyburn Rd., Perry Hall, W. 021-373 4802 and 021-385 7101 (7 p.m. Thurs). XEST: 31 Pilsford Lane, Bexley Heath, 01-303 3787/8485. ALSO: 32 Gould Road, Twickenham (Mon-Fri).

## 'GOLDEN' PARTY



A FORMER Harwell employee and his wife have just celebrated their golden wedding with a party at which their entire family of five children, 12 grand-children and three great-grand-children as well as a few friends were present.

They are 69-year-old Francis Harry Wheeler and his wife, Daisy, 68, who live in the village of East Hagbourne, a few miles from Harwell.

The couple met during a dance in Oxford and were married in the city in 1927.

Mr. Wheeler was born in Oxford and after finishing his schooling he joined what was then Morris Motors. Two years later he became a cleaner with the Great Western Railway and when he retired 43 years later he was an engine driver.

He then moved to Harwell for a few years as an industrial worker and finally retired from work just over four years ago.

Mr. Wheeler was a trade unionist all his life and one of his spare time pursuits was pigeon racing.

## BA degree

HUGH McIntyre, a fitter and shop steward at Springfields, has been awarded a bachelor of arts degree by the Open University. His wife Katherine is taking an honours degree course at Bolton Institute of Technology, Greater Manchester.

## RETIREES

ARTHUR Dennard, founder and retiring secretary of the Research Group Retirement Fellowship, received a cheque from its president, Ben Phillips.

## Container crash not dangerous

IN THE first accident of its kind in Britain a lorry carrying uranium hexafluoride overturned last month — but there was no danger.

The articulated lorry carrying a 15-ton container crossed the central reservation of the A33 near Winchester, Hants, and was in collision with three other vehicles.

Police closed a mile-long section of the road for three hours.

The uranium hexafluoride was on its way from British Nuclear Fuels Limited at Springfields to Southampton for shipment to America.

A BNFL spokesman said: "This was a routine export consignment. The container had been tested to international standards and was in proper order as the accident suggested.

"Even if the container had been damaged it would not have leaked immediately. The uranium hexafluoride was in a vacuum and air would have entered the container rather than anything being forced out."

Five people were hurt in the accident, none seriously.

## BRIGHT POSTER

WINFRITH'S suggestions scheme, hunting for more bright ideas, is asking employees to suggest a poster to publicise the scheme.

THE Authority plans to show people that it is possible to use plutonium in power stations without seriously threatening national security or civil liberties. Authority Chairman Sir John Hill told an audience at York University last month.

"We are proposing to demonstrate in practice over the next few years two methods," he said.

"We have at Dounreay on one site the prototype fast reactor and the fuel processing plant. The fuel fabrication plant is at present at Windscale and plutonium has to move between these two sites.

"We are proposing to build at Dounreay another fuel

fabrication plant so that the entire fuel cycle can be carried out alongside the reactor.

## Transport

"Transport of plutonium will be eliminated after the initial fuel charge is delivered to the site.

"This is the concept of a power park — a nuclear power station consisting of several reactors on one site complete with reprocessing and fuel refabrication plant.

"The chemical plant would, of course, be guarded to prevent theft, but the problems are not very different to giving adequate protection to any large and potentially hazardous industrial installation.

"The second concept we are

proposing to demonstrate is a central reprocessing plant such as Windscale, servicing a substantial number of reactors widely dispersed and sited to suit the needs of the electrical supply industry.

"Irradiated fuel is not a problem from the point of view of making weapons or terrorism because, although it contains plutonium, it is so radioactive that the plutonium is inaccessible to anybody not having a plant of the complexity, if not the size, of Windscale.

"Such spent fuel does not need to be guarded other than by the 80-ton shielded container used to transport it.

"After reprocessing, the fuel would be refabricated. But before despatch to the power

station the fuel would again be made radioactive to make the plutonium inaccessible again and the fuel would be returned in the same 80-ton container that was used to bring it to the reprocessing plant in the first instance.

## Irradiation

"This can certainly be done by giving the fuel a short irradiation in a reactor before despatch, but there may be easier, more convenient ways of achieving the same objective."

## Play wins contest

A PLAY written by the 16-year-old daughter of a Harwell man was performed at the Royal Court Theatre in London.

She is Liz Bellamy (right) whose father, Roy Bellamy, is group leader in the Metallurgy Division.

She wrote the play, an imaginary trial of Hitler, at her school in Newbury but then decided to enter it in a contest run by *The Observer* newspaper and the Royal Court Theatre.

The play which Liz wrote was one of four that won

Liz's play was entitled *To Err is Human* and it depicts Hitler's trial in 1980 after he is found and brought to London.



## Need to press on

THE world's energy policy makers remain committed to the need for nuclear energy, Dr. Sigvard Eklund, director-general of the International Atomic Energy Agency, said last month at the end of the agency's 60-nation conference on nuclear power.

"This may be a somewhat striking conclusion in the face of doubts, re-assessments, slow-downs and uncertainties which have marked the last few years and which may remain with us for some time, he told delegates to the conference in Salzburg, Austria.

"Yet, in spite — and perhaps because — of them we have seen a general agreement emerge from our discussions that nuclear power is a necessary and irreplaceable source of the future energy supply of mankind."

Dr. Jan Doderlein, of the Norwegian Atomic Energy Institute, said power stations burning coal and oil would cause thousands more deaths from cancer and lung disease than nuclear power stations.

"Can we wilfully sacrifice these lives in stopping nuclear energy?" he asked.

A report from America's Brookhaven National Laboratory said that if no more nuclear power stations were built the extra coal burned to provide light and power would cause between 2,300 and 29,000 extra deaths in the United States by the year 2,000.

The number of deaths was about the same as forecast for a single nuclear reactor accident, the report said, but the deaths caused by coal were fairly certain while the chance of the reactor accident was one in a million.

## Nuclear group should grow

THE 15-nation Nuclear Suppliers Group should be bigger and more representative, said Foreign Secretary David Owen in a speech to the Royal Institute of International Affairs last month.

"A privileged group will not be listened to in the wider world," he said. "We have, therefore, to establish an international dialogue based on the recognition that all countries, whatever their stage of development, have a legitimate requirement for timely assurances that their future energy needs, including nuclear, will be met."

The group has been discussing a code of behaviour to prevent the spread of nuclear weapons.

Without assurances about their energy needs, Mr. Owen suggested, countries would not agree on measures to control nuclear materials.

The way to solve the problems, he said, was by "a long-term process of continuity and open-ended negotiations."

Control of possible nuclear weapons must go hand-in-hand with a workable energy plan, Dr. Owen said.

"We must constantly strive to make the international safeguards system as watertight as possible."



## Our nuclear jubilee story

TWENTY-FIVE years of nuclear power was the subject of the Authority's exhibit, prepared in collaboration with British Nuclear Fuels Limited, the Nuclear Power Company, the Central Electricity Generating Board and the South of Scotland Electricity Board, at this year's Royal Society soirée in London. The display showed all Britain's reactor systems and different aspects of their fuel cycles. It also traced the development of nuclear power since Calder Hall in 1956 and showed how over two decades Britain has been developing the

fast reactor. The development of reactor fuels and reprocessing techniques was also described.

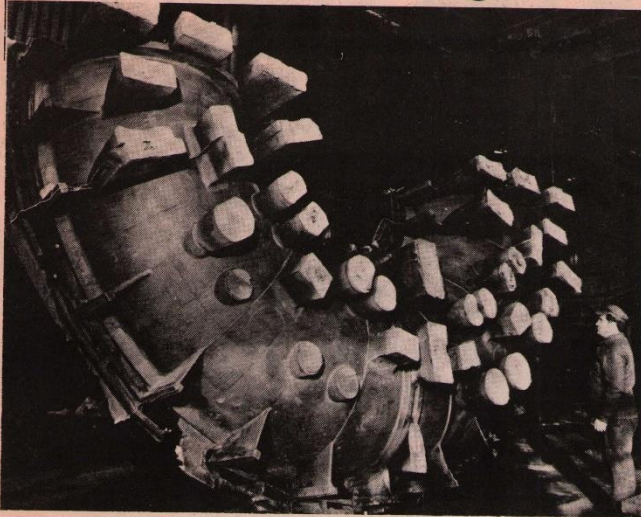
IN THE PHOTOGRAPHS: RIGHT: Bob Tillotson, from BNFL (centre), explains to Simon Gibbon (right) and Nicholas Evans (left) from St John's School, Leatherhead, Surrey, the workings of a fuel transporter.

LEFT: Mike Longstaff, of the Authority's London headquarters, talks with Candace Imison (right) and Caitlin Smalls (centre), from Godolphin and Latymer School, Hammersmith, London.



Nuclear Man...

## France makes giant casting



AS fusion experiments get closer and closer to the conditions which will eventually be found in power-producing fusion reactors, so the size of the equipment increases. For a new experiment at Culham, known as RFX, engineers have to commission what may be the largest casting in aluminium alloy in Europe.

### Machined

Culham works with Euratom and its fusion research is part of a European plan. So no-one was surprised to find that the giant casting was made by a French firm.

Fifteen feet long with walls 2½ inches thick and weighing three tons, the casting has been cut in half, machined and now forms a part of the doughnut-shaped vacuum chamber for the new experiment.

Last month it was a vacuum tested and x-rayed. It passed all its tests.

The picture was taken in France during casting.

# 22 'NO RISK' SCARES

ALTHOUGH the Health and Safety Executive recorded 22 incidents at nuclear sites between December 9 and March 31, none of them appears to have done harm.

A dead cat was found at Trawsfynydd nuclear power station in Gwynedd, but radioactivity did not contribute to the cause of death, says the executive, and the body was insignificantly radioactive.

Other power stations run by the Central Electricity Generating Board which reported minor incidents were Oldbury, on the River Severn; Wylfa, Gwynedd; Berkeley, Glos; Hinkley Point, Somerset, and Dungeness, Kent. The South of Scotland Electricity Board's Hunterston power station also had one incident.

Of all these, the Health and Safety Executive says: "No risk."

Seven incidents were reported from Windscale. The earliest was what appears to be a leak from a waste tank, and investigations are still going on. Later minute quantities of tritium were found on a beach nearby and, about the same time, alarms sounded when a fuel element failed in the advanced gas-cooled reactor. This year alarms went off when gloves were being changed in a processing plant. Then an air sampler used by a process worker showed that he had been exposed to more plutonium than normal. Another injured his finger while working with plutonium and in March a small radioactive area was found at Windscale.

The phrase most often used by the Health and Safety Executive in its report is: "No-one was exposed to any significant level of radiation."

Other incidents were reported from Winfrith, Dounreay, Chapelcross, Capenhurst and the waste-disposal site at Drigg, near Windscale.

At Winfrith a flask used to carry fuel from the steam generating heavy water reactor was found to be slightly contaminated. So was the railway truck it was on.

At Dounreay a faulty joint in a pipe raised the level of radioactivity in a waste store and sediment spilled from a drum. Again there was no danger.

## Discussion on future

REPRESENTATIVES of staff and trade unions at Risley were in London last month to meet North-of-England Members of Parliament to discuss the future of the nuclear power industry.

They also visited the Authority's London headquarters to talk about public relations and publicity.

## Danish

HARWELL director Dr. Lewis Roberts was an invited speaker at a one-day energy conference of the Danish Engineering Association in Copenhagen last month.

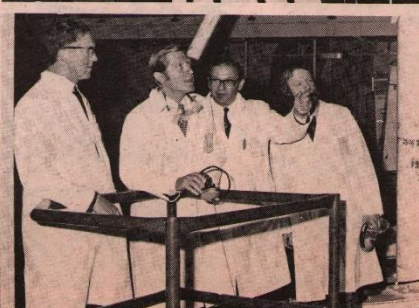
## Dounreay visitors

AMERICAN journalists in Britain as guests of the United States Atomic Industrial Forum met Authority Chairman Sir John Hill in London before flying to Dounreay for a tour of the prototype fast reactor and the fuel reprocessing plants there.

Dounreay director Clifford Blumfield explained the work which goes on at the site. Pictured here (above left) during their tour are (from the left) Bill Hines, of the Chicago Sun-Times; Harold Hughes, of the Portland Oregonian; Tony Broomfield, head of Dounreay's PFR Operations Group; Arthur Fisher, of Popular Science; Tom Alexander, of Fortune, and Jack McWethy, of US News and World Report.

Below left: Robin Cook, MP for Edinburgh Central, and Geoffrey Johnson Smith, MP for East Grinstead, Sussex, also visited Dounreay.

In the photograph (left) which was taken at the top of the PFR are (left to right) Mr. Blumfield, Mr. Johnson Smith, Mr. A. D. Evans, deputy director, and Mr. Cook.



# US looks at future facts

ONCE people realise the effects of a shortage of energy towards the end of the century and understand more clearly the technical problems of nuclear power, they might think more kindly about nuclear power stations, suggests the Workshop on Alternative Energy Strategies in a report published in America.

The workshop has taken a look at the energy the world might need between 1985 and 2000. Its maximum forecast for nuclear power is that stations might be generating 1,772,000 megawatts of electricity by 2000.

That would mean expansion at around 14 per cent a year for

25 years, it says. The smallest forecast is 913,000 megawatts — growing at 11 per cent a year.

By 2000 nuclear power stations could be producing about a fifth of the world's power and saving the equivalent of 43 million barrels of oil a day.

"Our analyses suggest that with political will and firm, prompt action on the many technical problems, our projected nuclear expansion is technically feasible in terms of uranium, physical facilities and other critical resources," says the workshop.

Delays in finding and mining uranium and in choosing the best ways of processing it would slow down the expansion of the group forecast.

Looking beyond 2000, the workshop says that expansion can continue only if fast breeder reactors start working commercially between 1990 and 2000.

It seems unlikely that fast reactors will provide more than five per cent of nuclear energy in the world outside the communist countries by the year 2000. Most people see little hope that fusion power will provide anything before 2000, says the report.

### Collection

A collection at Culham raised £30 for the Royal National Lifeboat Institution.

## PUBLIC INQUIRY CERTAIN

A MAJOR public inquiry will almost certainly be held before the Government decides whether to build the first commercial-size fast reactor in Britain.

Peter Shore, Secretary of State for the Environment, told reporters last month: "I think the reactor would not proceed until we have had a broader-ranging type of examination."

Some form of formal inquiry would take place, he said, but no details had been decided.

## New waste committee

THE Government is setting up a new Waste Management Advisory Committee which will give advice on problems of nuclear waste disposal.

The decision was announced last month by Peter Shore, Secretary of State for the Environment, who has taken over responsibility for waste disposal.

He told reporters on May 27: "We are creating, as a necessary consequence of nuclear power, highly active wastes which have a life measured in hundreds of thousands of years.

"Very special responsibilities and duties fall upon those of us in this generation who are considering the further development of nuclear power."

## College to do research

LONDON'S Imperial College may spend up to five years on research into the effect on the environment of using nuclear power stations in Europe. A contract for £25,000 for 1977 has been awarded to Dr. A. J. H. Goddard and Dr. H. M. ApSimon by Euratom and the French Atomic Energy Commission.

# LEARN AS WE PROGRESS

ANYONE who tried to make sure that there was no risk at all before doing anything would never do anything new, John Dunster, deputy director-general of the Health and Safety Executive, said last month.

He was talking at the Safety '77 Conference, organised by the Royal Society for the Prevention of Accidents, in Harrogate, North Yorkshire.

"Technology, especially high technology, is having a mixed reception from the public at present," he said.

"For some people, nuclear waste, dioxin, genetic manipulation, lead in petrol, motorways and even sulphur dioxide seem to merge into a science-fiction nightmare.

"The material benefits of technology are either ignored or discredited by the suggestion that they have been gained at the expense of that elusive concept, the quality of life.

"Part of this fear is irrational, part of it is stimulated as a means of furthering political aims, but much of it is nonetheless real, and, indeed, is by no means

without justification. "The simplistic approach which can be summarised as 'identify and solve the problem before going ahead' is attractive and has an apparently impeccable logic.

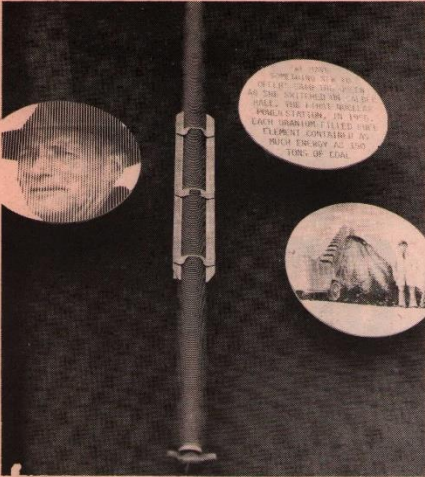
### Perfection

"It is, however, a policy of perfection and if applied rigorously would stultify innovation.

"Indeed, if the policy were applied retrospectively and reworded as 'identify and solve the problem before continuing' it would destroy our present society.

"Absolute assurances of safety, absolute elimination of health and safety problems, are just not available. Everything we do produces some benefit but is associated with some detriment."

# British geni



SOME HIGHLIGHTS OF THE 25th ANNIVERSARY OF THE BIRTH OF THE NUCLEAR POWER INDUSTRY IN BRITAIN. THE FIRST REACTOR WAS BUILT AT WINFRITH IN 1952. EACH YEAR WE CELEBRATE THE ANNIVERSARY OF THE BIRTH OF THE NUCLEAR POWER INDUSTRY IN BRITAIN.



BRITISH genius is alive and well and living in Battersea, London. That's the message from the John Player Foundation which staged the British Genius exhibition, open until the end of October. And among the geniuses are some of the people associated with the Authority's work. People like Lord Hinton, managing director of the Authority's old Industrial Group (far left), featured with the Calder Hall reactors he helped to build. People like the Harwell team which developed the thermomechanical generator being shown (left) to the Duke of Kent by scientific broadcaster Dr. Tom Margerison, and the Fluidyne pump (right) which can be operated by the heat of the sun. British genius showed, too, in the model fusion experiment (right centre) being examined by Westminster schoolboys James McDougall, Mark Chaiken and Alexander McDougall, and in the tribute (far right) to the Harwell-developed nuclear battery for heart pacemakers which brought new hope to people with heart trouble.



▲ ABOVE: A special contest to find a drag queen — or is it king? — of Winfrith ended in a title for Jimmy Whittle, who works in Winfrith's Instrument Services Section. Appearing as "Flo" and carrying a cabbage and a can of beer, Jimmy was given a chain of office — a garland of onions.



▲ ABOVE: One of the first jobs for newly-installed mayor Charles Patterson and his wife was to choose a queen. Charles, who works on steam generating heavy water reactors at Winfrith, was made mayor of Wareham, half a dozen miles away, last month. Then they asked him to pick the Winfrith carnival queen from eight contenders. His choice: Jane Barker, who is 17 and who got a kiss to confirm her appointment. The runners-up were Joanna Matthews (left), who is 16, and Susan Toop, 23, who works in Winfrith's Reactor Development Division.

► RIGHT: The British Nuclear Fuels jubilee float. It took part in celebrations at Warrington, Kirkham and Preston. The three Springfields girls are (left to right) Valerie May (restaurant), Frances Muskett (restaurant) and Janatha Hadgson.



**Three visit**  
THREE Windscale men made a jubilee month visit to London's Buckingham Palace to meet the Duke of Edinburgh. One, Chris Graham, is a third year apprentice with British Nuclear Fuels Limited. The other two are electrician Frank Bowe and fitter Eric Young.

► RIGHT: Chilton, the village a couple of miles from Harwell, has a jubilee bridge — part of the massive road-building which is going to make life easier for Harwell employees on their way to and from work. By this time next year delays on the A34, which passes Harwell's main gate, should be just a memory. In about six months the Drayton-Chilton by-pass will open and take most of the through traffic between the Midlands and Southampton away from the Harwell section of the A34. The road past the site will be quieter. The jubilee bridge — opened on June 3 — is needed to give Chilton residents a safe way across the new road, which cuts the parish in half. It got its name from Capt. Charles Mayne, former Oxford County Council member for the area, when he cut the tape to declare it open. IN THE PICTURE: The rush to be first across. In the chaos below the new bridge contractors will make the new A34, avoiding Harwell.



## Jubilatio over the c

### Special poem

DORSET poet George Smith, a 71-year-old cleaner at Winfrith, has written a special silver jubilee poem. But it wasn't his idea. The why-don't-you-write-a-poem suggestion came from Stan Wilkinson, of Winfrith's Radiological and Safety Division.

And this is the result:  
 This year of 1977  
 I trust you all agree  
 To extend the hand of friendship  
 In our land and overseas.  
 This year Her Majesty the Queen,  
 Our leader of the free,  
 Crowns 25 years of faithful reign  
 With her silver jubilee.  
 So let us all with heart and soul  
 Now make a special try  
 To make this tired unbalanced world  
 A home of peace and joy.  
 It'll be the greatest token  
 That has ever yet been known  
 To celebrate those glorious years  
 Of our Queen upon the throne.  
 Through all the years that follow  
 God grant that it may be  
 In memory lane for ever  
 The silver jubilee.

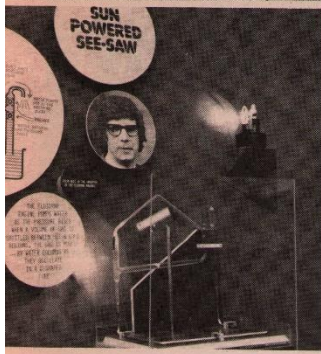
Said Stan: "I'm very pleased with the result. I notice that the words would go to the tune of God Bless the Prince of Wales."  
 Stan is a George Smith fan. He already has a book of his poems.



▲ ABOVE: Alan Wood (left) and Brian Metcalfe, who both work at Harwell, are seen showing a replica of scroll of greeting sent to the Queen on her silver jubilee. The original scroll was carried by a team of 25 rel-walkers — to represent the 25 years of the Queen's reign — from the village of Harwell to Windsor Castle. The first walker was Mr. Wood, who is a chemist analyst in the Chemistry Division; and the last walker was Mr. Metcalfe, who is in the Instrumentation and Applied Physics Division. Mr. Wood is chairman of the village's Jubilee Committee, and Mr. Metcalfe is chairman of the parish council. At the end of the walk Mr. Metcalfe handed the scroll to a representative of the Queen who had agreed to receive it. The scroll, of goat skin vellum, bore a message handwritten in old English script. It was the work of retired Harwell employee, John Tennyson.



# s at its best



## Medals for long-serving employees

TEN long-serving Authority employees have received medals commemorating the Queen's silver jubilee.



▲ABOVE: The wife of a Harwell man led a three-woman team who made models of all the previous reigning Queens of England. The models formed part of floral decorations of St Andrew's Church, East Hagbourne, a few miles from Harwell.

She is Mrs. Pat Lloyd-Rogers whose husband, Brian, works in the Lands and Accommodation section. Mr. and Mrs. Lloyd-Rogers live in Didcot.

The other two involved in the project are Mrs. Helen Tilston and Mrs. Vi Selley, both of East Hagbourne.

▲ABOVE: Mrs. Tilston and Mrs. Selley are pupils of Mrs. Lloyd-Rogers at her collage classes and they decided to make the models as their part of the jubilee celebrations in the East Hagbourne church.

The models are about 20 inches tall and beautifully dressed in costumes which are authentic for their respective periods.

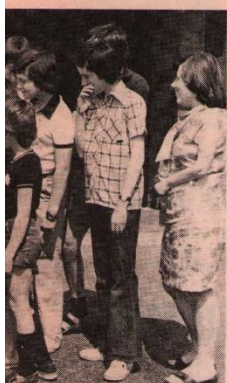
Mrs. Lloyd-Rogers designed the models and made their heads and faces from odd materials. The dresses were the responsibility of the other two.

The six Queens are Lady Jane Grey, Mary I, Elizabeth I, Mary II, Queen Anne, and Queen Victoria.

After the jubilee celebrations the trio hope to show the models in local exhibitions before finding a permanent home for them in some public building in Didcot.

The photograph shows Mrs. Tilston (left), Mrs. Selley and Mrs. Lloyd-Rogers with the models of the Queens and the Jubilee emblem.

## n all untry



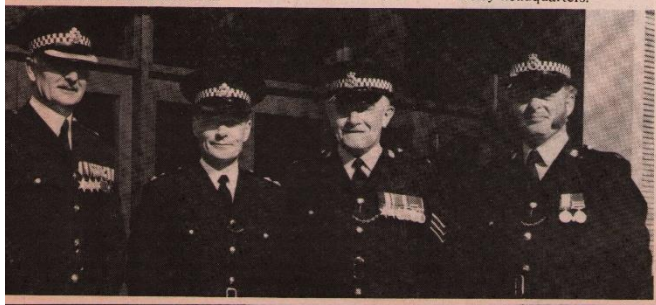
▼BELOW: Four Authority policemen represented the force when the Queen and Prince Philip visited the police Silver Jubilee exhibition at Hendon, London, last month.

They were, in the picture left to right: Supt. D. C. Rae, from Harwell; Insp D. M. Montgomery, from Windscale; Sgt H. E. Nye, from Winfrith, and PC A. R. Wills, from Springfields.

Over 50 forces were represented from all parts of Britain.

Supt Rae was presented to the Queen, the Duke of Edinburgh and Merlyn Rees, the Home Secretary. He in turn introduced members of his group.

The exhibition showed technological advances in police work over the past 25 years.



## CELEBRATED TWICE OVER

IT'S been a double jubilee for Ted Cooke-Yarborough, head of Harwell's Instrumentation and Applied Physics Division.

He and his wife celebrated their silver wedding anniversary on June 7, the jubilee bank holiday.

A physics graduate, Ted joined Harwell in 1948 after wartime work on telecommunications, radar and guided weapons.

One of his first Harwell jobs was with the site's first computer. Cadet. He became head of the old Electronics Division in 1957 and has just completed 20 years as boss of it and its successor.

He has been involved with the official jubilee, too. Harwell has provided four exhibits for the British Genius exhibition in London's Battersea Park. He has been involved with three of them.

## Contest at dance

THE Silver Jubilee dance and barbecue planned for Winfrith's social club on June 24 will include the final of the darts contest organised by the Civil and Public Services Association and dancing to the Easy Beats. Prizes will include jubilee souvenirs.

## More mail

MARK BAKER, Secretary of Harwell, has been receiving more than his usual amount of mail at home. The reason? Mark's address is Jubilee Cottage.

## Popular

MEMBERSHIP of the bridge club at the Authority's London headquarters has reached 46 and it's still rising.



▲ Above: Harcourt Green residents on the Authority's Charlton House estate at Wantage put on a children's party on Jubilee day. The entertainment included a fancy dress competition.

Frank Loyd (above), Rutherford laboratory, dressed up as Ali Baba to officiate at the lucky dip.

## Overseas spotlight

# SUPER PHENIX GOES AHEAD

FRANCE has decided to go ahead with its first commercial fast reactor, the Super Phénix, which will generate 1,200 megawatts of electricity.

The decision to build the country's second fast reactor was announced last month by officials of the French Atomic Energy Commission.

It will be at Creys Malville, near Lyons, on the Rhone.

Super Phénix is planned to be "very similar" to the first French fast reactor, Phénix, which reached full power in 1974, seven months after it first went critical.

Estimates then were that Super Phénix would be producing electricity by 1980, provided building started in 1975.

After questions about safety had been asked in France, American engineers said in November that the Super Phénix design seems to be consistent with the criteria which had been used for fast reactors in the United States.

## Missed the boat

FRENCH plans to build nuclear power stations are 22 months behind schedule, the chairman of Electricité de France, Paul Delouvier, told reporters in Paris.

He blamed technological problems, systematic opposition and tighter security rules.

The result: Electricité de France will ask the French Government for permission to build two power stations near Le Havre which can burn coal, oil, or gas.

## IN GREECE

A two-week course on advanced physics for young experimental physicists who are studying the basic composition of matter was held at Nafplion, Greece, by CERN, the European Organisation for Nuclear Research.

## ANNOUNCEMENT

Four floors of luxury, of space to browse. Room to choose from thousands of beautiful ring designs and qualities. To select a watch to suit your personality. To examine at leisure the finest crystal ware, porcelain, silver, plate, cutlery and clocks.

For those unable to call, Winegartens offer free catalogues illustrating representative selections of the ranges from which to choose at leisure and order by post.

By special arrangement, Winegartens can offer a privilege cash discount of 20% to all members of the UKAEA.



Winegartens Limited  
186-188 Bishopsgate, London EC2M 4NL  
Tel: 01-283 6622  
Jewellers, watchmakers and silversmiths of the City of London

BUILDING more nuclear power stations will not lead to security arrangements much different from those which Britain has at present, Tony Benn, Secretary of State for Energy, has told three organisations which sent him a list of questions about nuclear power.

The three groups are Friends of the Earth, the Council for the Preservation of Rural England and the National Council for Civil Liberties.

"The level of the national security commitment would not be dictated only by the size of the nuclear programme or the extent to which it employed plutonium," he said, "but by the scale, the nature and the intensity of terrorism and other violent criminal activity."

"It cannot be assumed that such terrorist activity would necessarily be directed against nuclear plant and material, or that if the nuclear material did not exist terrorism and other

# SECURITY NEEDN'T BE THREATENED

violent crimes would disappear.

"Although the general situation in this country and in the world in the first half of the next century is not one which can be predicted with exactness and confidence, no democratic government would want to take precautions against terrorism which would be more harmful to individual liberties than the situation demanded."

The three organisations based their questions to Mr. Benn on the assumption that Britain might have enough nuclear power stations to generate about 128,000 megawatts of electricity by soon after the year 2000—half of it in stations using fast reactors.

In his reply Mr. Benn

emphasised that the Government has not decided how many nuclear power stations will be built, but it seems unlikely that more than half the total suggested by the questioners will be reached.

Fast reactors would account for only "a modest proportion" of the total.

Although plutonium is a possible target for terrorists, he says, what needs to be done to protect it "depends more on the prevalence of terrorism than on the availability of plutonium."

Nuclear plant could be designed for maximum security. That, in turn, would reduce the need for such things as new checks on employees "which could be regarded as a threat to civil liberties."

Although there might be increased checks, the number of people involved was likely to be small.

Few people would be affected by any extension of the Official Secrets Act, he forecast.

Mr. Benn did not expect any difficulty in Parliament if questions could not be answered for security reasons.

Although there is a limit to what can be published without helping such people as terrorists, the Government will make every effort to see that adequate information about nuclear power is available and it is "confident that it will be possible for Parliament to perform its traditional function."

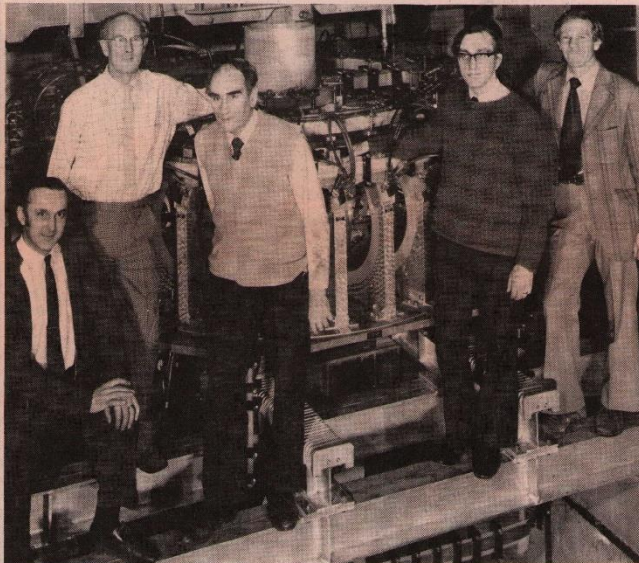
He did not expect the development of nuclear power to cause any changes in the arrangements for phone-tapping which already exist in Britain.

Organisations and individuals opposed to nuclear power would not be watched "unless there was reason to believe that their activities were subversive, violent or otherwise unlawful," said Mr. Benn.

It was impossible to estimate whether there would be any increase in the number of police and security men.

There are plans for dealing with criminal or terrorist threats to nuclear plants and materials, he said. "The Government considers that they would be effective should the need arise."

## FUSION FOR ITALY



CULHAM engineers have designed and built £360,000-worth of apparatus which will be used at Milan University in Italy for fusion experiments.

The work was done for Italy's national research council and the apparatus is being shipped to the plasma physics lab run at the university by the committee and Euratom.

Four British firms co-operated with Culham — British Insulated Callenders Cables, Hawker Siddeley, Brentford Electric and JEP Engineering, of Reading, Berks.

It took two years to complete the design, building and commissioning of the apparatus.

The order is one of several on which Culham has co-operated with British industry to supply special equipment, mainly to overseas customers.

IN THE PICTURE some of the Culham men and the equipment they produced. From the left they are Eric Young, Peter Worsnop (engineer in charge), Bernard Marsden, Alan Hoskins and Brian Ingram.

## HISTORIC MAYOR



CHARLES Patterson, who works on steam generating heavy water reactors at Winfrith, is the new mayor of historic Wareham, half a dozen miles from Winfrith.

At the traditional mayor-making ceremony, first performed there in 1211, the retiring mayor, Mrs. Gwen Broughton, adjusts Charles' chain of office as the town clerk, Paul Randall, looks on.

## Tory gains in council elections

RETIRED Authority employee Joe Haigh, who left Springfields five years ago after 23 years' service, was the only Labour candidate elected to Lancashire County Council in the Chorley and South Ribblesdale area last month.

Some of his supporters work at Springfields and helped him to his 453-majority win.

Three Windscale men were elected to Cumbria County Council. Conservative Trevor Moulding, British Nuclear Fuels Limited's plutonium fuels manager, was re-elected in the Gosforth area.

Plutonium waste manager in BNFL's Reactor Development Department, Les Tuley is the Labour councillor for the Egremont district and Harry Petrie, an electrical estimator with BNFL, is Labour councillor for the Mirehouse area.

Wilfred Edwards, a former Culcheth employee, was re-elected Conservative councillor for Golborne on Cheshire County Council.

Three independent candidates from Dounreay represent Thurso on Caithness District Council. They are Falconer Walters, a fitter; Tom Pollock, a senior scientist, and Martin Smith, electrician.

And three process workers from Dounreay represent Wick on the same council. They are Anderson Murrey, Robert Durrand and William Mowat.

Harwell men were chosen for four seats on Oxfordshire County Council. John Clarke, financial controller for Harwell and Culham, is the Conservative representative for part of the Wantage rural area; Les Steggle, of Harwell's Finance Branch, another Conservative, represents Abingdon, and Ted Williams, of Harwell's Building Section, also a Conservative, was elected in the Didcot area.

Walter Burrells, who retired from the Science Research Council's Rutherford Laboratory at Harwell in April, was re-elected in another part of the Wantage rural area. He, too, is a Conservative.

## BUSY RETIREMENT

A MAN who said he planned to keep busy after he retired has just been elected chairman of the Vale of White Horse District Council in Oxfordshire — his third local government office and one of seven public jobs he is doing.

The man is Frank Bushell, who retired last year after about 20 years as administrator of the Medical Research Council's unit at Harwell.

Meanwhile in Lancashire Mike Gilbert, of British Nuclear Fuels Limited's technical department at Springfields, starts his second term as chairman of Warton Parish Council.

Another Springfields man — and a magistrate — Harry Robinson is Freckleton Parish

Council's new chairman. At Springfields since 1961, Harry has been a councillor for four years.

Two Winfrith men are also parish council chairmen. Les Burt, who works in Winfrith's Public Relations Office, is chairman at Winfrith Newburgh, on the Authority's doorstep, and Reg Symes, who manages Winfrith's training centre, is chairman of Osmington Parish Council.

## £80 for charity

WINFRITH apprentices, sponsored on a pedal-car race earlier this year, raised £80 to help sufferers from multiple sclerosis.



TWO Harwell scientists are just back from Bangladesh where they have been studying the problem of disposing of pesticides which have spoiled in store.

Most of the pesticides were imported from Western countries during the past ten years and distributed throughout Bangladesh in local stores.

Often the containers were roughly treated and some have leaked poisonous materials.

Solid chemicals packed in plastic and hessian sacks leaked as the containers rotted in the intense sun. Drums rusted through during the monsoons.

The stores themselves are badly contaminated. So are some local water supplies.

The Harwell men — Dr. Frank Feates and Ken Pearce, both of the Hazardous Materials Service — were called in by Britain's Overseas Development Ministry.

## Scientists solve pesticide scare

They travelled all over Bangladesh to size up the problem. Now they are preparing a report which will suggest to the Bangladesh Government ways in which about 700 tons of chemicals can be disposed of.

### Dry season

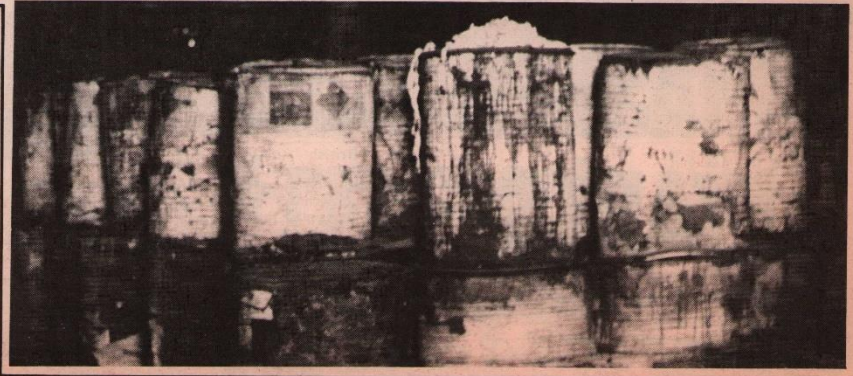
Harwell staff expect to return to Bangladesh during the next dry season — it starts in November — to supervise the disposal.

And when the job is done the Hazardous Materials Service hopes to produce a blueprint for

organisations exporting pesticides to developing countries. It will contain advice on how to organise stores, distribute the chemicals, pack and label them.

The Harwell men believe that there may be similar problems in other countries because of a lack of understanding of the risks and poor storage arrangements.

IN THE PHOTOGRAPH: Left, Dr Frank Feates discusses the problem with a chemical company representative. Below, the main storage for pesticides at Chittagong port.



## JET STILL WANTED IN BRITAIN

The Government still wants the European Jet fusion experiment to be set up at Culham, Tony Benn, Secretary of State for energy, confirmed last month.

He told a meeting of the Oxford University Labour Club that the Government was continuing to fight and bargain for a Culham-based JET.

Culham, he said, was the best qualified of any of the sites put forward by Common Market countries.

They include Garching, Germany; Ispra, Italy, and Cadarache, France.

Discussion about the site has been going on for a couple of years. JET — it stands for Joint European Torus — has been planned by an international team working at Culham as the next step towards a power-producing fusion reactor.

Mr. Benn denied a suggestion which had been made earlier by Douglas Hurd, MP for mid-Oxfordshire, that Culham's chances were spoiled by Britain's insistence on a subsidy on butter during Common Market discussions.

Mr. Hurd said other countries may be blocking a vote for Culham because Britain had hindered a farm agreement.

## Euro info campaign mooted

THE European Commission has been recommended to put its full weight behind a campaign to popularise nuclear power.

The recommendation comes from the European Centre for Public Enterprise which has asked the commission to commit itself, without delay and with the full weight of its authority, to "overcoming the psychological barriers encountered by nuclear energy."

Some European countries will need financial help if they start building nuclear power stations, says the committee, but the aid will benefit all Common Market countries by reducing the need for imported fuel.

The committee is also keen to keep work going on fast reactors and it suggests united European action to solve problems of processing nuclear fuel and handling radioactive waste.

## JOIN IN THE FUN

PEOPLE who take part in a summer school at Harwell will be able to join in experiments with the Pluto and Dido reactors there.

The school will run from September 11 to 14 and is the second like it to be organised by Harwell. The first was two years ago.

"Applications from scientists working in industry are particularly welcome," said a spokesman.

The subject of the course is thermal neutron scattering but no previous knowledge of the subject is needed.

What is essential is an honours degree in one of the physical or chemical sciences.

## At policy meeting

AUTHORITY chairman Sir John Hill and deputy chairman Dr. Walter Marshall were among 30 experts at a week-end meeting last month called by Tony Benn, Secretary of State for Energy, to discuss Britain's nuclear energy policy.

Others included Con Ailday, managing director of British Nuclear Fuels Limited, Dr. Ned Franklin, chairman and managing director of the Nuclear Power Company, Frank Toms, new chairman of the Electricity Council, and Walt Patterson, of the Friends of the Earth.

## GOING UP

MEMBERSHIP of the London Office Recreation Association increased during the last 12 months to 252.

## Processing ban could backfire

BANNING the processing of plutonium fuel for reactors could stimulate the spread of nuclear weapons, not reduce it, according to Chauncey Starr, president of the American Electrical Power Research Institute.

He told the American Power Conference that a ban "will be internationally counterproductive and actually stimulate proliferation."

"There are today no fewer than eight different ways to produce weapons material," he said. Using plutonium from nuclear power stations, "would be among the least attractive choices" for a government that wanted to set up its own weapons factory.

"It is the most expensive — five to ten times more costly than others. It requires the highest level of support technology, the broadest base of support industry and takes the longest to install to yield material — three to five years longer," he said.

"If the dyke is leaking in at least eight places, maybe more, why are some so desperately anxious to plug only one of the

## Tea break

CYRIL STONE, who retired from the Authority's London headquarters last month, spent more than 30 years with the Brooke Bond tea company before he joined the Authority,

leaks? "Why this effort to focus attention on an issue that does not go to the heart of the problem?"

Embargoes or stringent restrictions imposed by America and other countries which supply nuclear fuel "will only accelerate the national trend towards the construction of independent plants for enriching and reprocessing fuel."

"In that way we lose or reduce the likelihood that

effective international controls and safeguards may be accepted."

Restrictions on reprocessing nuclear fuel were "not a significant obstacle" nor did they delay a decision by a country to produce weapons, said Mr. Starr.

"What is needed is an assured fuel cycle system, preferably under international auspices, operated to make the best use of the world's resources and to inspire confidence in supply."

## Diamond John celebrates

A MAN who retired from the Authority at Risley 15 years ago was celebrating his diamond wedding anniversary last month.

He is John Beaumont, who was a policeman at Risley for seven years. Earlier he was with the Admiralty Constabulary.

Now 79, he looked back last month to May 8, 1917, when he married Beatrice Smalley, a year younger than him, at Mexborough, South Yorkshire.

And he looked back to 25 years in Blackpool, where he and Beatrice lived before they moved to Repton, Derbyshire, to be near one of their two daughters, who is a widow.

A serious illness has limited John's activities recently but he is still a member of the British

Legion and his wife is active in its local women's section.

### £100 winner

THE first £100 winner in the 16-year history of a contest run by Springfields Social and Recreational Association, was Roley Cross.

## MEMBER OF CEGB BOARD

JOHN Jukes, who will become a full-time member of the Central Electricity Generating Board in September, was head of the Authority's Economics and Programmes Branch in London until he left in 1964.

He joined the Authority from the Treasury ten years earlier and became a member of the management boards of the old Development and Engineering Group and the Production Group at Risley.

### DRY FUTURE

WINE and cheese parties, popular in the Authority's London headquarters for several years, may not be held again. Twice this year they have had to be cancelled because of poor support.

**fellview**  
CARAVANS LIMITED

For new and used CARAVANS

TOURERS FOR HIRE

EXTENSIVE ACCESSORIES

REPAIRS

EFFICIENT SERVICE

BECKERMET, NR. EGREMONT.  
Tel: (094684) 274

**IN CUMBRIA**

DIAMOND ENGAGEMENT RINGS, JEWELLERY AND WATCHES

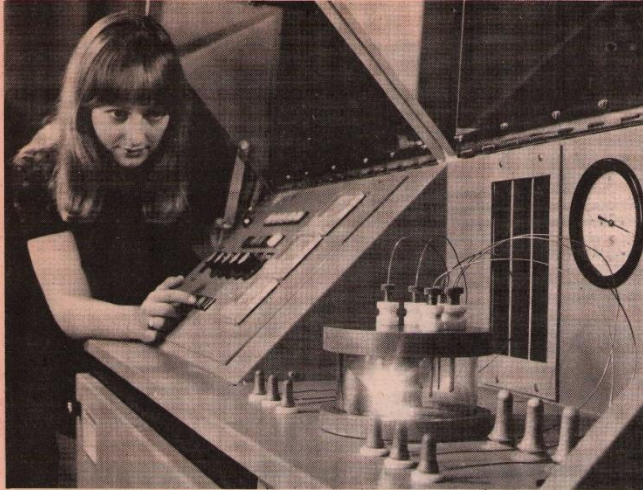
**20%-25% DISCOUNT TO ALL STAFF**

GOLD-Wedding and Signet Rings, GOLD & SILVER-Bracelets, Necklaces, Charms, Brooches, Earclips, Links, Dress Rings and Chains.

**DISCOUNT TO ALL STAFF PERSONNEL on all Brand Goods—SWISS WATCHES, Clocks, Pens, Lighters, etc. and on all second-hand Jewellery.**

**GEORGES & CO. OF HATTON GARDEN**  
(Entrance in Greville Street only)

88/90 HATTON GARDEN E.C.1. 91-405 0700/6431  
SHOWROOM OPEN—WEEKDAYS 9.5.30, SATURDAYS 9.12  
Remodelling and repairs to all Jewellery and Watches  
Special attention to orders by post or 'phone



## Push button insta-weld

HARWELL has delivered to a Czech company a machine for making high quality long life thermocouples. The order followed two similar contracts for machines which have already been sent to other firms in Europe.

The thermocouples are vital to industries which need accurate temperature control.

The Harwell machine produced thermocouples which last longer and are more reliable than traditional ones.

The key to their durability is the plasma arc welding process developed by the Authority.

"We believe that no other commercial thermocouple manufacturing equipment is able to match the precision specification whilst making thermocouples at speed with relatively unskilled operators," said a spokesman.

Now the hunt is on for firms which might like to make and sell the Harwell equipment under licence.

IN THE PICTURE Anne Fisher, who used to work at Harwell, takes a look at the Harwell plasma arc welding machine.

## NEW LOOK NORTHERN DIVISION

MR. G. R. ARMSTRONG, who has been director of personnel and administration in the Authority's old Reactor Group, has been appointed deputy managing director of the new Northern Division.

Mr. Armstrong keeps his position as director of personnel and administration which he has held since 1969 and other directors in the Northern Division are:

Dr. D. Hicks, thermal reactor development;

Mr. J. D. Thorn, technical services and planning;

Mr. J. Moore, fast reactor development;

Dr. H. K. Hardy, fuel and engineering technology;

Mr. R. F. Jackson, engineering;

Mr. D. C. Boardman, finance;

Mr. C. W. Blumfield, Dounreay.

They form the division's board of management with representatives from Winfrith and Dounreay.

## STRATEGIC MANAGER

DR. ALAN SALMON, who has been appointed manager for strategic studies in British Nuclear Fuels Limited's Reprocessing Division, was in charge of reactor physics experiments at Harwell for the first reactors at Calder Hall in the early 1950s.

Author of a reactor physics text book, he has recently been commercial director of the Mersey Docks and Harbour Board.

# SMASHER STARTS

THE world's largest "atom-smashing" accelerator — it belongs to CERN, the European Organisation for nuclear research on the French-Swiss border near Geneva — was officially inaugurated last month at a ceremony watched by 400 guests from all over the world.

Dr. John Adams, executive director-general of CERN, who used to be the Authority's Member for Research, described it as "the material manifestation of what a united Europe can do if only it is given the chance."

Another Briton, Professor C. Llewellyn-Smith forecast that "completely new and unexpected phenomena are likely to be discovered."

### Irrelevant

"To the layman the knowledge that we are pursuing may seem as irrelevant as the

knowledge that the earth goes round the sun, but its influence on our conception of the universe may prove equally profound."

The accelerator had been built within the scheduled time and without overspending the budget, said Professor Wolfgang Paul, from Germany, who is chairman of the CERN Scientific Policy Committee.

"At present 43 experiments have been approved and many are now in operation," he said. "About 900 experimenters from more than 100 laboratories are taking part in the experiments."

## WEDDING BELLS



MARRIED in the West Church, Thurso... Dounreay electrician Ian Campbell and Phyllis Harper, a clerk in the Authority's Superannuation Office in Thurso.

## On top of a reactor

THE British national Monopoly championship which was held last year on London's Fenchurch Street station is taking place this year on top of a nuclear reactor.

The competition will be held on the charge face of the number two reactor at the Central Electricity Generating Board's Oldbury nuclear power station on the banks of the River Severn.

The reactor will be working at the time, said a CEGB spokesman.

About 120 people are expected to take part in the two-day event early in September.

## Taking a break

THE steam-generating heavy water reactor at Winfrith has shut down at the end of its winter operating period after working from the middle of December at an average of 95 per cent of its capacity.

It will be shut down for three months for refuelling and maintenance which will include replacing a pressure tube.

## NEW POST FOR EX-NUCLEAR MAN

DR. DAVID SILVERLEAF has been made director of resource planning in the Central Electricity Generating Board's Research Division. It is a new post in a new division.

Mr. Silverleaf spent 12 years from 1959 in the board's Nuclear Operations Branch.

## NOT EMILE VAN LENNEP

IAN WILLIAMS, new director-general of the Nuclear Energy Agency of the Organisation for Economic Co-operation and Development, has succeeded Einar Saeland, who has retired, and not Emile van Lennep, OECD's secretary-general, as stated in last month's *Atom News*.

## Versatility

BADMINTON players in the Authority's London headquarters have been challenged by other Government offices to play cricket and rounders — "more evidence of our sociability than of our versatility," said a badminton club spokesman.

## High flying watchdogs

NEW equipment which uses high-frequency sound waves to keep an eye on the way chemical plants are working goes on show for the first time this month.

The equipment, developed at Harwell, will be seen at Eurochem, the first international exhibition on chemical engineering to be held in Britain.

It takes place at the National Exhibition Centre in Birmingham, from June 20 to 24.

Harwell developed the new equipment to streamline the control of the nuclear fuel

re-processing plant at Dounreay, but it could be used in other industries.

Visitors to the exhibition will see how it can measure the concentration of a solution continuously in a pipeline. Later versions will also be able to show the level of liquid in a container.

### Instruments

"The instruments are ideal for connecting to simple computerised devices or more complicated data-handling equipment," said a spokesman.

# 'ATOMICS' PLAY PART IN JUBILEE SUMMER

THE Authority is one of 31 organisations taking part in the Silver Jubilee exhibition which opens in London's Hyde Park on July 1 and is scheduled to run for nine weeks.

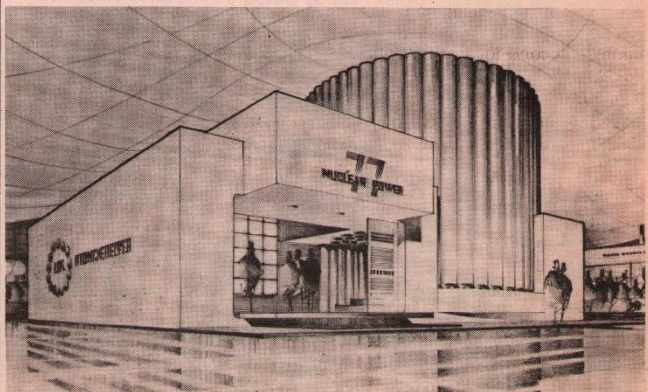
The exhibition is the first to be held in one of Britain's royal parks since the Great Exhibition of 1851. A million people are expected to see it.

In an exhibit planned jointly by the Authority and British Nuclear Fuels Limited visitors will be able to pass through a model reactor core. Walking on a transparent floor, they will be able to see fuel elements.

On another part of the stand they will see and hear about the activities of the nuclear industry.

And a special display will keep them up to date with the number of units of electricity which have been generated in British nuclear power stations since the world's first nuclear station at Calder Hall was opened by the Queen in 1956.

BELOW: An artist's impression of the joint 'atomics' stand at the Silver Jubilee Exhibition.



THE Authority, British Nuclear Fuels Limited, the British Nuclear Forum and the Nuclear Power Company are to be among the exhibitors at the Energy Show which is being staged in September at London's Olympia.

Tony Benn, Secretary of State for Energy, will open the show on September 18.

Sponsored by the Institute of Fuel, it is the first exhibition in Britain giving a comprehensive picture of the resources, production and use of

conventional fuels as well as looking at the development of newer forms of energy.

The organisers say that visitors from Argentina, Mexico, South Africa and France are already anxious to see it.

Lectures aimed at professional experts as well as casual visitors are being planned. So are competitions for schoolchildren and more senior students.

There will also be a chance for individual inventors to show off their ideas.

## Report on first year at Harwell

THE National Radiological Protection Board has just published its first annual research and development report which describes work it did in 1976, the first full year at its new Harwell laboratories.

Before its work moved to Harwell research and development was done by the board at Sutton, Surrey, and Glasgow as well as Harwell.

The report, which also refers to work done before 1976, describes 66 separate projects. Most of them deal with the practical problems experienced in protecting people from radiation and many concern the use of plutonium and the way it and similar radioactive substances move around in the human body.

The report is available from HMSO for £1.75.

# Nuclear power makes history

THREE new records have been set up by Britain's nuclear power stations, the Central Electricity Generating Board announced last month.

At Hinkley Point, Somerset, the oldest power station there has now generated more electricity than any other nuclear power station in Britain.

First commissioned in

February 1965, it produced 39,427,000,000 units of electricity up to March 31, using two magnox reactors.

And the second station at Hinkley Point, which uses two advanced gas-cooled reactors, has become the first AGR station in Britain to produce 1,000 megawatts of electricity.

### Megawatts

With one reactor already producing 535 megawatts, the second topped 500 megawatts.

Then for nine days the first

reactor ran steadily at around 540 megawatts until it was stopped by an instrument fault.

The third record was made at Sizewell, Suffolk, where the nuclear power station has been running for 625 days without stopping.

Starting in August 1975, the run has produced more than 3,709 million units of electricity, the CEGB's new chairman, Glyn England, told reporters last month.

And during the year which ended on March 31 Sizewell — which uses two magnox reactors — was available to produce its full power for 90.4

per cent of the time — a figure that would place it high among the world's best nuclear plant performances, said Mr. England.

The board's experience with nuclear power stations has "really been very good," he added.

### Gatewoman

The Central Electricity Generating Board has just appointed its first woman security gatekeeper. She's 26-year-old Helen Myatt who works at the Rugeley power station in Staffordshire.

## Nuclear steel...

A commercial high temperature gas-cooled reactor — like the Dragon reactor which closed down at Winfrith last year — could be working by the end of the century to produce hydrogen from natural gas for use in steel works, says the European Nuclear Steelmaking Club.

First of all a reactor would have to be built and used to generate electricity, says the club. That could be operating in the early 1990s.

The club studied the technical feasibility, but a separate working party looked at the economics of using nuclear power in the steel industry.

Using hydrogen to process iron ore was economically sound in some furnaces but not in blast furnaces, it decided.

## FALLOUT AT ITS LOWEST

RADIOACTIVE fallout from nuclear weapon tests is still going down. An Authority Report published last month says that the amount of caesium-137 in the air in Britain in 1976 was one third of the 1975 figure and the lowest since measurements began in 1953.

Caesium-137 is typical of the long-life products of fission, said a spokesman.

There were three Chinese nuclear tests in 1976. The first, in January, made no change in the readings in Britain but the second, on September 26, left iodine-131 which has a short life.

Although the amount measured was less than one tenth of the figure for 1962, when Russia was testing nuclear devices, it was the highest recorded since then.

Traces of activity from the third test on November 17 were detected in Britain by the middle of December.



## FIRST LADY BOBBY

THE Authority's first policewoman used to run a hotel in Seascale, a couple of miles from Windscale where she now works. She is Jean Crolla — officially PC 459 — mother of two teenage daughters.

Jean moved to Seascale from Manchester seven years ago and first started work at Windscale as a health and safety monitor.

"I thought it was odd that there were no women at all in the Authority Constabulary," she said.

So she met Windscale's chief inspector and convinced him that she was a suitable candidate.

After training which includes a month's course at Harwell, Jean now does the full three-shift system worked by all Authority policemen. That's seven days on duty, two off and one weekend off in four. And, says Jean, she likes

it. As a housewife and mother, she finds the hours easier than normal day work. But she agrees that it wouldn't suit everybody.

Her male colleagues accept her completely, although they had some apprehensions at first, she said. Now "they don't often forget that I'm about."

Next step in Jean's career could be promotion. She takes her sergeant's examination in February with three written papers, a sergeant's course and a final interview.

One thing that will help her is her hobby — pistol shooting.

Mr. Crolla — the name is originally Italian — also works at Windscale on acoustic and vibration tests for advanced gas-cooled reactors.

IN THE PHOTOGRAPH: Pictured during her training at Harwell, Jean Crolla — PC 459 — checks up on a visitor at the main gate.

## UNION LOOKS AT POLICY

THE Institution of Professional Civil Servants which has 5,000 members in the Authority and has traditionally supported nuclear power is taking a second look at its policy.

Its national executive was told at the Institution's annual delegate conference last month to reconsider its attitude "in the light of uncertainties regarding long-term safety raised by the report of the Flowers Commission."

Delegates referred the whole question to the executive after Dr. John Sargent, a botanist working for the Agricultural Research Council, suggested a "multi-disciplinary working party to review available evidence from both an energy and ecological standpoint."

The conference also formally welcomed the recommendations of the Flowers Commission which called for more research into radioactivity in the atmosphere and on earth.

The conference also agreed to resolutions calling for better pay, fringe benefits, subsistence allowances and a shorter working week.

It also urged that the parliamentary commissioner should be able to consider personal cases within the Civil Service and associated organisations like the Authority.

### Real ale

REAL ale — the local Morlands bitter from traditional hand pumps — has been introduced to Harwell's social club bars at 25p a pint. And, says the club, a range of real ales will be available shortly.

### Golfer dies

TERRY Daley, of Harwell's wages office, who has died, was a member of the Harwell golf society for ten years.

### Family man

DR. Peter Clements, of Harwell's Material Physics Division, has died leaving a widow and family.

## Nina's had a smashing ten years

NINA, the little atom smashing accelerator at the Science Research Council's Daresbury Laboratory, near Risley, closed down on April 1 after just over ten years.

Closure was forecast about five years ago as larger accelerators were being developed. New equipment for different experiments is being installed at Daresbury.

## Odd bods needed

HARWELL Dramatic Society need back-stage volunteers and odd-bods to help with their next production of two one-act plays, *Black Comedy*, by Peter Shaffer, and *The Real Inspector Hound* by Tom Stoppard. Performances will be held on July 13-16.

## Harbour police

AFTER a year in the London Office Authority, policeman Edward Pierce is leaving to join the Port of Liverpool Harbour Police.

PC Pierce has worked in the Metropolitan Special Police in the Crown Investigation Department. He has worked for the Authority before, at Aldermaston.

## Magic sticky tape



A NEW adhesive tape which contains no chlorine has been devised for use on stainless steel in nuclear reactors.

Ordinary tapes can give off gases which contain chlorine if they are overheated or burned. As a result hydrochloric acid is formed and this can cause corrosion of stainless steel.

Adhesive tape is used for various jobs when a reactor is being built. The new tape, developed by Rotunda Limited,

of Denton, Manchester, will not cause serious damage if a piece is accidentally left in the reactor and burned.

The problem became serious only when advanced gas-cooled reactors were being brought into service. Earlier reactors did not use stainless steel at such high temperatures.

Much of the work to find a tape which was free of chlorine was done by George Jarvis, head of The Nuclear Power

Company's chemistry section at Whetstone, Leics.

Now the new tape is streaked with black during manufacture so that it should be easily recognised.

IN THE PICTURE new tape is in use at the new Heysham nuclear power station, Lancs, which is being built by NPC for the Central Electricity Generating Board.

OVERSEAS SPOTLIGHT

# The only way is nuclear

NUCLEAR power is an economic necessity, Robert E. Kirby, chairman of the American Westinghouse Corporation, tells shareholders in the company's annual report for 1976, just published.

"While conservation is necessary, I believe the ultimate solution to the nation's energy problem will be an energy policy that includes a heavy reliance on electricity using both coal and nuclear power," he says.

"This is not just in the narrow self-interest of Westing-

house: nuclear equipment amounts to only about eight per cent of the corporation's total sales.

"But your management is convinced of the economic necessity of the fullest possible use of nuclear energy and we will continue to work diligently with utilities and government officials to make this come about."

### Economical

The report itself says that nuclear power, a "safe, reliable and economical way of providing electricity," will become

more important in the years ahead.

The 62 reactors operating in the United States provide about a tenth of the nation's electricity and, says the report, saved consumers and industry more than a billion dollars (about £580 million) in 1976 alone.

During 1976 three Westinghouse-equipped plants started commercial operation and 35 are now operating throughout the world. Another 82 plants are still on order, says the report.

Fuel manufacture was "an all-time high".

# SEWAGE HAS ITS USES

SEWAGE might be turned into cattle food by irradiation, American experts have suggested.

## Fault in turbine

THE nuclear reactor at France's Fessenheim nuclear power station, which went into operation early in March, was shut down last month because of a fault in a turbine.

The fault had nothing to do with the nuclear part of the plant, said a spokesman. It was expected to be out of action for about four weeks.

## For Russia

HUNGARY will supply millions of pounds-worth of equipment for Russian nuclear power stations by 1980 says the MTI news agency in Budapest.

The US Energy Research and Development Administration is making experiments to convert "municipal sludge" into useful products.

If the sewage sludge is irradiated it can be converted into economic feed for cattle and sheep, says ERDA. It also makes a soil conditioner and fertilizer.

"The application of radiation along with heat and oxygen to the waste effectively destroys viruses, bacteria and parasites without creating residual activity," said a spokesman.

Work is also going on to irradiate compost produced from sludge and wood chips. The radiation would sterilise it and turn it into a soil conditioner without the need to add nitrogen, said the spokesman.

# Might take the plunge

PLANS for New Zealand's first nuclear power station have been published by the country's Electricity Department.

They show a plant using two reactors to generate 1,200 megawatts of electricity. It might be working by 1988.

But the New Zealand government says it is still trying to find other ways of supplying the country's needs before it orders a nuclear power station.

## Nuclear solution

IF a nuclear power station was built in Newfoundland no power lines would need to cross the ten-mile-wide strait from Labrador, suggested Campbell Eaton, managing director of the Newfoundland Tractor Company, when he forecast uranium mining in Labrador next year.

He was speaking at a business conference in St. John's, the Newfoundland capital.

# Only 14 claims in 19 years

IN 19 years the firms who insure organisations against nuclear risks in America have paid out on only 14 claims, says an American insurance association.

And Burt C. Proom, general manager of Nuclear Energy Liability — Property Insurance Association, commented: "No accidents involving radiation releases have occurred which posed even a minor threat to the general public."

# IRANIAN STATION

WORK is starting this month on the site of Iran's new nuclear power station on the Karoun river near Ahvaz.

Agreement has been reached between France and Iran about paying for the two reactors, said Jean-Pierre Fourcade, French Supply and Regional Development Minister.

A price around £1,000 million has been discussed.

# Power in north-east

A NEW nuclear power station worth about £811 million is planned by Electricite de France. It will be built at Cattenom, in north-east France, said an EDF spokesman in Paris.

Work on the first two reactors would begin next year and is likely to be finished in 1984. Two more reactors will be built later.

## 'Fast' stamp

JAPAN will issue a postage stamp featuring its new fast reactor which started working in April.

# FRENCH URANIUM SECRET

FRANCE has devised a new way of enriching uranium for use as nuclear reactor fuel which cannot be used to produce material for nuclear weapons, according to Andre Giraud of the French Atomic Energy Commission.

# Next ones may be nuclear

ALBERTA, the western Canadian province, may build nuclear power stations before any more hydro-electric ones, one of its planners told a meeting of engineers, geologists and physicists in the provincial capital, Edmonton.

Keith Provost, who is vice-president for planning with Alberta Power Limited and chairman of the Electric Utility Planning Council's steering committee, said nuclear power will be economic in the province in the 1990s.

# Australia to prepare fuel?

AUSTRALIA could become the site of an enrichment plant to prepare uranium fuel for use in reactors in Europe and Japan, suggested Doug Anthony, Australia's deputy prime minister, last month.

He was talking to reporters after a visit to America and Europe. He said he had received assurances from America that she would have no objection.

When he revealed the new technique last month he refused to discuss technical questions but did say the process was a chemical one.

France "does not exclude the possibility" of co-operating with other nations to make the process commercial, he said.

American Nelson Sievering said his country was "very much interested" but knew too little about the process.

### Deter arms

Andre Giraud said it would take 30 years to produce highly enriched uranium using the new process — long enough to deter arms manufacturers — and there was no way of altering the plant to enrich the uranium more quickly.

High enrichment could lead to criticality in the plant or even a small explosion which would stop the whole system, he claimed.

# Four year line delay

CANADA'S new Bruce nuclear power station may not be able to operate at full power because new power lines to carry its electricity to homes and factories are four years late, said Ontario Hydro general manager for finance Mr. F. W. Gomer.

# Heave ho! Up she goes

TO the uninitiated the terms "tower grabbing" and "peal grabbing" are of little or no significance, but to the expert campanologist — bell ringer to the layman — tower grabbing refers to the number of church towers visited, and peal grabbing the number of peals rung in a single session.



Ringling the changes is something which Barbara Gibson (left) an assistant scientific officer in the Technical Records Department of British Nuclear Fuels Limited at Springfields, has been involved with since she was 9½ years old. Since gaining a proficiency certificate some years ago she has been keen to study further, steadily gaining experience throughout the local parishes and wherever she might be when practice sessions are held.



Barbara is still the youngest member of the local Preston bell-ringing group. Although closely associated with religious ceremonies, fun is predominant in bell-ringing and after a strenuous "tower grabbing" dash, ringing bells averaging half a ton in weight, the subsequent pub crawl helps to refresh the parts ringing bells cannot reach.



# GORDON'S SWAN SONG

NICE and easy does it . . . Gordon Reddall (right), of Winfrith's Reactor Physics Division receives the Swanage Round Table chairman's chain of office from Rufus Stimpson, chairman of Swanage 41 Club, at the annual dinner of the Swanage Round Table.

Gordon has been at Winfrith for about 11 years and he worked originally on the steam generating heavy water reactor. He moved to reactor physics a year ago.

### Community

He's been involved with the Round Table for about ten years. This year is to be his last with the group. During his term of office he hopes to extend the group's function as a community service organisation, to raise more money for charity, provide holidays for children and keep an eye on elderly local people.

Gordon is also a keen sailor and chairman of the management committee of the Swanage youth centre.

# FUEL MAY LAST LONGER

RESEARCH which has been done on same sort of economy can be made in nuclear fuel at the Central Electricity advanced gas-cooled reactors. Dr. Generating Board's laboratories at Bryan Edmondson, director of the Berkeley, Glos, has already extended laboratories, told reporters last month. the life of some fuel elements in If the fuel can stay in the reactors Britain's original magnox reactors. longer, it not only saves money but Over the next ten years about £150 million could be cut off the board's fuel means fewer storage problems for used million could be cut off the board's fuel fuel elements and fewer elements being transported to Windscale for bill. Work is now going on to see if the reprocessing, he said.



## Darts team nearly made it

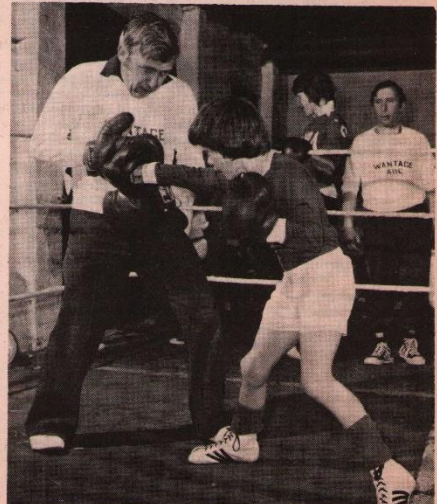
HARWELL social club's darts team were runners-up in one section of the Didcot and district ladies' darts league. The league, which attracted 44 teams, covers the towns of Didcot, Wallingford and Abingdon and the surrounding villages. The Harwell ladies were beaten in the league by the nearby Drayton Labour Club. The league, which is ten years old, spends £300 on prizes each year.

## Unfriendly weather

WALLY Stevens, who won last year's Spring meeting of Winfrith's golfing society, looked all set to keep his title last month. In weather which players described as "unfriendly" he finished the morning round at Sherborne, Dorset, three shots ahead of the field. But his afternoon form was not so good. Brian Hinton, a runner-up in the morning, improved his play and scored a net 67 against a par 71 to take the trophy by five strokes. His nearest rival was Roger Pike.

## Phil's got style

PETER CANNON, of the Engineering Sciences Division at Harwell has always loved boxing. As a young man he was taught to box by Jack Tredaway, probably one of the greatest lightweight amateur boxers Britain has ever had. Today Peter's boxing career has ended, but he is still very much involved in the sport. The club holds boxing shows which are well supported, but Amateur Boxing Club. The 25 young boxers, including a number of Authority boys, train twice a week in an old stable at the local Bear Inn. The club holds, boxing shows which are well supported, but Peter says more trainers would be welcome. The club's first season has been very successful: about half the boxers have had bouts and they have won over threequarters of them.



IN THE PICTURE: Peter Cannon (left) spars with little Philip Machin, who was voted by the trainers as winner of the "best prospect" trophy. His father Mr. M. Machin works in Harwell's Contracts Branch.

# Golf champs defend their title

SPRINGFIELDS golfers were defending their title as Authority and British Nuclear Fuels Limited champions on June 14.

## Cup final with a difference

THE best ever. That was how the organisers described Springfields annual Rogan Cup inter-departmental football competition which had a record entry of 18 teams. The sell-out social evening on cup final marked the climax to the competition, when British Nuclear Fuels Limited champions met Authority champions. The match ended in victory for Plant Maintenance by seven goals to nil over Reactor Rangers, five goals coming in the last 20 minutes of a game which produced a few surprises.

### Presentation

After the game a dance was held in Springfields' Lea Club and general manager Harold Dibben presented the trophies. Mrs. Dibben was asked to present awards to two members of the Springfields football club. The award for the player of the year went to Mickey Louchran, and clubman of the year was Ken Jackson. Surprise awards went to Ray Myers, who is manager of the team, and to Tony Wild.

## Came in fourth

A British team which included David Clark from the Authority's London headquarters took seven of the first nine places in a 15-mile road race in Northern France last month. Britain has been invited to send a team to join more than 100 other runners at Le Quesnoy for a race over an undulating course through countryside, villages and the outer suburbs of Valenciennes. Among the competitors was Fernand Kolbeck, the French marathon champion in 1972, 73 and 74, who ran for France in the 1976 marathon in the Montreal Olympics. The highest placed Frenchman was Daniel Fossé, French marathon champion in 1975, who was sixth. Kolbeck was eighth. David Clark came fourth in 1hr, 18mins4secs, just over two minutes behind the leader.

## Didn't win

THE team that never lost didn't win either. A Culham seven competed in Harwell's seven-a-side rugby tournament and drew all three of the games they played. But they were out of the semi-final by a hair's breadth when the points were added up.

# CYCLISTS HELP IN MILK RACE

TWO members of Harwell's Instrumentation and Applied Physics Division, Gordon Hinder and Mike Warner, officiated at this year's International Milk Race for amateur cyclists.

The race was the 20th organised and sponsored by the Milk Marketing Board. Gordon has been involved in ten of them. This year he was radio control officer. He maintained contact with all the vehicles by providing a mobile base. "I love the sport and it is a tremendous thrill to be actively involved in Britain's major cycling event," he said. Mike, who drove the American team's bus, was first associated with the race in 1974.

### Competition

"Competition to act as an official in the race is high and we are lucky to be associated with it," he said. "The event is incredibly well organised and everyone enjoys giving his best and responding to all demands to make each Milk Race better than previous ones." Both men are keen cyclists and members of the Oxford City Road Club. Gordon has been cycling and racing for more than 30 years. He's still an active racing man — at present racing once or twice a week. He cycles to Harwell each day, a round trip of about 20 miles. He holds various senior positions in the cycling organisations. His son Andrew is the 1977 junior cycle road race champion of the Thames Valley. Mike has retired from active racing, but still enjoys touring and the occasional 40-mile round trip to work.

# LEAGUE PROMOTION

CULHAM'S snooker team have won promotion from Division Three of the Didcot and District Snooker League at the end of their first year of competitive play. Formed last summer, the team finished third in the league, although they have beaten both the teams who were ahead of them. The club has 31 members — and one table. Pictured round it are the team members Stanley Hughes, Don Summers, Keith Bennett, Bill Stanley, Fred Davies, Robbie McStay and George Cruickshank.



IN THE PHOTOGRAPHS: Above, Gordon Hinder. Below, Mike Warner.



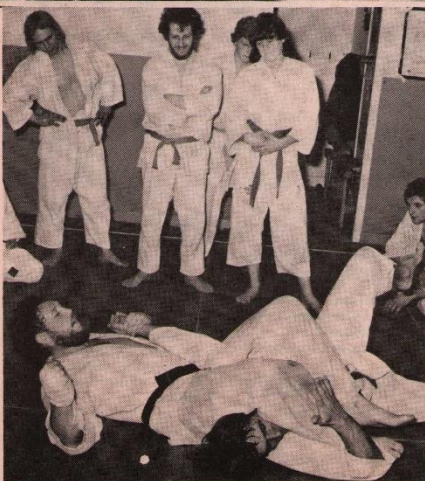
## Singles did it

FOR the first time in four years Harwell beat Risley in their annual golf match. Played at Sutton Coldfield, West Midlands, last month, the match ended in an 8½-6½ win for Harwell who regain the Coleshill trophy. Harwell were 3-2 down after the morning foursomes, but came back in the singles.



## UK team pro gives a lesson

HARWELL judo enthusiasts met Alex Ives last month. Alex is a member of the British international judo team, a world under-21 bronze medallist and a European under-21 gold medallist. The club benefited from an evening training session on techniques and insights into national squad training methods. IN THE PHOTOGRAPH: Alex (left, bearded) demonstrates the finer points of a straight arm lock on club secretary Dave Baker, while members look on.



**NUCLEAR** critics in the Womens Institutes of England and Wales failed to get enough support to ask the Government to postpone building fast reactors until "a more satisfactory means has been discovered of disposing of the latent and permanent dangers of nuclear wastes."

Five thousand delegates in London's Albert Hall on June 2 approved their motion "while in no way wishing to discourage intensive research into the possible uses of nuclear energy."

But the voting was so close that, for the first time in probably a quarter of a century, individual hands had to be counted all round the hall.

Although 62 per cent voted in favour of waiting, there was not the two thirds majority needed before the resolution could be sent to the Government.

"This resolution admits the value of nuclear energy," said Mrs. Gwynneth Watson, wife of an RAF man based at St. Athan, near Barry, South Glamorgan.

But, to protect succeeding generations from the possible dangers of nuclear waste, it was vital to find a site where it could be disposed of that was acceptable to experts and the local population.

# WOMEN VOTE ON FAST REACTOR

Mrs. Ivy Blackwell, from St. Peter Port, Guernsey, only 20 miles from the French mainland, was worried about the possible pollution of the sea, from French nuclear work.

"Accidents can happen . . . experts have been wrong and experts disagree," she claimed.

Mrs. Margaret Collie, from Oxfordshire, failed in a bid to end the debate by proposing that delegates moved to the next business on the agenda. "This is not the time to vote on the resolution," she said.

The situation had changed since it was first proposed. The Government had announced that the Department of the Environment would be responsible for nuclear waste, the public inquiry into British Nuclear Fuels Limited's plans to expand Windscale was beginning.

The subject was both technical and political

and, she claimed, members did not have enough information to reach a sensible decision.

Supporting her, Mrs. Betty Bateson, from Dean, about 15 miles from Windscale, said many people in West Cumbria had lived with atomic energy for 20 years and were happy to do so.

But Lady Anglesey, who was a member of the Royal Commission on Environmental Pollution, pleaded with members to let the discussion carry on. Public debate was needed, she said.

Mrs. June Mortimer, from Montgomery, Powys, said the country could not afford the health risk of not going nuclear "with conventional power stations pouring out half a million tons of carbon dioxide a day."

With a shortage of fuel forecast, "we will be freezing in the dark without nuclear power".

she said, and the nuclear industry was "pushing ahead with all speed to safer waste handling."

Later the conference called on the Government almost unanimously to spend more on research into other forms of power.

Mrs. Iris Shapland, from Harracont, Devon, originally proposed that the Government should give priority to research which would make more use of natural resources and less of nuclear power, but delegates agreed to an amendment which removed the reference to nuclear power.

When a questioner suggested that wind-powered generators would be "desecrating the landscape with great contraptions," Mrs. Shapland replied that they would be no worse than the electricity pylons which already cover the country.

Invited to the conference to answer technical questions, Dr. Wyn Llewelyn, of the Authority's Economics and Programmes Branch, said that 10,000 windmills would provide only one per cent of the electricity the country needed and "two hundred structures like super tankers" might be needed off the west coast of Scotland to turn the power of the waves into three per cent of the country's electricity.

Clifford Blumfield, Director of Dounreay, who also attended the conference to give expert views flew immediately afterwards to Scotland for a television interview. Before the conference many Authority employees had been guest speakers at WI meetings.

## CURE FOR GIANT FAN

A GIANT fan which kept on breaking down in the late 1960s has been running normally for seven years now since its owners bought £250-worth of advice from the National Centre of Tribology at Risley.

The fan is part of the equipment which is used to dry paper at a mill. It was supposed to run continuously but kept on breaking down.

The company which installed it made a number of changes but, although it worked better, it was still not good enough.

So the tribology centre's experts were called in.

They found that, as the metal in and around the fan warmed up, some parts tilted and affected the lubrication.

The cure: set up the fan so that when it was cold it tilted the opposite way. Now, as it warms up it moves into its normal operating position.

But the amount of movement is only about a thousandth of an inch.

## FIRST NUCLEAR GRAN



SIXTY-THREE-year-old widow Mrs. Constance Ladell, Britain's first nuclear gran, has just finished decorating three rooms in her large bungalow and is now preparing for a hard season's gardening.

And Mrs. Ladell was once told she would never be able to look after herself again.

That was before she had a pacemaker, powered by a tiny Harwell-developed plutonium oxide nuclear battery, fitted into the cavity in her chest. Before that, she had been suffering for nearly six years from a chronic heart condition. By 1970 it had made her housebound and barely capable of moving around.

Now, seven years later, Mrs. Ladell is living a normal, active life. The pacemaker should have a life of at least 10 years, and probably nearer 20. Pacemakers with ordinary chemical batteries have to be replaced — and that means an operation in hospital — every two or three years.

The reason for the longer life of the plutonium battery is that its power output falls by only one per cent a year. The radiation it gives off requires the minimum of shielding for it to be perfectly safe. When Mrs.

Ladell's battery eventually shows signs of giving out, replacing it should be no more difficult than replacing a conventional pacemaker.

Mrs. Ladell, who lives in Barnet, North London, said: "For the 18 months before my operation I was effectively a cabbage. I could barely get out of bed. Within a year of having the pacemaker fitted I had moved house and painted the entire outside of my new bungalow. It was really like being reborn."

The Department of Health has ordered 320 of the pacemakers from British Nuclear Fuels Limited. The tiny quantities of plutonium needed are made at its Windscale works in Cumbria. Harwell is helping to make the batteries.

## Response

LESS than a quarter of the members of the London Office Recreation Association responded to a questionnaire asking what social events they would like. And only five per cent had any new ideas, the association's annual meeting was told.

## GOOD TRADE

TRADE over the bar run by the London Office Recreation Association in the Authority's headquarters has more than doubled in three years, the association's annual meeting was told last month.

But the association's policy of keeping prices as low as possible meant that profits were down by about one per cent.

## New chairman

LEN Brookes, of the Authority's Economics and Programmes Branch, is the new chairman of the London Office Recreation Association. He succeeds Ken Varney, chairman for a year, who is moving to Harwell with the Contracts Branch he directed.

## Hot trolley

WHEN Kay Williams left the Authority's London headquarters at the end of last month friends and colleagues gave her a Hostess Royal trolley.

# It has been harder than we thought

## —AGENCY HEAD

THE International Atomic Energy Agency, which celebrates its 20th anniversary this year, has achieved much of what it set out to do, according to its director-general, Dr. Sigvard Eklund.

"The agency has not been unsuccessful in living up to what its statute intended it to accomplish — to spread the benefits of nuclear energy with regard to health and power to the world as quickly as possible in such a way that it was not used for nuclear weapons," Dr. Eklund told Reuters news agency.

Medical advances using nuclear technology have been easier to help along than the widespread use of electricity generated by atomic energy, he said. The road to nuclear power "has been longer and more difficult than was anticipated in 1957" when the United Nations set up the agency.

Even after oil prices quadrupled around 1974 nuclear energy did not increase as much as had been expected, he said.

Dr. Eklund, the agency's director-general since 1961, blamed an increase in people's concern for the environment and the slow-down in the world industrial expansion.

Rapidly changing laws in many countries made it impossible for energy planners to estimate costs accurately, he said.

Despite present doubts, the world needed nuclear energy, he said. "I can't see a world in which an expanding population can survive without nuclear energy."

The agency's aim was not necessarily to encourage nations to turn to nuclear power, he said. Many developing nations could not absorb the power produced by large nuclear plants. "But I am sure nuclear power will gradually be introduced into developing countries."

## He went back to work

FRED Luker, (right) who moved from Harwell to Culham in 1962 and retired last year, went back to work on Friday the 13th last month to receive a medal.

The Lord Lieutenant of Oxfordshire, Colonel Sir John Thomson, (left) presented to him the British Empire Medal which he was awarded in the Queen's new year honours.

Fred was a senior shop steward and convenor of shop stewards until he retired. He was one of the pioneers who developed a workable system for incentive bonuses at Culham.

Fred's own version of his career in a speech at the ceremony was: "All I did was come to work and do as I was told — well, usually."



## Latest

### GOLF RESULTS

(see page 15)

Afternoon round of Authority contest abandoned after thunderstorm flooded greens. Results based on morning round. Springfields win Sir William Penney trophy. Best 18-hole gross: M. Niell, Springfields (69); runner-up, D. S. McPhee, Risley (82). Best 18-hole net, up to 11 handicap: C. Taylor, Windscale (76); 12-18 handicap: R. Hall, Harwell (73). Best net morning round: T. D. Austin, Windscale (74); runner-up, B. N. Eaves, Springfields (77).