



dsg

10 DOWNING STREET

THE PRIME MINISTER

19 September 1980

Dear Sir John,

I am writing to thank you very much for laying on such a full and instructive programme at Harwell last Thursday. It was good to be brought up to date on all that you are doing, and I was impressed by what I saw.

Following the discussion I had over tea with the Trade Unions and Staff Side about last week's Panorama programme on Dounreay, we have now written to Sir Ian Trethowan and have passed on their views.

Papers
in
C.F.

Yours sincerely
Margaret Thatcher

Sir John Hill

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10 DOWNING STREET

CF. London
(90) visit
on Harwell visit
papers in CR

THE PRIME MINISTER

JH

19 September 1980

Dear Sir Ian,

When I visited the Atomic Energy Establishment at Harwell on 11 September, officials of the Atomic Energy Authority and representatives of the Trade Unions and the Staff Side raised with me the BBC's recent Panorama programme on Dounreay.

They expressed their concern both about the content of the programme and the way it was handled by the BBC. They said that the programme lacked balance in that it did not fairly place the incidents discussed in the context of the Authority's achievements and safety record. They thought the programme exaggerated the particular incidents in a manner likely to increase public anxiety unjustifiably. They also complained that the Atomic Energy Authority was not given an opportunity of seeing the programme until it was transmitted, although it was the subject of extensive news coverage beforehand.

In view of the strength of feeling at Harwell about the balance of this particular programme, I agreed to let you know their views.

I should be grateful for your comments.

Yours sincerely

Margaret Thatcher

Sir Ian Trethowan.

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R

PRIME MINISTER

I attach:-

Flag A

Programme and list of AEA staff whom you will meet.

Flag B

Background note prepared by the AEA.

Flag C

Department of Energy brief.

Flag D

Briefing on the Panorama allegations about safety at Dounreay.

Flag E

returned to CF
Sir Keith Joseph's minute on the AEA industrials' pay claim (you will be meeting staff association and trade union representatives: ~~although~~ you won't want to get drawn into discussing their claim, but you may wish to be reminded of it).

As Charles Anson has already mentioned to you, the press conference which had been earlier planned for the end of the visit, has been cancelled - in view of the allegations about Dounreay.

R.

10 September, 1980

UNITED KINGDOM ATOMIC ENERGY AUTHORITY

PROGRAMME FOR THE VISIT OF THE PRIME MINISTER,

THE RT. HON. MRS. MARGARET THATCHER, M. P.

TO HARWELL ON 11TH SEPTEMBER, 1980

| | | |
|------------------|---|--|
| 15.30 | Welcome to Harwell and brief introduction to the Laboratory's Programme | Sir John Hill Dr. Marshall Dr. Roberts |
| 15.40 | Authority work on the PWR Safety Case | |
| | Introduction | Dr. Marshall |
| | Inspection Techniques | Dr. Crocker |
| | Circuit Chemistry and Corrosion | Dr. Williams |
| | Reactor Loop Work | Mr. Henry |
| 16.15 | Radioactive Waste Management | |
| | Development of methods of medium and high level waste treatment | Dr. Roberts Mr. Johnson Dr. Flowers |
| 16.40 | Alternative Energy Sources | |
| | Work of the Energy Technology Support Unit | Dr. Clarke Dr. Dawson |
| 17.05 | Work for Industry | |
| | Items for Harwell's non-nuclear programme | Dr. Low |
| 17.30 | Tea and informal discussions with Harwell staff including Staff Association and Trade Union representatives | |
| 17.45 | Meeting with the Press | |
| 18.00 | Leave Harwell | |

VISIT BY THE PRIME MINISTER TO HARWELL

ON 11TH SEPTEMBER, 1980

AUTHORITY STAFF

| | |
|--------------------------------------|--|
| Sir John Hill | Chairman of the Authority |
| Dr. W. Marshall, C. B. E. , F. R. S. | Deputy Chairman of the Authority |
| Dr. L. E. J. Roberts, C. B. E. | Authority Member and Director of Harwell |
| Mr. F. W. Fenning | Deputy Director of Harwell |
| Dr. F. J. P. Clarke | Research Director (Energy) |
| Dr. V. Crocker | Head of Materials Physics Division |
| Dr. J. K. Dawson | Head of Energy Technology Support Unit |
| Dr. R. M. Flowers | Head of Chemical Technology Division |
| Mr. K. J. Henry | Head of the Research Reactors Division |
| Mr. K. D. B. Johnson | Head of the Authority Fuel Processing Directorate |
| Dr. G. G. E. Low | Research Director (Industry) |
| Dr. J. Williams | Research Director (Nuclear Power) |

NOT FOR PUBLICATION

UNITED KINGDOM ATOMIC ENERGY AUTHORITY

BACKGROUND NOTES FOR THE VISIT OF THE PRIME MINISTER,

THE RT. HON. MRS. MARGARET THATCHER, M. P.

TO HARWELL ON 11TH SEPTEMBER, 1980

Summary of Harwell's Activities in 1980

Harwell was founded in 1946 with a wide remit to carry out research on all aspects of nuclear power development and the use of radioactive substances. It is the largest single site and the principal research laboratory of the UKAEA. The total complement of the site is about 4500 staff, including 1200 fully qualified scientists and engineers, and 1400 industrial staff.

Nuclear power development and related underlying research remains the largest single task of the laboratory, some of which is funded by direct contracts from the nuclear power industry, both at home and abroad, and some from research contracts from other Government Departments or agencies (DOE, MOD, and SRC) and from collaborative agreements with the EEC.

A substantial part of the work at Harwell is outside the nuclear programme and is funded from contracts with industry, from Government Departments and local authorities. Taken together with the contracts carried out for the nuclear industry itself, the sum total makes Harwell one of the largest contract research laboratories in Europe. The main themes are the production, use and storage of energy - which includes technician support to the Department of Energy through the technical support units, ETSU and MATSU; environmental monitoring and control; and other industrial developments carried out for individual firms or for groups of companies, under the general direction of the D.O.I.'s Requirements Boards.

Harwell has been and remains closely engaged with every major nuclear reactor project in the UK and with nearly every aspect of the nuclear fuel cycle. It is a multi-disciplinary laboratory strong in materials research, neutron and nuclear physics, chemical process development and instrumentation. Harwell operates two Materials Testing Reactors (DIDO/PLUTO), together with several particle accelerators used for nuclear research and radiation testing and a number of chemical and metallurgical laboratories equipped to handle radioactive materials. To support this work, Harwell has an effluent treatment system and is also the centre for the collection and packaging of low-level radioactive waste prior to disposal at sea.

The equipment and organisation of the laboratory enables Harwell to respond flexibly to changing priorities in the nuclear power programme. The Authority's Vote funded nuclear power programme is controlled across all Authority sites by a project system which is reviewed on an Authority basis at least once a year; detailed examination of programmes is the responsibility of Project Officers working under three main Project Directors. Of these, the Director of the Fuel Processing programme resides at Harwell whilst the Fast and Thermal Reactor programmes are directed from the Northern Division of the Authority. Harwell also has a particular responsibility for co-ordinating the Radiological Protection and Underlying Research Programmes of the Authority.

In parallel with its nuclear activities, Harwell deploys the technical skills and facilities of the Laboratory in support of non-nuclear industries and organisations on a contract R & D basis. Broadly the same range of technical expertise is involved in both nuclear and non-nuclear applied work and the experience and skills gained in one area reinforce those in the other.

Within the work for Nuclear Power, Harwell has had long experience of fuel and fuel cladding behaviour in gas, water and sodium cooled systems. The effects of irradiation and of corrosion reactions on the steels used in nuclear reactors is one particular study. It is necessary to be able to guarantee the integrity of materials throughout the lifetime of a reactor; to this end, Harwell is developing new techniques for the measurement of small cracks in steels to supplement other inspection techniques.

Harwell takes the lead in the Authority in work of fuel preparation, fuel

reprocessing after irradiation and radioactive waste conditioning and disposal. Work includes the vitrification of high level wastes and the verification of the properties and durability of the glassy products, and also conceptual studies of designs of stores and of repositories. The conditioning of medium level active wastes for storage or eventual disposal is assuming greater importance.

In the non-nuclear energy field, ETSU is responsible for stimulating and managing programmes on the renewable energy sources and on energy conservation. The programmes cover mainly solar heating, biofuels, wave, wind, tidal and geothermal energy and in the conservation area are aimed at demonstrating industrial applications of technologies that will assist in the more efficient use of energy.

As an example of the support to non-nuclear industries, high temperature steels and coating processes for catalyst systems which are used in anti-pollution units in motor vehicle exhausts have been developed. Inspection and non-destructive testing enters into much of Harwell's contract work, a particular example of which has been the development of methods of dynamic radiography of aero-engines carried out in collaboration with Rolls-Royce. Another example is based on laser techniques developed for measurement of fluid flow and turbulence in reactors and process plant. From this Harwell has designed and is currently applying instrumentation for the measurement of fluid flow and combustion processes in diesel and petrol engines as an aid in the development of more efficient engines with lower noxious emissions, a project supported and guided by a consortium of industrial firms.

PRIME MINISTER'S VISIT TO HARWELL: 11 SEPTEMBER
DEPARTMENT OF ENERGY BRIEF

PWR Safety Case

The nuclear industry are now aiming to be ready for a PWR inquiry to begin in May 1982.

Pressure Vessel integrity, and the work of Dr Marshall's group on this subject, will be a crucial part of the PWR safety case, especially in view of the concern that Sir Alan Cottrell has expressed.

In evidence to the Select Committee on Energy the AEA have said that it has now been shown that in order to achieve the required reliability more advanced and sophisticated techniques of crack detection will be needed than were previously thought necessary. We understand that the Authority are now undertaking urgently the development of robust in-service inspection equipment incorporating these techniques.

Energy Technology Support Unit

ETSU was set up by the Department of Energy in 1974 to assess and manage the Department's R and D programmes on renewable energy sources and energy conservation. Since the unit's inception it has moved its emphasis from assessment studies to project and programme management.

The present relationship between the Department and ETSU is currently under review following a Rayner examination of the Department's R and D organisation.

Radioactive Waste Management

RESTRICTED The Authority are developing a process for vitrifying high level nuclear waste known as HARVEST. However BNFL have just informed the Department of Energy and the Department of the Environment that they wish to adopt a vitrification process more similar to the French system AVM. The Authority are also aware of this, though probably only at a high level. Submissions to Ministers on the implications are being prepared.)

Work for Industry

The growth in non-nuclear programmes has been one of the most striking features of Harwell's work over the past 15 years, since the Science and Technology Act 1965 made this possible. Care is taken to ensure that a due proportion of the overheads of the site is allocated to commercial contracts and that they do not benefit from any subsidies from the nuclear vote.



Industrial Pay Negotiations

The AEA's industrial pay settlement date is 1 October. The trade unions recently submitted a claim which would cost some 30%. The AEA have made it clear that this cannot be met in full but they are being pressed by the unions for a formal offer. The unions may, therefore, take the opportunity of the visit to lobby the Prime Minister.

[BACKGROUND: The Authority have prepared proposals for an 11% settlement to run for 8 months. E(EA) considered these on 4 September and concluded that such a settlement would be unacceptably high. The Secretary of State for Energy has asked that E Committee should consider the Government's approach to public sector pay negotiations generally, and pending this consideration the AEA have been advised to not to make an offer to their unions.]



PM'S VISIT TO HARWELL: SUPPLEMENTARY BRIEF

PANORAMA ALLEGATIONS ABOUT SAFETY AT DOUNREAY

Background

The 1973 and 1977 incidents involving the loss of fuel pins were both thoroughly investigated and reported to Euratom. Both would have been reported to the Secretary of State for Energy under monitoring arrangements since introduced and now in operation. The 1977 incident involving a small explosion in a waste storage silo was reported under these arrangements, which have been re-affirmed by the present Secretary of State. The fourth incident mentioned, a minor case of plutonium contamination resulting from incorrect handling of radioactive flasks, was not reported to the Secretary of State, who is considering writing to the AEA about it. The Secretary of State is confident that the reporting arrangements to protect the public interest introduced in 1977 as a result of the two earlier incidents are satisfactory.

Line to Take

The Secretary of State for Energy has called for a report on these incidents and will be making a statement when he has considered the report.

D

✓ Press Office

DOUNREAY: DAILY MAIL ALLEGATIONS ABOUT MISSING PLUTONIUM AND ACCIDENTS

The Daily Mail refers to four alleged incidents, two involving the "loss" of fuel pins, two alleging exposure of workers to radiation. The position on these is as follows:-

1973 "loss" of fuel pin G-7

An irradiated fuel pin of German origin containing 10 grammes of plutonium could not be accounted for after it had arrived in the post-irradiation examination facility. An exhaustive internal AEA investigation concluded that the pin had probably been accidentally sent to the highly active waste silo and had certainly not left the site illicitly. Changes were made in security and accounting arrangements in the light of these investigations.

The accounting discrepancy was not reported to the Department; it was not then the practice to report such incidents to the Secretary of State, although it has been now for a number of years. The discrepancy was, however, reported to Euratom as an inventory difference and included in the published MUF (material unaccounted for) figures for Dounreay for 1973/74. (NB MUF figures for earlier years were not published until 1977).

1977 "loss" of fuel pin V-188

In October 1977 the AEA notified the Department that following their half yearly stock taking of fissile material at Dounreay they had been unable to account for a lightly irradiated fuel pin containing 140gms of uranium (mainly U235) and 25gms of plutonium. Following careful investigations and a thorough search extending for some months (including excavation of the waste pit referred to in the Daily Mail) the Authority were satisfied that the likelihood of theft was very remote and that the pin was still somewhere at Dounreay.

The then Secretary of State was told of the discrepancy in December 1977 and kept informed of progress of the AEA's investigations. The Euratom Directorate of Safeguards were also notified of the discrepancy which was duly included in the AEA MUF figures published for 1977/78.

Safety Incidents

Under arrangements introduced in February 1977 nuclear site operators report to the NII any incident of significance in nuclear safety terms. The NII in turn report these to the Secretary of State. The reports are summarised and published in the HSE's Quarterly Statements of Incidents at Nuclear Installations. In all, 11 incidents at Dounreay have been reported in this way.

/The...

The Daily Mail refers to two incidents. The first, an "explosion" involving sodium occurred on 10 May 1977, was reported immediately to the NII who informed the then Secretary of State on 11 May. The incident was duly published in the Second Quarterly Summary for 1977. The incident involved the chemical reaction of 2.5 kilos of sodium in water in a solid waste disposal facility. The concrete covers of the facility were displaced without significant damage. Nobody was hurt.

The second incident involved the disposal of flasks of radioactive liquor from the reprocessing plant into a waste tank in a controlled area. Paperwork which should have accompanied the flasks did not reach those carrying out the operation with the flasks. The paperwork would have indicated that the flasks were contaminated by very small quantities of plutonium, a total of one gramme. As a result of some of the people involved using hand monitors at the end of a shift or at a meal break plutonium contamination was discovered. Air samples were taken which showed airborne contamination, although this was only a quarter of the permitted levels in relation to the time that those concerned had been exposed. The operation was resumed once the necessary additional precautions had been taken. Eight men were involved. All had whole body monitors. Four were completely clear; four were found to have plutonium in their bodies but the amounts were not medically significant. An inquiry was held and a tightening up of procedures resulted. The incident was not reported to the NII because it was not of a serious nature (ie it took place in a controlled area and no one was exposed to radiation above the limits laid down for safe working).