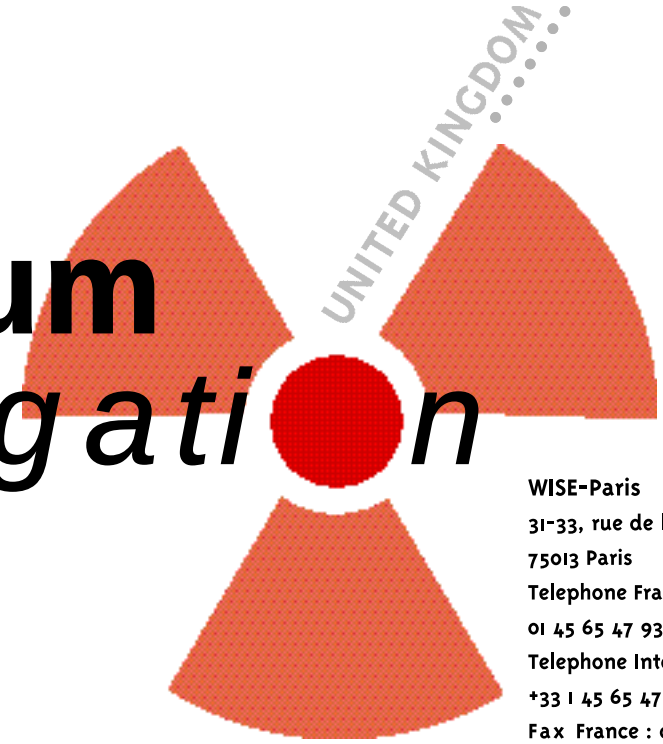
Plutonium *Investigation*



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EDITORIAL

Out of control

The United Kingdom is unique in that it produces massive quantities of plutonium without **any** domestic use for it. No reactor in the UK has a license nor is adapted to use plutonium fuel (MOX). If Sizewell-B, the UK's only light water reactor, were to be converted to MOX use, it would absorb hardly more than 150 kilos of plutonium per year. It would take the reactor some 400 years to absorb the current stockpile of about 60,000 kilos of separated plutonium in the UK. Reprocessing of gas-graphite and advanced reactor fuel continues, although the technical feasibility of dry storage was demonstrated years ago. Foreign light water reactor fuel reprocessing is increasing steadily. When THORP started up first at Sellafield in 1994, the plutonium stockpile in the UK was already over 40,000 kilos. During 1997, the mountain grew by an unprecedented 5,000 kilos.

Of course, there is no plan to introduce MOX into Sizewell-B nor into any other reactor in the UK. And - as illustrated by the spectacular evolution of the stockpile in the country - foreign clients are equally unable to take home their share of this increasingly awkward and expensive material to manage.

The United Kingdom is a Nuclear Weapon State (NWS) and has developed its plutonium production capacity under the particular conditions linked to a highly sensitive arms program: no transparency, no democratic debate, and until recently virtually no formal public involvement in any decision making process. That is history.

The current British plutonium policy lacks any identifiable rationale. That is the present. What will be the future ?

UNITED KINGDOM : The Plutonium Glut

The United Kingdom has been a key country for the plutonium industry. Starting from the late 1940s, the UK developed an experimental and demonstration complex with reprocessing plants, fast-breeder reactors, and plutonium fuel fabrication. Only then, after completing a formidable infrastructure for producing nuclear weapons did the UK develop industrial facilities, sometimes fully shared with the military, as at Sellafield, for the reprocessing of spent fuel. However, it seems as if the UK today is in a plutonium dead-end: it owns the largest stockpile of separated plutonium in the world, but does not have any destination for this material.

Another important feature of the British nuclear electricity industry is due to the institutional reorganisation of the sector. The nuclear power companies are undergoing - with great difficulties - a privatisation process, some time after the rest of the electricity generating sector. The British

CONTINUED ON PAGE 2

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Government has clearly stated that it will not finance the construction of new nuclear power generating capacity, and no private electricity utility seems willing to make such investment.

About one quarter of the British electricity is generated by nuclear power plants. In 1997, the 35 operating reactors generated 97.7 TWh. All but one of the reactors are "graphite-gas", which means that the nuclear reaction moderator is graphite, and the reactor coolant is gas. Twenty of these reactors, called Magnox, use metallic fuel based on natural uranium. Fourteen other reactors, called Advanced Gas Reactors (AGR), use metallic fuel based on enriched uranium. Neither of these reactor types can use MOX fuel.

The last reactor, which is also the most recent one, is the only British pressurised water reactor (PWR). This plant has not been licensed to use MOX fuel.

There are at the moment three nuclear power plant operators: Magnox Electric, which operates twelve Magnox units, BNFL, which operates eight Magnox units (all of which were optimised for and dedicated to military nuclear materials production, plutonium at Calder Hall on the Sellafield site and tritium at Chapel Cross in the south of Scotland), and British Energy, which operates all Advanced Gas Reactors (AGR), as well as the sole Sizewell-B pressurised water reactor (PWR). In December 1997, the Government announced it had decided to merge parts of the two operators of Magnox reactors in order to constitute one organisation which would also operate the reprocessing of the Magnox reactor fuel at the B-205 reprocessing plant at Sellafield.

The Plutonium Dilemma

A significant proportion of the Magnox spent fuel has been reprocessed. Magnox fuel deteriorates during storage through corrosion in the storage pools. Wet storage prior to reprocessing is therefore considered to be limited to about 18 months. Dry storage of Magnox fuel was demonstrated, however, already years ago at the Wylfa power station, in north Wales, which opened in 1971. Spent fuel from AGRs does not deteriorate as quickly as Magnox spent fuel and wet storage periods can be much longer. Nevertheless, BNFL plans to reprocess all of the AGR spent fuel.

A large amount of separated British-origin plutonium has been stockpiled following reprocessing even though there exists no prospect of use for it. Small quantities of plutonium have been used in the demonstration fast-breeder reactor or other experimental programmes, but most of it is stored at Sellafield (See plutonium stockpile page 7). The UK is the only country which has established a plutonium separation programme without initiating commercial plutonium use in parallel. The nuclear industries in other countries which have reprocessed spent fuel initiated plutonium use in MOX fuel, when they realised that the fast-breeder programmes would not be developed as previously forecast.

The Government's Nuclear Review 1995

In 1989, while the British government was making decisions on the privatisation of the electricity sector, it became clear that it would not be possible to incorporate nuclear power stations in the privatisation process. Nuclear generated electricity turned out to be at least twice as expensive as figures on public record had suggested until then. Also, liabilities for waste management and dismantling stayed highly uncertain. In 1989 the Government held a moratorium on any decision to build new nuclear power plants, until 1994 and until a review of the whole nuclear power sector had been undertaken. This review, which was carried out by the Department of Trade and Industry (DTI) and the Scottish Office Industry Department, in consultation with other Government Departments, was completed in May 1995.

Concerning the potential effect of nuclear power on global climate change, the Government concluded that there was "no evidence to support the view that new nuclear power build is needed in the near future on emissions abatement grounds". The Government stated in addition that providing public sector funds for the construction of new nuclear power stations could "not be justified on the grounds of wider economic benefits and would not, therefore, be in the best interests of either electricity consumers or the taxpayer". The nuclear review therefore prolonged the 1989 moratorium on new nuclear power financed by the public sector. No private electricity operator seems interested in nuclear power while investment in gas stations is massive. The UK is thus drifting towards a "natural" nuclear phase-out beginning early next century with the end of the operating lifetime of existing nuclear power plants.

The THORP Plant Recently Licensed For Commercial Operation

The UK Nuclear Installations Inspectorate, one of the Government-sponsored British nuclear safety authorities, gave a "green light" in August 1997 for full operation of the THORP (Thermal oxide reprocessing plant) reprocessing plant. The plant had been operating in limited commissioning mode since March 1994 with a limited license. THORP suffered a nitric acid spill on 29 March

1994 just after initial start up. The plant is designed to reprocess AGR fuel from the British AGRs as well as many types of foreign LWR fuels. THORP was, in principle, entirely financed by its customers for the first ten years of operation, during which 7,000 metric tonnes of spent fuel were planned to be reprocessed. Of this quantity, 30.8% of the spent fuel is from British AGRs, 13.8% is from German LWRs, and 38.2% is from Japanese LWRs. Other customers are from Switzerland, Sweden, Spain, the Netherlands, Canada and Italy. The plant is said to have cost about £2.8 billion.

THORP currently has no firm engagements from foreign utilities for reprocessing services after the baseload contracts. Engagements were signed in 1990 for post-baseload contracts with German electricity utilities, and penalties for cancellation were due to increase significantly by the end of 1994. In December 1994, four German utilities (covering fuel from two reactors) cancelled their 1990 engagements in order to store the spent fuel in interim storage in Germany instead.

An agreement was reached between Nuclear Electric and BNFL in 1991 which planned for the reprocessing of all the spent fuel which would be produced by the Magnox reactors, and about half of the spent fuel which would be produced by AGRs. However, the wording of the contract is not known and there are doubts as to the binding character of the agreement.

During fiscal year 1996-1997 (ending 31 March 1997), the THORP plant reprocessed 398 tonnes of spent fuel, while the B205 plant at Sellafield reprocessed 601 tonnes of Magnox spent fuel.

MOX Fabrication

Even though no power plant unit will use MOX fuel, the UK is constructing an industrial MOX fabrication complex. BNFL already operates a demonstration MOX fuel plant at Sellafield, called MOX Demonstration Facility (MDF). Most of the MOX has been produced for a Swiss utility and was transported by aeroplane to Switzerland from a local commercial airport at Carlisle.

BNFL has also been building a large 120 tonne per year MOX fabrication plant which is in its final construction stage. An initial public consultation was held at the beginning of 1997. The Environment Agency, to which BNFL has submitted the licensing application in November 1996, has requested an independent assessment of the "economic case for operating" the plant. This assessment was opened to another public consultation on 19 January 1998 for two months (see box page 4). A public consultation concerning application to modify BNFL's radioactive discharge licenses (mainly upwards) is also being conducted currently.

The "Return To Sender" Option

The reprocessing contracts between BNFL and its foreign customers contain a clause which states that BNFL has the "option" to return radioactive waste, generated through the reprocessing of the customer's spent fuel, if the waste is in a form suitable for safe transportation and storage. There is no contractual obligation for BNFL to send back radioactive waste. However, the Radioactive Waste Management Advisory Committee (RWMAC) has made it clear it did not accept the disposal of radioactive waste attributed to foreign customers in the UK[1].

BNFL has also stated that if ever it sent back reprocessing waste to foreign customers, it would not send all the waste, but instead make a substitution of waste volumes between high and lower radioactive waste. BNFL is planning to send back a small additional volume of very high radioactive waste instead of all the different categories of radioactive waste which are generated through reprocessing (i.e. the so-called low and intermediate level wastes). The British Government has agreed to this practice in July 1995, but to the condition a geological disposal for radioactive waste is chosen and operated as planned. In February 1998, BNFL's chairman John Guinness stated that such a repository might not be ready before after 2020, this condition would put BNFL "at a competitive disadvantage with the French, who, we understand, have the ability to undertake substitution"[2] . This is a highly questionable interpretation since the French legislation actually prohibits foreign waste storage in the country.

The Dounreay Shaft - Responsibility Dumped With Radioactive Waste

The Dounreay shaft is an example of some of the worst radioactive waste management and disposal practices in the global experience of such activity. The nuclear power development establishment at Dounreay in the North of Scotland was started in the early 1950s for the development of fast-breeder reactors (FBRs) and of FBR fuel reprocessing. It was built in a remote area close to a site at Wick - now used as the local airport for Dounreay - which, at the same time as Dounreay was constructed, was considered by the UK Atomic Energy Authority (UKAEA), Dounreay's owner operators, as a possible site for the testing of UK nuclear weapons.

In 1955, the UKAEA built an underground discharge pipe 65 meters deep for the discharge

of radioactive liquid waste into the sea. It also built a 4.6 meter diameter shaft in order to take out the rock spoil. When the discharge pipe was installed the shaft was sealed at the bottom. Instead of condemning the shaft, or keeping it intact to inspect the discharge pipe, the UKAEA was authorised in 1959 to dump so-called intermediate radioactive waste in the shaft. All kinds of radioactive wastes were dumped in the 75 cubic meter shaft without any precautions as to their radiological or chemical content. There is no precise inventory of the dumped waste, but the shaft is thought to contain 147 kg of highly enriched uranium and 2.2 kg of plutonium, and more than a hundred pieces of fuel elements. The UKAEA was conscious of risks of criticality and in 1968 it dumped powdered boronated glass into the shaft - as if a nuclear reaction could be controlled as you put salt into a pot of soup.

On 10 may 1977, a hydrogen explosion burst the shaft open and dispersed some of the shaft's contents into the surrounding environment. The explosion was completely covered up by the authorities at the time and the whole extent of the environmental damage was only revealed in 1996 by a BBC television programme. Now, some thirty years after waste was first introduced into the shaft and twenty years after the explosion, UKAEA is trying to find a contractor willing to empty the shaft. Costs for cleaning-up, retrieving and repackaging the waste and also dealing with the shaft, are estimated to range up to 500 million pounds and could take 10 to 15 years.

During Autumn 1997, finally, the Scottish Office barred the catching of fish or shellfish for a two kilometre radius around the discharge pipe of the whole nuclear complex, after divers found fragments of irradiated nuclear fuel in seabed sediments. Other hot particles had already been found in the Dounreay environment, for which the plant operators were strongly criticised by RWMAC in recent reports.

The nuclear industry monthly Nuclear Engineering International considers that the Dounreay shaft explosion "created one of the most interesting radwaste problems facing the British nuclear industry". That is one way to put it.

1 see RWMAC,The Import and Export of Radioactive Waste, September 1997 .

2 Nuclear Fuel, 23 February 1998

CONSULTANT ASSESSMENT OF SMP ECONOMIC CASE

In November 1996, British Nuclear Fuels plc. (BNFL) submitted an application for the commissioning and operation of the Sellafield MOX Plant (SMP) at Sellafield, Cumbria, to the UK Environment Agency (EA). A public consultation was organised between February and April 1997 by the Environment Agency as part of the licensing procedure. More than a hundred responses were registered.

According to EA, "several respondents raised the concern that BNFL had not provided an economic case for operating the fuel production plant in its application". According to the EA, this "highlighted" the "need for an in-depth assessment of BNFL's business case for the MOX plant". The EA appointed the PA Consulting Group to perform an assessment, which is open to public consultation at the EA and at affected local authorities until 16 March 1998.

The EA requested the consultant "to assess independently the potential economic and commercial benefits, if any, which are likely to follow from the operation of the SMP". Only one paragraph in the 36-page long PA report concerns exclusively the non operation case for the SMP. PA states that BNFL would lose £50-60 million if the plant were not operated, and would earn £240-300 million if the plant were in operation. PA claims to have used "a series of restrictive assumptions about volumes and duration of production". One of them is that the investment of the installation is to be considered sunk cost. However, no information is given on the advancement of the construction work or on whether or not the entire expenses are thought to be spent already.

The Reference Case considers the operation of the SMP, based on very different engagements on behalf of utilities: there are contracts, letters of intent, production capacity reservations, or mere intentions. According to PA, the large majority of the plutonium required for MOX fuel production is already on site at Sellafield. Taking into account the 53.5 tonnes of separated plutonium at Sellafield as of 31 March 1997, this means that PA estimates a minimum of 700 - 1,000 tonne production for SMP, which corresponds to roughly twice to three times the total quantity of MOX that has been produced to date - world-wide.

PA regards these sales volumes as "secure estimates". Indeed, no analysis is carried out of the plutonium policies in the countries which are most affected. Since no MOX will be used in the UK, BNFL plans to export MOX to those countries which might want to use but do not produce this fuel, namely Japan, Germany and Switzerland. PA states that France, Japan, Germany, Switzerland, Belgium and the UK "view plutonium as a valuable source of energy when recycled, and view such recycling as a valuable part of plutonium management." In each of these countries, there is much debate affecting the development of MOX fuel use. No comments are given on the facts that:

- in Japan, no reactor is licensed to use MOX and the national plutonium policy is in total disarray;
- in Germany, only seven reactors out of twelve licensed use MOX and the industry has a long term agreement with COGEMA for MOX fuel production;
- in Switzerland, only two reactors use MOX;
- in Sweden, which is not even mentioned, no reactor has a MOX license.

The economic case for SMP remains to be proven.

Who's Who ?

In the United Kingdom

STATE and INDUSTRY

BNFL British Nuclear Fuels plc

BNFL is a large industrial public limited company, which mostly provides services related to nuclear fuels. It operates the two industrial reprocessing plants at Sellafield and will soon co-operate all the Magnox reactors. BNFL is also involved in uranium enrichment, fuel fabrication, radioactive waste management, plutonium, tritium and electricty production, and decommissioning nuclear facilities.

RISLEY, WARRINGTON, CHESHIRE WA3 6AS
TEL: +44 1925 832 450 FAX: +44 1925 832 098

UKAEA UK Atomic Energy Authority

The UKAEA is the UK research and development organisation for civil nuclear activities. Currently, nuclear research budgets have been squeezed and UKAEA is very active in decommissioning and cleaning up obsolete installations (an activity called "nuclear liabilities management"). AEA Technology is the industrial subsidiary of the Government Division UKAEA.

521 HARWELL, DIDCOT, OXFORDSHIRE OX11 0RA
TEL: +44 1235 436 600 FAX: +44 1235 436 899

UK Nirex Ltd

NIREX, 40% owned by BNFL, is a company in charge of the management of low and intermediate level radioactive waste. Its future is in jeopardy since the Environment minister under the previous Government refused NIREX permission to continue its underground research in March 1997. RWMAC has recommended that NIREX be replaced by a new organisation with the same objectives, but one which should be independent and have a broad openness policy.

CURIE AVENUE, HARWELL DIDCOT, OXON OX 11 ORH
TEL: +44 1235 825 500 FAX: +44 1235 831 239

DT Department of Trade and Industry

The DTI, which includes the middle ranking Minister for Energy, is the Government's main strategic decision-making body for nuclear matters. The DTI now publishes annual plutonium production and storage figures (see page 7).

ASHDOWN HOUSE, 123 VICTORIA STREET, LONDON SW1E 6RB
TEL: +44 171 215 5000 FAX: + 44 171 222 4382

NRPB National Radiological Protection Board

The NRPB is the official UK authority for radiological protection, based at Harwell. NRPB has opposed French Academy of Sciences experts over the basis of radiological protection. The NRPB maintained that the available data on radiological impacts did not provide information against the current no threshold theory for health effects from low level radiation.

CHILTON, DIDCOT, OXFORDSHIRE OX11 ORQ
TEL: +44 1235 831 600 FAX: +44 1235 833 891

NII Nuclear Installations Inspectorate

The NII is the main British nuclear safety authority. The NII controls the safety of the installations and grants operating licenses.

BAYNARDS HOUSE, 1 CHEPSTOW PLACE, WESTBOURNE GROVE, LONDON W2 4TF
TEL: +44 171 243 6000 FAX: +44 171 727 4116

RWMAC Radioactive Waste Management Advisory Committee

The RWMAC is an independent body - yet appointed by the Environment Minister - that advises the British Government on issues relating to civil and military radioactive waste management and issues public reports on these subjects. RWMAC members are from industry, government, university or local authorities.

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OPPOSITION ACTIVITIES

FOE Friends of the Earth

FOE has been instrumental in exposing NIREX's scientific inconsistencies of the planned intermediate level waste laboratory near Sellafield, which ultimately led NIREX to abandon the license application. In 1998, FOE plans to intensify its activities around plutonium production and MOX fabrication.

RACHEL WESTERN, 26-28, UNDERWOOD STREET, LONDON NI 7JQ
TEL: +44 171 490 1555 FAX: +44 171 490 0881

COLA The Consortium of Opposing Local Authorities

COLA publishes a useful newsletter primarily on British nuclear issues and has been involved in the opposition activities against radioactive waste management as well as the operation of the Sellafield reprocessing plants.

FRED BARKER GLENDENE, DEANROYD ROAD, WALSDEN, LANCASHIRE OL14 6TT TEL/FAX: +44 1706 818 732

Greenpeace-UK

As in other countries, Greenpeace has been active for many years in opposition activities against reprocessing and the risks of nuclear transportation and radioactive discharges.

HELEN WALLACE, CANONBURY VILLAS, N1 2PN, LONDON
TEL: +44-171-865 8100 FAX: +44-171-865 8200
E-MAIL: INFO@UK.GREENPEACE.ORG

CORE Cumbrians Opposed to a Radioactive Environment

CORE has been monitoring activities and events at the Sellafield site located in Cumbria. A very reliable source of information.

MARTIN FORWOOD, 98 CHURCH STREET, BARROW IN FURNESS, CUMBRIA LA14 2HT
TEL: +44 1229 833 851 FAX: +44 1229 812 239

CND Campaign for Nuclear Disarmament

A national organisation, 40-years old in February 1998, which has campaigned against nuclear power for many years because of the inextricable links between nuclear power and weapons and plutonium proliferation dangers.

162 HOLLOWAY ROAD, LONDON N7 8DQ
TEL: +44 171 700 2393 FAX: +44 171 700 2357

SERA Socialist Environment and Resource Association

SERA is the environment "branch" of the Labour Party. It is somewhat independent from the Labour Party concerning civil nuclear issues and has notably published a report which is very critical of reprocessing and of the British management of radioactive waste and outlines recommendations to the Blair Government.

11, GOODWIN STREET, LONDON N4 3HQ
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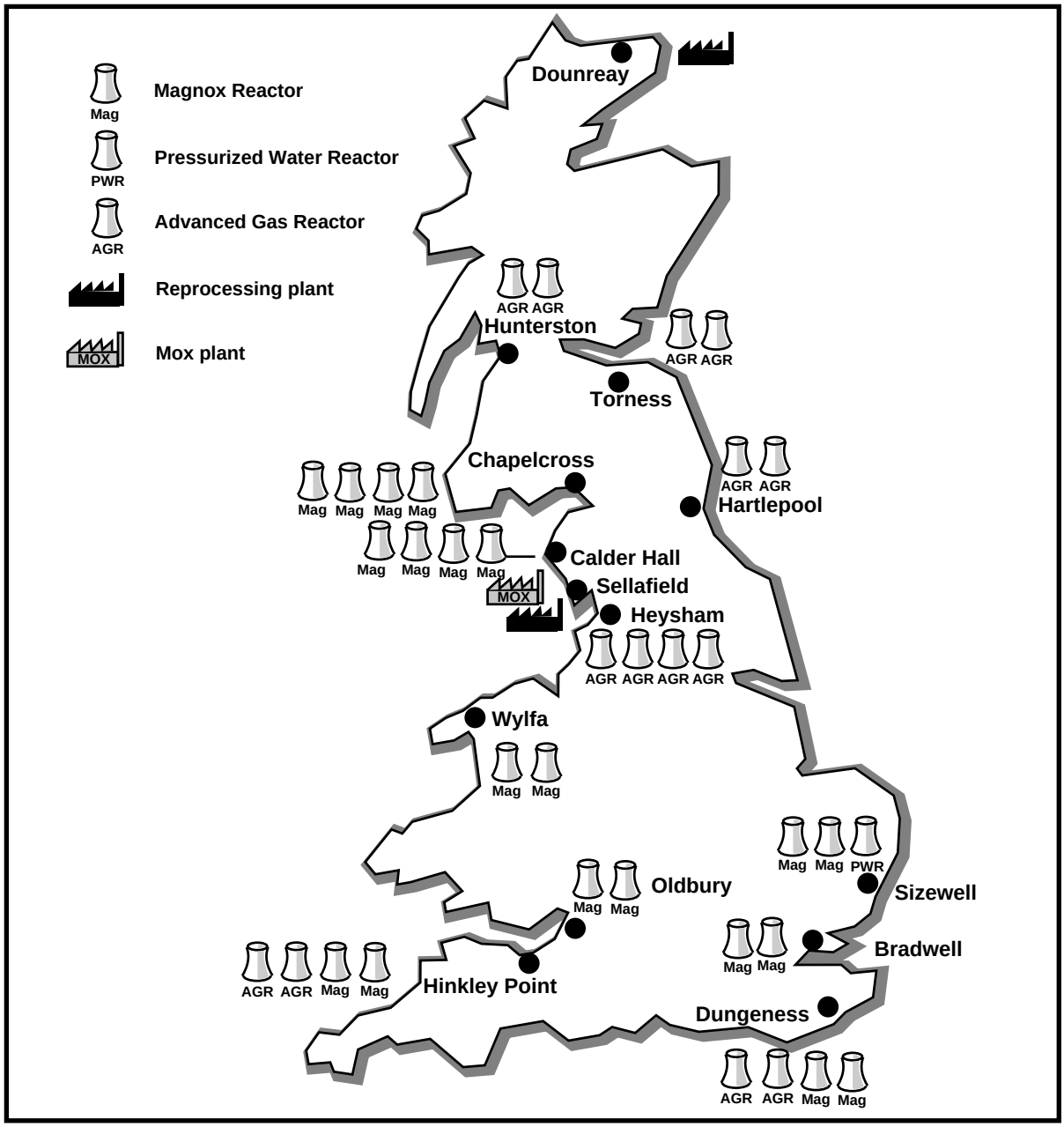
Plutonium
IN UNITED KINGDOM



NUCLEAR POWER PLANTS
Operating British nuclear power plants: 20 Magnox reactors, 14 advanced gas-cooled reactors (AGRs), one pressurised water reactor (PWR).

REPROCESSING PLANTS
Two industrial scale reprocessing plants at Sellafield (B205 for Magnox and THORP for oxide and AGR fuel). One demonstration reprocessing plant for research reactor and breeder fuel at Dounreay (another is undergoing renovation at the same site).

MOX FUEL FABRICATION PLANTS
One demonstration MOX plant at Sellafield in operation (MOX Demonstration Facility, MDF). One industrial scale MOX plant at Sellafield under construction (Sellafield MOX Plant, SMP).

NO BRITISH REACTOR IS LICENSED TO USE MOX FUEL.
Magnox and AGR reactors are not technically able to use MOX fuel, and the only reactor which could theoretically be adapted for MOX fuel use, Sizewell-B, is neither licensed nor planned to be adapted for such use.

Plut'Info

FIGURES OF THE MONTH

The inventory of separated plutonium in the UK, which has doubled over the last ten years, is the largest in the world. Most of the separated plutonium is of British origin, which highlights the inconsistency of the UK plutonium management scheme. As of 31 March 1997, the amount of non-British separated plutonium in the country was less than 5.5 tonnes, that is to say less than 10% of the total separated plutonium of almost 60 tonnes. BNFL is to continue producing very significant quantities of separated plutonium of UK origin, while there is no use for such material in the UK.

As of 31 March of Year	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
Plutonium at all UK nuclear sites but UKAEA sites (in Mt)											
In store as plutonium oxide	25.0	26.5	29.5	32.0	34.0	36.5	38.5	41.5	44.0	48.5	53.5
Unextracted plutonium in irradiated fuel	>17.5	23.5	26.0	28.0	31.0	34.0	37.0	39.5	43.0	49.5	45.0
In process of extraction / fuel fabrication or in other interme-diate forms (eg.nitrate)	2.5	2.0	1.5	1.5	1.5	1.5	1.5	1.0	1.5	2.5	2.0
UKAEA sites (in Mt no detail)	4.5	4.5	4.5	4.0	4.0	4.5	4.5	4.5	4.5	4.0	4.0

16 Tonnes Of Plutonium Produced At La Hague During 1997

The French reprocessing plants at La Hague reprocessed a total of 1,620 tonnes during 1997. The UP2 plant reprocessed 850 tonnes of French spent fuel and the UP3 plant reprocessed 820 tonnes of foreign spent fuel and a total of approx. 16 additional tonnes of plutonium were separated. Most of it will, of course, be added to the plutonium stockpile. A brilliant demonstration of the official French policy of not putting plutonium on the shelves.

WORDS OF THE MONTH

Early Day Motion On The British Plutonium Policy

As of 23 February 1998, 134 MPs had signed the following Early Day Motion, tabled at the House of Commons by Labour MP David Chaytor on 27 October 1997: "That this House is concerned with the ever-increasing stockpiles of plutonium in Britain and the rest of the world; regrets the lack of any clear policy on what to do with this plutonium and in particular the decision by Britain to allow the recycling of some of this plutonium for use in mixed oxide fuel; regrets the lack of a detailed plutonium disposition policy for Britain and the lack of discussion or debate in the House on the potential proliferation risks of Britain's plutonium stockpile and the manufacturing and exporting of mixed oxide fuel by British Nuclear Fuel plc; and calls on Her Majesty's Government to instigate a thorough re-examination of how to deal with Britain's plutonium stockpile that takes account of the many concerns of the public and honourable Members before arriving at a plutonium disposal policy that properly addresses all the potential health, environment and proliferation risks posed by the stockpile."

Plutonium Stockpile A Proliferation Risk ?

Mr Derek Fatchett, Minister of State for Foreign and Commonwealth Affairs, stated to MPs in a House of Commons written reply on 2 December 1997 that "the proliferation risks posed by the use of Mixed Oxide Fuel (MOX) by European Union countries and its transport from EU suppliers to Japan are assessed as being extremely low". He added: "Indeed, the use of MOX fuel reduces proliferation risks by gradually reducing plutonium stockpiles"... which the same government currently allows to increase at unprecedented speed. Ah, politics and logic.

WHAT A WASTE

Belgian Government Says Radwaste Will Stay In France

Large quantities of low level radioactive waste from the reprocessing of Belgian spent fuel shall stay in France. In a response to parliamentary questions, dated 18 february 1998, the Belgian Government states: "The execution of the reprocessing contracts no longer forsees the return to Belgium of Category A waste".
How the French population will appreciate the Belgian glowing gift - illegal under the 1991 Radioactive Waste Act - remains to be seen.

Superphénix Shut Down For Good, Phénix Restart Legally Doubtful

On 2 Février 1998, the French Government issued a clear statement confirming its decision to keep the world's only industrial scale (1,200 MWe) fast breeder reactor shut down and prepare for its decommissioning: "Superphénix will not restart, not even for a limited time span".

The same statement indicated that the almost 25 year old Phénix (250 MWe) fast breeder reactor at Marcoule could be restarted "until 2004 under certain conditions which will have to be respected by the operator".

The reactor was shut down for upgrading work on 7th April 1995 and has been inoperative ever since. The French legislation stipulates that a reactor which is shut down ("à l'arrêt") for more than two subsequent years has to undergo a new licensing procedure. The operators want to restart the reactor by the end of March. Opponents are only waiting for the authorisation to be given to go to court - with good chances.

WORTH READING

The Royal Society
Management of Separated Plutonium
14 pages, February 1998 £12

In late 1996, a Working Group of the Royal Society Scientific Aspects of International Security Group (SAIS) was established by the Royal Society Council to undertake a scoping study on the status of the scientific basis for management of civil plutonium in the UK. The working group is comprised of former industry members, including a former Deputy Chairman of UKAEA and a former Deputy Chief Executive of BNFL, and other scientists. Here are some highlights of the group's stunning critique of the British plutonium policy:

- "The current stockpiling policy should not be maintained without careful study of alternative policies."
- "The present lack of strategic direction for dealing with civil plutonium is disturbing. The Society urges the Government to commission a comprehensive review by independent experts of the options outlined above, covering technical, economic, environmental and security aspects, energy policy issues and taking account of public acceptability and of the opportunity costs of each option."
- "The stockpile of separated civil plutonium at Sellafield poses a greater security threat than would spent fuel".
- "The surest anti-proliferation measure is to stop reprocessing spent fuel and to reduce the quantity of separated plutonium in store."

Refreshing !

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❏ "La France Nucléaire 1997", Mary Byrd Davis, WISE-Paris, 256 pages; 120 FRF + 25 FRF for postage

❏ "Comprehensive Impact Assessment of the Use of MOX Fuel in Light Water Reactors", Jinzaburo Takagi, et al., CNIC, Tokyo, 335 pages; 400 FRF (NGOs 160 FRF) + 60 FRF postage + VAT for Europe (contact CNIC for US and Asia, fax: 81-3-53 30 95 30).
Payment to WISE-Paris by check in FRF or bank transfer.

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