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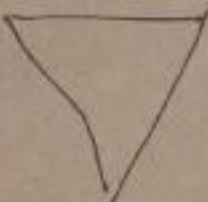

Energy Policy  
Fast Reactor Policy.

307

ENERGY

Part 1: May 79

Pr 13: June 88

Referred to	Date	Referred to	Date	Referred to	Date	Referred to	Date
<del>4-6-88</del>		28.8.90					
<del>13-6-88</del>							
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● PART 13 ends:-

SS/Energy to SS/DoE 25.8.90

PART 14 begins:-

CSF to SS/Energy 3.9.90

THE RT HON JOHN WAKEHAM MP



Department of Energy  
 1 Palace Street  
 London SW1E 5HE  
 071 238 3290

The Rt Hon Chris Patten MP  
 Secretary of State for the Environment  
 Department of the Environment  
 2 Marsham Street  
 LONDON  
 SW1P 3EB

27 August 1990

*Dear Chris,*

**HINKLEY POINT C**

In my letter of 5 June, I said that I was aiming to reach a decision on the CEBG's application to construct Hinkley Point C by early/mid September. Thanks to the clarity of the report submitted by Michael Barnes QC following the public inquiry into the CEBG's application and to the help we have received from your officials and from other Departments we have been able to achieve this timetable in spite of the number of issues raised by the Inspector.

The Inspector recommended that I should give consent to Hinkley Point C and I propose to do so in terms of the attached decision letter, which your officials have seen in draft. If you are content I propose to publish the letter and the Inspector's report on or around 6 September. I know that you have a related decision on footpaths to make and that Cecil Parkinson is considering another related application on by-passes. I hope that it will be possible for us to synchronise these decisions. It will of course be important not to exaggerate the significance of the present consent: we have made very clear that Nuclear Electric will not receive financial approval to proceed with a further PWR station at least until after our review of nuclear policy which is currently scheduled for 1994.

The Inspector expresses some criticism in respect of nuclear regulation; in particular he echoes the criticism made by the Inspector at the Sizewell B inquiry that there are too many bodies with responsibilities for regulating nuclear power. Any changes could well require primary legislation, which it would



probably not be realistic to contemplate in the present Parliament. But I do feel that we shall need to give further thought to this in pursuit of our longer term aim of restoring public confidence in nuclear power. As a first step I have asked my officials to circulate the relevant extracts from the two Inspectors' reports.

The Inspector also makes a large number of recommendations in respect of emergency arrangements, which go well beyond Hinkley Point. Among them are recommendations which would require important changes in the handling of the most serious categories of nuclear accident. Our present approach to nuclear emergency planning is to require operators to draw up detailed plans to protect the public within a specified zone governed by a Reference Accident for the site, that is the accident within the design basis of the particular plant which gives rise to the greatest release of radioactivity. The response to more serious accidents would be based on the detailed arrangements for the reference accident but would also draw on the planning arrangements which exist for civil emergencies in general - a concept known as extendibility. The Inspector supports the concept of extendibility, but recommends that a hypothetical 'beyond design basis' accident should be specified by the Nuclear Installations Inspectorate and that the various bodies responsible for emergency planning around the site should combine to formulate and publish their outline response to the specified accident. I think this recommendation is sensible, and I understand that the principle behind it has the support of the NII, the police authorities and the County Emergency Planning Officers. Although the recommendation is specifically directed at Hinkley Point C it of course has wider implications for other nuclear sites and is likely to impinge upon the work of several Departments. The main effect is that the HSE would provide guidance and advice to County authorities, so that, in consultation with other bodies concerned with emergency planning, in particular the police, they would be able to indicate how their existing general emergency arrangements would respond to the specified scenario. The onus will be on the local bodies to decide in the light of local circumstances how extendibility around their sites should be handled. I regard it as important for presentational reasons that there should be greater room for local decisions on these matters, based of course on the detailed advice of the Health and Safety Executive. I understand that the NII have already circulated to Departments a draft paper on the suggested new arrangements. The final paper will be circulated to all those involved in emergency planning.

Finally, the Inspector devotes a chapter of his report to inquiry procedure. He suggests that there is considerable scope for improving the efficiency of inquiries generally, both at the pre-inquiry stage and in the handling of evidence and cross-examination at the inquiry itself: in particular he suggests the removal of the concept of a 'qualifying objector'. I believe there is much good sense in his proposals, and I share his view



that they should benefit objectors as well as those proposing development. I am, as he requests, passing them on to the Council on Tribunals. It is frankly disturbing that the Hinkley Point C inquiry should have lasted over 180 days, even though the technical proposals, and hence most of the safety aspects, were a precise replica of the Sizewell B station and should not therefore have been in serious dispute.

I would be grateful for your agreement by 3 September. I am copying this to the Prime Minister, John Major, David Waddington, Kenneth Clarke, Malcolm Rifkind, Cecil Parkinson, John Gummer, Michael Howard, David Hunt, Peter Lilley, Sir Patrick Mayhew and Sir Robin Butler.

*John Wakeham*

*John*

JOHN WAKEHAM

The Chairman  
Nuclear Electric plc  
123 Pall Mall  
London  
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DRAFT OF 22 AUGUST 1990

ELECTRICITY ACT 1989, SECTION 36  
TOWN AND COUNTRY PLANNING ACT 1990, SECTION 90

APPLICATION FOR CONSENT TO THE CONSTRUCTION OF THE POWER  
STATION HINKLEY POINT C

I. INTRODUCTION

1. On 27 August 1987 the Central Electricity Generating Board (CEGB) applied for the consent of the Secretary of State for Energy under section 2 of the Electric Lighting Act 1909 to the extension of the Hinkley Point nuclear power stations in Somerset by the construction of an additional generating station to be known as Hinkley Point C, and for a direction under section 40 (1) of the Town and Country Planning Act 1971 (the 1971 Act) that planning permission for the development be deemed to be granted. On 25 September 1987 the CEGB applied for the consent of the Secretary of State under section 10(b) of the Schedule to the Electric Lighting (Clauses) Act 1899 to realign the final spans of two overhead transmission lines associated with the stations and for a direction under section 40 (1) of the 1971 Act that planning permission for that development be deemed to be granted. On 8 June 1988 the CEGB applied to the Secretary of State under section 9 of the Electricity Act 1947 for the confirmation of a compulsory purchase order in respect of land required in connection with the development. On 17 June 1988 the CEGB applied to the Secretary of State for the Environment for the making of an order to stop up certain footpaths in the Hinkley Point area under section 209 of the 1971 Act.

2. Following objections from the local planning authorities, the Somerset County Council and the West Somerset District Council, to the applications of 27 August 1987 and 25 September 1987, my predecessor caused a public inquiry to be held under section 34 of the Electricity Act 1957 into those applications. On 21 March 1988 he appointed Mr Michael Barnes QC (the Inspector) to preside over the inquiry. On 22 August 1988 my predecessor appointed the Inspector under section 13(2) of the Acquisition of Land Act 1981 to hold a public local inquiry in connection with the CEGB's application of 8 June 1988; and on 26 September 1988 the Inspector was further appointed by the Secretary of State for the Environment under section 215(3) of the 1971

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Act to hold a public inquiry in connection with the CEGB's application of 17 June 1988. The three public inquiries were held jointly and were opened on 4 October 1988 and closed on 1 December 1989. The inquiries into the CEGB's applications of 27 August 1987 and 25 September 1987 were governed by the Electricity Generating Stations and Overhead Lines (Inquiries Procedure) Rules 1987 (the Inquiries Procedure Rules). These Rules were revoked by the Electricity Generating Stations and Overhead Lines (Inquiries Procedure) Rules 1990, but by virtue of transitional provisions continue to apply to procedure following the inquiries.

3. This letter addresses the CEGB's applications of 27 August 1987 and 8 June 1988. The CEGB's application of 25 September 1987 is the subject of a separate decision letter dated today to The National Grid Company plc. The Secretary of State for Environment is making known his decision today on the CEGB's application of 17 June 1988.

4. On 21 March 1988 in a statement made under rule 5 of the Inquiries Procedure Rules, my predecessor gave notice that on the information so far available to him the following economic, safety, environmental and planning matters appeared likely to be relevant to his consideration of the CEGB's application to construct a pressurised water reactor (PWR) at Hinkley Point:

- "(1) The applicant's requirement for the power station (particularly in the light of Government policy as set out in the Secretary of State's written Parliamentary answer of 17 December 1987 and in the light of the White Paper 'Privatising Electricity' (Cm 322) presented to Parliament by the Secretary of State in February 1988, in particular paragraphs 44-49).
- (2) The safety features of the design, construction and operation of the station, taking into account the conclusions on the safety of the Sizewell B PWR contained in the report of Sir Frank Layfield QC and the views of the Nuclear Installations Inspectorate, as representing the Health and Safety Executive (the licensing authority).
- (3) The on-site management of radioactive waste arising from the station and radioactive discharges from the station to the environment in the light of the views of the authorising Departments.
- (4) The implications of the proposed development (including construction, operation and decommissioning) for:



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- (a) agriculture and fisheries;
- (b) the local economy including employment;
- (c) water supply and disposal;
- (d) transport requirements;
- (e) coast protection and sea defences;
- (f) housing and public services generally;
- (g) local amenities and in particular areas of special landscape value or nature conservation interest;
- (h) emergency arrangements."

5. On 31 March 1990 by virtue of section 66(5) of the Electricity Act 1989 (the 1989 Act) all property, rights and liabilities of the CEGB passed to nominated successor companies. The application to construct Hinkley Point C has effect as if made by Nuclear Electric plc (Nuclear Electric). The requirement for consent to construct, extend or operate a generating station is now contained in section 36 of the 1989 Act. By virtue of the transitional provisions in paragraph 4 of Schedule 17 to the 1989 Act, the application for consent to construct Hinkley Point C has effect as if made under section 36 of that Act and anything done under the provisions of the repealed legislation, including the holding of inquiries, shall have effect as if done under Schedule 8 to that Act. Sections 40, 209 and 215 of the 1971 Act have now been replaced by sections 90, 247 and 252 respectively of the Town and Country Planning Act 1990.

6. By virtue of rule 16(1) of the Inquiries Procedure Rules, the Inspector was required to make a report on the inquiries to the Secretaries of State with conclusions and recommendations or reasons for not making any recommendations. I received the Inspector's Report on 4 June 1990 and commend him for a thorough and well ordered Report. In making my decision I have considered in particular the views of the local planning authorities, the objections received under paragraph 3(2) of Schedule 8 to the 1989 Act, and matters relating to the preservation of amenity pursuant to paragraph 1(2) of Schedule 9 to that Act.

II. MY ANNOUNCEMENT OF NOVEMBER 1989 ON NUCLEAR POLICY

7. On 9 November 1989, shortly before the end of the inquiries, I announced that all the nuclear power stations and related assets of the CEGB would remain with a Government-owned company, Nuclear Electric, which would retain the ability to construct and operate new nuclear capacity. I emphasised the Government's wish to preserve the strategic role of nuclear power in order to maintain adequate diversity of electricity supply, avoid too great a reliance on a single fuel and obtain the benefits of this environmentally clean source of energy. I noted that as well as a likely contribution to diversity from combined cycle gas

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turbine (CCGT) technology, it should be possible, subject to the views of the Health and Safety Executive's Nuclear Installation Inspectorate (the HSE's NII), to extend the lives of at least some of the Magnox stations. This would have the effect of postponing the date at which replacement nuclear capacity would be required in order to maintain the nuclear contribution at broadly its present level.

8. In March 1990, I set the non-fossil fuel obligation for the period up to 1998 at a level which could be satisfied without the completion by that date of new nuclear stations beyond Sizewell B. As I indicated in my 9 November 1989 statement I mean to review the prospects for nuclear power in 1994; I will review at that stage whether there is likely to be a need for a continuing non-fossil fuel obligation for the period beyond 1998 and if so what it might cover. By 1994 I will have the benefit of the experience in building Sizewell B and a clearer view of the scope for extending the lives of Magnox stations. It will also be clearer what changes in generating patterns will be required, and in particular what contribution new nuclear capacity could make, in order to meet the targets for the abatement of sulphur dioxide established by EEC Directive 88/609 on the Limitation of Emissions of Certain Pollutants into the Air from Large Combustion Plants and any target for the abatement of carbon dioxide. I made clear during the course of the inquiries that the Government did not intend to give capital investment approval for new nuclear power stations beyond Sizewell B before that review.

9. It is against this background of evolving Government policy that I have approached the decisions on whether to grant or refuse consent to the application to construct Hinkley Point C under section 36 of the 1989 Act, on whether to give a direction under section 90(2) of the Town and Country Planning Act 1990 as to deemed planning permission, and whether to confirm the compulsory purchase order.

### III. INSPECTOR'S CONCLUSIONS

10. In Chapter 68 of his Report the Inspector gives his conclusions on the four basic issues he identified; those issues are set out at paragraph 13 below. He concludes:

"1. It is likely that, on a reasonable expectation of future electricity demand and of the retirement of existing plant, there would be a shortfall of capacity in England and Wales at the end of the century of the order of 11 to 12 GW unless new generating plant were constructed. The evidence indicated an increasing level of demand after the turn of the century. There is, therefore, a need to decide in favour of constructing major new generating capacity. This conclusion does not, of course, indicate what should be the nature of the new plant. Nor does it mean that if

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a particular form of plant, such as a PWR, is not constructed there would not be other plant constructed which would make up the shortfall.

2. Apart from considerations of safety and the effect on health and on the local environment it is in my opinion correct that consent should be granted now for the proposed PWR. This conclusion has involved a consideration of legal, economic and policy matters.

3. There are no considerations of safety or the effect on health which prevent the grant of the consent. This conclusion has involved a consideration of the normal operation of the proposed plant and of the risks which result from the possibility of accidents. It has required an examination of the much disputed subject of the maximum levels of risk which may be tolerated from a new nuclear plant and of the actual levels of risk likely from the proposed PWR.

4. There are no local or environmental considerations which prevent the grant of the consent.

The above conclusions on the four basic issues reveal that in my opinion an answer broadly in favour of the application results on each of the issues. It is therefore necessary to go on to the second stage and to consider the overall balance of the main benefits and disadvantages."

11. After discussion of the overall balance of the main benefits and disadvantages, the Inspector further concludes:

"Having considered the four basic issues, and having summarised the benefits and disadvantages of the proposals before the Secretary of State for Energy, I am now in a position to weigh the benefits and disadvantages and come to an overall conclusion. Before doing so it is instructive to compare the situation as it now appears with that which existed at the time of the Sizewell 'B' decision. It is instructive to do so because the two developments at Sizewell 'B' and Hinkley Point 'C' are virtually identical and because the recommendation of the Inspector and the decision of the Secretary of State as regards Sizewell 'B' proceeded by way of a weighing of the benefits and disadvantages of the development....

There would in my opinion be significant disadvantages in the grant of consent for Hinkley Point 'C', most particularly those mentioned at the end of the last paragraph as having the greatest weight. However, when I consider the benefits of granting consent, notably the contribution of the project to the declared aims of diversity in electricity generation, the environmental

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benefits, and the fact that the grant would accord with so many important aspects of government policy, it is clear to me that the benefits substantially outweigh the disadvantages. In these circumstances it is my duty to recommend to the Secretary of State for Energy that consent be granted for the construction of Hinkley Point 'C' under S36 of the Electricity Act 1989, and I make that recommendation."

12. That and related recommendations are set out at paragraphs 68.25 to 68.31 of the Inspector's Report (paragraphs 25-31 in the document entitled "Inspector's Conclusions and Recommendations" which accompanies this letter).

13. In reaching his conclusions, the Inspector identified as the primary issue the question whether the CEGB had shown that on balance the benefits of granting consent outweigh the disadvantages. He structured his consideration and conclusions around four basic issues which he judged needed to be considered before the primary question could be answered. These four basic issues were:

- (a) whether there is a present need to decide in favour of constructing major new generating capacity in England and Wales;
- (b) whether, apart from considerations of safety and the effect on health and the effect on the local environment, it would be correct to grant consent now for the construction of the proposed nuclear plant;
- (c) whether there are considerations of safety or the effect on health which prevent the grant of this consent;
- (d) whether there are any local or environmental considerations which prevent the grant of this consent.

14. I agree that this is an appropriate framework for reaching the decisions which I have to make, and it is the approach which I have adopted.

IV. THE INSPECTOR'S FOUR BASIC ISSUES

A. Whether there is a present need to decide in favour of constructing major new generating capacity in England and Wales

15. I have carefully considered all the evidence on the likely need for new generating capacity in 2000 and beyond. I have examined in particular the argument that the need for major new capacity by 2000 could be avoided by more

intensive energy efficiency, or by postponing the retirement of existing generating capacity. The forecast requirement put forward by CEGB already allowed for a significant 20% improvement in overall energy efficiency in 2000/01 compared with 1986/87. However I believe that there may be even greater scope for energy efficiency and hence a somewhat lower level of electricity demand in 2000 than assumed by the Inspector. I also believe that the shortfall in generating capacity anticipated by the Inspector may be further reduced by the life extension of some Magnox stations. But this will depend on a detailed station-by-station examination of economic and safety issues; and even if possible the life extensions are in any event likely to be for only a limited period. Moreover, beyond 2000, I note that several advanced gas-cooled reactor (AGR) nuclear stations, including Hinkley Point B, will also be nearing the end of their planned lives. I concur with the Inspector's view that the requirement for new capacity is unlikely to fall in the early years of the next century; and I judge that it may increase. I am accordingly satisfied that there will be a need for a significant amount of new generating capacity in England and Wales by 2000, with more required by the time that Hinkley Point C might be commissioned.

B. Whether, apart from considerations of safety and the effect on health and the effect on the local environment, it would be correct to grant consent now for the construction of Hinkley Point C

16. I have carefully weighed up all the evidence relating to the costs of Hinkley Point C and to relevant aspects of policy, particularly as regards diversity of fuel supply and the global environment.

17. The Inspector concluded that the CEGB's estimates of the capital cost of Hinkley Point C were likely to be understated even if construction started immediately. I have taken into account his suggestion that at this initial stage of the project a higher contingency margin of 27.5% would be appropriate. He also took the view that the real cost would rise further as a result of delaying the start of construction until after 1994, not least because of the likely reduction in the benefits to be achieved from replication: his assessment was that the capital cost of Hinkley Point C could rise by a further £154 million (10%) if all the benefits of replication were lost as a result of its delayed start. I have also taken this into account in reaching my present decision. On 26 June 1990, subsequent to the inquiries, Nuclear Electric announced that the capital cost of Sizewell B had risen by around £350m. However, for the reasons I set out below, I do not regard this increase as materially affecting my assessment of the Inspector's conclusions and recommendations. Virtually all the increase is due (a) to a re-attribution of sunk costs of

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the PWR programme and (b) to a reassessment of contract prices on the basis that Sizewell B will be a single PWR project rather than one of a family of four PWR stations. The re-attribution of sunk costs does not increase the future construction costs of Hinkley Point C: indeed to the extent that design costs which were previously to have been shared over four stations are now to be absorbed by Sizewell B, it is reasonable to expect that less will be borne by Hinkley Point C. As regards the renegotiation of Sizewell contract prices, I do not judge that this has significant relevance for the construction cost of Hinkley Point C. What will be significant, as the Inspector points out, will be the number of PWR stations expected to follow Hinkley Point C. This is, however, a question to be addressed in the 1994 review, and until then remains uncertain. For the purpose of my present decision I accept the Inspector's advice that the uncertainty about the eventual cost represents in itself a disadvantage which needs to be weighed in the overall balance.

18. The Government expects the total investment programme of Nuclear Electric, like that of other nationalised industries, to achieve a required rate of return, currently 8%. The specific rate of return for a new PWR project will be a matter for further discussion with Nuclear Electric in the context of the 1994 review, but is unlikely to be less than the overall required rate of return. On this basis I agree with the Inspector that the assessment of new projects is likely to show a cost advantage for some years in favour of constructing new CCGT plant or new coal-fired plant rather than a further PWR station, and that this is a relevant matter for me to take into account. However, I also accept that the size of this advantage is likely to be uncertain. Moreover it must be weighed against the longer-term and less tangible benefits of diversity of fuel sources and the potentially substantial environmental advantages of non-fossil-fired generation. It is the Government's policy not to approve investment in further PWR stations unless they are assessed as being economic over their life taken as a whole, having regard to these wider factors. We shall consider as part of our 1994 review of nuclear policy whether these wider factors are being adequately reflected in the market place. Against this policy background, as well as for the reasons given by the Inspector, I am satisfied for the purposes of my present decision that the purchase of nuclear electricity from Hinkley Point C is not incompatible with the statutory duty imposed on public electricity suppliers under section 9(1) of the 1989 Act to develop and maintain an efficient, co-ordinated and economical system of electricity supply.

19. Renewable energy also contributes to diversity and to the displacement of fossil fuel combustion, and I have carefully considered the evidence concerning its likely cost and availability. The Inspector is confident that at least

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600 MW of new renewable generating capacity will be available by the year 2000 at a cost competitive with a PWR. I have taken into account that the Government's policy of encouraging renewable energy through the non-fossil fuel obligation may lead to even more rapid growth. But I fully endorse the Inspector's conclusion that renewable and nuclear generating capacity should not be regarded as competitors: both have a part to play. In reaching my present decision I have attached particular importance to the potential contribution that Hinkley Point C, if started promptly after 1994, could make towards the targets for reducing sulphur dioxide and carbon dioxide emissions in the early years of the next century.

20. Attached as Appendix 1 to the Report is a report to the Inspector by Professor Ulph, the Economic Assessor to the inquiries, together with a statement by the Inspector under rule 16(3) of the Inquiries Procedure Rules. Professor Ulph argues that in the light of the evidence before the inquiries it was not possible to know what weight was attached by the Government to diversity benefits relative to comparative generation costs, nor what a satisfactory estimate of the capital cost, and hence generation cost, of Hinkley Point C would be assuming implementation does not begin until at least 1994; that these were the most important economic advantages and disadvantages; and that a balance could not be struck between them when the evidence did not allow a view to be reached on them. In the light of Professor Ulph's report I have considered carefully whether it is appropriate for me to reopen the inquiries or otherwise to seek fresh evidence on the economics of the proposed development; alternatively to withhold or refuse consent at least until after the question of investment approval has been considered in 1994. I have concluded that none of these steps is appropriate. As regards the seeking of fresh evidence, I have noted that the major parties to the inquiries decided, after time for consideration, not to apply to call further evidence following my statement of 9 November; and I have received no subsequent representation from any of the parties that further evidence should have been called. As regards whether consent should be withheld for the reasons set out by Professor Ulph, many of the uncertainties, as the Inspector points out, are endemic to consideration of large projects with long construction times in a volatile sector. Some important benefits of diversity may be difficult to quantify. I shall review the economic prospects of the project and the need for a continuation of the non-fossil fuel obligation for a period beyond 1998 as part of my review of nuclear policy in 1994. Although I cannot prejudge the outcome of that review or the probability of investment approval for Hinkley Point C, I am satisfied for the purposes of my present decisions that the possibility of investment approval cannot be excluded. On this basis, I would not be justified in denying consent and deemed planning permission to the main application solely on

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the basis of economic uncertainty. On the other hand, I accept the Inspector's conclusion that the uncertainties set out by Professor Ulph do constitute a factor which weigh against consent, and I have accordingly taken them into account in reaching my overall decision.

21. I have already discussed the uncertainty concerning capital cost. Another concerns the likely starting date of the project in the event that investment approval is granted following the 1994 review. This affects the appropriate time limit to attach to any planning permission deemed to be granted now. If the standard time limit of five years is set, but investment approval were not to be given until early 1995, this would leave an unreasonably short period of time for Nuclear Electric to resolve any outstanding planning matters and place contracts. Therefore if I gave consent and directed that planning permission should be granted I would be minded to set a time limit of seven years, which would seem to me a reasonable balance between the interests of Nuclear Electric and the local community. A further uncertainty concerns the detail of the design, configuration and rating of the plant. As the Inspector recognised, the delayed start to Hinkley Point C makes it likely that technical improvements will come forward which could enhance the safety or competitiveness of the station. I would therefore be minded in any consent to cover the possibility of adopting such improvements, subject of course in each case to their acceptability to the HSE's NII.

22. I have also taken into account evidence on other matters in the Report relevant to this issue, including the cost and availability of uranium and nuclear insurance. In some areas the Inspector has made specific recommendations. I set out my response to these at paragraph 40.

23. In June 1990 the Select Committee on Energy published a report on The Cost of Nuclear Power. The Committee noted that it may be possible to justify further nuclear investment in 1994 despite the currently unfavourable economics of nuclear power. However they regarded it as "essential that in doing so the economics of nuclear power are in no way glossed over, that the full costs and risks of nuclear power are ascertained as closely as possible, and that this analysis be fully exposed to public examination prior to decisions being taken. In that way, the cost of diversity of supply and reduced pollution by means of nuclear power can be compared with the cost of achieving the same ends by other means." While this is relevant to the decisions which I shall make in 1994, the Committee's report does not contain new evidence or raise new issues which I consider need to be referred to the parties to the inquiries before I reach my present decision.



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24. The Inspector's overall conclusion on this second basic issue is that the balance of advantage is in favour of the grant of consent, having considered all legal, economic and policy matters. I accept his conclusion.

C. Whether there are considerations of safety or the effect on health which prevent the grant of consent

25. The Inspector found that the level of exposure of the public to radiation from the normal operation of a PWR at Hinkley Point was unlikely to exceed 15 microsieverts per year. As regards workers, there was a high degree of confidence that in its normal operation the proposed development would comply with all limits on operator doses at present imposed by law or suggested by official bodies. It was possible notwithstanding previous shifts of plans and of policy, to be reasonably confident that a satisfactory route would be available for the disposal of the solid radioactive waste which will arise from the operation and decommissioning of the PWR. There was no evidence to doubt that the complete decommissioning of the PWR, including the ultimate unconditional release of the site, was feasible. As regards accidents the Inspector found that the risk of radiation-induced death to a person living 1km from the station was likely to be much lower than 1 in 100,000 per year, and to a person living 5km from the station much lower than 1 in 1,000,000 per year. On the basis of these and his other findings the Inspector concluded that considerations relating to safety and accidents should not prevent the grant of consent. I accept this. The Inspector makes a number of detailed recommendations in respect of health and safety and emergency arrangements. I set out my response to these later. I am satisfied that the proposed emergency arrangements for the station would not be in breach of any legal obligations derived from any source applicable in this country.

26. The Inspector records in passing several concerns about the discharge authorisations from the Department of the Environment and the Ministry of Agriculture, Fisheries and Food (the Authorising Departments) under the Radioactive Substances Act 1960; in particular that the present authorisations for the existing stations at Hinkley Point left too wide a margin above actual discharge levels. The Authorising Departments were already proposing to set, after public consultation, revised authorisations later this year. The revised authorisations will include substantially reduced limits on gaseous and liquid effluent discharges at Hinkley Point A and B, which more closely reflect current discharge levels. The important radionuclides will be separately limited, and the relationship between discharges and radiation doses to the public will be set out in an explanatory memorandum which will accompany the revised certificates of authorisation.

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27. In reaching his conclusion on safety the Inspector drew attention to the evidence of a raised incidence of childhood leukaemia and non-Hodgkin's lymphoma around some nuclear installations. He concluded that on the evidence and on the then present state of knowledge it was possible, but most improbable, that there was some causal link between the operation of the installations and a generally increased risk of leukaemia among children living nearby; and that consent to Hinkley Point C should not be refused on these grounds. But he urged that a more systematic and comprehensive approach to childhood leukaemia investigation should be adopted, as a means to identifying and remedying the cause; and he endorsed the recommendation by the Committee on Medical Aspects of Radiation in the Environment (COMARE) that there should be studies on a nationwide basis.

28. Subsequent to the inquiries, in February 1990, a paper was published by Professor Martin Gardner and others on leukaemia and lymphoma among young people near the Sellafield nuclear reprocessing plant in West Cumbria. The paper documented a statistical association between the excess incidence of leukaemia and non-Hodgkin's lymphoma in children near Sellafield and employment of the father of the affected children at Sellafield. In particular, the study suggested that there is an association between the risk of having a child with leukaemia or non-Hodgkin's lymphoma and the recorded level of external radiation doses received by the father before the child was conceived. In April 1990 COMARE, in a published Statement of Advice to Government, took the view that the results of the study undertaken by Professor Gardner and his co-workers were important, but that they needed to be interpreted with caution. COMARE pointed out that the conclusions were based on very small numbers and that a study of this type could not provide evidence of a causal relationship. The further research studies recommended by COMARE have been urgently put in hand: preliminary results are not, however, expected until towards the end of 1991. In assessing the materiality of the Gardner Report and its appraisal by COMARE to my present decision, I have taken into account on the one hand the Inspector's view that if there were a likelihood that discharges to the environment of radioactive materials from Hinkley Point C or some other aspect of its operation would cause an increase in the level of childhood leukaemia among those living in the vicinity, then this would represent a strong reason against my giving consent. On the other hand the advice of the Department of Health is that they accept the view of COMARE that the Gardner conclusions must be interpreted with caution. I have moreover placed weight on the evidence given to the inquiries by the Director-General of the HSE as summarised in the closing submission of the HSE's NII, that if further research work confirms a causative link between nuclear power stations and leukaemia then the situation would be reviewed, and on HSE's assurance to the inquiries that it had sufficient powers to ensure

that the licensee does whatever is necessary for the safety of his employees in this matter. On this basis I have concluded that the Gardner report ought not materially to affect my assessment of the evidence presented to the inquiries or the conclusions which the Inspector reached.

D. Whether there are any local or environmental considerations which prevent the grant of this consent

29. The Inspector has reached conclusions on the various planning and local issues under a number of headings, including conformity with the Somerset Structure Plan, the visual impact of the proposed development, the effects on ecology and on the local economy, and the likely impact of providing for the accommodation of employees during the construction phase. Having carefully considered all the evidence given on these and other local issues, I accept the Inspector's conclusion on the fourth basic issue that although the visual and other disadvantages outweigh the local benefits, they are not such as to prevent the grant of consent, but they do need to be considered in the final balance of benefits and disadvantages.

30. At the same time, in accordance with my duty under paragraph 1(2) of Schedule 9 to the 1989 Act and in the light of the Inspector's Report, I have considered whether further steps can reasonably be taken to preserve environmental amenity. I am conscious that the area is not only a designated site, under the Ramsar Convention on Wetlands of International Importance (Cmd 6465), but has also been identified as a potential Special Protection Area under EC Birds Directive (79/409/EEC). I accept the Inspector's outline conclusions for shortening and realigning the sea-wall, which will preserve more of the existing cliff-line, and for further improvements to the CEGB's proposed landscaping at Hinkley Point, subject in both cases to the detail being approved by the local planning authority: and I agree that it would be appropriate for conditions to this effect to be attached to any deemed planning permission. I agree that on the evidence presented the land sought to be acquired by compulsory purchase would not be excessive in area save for that part which is not needed if the sea-wall is shortened. However, I consider that its compulsory purchase now would not be merited in view of the uncertainty as to whether and when construction of Hinkley Point C will start. I intend accordingly, and without prejudice to the consideration of any further order made by Nuclear Electric in the future, not to confirm the Central Electricity Generating Board (Hinkley Point 'C') Compulsory Purchase Order 1988. In my assessment of the environmental and ecological issues I have borne particularly in mind that the Nature Conservancy Council do not object to the development.

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31. As regards other local matters, I accept that a temporary hostel should be provided on site for construction workers. I rely upon Nuclear Electric's assurance that they will seek to provide a site for residential caravans either at Donniford or elsewhere. I agree that it would be appropriate to attach to any deemed planning permission conditions - essentially in the form recommended by the Inspector - bearing on such matters as the layout and design of the development, non-nuclear waste disposal and noise and fire arrangements. I accept the Inspector's conclusion that neither the construction of a new rail link nor the use of the present or a relocated rail siding in Bridgwater constitutes a realistic option for handling the movement of materials and persons which would arise from the construction stage of Hinkley Point C.

32. In reaching my decision I have taken full account of the proposed Second Alteration to the Somerset Structure Plan which was submitted by Somerset County Council to the Secretary of State for the Environment for his approval after the close of the inquiries. The Secretary of State for the Environment has not yet considered the proposed alterations, or any objections and representations made in respect of them, in accordance with his functions under Part II of the Town and Country Planning Act 1990. However, I have considered the proposed alterations so far as they affect this application, and I have concluded that they do not constitute new evidence of sufficient significance to lead me to disagree with the Inspector's recommendations or otherwise materially to affect my decision, and that accordingly they do not raise any matter which calls for reference back to the parties before I proceed to my present decision. In particular I have noted that the visual impact of Hinkley Point C from the Quantock Hills Area of Outstanding Natural Beauty was fully considered by the Inspector.

33. I have given particular thought to the Inspector's conclusions on the timing and the control of the decommissioning of Hinkley Point C. I note that the Inspector accepts the basis of the CEGB's analysis which identifies three stages of decommissioning, the last of which (Stage 3) involves final dismantling of the remaining plant and final clearance of the site. The Inspector argues that no reason was put forward for delayed Stage 3 decommissioning for a PWR and that Stage 3 decommissioning should be completed as soon as reasonably practicable after the final shutdown of the reactor. He made clear, however, that his conclusions related only to a PWR built at Hinkley Point, and not to the decommissioning at other sites or of other types of reactor. I accept the Inspector's conclusions in principle but, as the Inspector points out, the various considerations that will affect the precise timetable for decommissioning will need to be reassessed

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nearer the time. I agree with the Inspector that it would not be right now to impose a particular timetable.

34. Safety must be paramount in decommissioning, as it is in reactor operation, and this is ensured by the need for the arrangements to be governed by the requirements of the HSE nuclear site licence. Subject to this I accept the Inspector's view that amenity and other local aspects ought to be taken into account in the reassessment along with economic and practical issues. However, I also agree with the Inspector that it would not be appropriate to include in a consent for Hinkley Point C a general requirement for a public inquiry prior to decommissioning. The CEGB offered an assurance that they would consult the local planning authorities on the decommissioning of the station. While I attach considerable weight to an assurance of this kind, I agree with the Inspector that it does not adequately safeguard the public interest as far as the timing of stage 3 is concerned. I therefore consider it appropriate that if deemed planning permission is granted it should include a condition which builds on the CEGB's assurance but provides that if agreement between Nuclear Electric and the local authority cannot be reached on the timetable for stage 3 as defined in the Report, that issue can be referred to me by either side for decision without holding up progress on Stages 1 and 2. But I am not convinced it is necessary to require my approval if the timing of Stage 3 decommissioning can be agreed at local level; nor that it is appropriate for me to be involved in arbitrating on other aspects of the decommissioning of Hinkley Point C.

35. CEGB have also offered, and Nuclear Electric have subsequently endorsed, a number of other assurances to me, which are set out at Annex A to this letter. I consider assurances 1-13 acceptable although in some cases, for example on off-site woodland screening and prevention of fumes and dust, I accept the Inspector's recommendation (see Further Recommendation 10) that additional steps would need to be taken. I also agree with the Inspector's view (see Further Recommendation 8) that a fresh undertaking should be offered to the Wessex Region of the National Rivers Authority in respect of a shortened and realigned sea-wall.

V. THE INSPECTOR'S PRIMARY ISSUE: MY CONCLUSIONS

36. The primary issue considered by the Inspector was whether on balance the benefits of consent outweighed the disadvantages. I have studied carefully the Inspector's assessment of the relative importance of the factors he has considered in reaching his final recommendation. On safety I have weighed up the risk associated with Hinkley Point C. The Inspector assesses the risk of death from radiation effects from normal operation and from all causes of accidents for a typical person living five kilometres from the plant as much lower than 4 in 10 million per year. I

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agree that this is slight. Like him, I place greater weight on the threat to local health and the wider economic disruption that could follow a serious accident at Hinkley Point C, but I believe this has to be balanced by its extreme improbability. Apart from the objective assessment of risk, I have also attached weight to the fears of nuclear accidents voiced at the inquiries. Anxiety about a catastrophic accident, however unfounded or disproportionate to the actual risk, is in itself an important factor counting against the development, although I believe that the improvements in emergency arrangements proposed by the Inspector will help to further allay public concerns. As regards local and environmental issues, I agree closely with the Inspector's assessment. The local impact is on balance negative, but has to be considered in the context of an existing site with two nuclear stations which are unlikely to be finally dismantled for many years. I have taken into account that the conditions which I would attach to any deemed planning permission and the assurances offered by the CEBG and endorsed by Nuclear Electric would help to ameliorate the adverse local effect of the development. As regards the economic aspects of Hinkley Point C, there is uncertainty about whether, when and to what extent a PWR at Hinkley Point is likely to prove cost competitive in relation to other forms of electricity generation. On the other hand there is a need for new generating capacity beyond the turn of the century as demand grows and existing stations are retired. Much of the retiring capacity comprises nuclear capacity, so that without replacement nuclear plant the contribution of nuclear power to electricity supply will fall sharply. I attach strong importance to greater diversity of fuel supply and in particular - for global environmental reasons - greater diversification away from fossil fuels. I regard this as a powerful advantage in favour of Hinkley Point C, and I share the Inspector's view that this factor outweighs the cost disadvantages described in his Report as well as the safety and local disadvantages of a PWR at Hinkley Point. I have accordingly concluded, in line with the Inspector's recommendations, that consent and deemed planning permission should be given for the construction of a PWR at Hinkley Point.

### VI. STATUTORY DECISIONS

#### FORMAL RECOMMENDATIONS

37. Accordingly I have decided:

- (a) to grant consent under section 36 of the 1989 Act for the extension of the Hinkley Point nuclear power stations by the construction of an additional PWR generating station, and for its operation as extended;

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(b) to direct that planning permission for the above development, including by way of ancillary development a temporary workers' hostel, should be deemed to be granted pursuant to section 90(2) of the Town and Country Planning Act 1990;

(c) not to confirm the Central Electricity Generating Board (Hinkley Point 'C') Compulsory Purchase Order 1988;

(d) that there should be imposed on the deemed planning permission referred to at sub-paragraph (b) of this paragraph the conditions set out at Part 2 of the Appendix to Chapter 66 of the Inspector's Report, (Part 2 of Appendix 3 of the document entitled "Inspector's Conclusions and Recommendations") subject to amendment of the time limits and other minor and drafting changes. The conditions to be imposed are set out in full in my formal consent and direction as to deemed planning permission;

(e) to accept to the extent set out in Annex A to this letter the assurances offered by the Central Electricity Generating Board and endorsed by Nuclear Electric.

38. My consent and direction are given without prejudice to any decision I may make on the granting of investment approval in respect of the Hinkley Point C PWR.

**VII. FURTHER RECOMMENDATIONS**

39. In addition to the Formal Recommendations leading to the statutory decisions I have reached in paragraph 37 above, the Inspector made a number of Further Recommendations for study or action. These range widely in both character and substance. In two cases, Further Recommendations 8 and 10, the recommendations relate to undertakings of assurances offered by the CEGB in support of their application for consent and deemed planning permission, which the Inspector for one reason or another finds inadequate. Having regard to the Inspector's argument and also to my duties under paragraph 1(2) of Schedule 9 to the 1989 Act, I have decided that the intention of these recommendations should be given effect through conditions to be attached to the planning permission I am directing should be deemed to be granted. Another recommendation in the

conclusion to Appendix 2 (Costs) to Chapter 68 relates to the making of an order as to costs in respect of the compulsory purchase order: such an order would be under section 250(5) of the Local Government Act 1972 as applied by paragraph 5(1) of Schedule 3 to the 1989 Act and section 5(1) of the Acquisition of Land Act 1981. As I indicate below, I am minded to make such an order. In some other cases (for example Further Recommendations 5 to 7(3)), the recommendations are addressed to Nuclear Electric in respect of matters specific to Hinkley Point C which fall to be decided by other regulatory authorities and which I do not consider appropriate to require as conditions of my consent. My endorsement or otherwise of these Further Recommendations should be construed as a statement of policy: it cannot prejudice the decision of the regulatory body concerned. A fourth and larger category of recommendations is either more generally couched or, although directed at Hinkley Point C, in fact has wider implications: I intend my response to these to represent a statement of policy.

40. I set out below the text of the Further Recommendations and my responses to them.

Recommendation 1:

"I recommend to Nuclear Electric and the Department of Energy that if diversity in sources of electricity generation is to be relied upon in support of the construction of further nuclear facilities the work started by Professor Ulph and the CEGB described in Chapter 17 should be continued and elaborated on, in an attempt to arrive at a more accurate quantification of one aspect of the benefits of diversity. (see Chapter 17)."

I note that several of the important benefits of diversity are not amenable to quantification and must rest upon broad strategic judgements. Nevertheless, in advance of the 1994 review of nuclear policy which I announced in my statement of 9 November 1989, I endorse the proposal that Nuclear Electric should continue their efforts to quantify the benefits that nuclear power has in reducing the impact of volatility in fossil fuel prices. I agree that my Department should also study this, and in due course publish its conclusions.

Recommendation 2:

"I recommend that if consent for Hinkley Point 'C' is given and the PWR is commissioned the operators of the plant should present triennial reports to the Secretary of State for Energy in which they should state



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- (i) the up to date estimate of the cost of decommissioning of the plant with a full explanation of how that estimate is arrived at, and
- (ii) details of the provision that has been and is intended to be made to meet that cost.

The reports should be published. (see Chapter 22)".

I attach importance to greater transparency of nuclear costs and the Government has agreed that separate information about the costs of generation from Magnox, AGR and, in due course, PWR stations should be provided by nuclear operators. As regards decommissioning costs, I agree that Nuclear Electric should provide me with up to date assessments, and that, subject to any reasonable constraints of commercial confidentiality, those assessments should be published. I will discuss with Nuclear Electric the content and frequency of those assessments and will publish the conclusions reached.

Recommendation 3:

"I recommend to the Secretary of State for Energy that, unless there are commercial or security considerations which would prevent it, consideration should be given to the provision and publication of future plutonium figures as actual calculated quantities expressed in kilograms per station with appropriate error bands specified for the quantities per station and for the totals. (see Chapter 31)".

I accept this recommendation. As the Inspector recognises, the precise amount of the plutonium content of fuel discharged in any one year is uncertain to within +/- 1% for the CEGB as a whole and +/- 5% for individual stations. Recent figures of discharges and dispatches were rounded solely to avoid a spurious precision. There are, however, no commercial or security reasons why estimates referring to kilogram quantities should not be published in future. I accordingly intend to publish the figures in the detail which the Inspector proposes, while at the same time emphasising the appropriate error bands.

Recommendation 4:

"I recommend that if future proposals are put forward for further nuclear facilities which would involve the importing of uranium the applicants should use their best endeavours to present information to any future inquiry on conditions for workers and the public in the countries concerned who might be affected by the mining

and processing of uranium for the project. (see Chapter 31)".

I do not endorse this recommendation. I recognise that the sustainability of overseas uranium supplies as well as their cost is likely to be an issue at future inquiries. It will, however, be for the Inspector at those inquiries to decide what information is relevant to the issues before him.

Recommendation 5

"I recommend that Nuclear Electric should carry out occasional monitoring in the marine environment at varied sites beyond the present locations and distances from the stations at Hinkley Point used for regular monitoring. (see Chapter 37)".

The Government accepts the importance of comprehensive environmental monitoring programmes by nuclear operators and acknowledges the significant public reassurance such programmes provide. The desirability of extending the marine environmental monitoring programme at Hinkley Point was recognised by the Ministry of Agriculture, Fisheries and Food when studying the results of its "Investigations of Exposure Pathways from Liquid Effluent at Hinkley Point Power Station: Local Habits Survey 1986" (Fisheries Research Data Report No 13). Accordingly, in January 1989, the Ministry asked Nuclear Electric to make certain changes to their existing programme, including the introduction of monitoring of silt from the River Parrett estuary. These changes have been implemented since the third quarter of 1989. The Inspector's recommendation has therefore been fulfilled. The terms of authorisations for radioactive waste discharges provide for authorising departments further to extend or modify monitoring requirements in the light of changing circumstances.

Recommendation 6

"I make the following recommendations to Nuclear Electric.

- (1) The precise status of the requirements in the Design Safety Criteria relating to beyond design basis accidents should be clarified.
- (2) There should also be clarification of the circumstances in which failure to demonstrate compliance with these requirements is or is not acceptable in relation to any project.
- (3) Consideration should be given to amending and refining these requirements so that (a) separate requirements are specified for different categories of beyond design basis accidents depending upon the seriousness of the consequences, and (b) degraded core accident sequences not leading to an

uncontrolled release are brought into the requirement of a maximum total probability of accidents. (see Chapter 46)".

I endorse the Inspector's recommendation. The HSE's NII have agreed to reflect the recommendation in their Safety Assessment Principles, but also need to take into account parallel international developments in this area.

Recommendation 7

"On the subject of emergency arrangements I make the following recommendations. I indicate in respect of each recommendation, where appropriate, the bodies most affected by it.

A The subject of the proper application of the concept of the reference accident to the circumstances of the operation of a PWR at Hinkley Point

- (1) If consent to the construction of a PWR at Hinkley Point is granted by the Secretary of State Nuclear Electric should state a definite intention that, subject to and with the approval of the NII, they will use the present early Magnox reference accident as the basis of detailed emergency planning for a PWR irrespective of whether the present reactors on the Hinkley Point site continue in operation.

This recommendation is for Nuclear Electric and the NII.

- (2) This accident could more accurately and appropriately be described as what it would be once the Magnox reactors at Hinkley Point had ceased to operate, ie a notional limited accident which formed the basis of emergency planning on the site, and not as the reference accident for a PWR.

This recommendation is for Nuclear Electric and the NII."

The "reference" accident (ie the most serious accident the probability of which, although small, is sufficiently large to justify detailed emergency planning) for the early Magnox design at Hinkley Point A involves a detailed emergency planning zone within a radius of 3.5km from the station. The reference accident for the later Magnox design, and for the AGR (such as Hinkley Point B) and the PWR (such as is proposed for Hinkley Point C) would not lead to anyone outside the site boundary receiving a dose at or above the emergency reference level for evacuation. Nevertheless the detailed emergency planning zone of 3.5km has been adopted for Hinkley Point B, and I endorse the recommendation that it should be adopted for Hinkley Point C, with the consequential change in description of the reference accident suggested by the Inspector. This will ensure that

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existing emergency plans, which are familiar to the bodies concerned and which do provide a basis for extendibility would be kept in being after the existing stations at Hinkley Point are closed. The HSE have accepted the two recommendations and the HSE's NII will be pursuing the matter with Nuclear Electric.

I have considered whether this recommendation has implications for other nuclear stations. I believe that the guiding principle at any site where there is a detailed planning zone should be large enough to deal with the appropriate reference accident and there should be the capability of an extended response in the event of a more serious accident. I do not believe however that the early Magnox reference accident is an appropriate basis for detailed emergency planning at all stations. The size of the detailed emergency planning zone is best considered on a site-by-site basis. The formulation of plans for an extended response is primarily for the local emergency planning services to determine in the light of local circumstances. The HSE's NII have agreed to assist in this process by specifying a hypothetical scenario requiring an extended response and to provide guidance and advice on its application.

"B The subject of the detailed planning arrangements to deal with the consequences of the limited or reference accident

- (3) The question of whether or not sirens should be installed and used for early off-site warning to the public in the event of an emergency at a PWR at Hinkley Point should be decided well in advance of the commissioning of a PWR, the decision being made by the Department of Energy and the NII jointly and implemented by the site operator.

This recommendation is for the Department of Energy, the NII and Nuclear Electric."

I generally endorse this recommendation and I accept it insofar as it relates to the Department of Energy. The Home Office is currently reviewing the wider question of means of alerting the public where a possible hazard exists and the outcome of this review will clearly be material to the decision whether or not sirens should be employed at Hinkley Point C.

- "(4) The question of whether or not greater emphasis should be given to sheltering in the emergency planning for a PWR at Hinkley Point, whether as a countermeasure in its own right or in conjunction with other countermeasures, and, if so, what greater emphasis, should be decided well in advance of the construction of a PWR at Hinkley

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Point, the decision being made by the Department of Energy and the NII jointly and implemented by the site operator and other bodies concerned in this aspect of emergency planning.

This recommendation is for the Department of Energy, the NII, Nuclear Electric, the Avon and Somerset Constabulary and the Somerset County Council.

- (5) The question of whether there should be a general pre-distribution of stable iodine tablets and, if so, the appropriate arrangements for effecting such a pre-distribution should be decided well in advance of the construction of a PWR at Hinkley Point, the decision being made by the Department of Energy and the NII jointly and implemented by the site operator and other bodies concerned in this aspect of emergency planning.

This recommendation is for the Department of Energy, the NII, Nuclear Electric (and for any other body involved in the pre-distribution if this is the course of action decided upon)."

I endorse the Inspector's recommendations that the questions of the emphasis to be placed on sheltering and whether there should be a general pre-distribution of stable iodine tablets should be decided well in advance of the construction of a PWR at Hinkley Point; and I accept the recommendations insofar as they fall specifically to the Department of Energy. Both questions are under active consideration by the Counter Measures sub-group of the Nuclear Emergencies Planning Liaison Group (NEPLG), a group chaired by my Department which consists of relevant government departments, nuclear operators, police and fire associations and local authority emergency planning officers. Guidance from the NEPLG will be taken into account by my Department and the HSE's NII in reaching their joint decisions.

- "(6) (a) The NRPB should proceed to issue formal guidance on limits for personnel involved in the aftermath of a nuclear emergency.  
(b) Each body and service likely to be involved in the local response to an emergency should ensure that their plans and procedures are examined, and adapted if necessary, so as to ensure that as far as possible none of their staff would receive doses in excess of the appropriate limit and that doses to staff are kept as low as reasonably practicable.  
(c) An explanation should be made available to the persons who would be likely to be involved in an emergency response of the dose limits, the means to be adopted for ensuring compliance with the limits and for keeping doses as low as reason-

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ably practicable, and of the risks which it is believed would be associated with doses up to the limits.

(d) The NII should issue to the police the guidance requested on the use of personal dosimeters by police officers in the event of an emergency.

This series of recommendations is for the NRPB, the NII, Nuclear Electric and all bodies and services likely to be involved in the local response to a nuclear emergency."

I endorse these recommendations, which impinge upon more general matters of policy. The preparation of the guidance documents proposed at (a) and (d) above is at an advanced stage; they are expected to be published this year. The need for other bodies and services to take notice of the guidance at (b) and (c) will be monitored by HSE as part of their general enforcement responsibilities.

"(7) Police officers involved in implementing emergency countermeasures should, so far as is consistent with their safety and the limitation of radiation doses, continue wherever possible to wear ordinary police uniform.

This recommendation is for the Avon and Somerset Constabulary."

I endorse this recommendation, and am drawing it to the attention of the Avon and Somerset Constabulary. I have also drawn it to the attention of the Home Office and Scottish Office.

"(8) The booklet and action card to be distributed within the detailed planning zone by the Somerset County Council should be regularly redistributed. This recommendation is for the Somerset County Council and Nuclear Electric."

I endorse the Inspector's recommendation and commend it to the Somerset County Council and Nuclear Electric.

"(9) The NRPB should keep under review the contents of the advice leaflet issued by them to General Practitioners and the leaflet should be redistributed to all doctors in general practice within 40 km of Hinkley Point at regular two yearly intervals. This recommendation is for the NRPB."

I endorse the Inspector's recommendation. The Department of Health were already collaborating with the NRPB on a revision of this advice which it is intended will form part of an amendment to the main Department of Health circular on the National Health Service response to nuclear emergencies to be issued later this year.

"C The subject of extendibility

- (10) The NII should specify a hypothetical beyond design basis accident scenario for a PWR at Hinkley Point, with an indication of the response needed, as guidance for the formulation of outline plans for an extended response.

This recommendation is for the NII.

- (11) The main bodies responsible for emergency planning around Hinkley Point should combine to formulate and to publish an outline of what would be the extended response to the accident scenario so specified and what would be their respective contributions to that response.

This recommendation is for Nuclear Electric, the NII, the Somerset County Council, the Avon and Somerset Constabulary and the Ministry of Agriculture, Fisheries and Food.

- (12) Every county council and police authority outside Somerset any of whose area lies within a radius of 40 km of Hinkley Point should be asked by the NII to indicate, on the basis of the accident scenario so specified, what emergency plans and procedures would be used in their area in the event of an accident of the severity so specified at Hinkley Point.

This recommendation is for the NII and the local authorities and police authorities concerned.

- (13) The NII should give careful consideration to requiring that before a PWR at Hinkley Point was commissioned an exercise should be carried out of the nature carried out during the Sizewell inquiry to test the extendibility of the emergency arrangements to cope with the consequences of an accident substantially more serious than the limited or reference accident.

This recommendation is for the NII, Nuclear Electric, the Somerset County Council and other bodies and services concerned in emergency arrangements."

The Inspector felt that it could assist public confidence in Hinkley Point C if some flesh could be put on the plans for an extended response (ie a response involving counter-measures beyond the detailed emergency planning zone) to a nuclear accident, and these plans published. The fact that the detailed emergency planning zone for Hinkley Point C will already be greater than required for the PWR "reference" accident should help to engender public confidence in the arrangements. Nevertheless I note that in respect of Sizewell B the HSE's NII formulated a scenario

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designed to test the extended response of the emergency services to an exceptionally serious though highly improbable PWR accident. I endorse the Inspector's view that this could usefully be repeated in respect of Hinkley Point C (Further Recommendation 7.10), and the HSE's NII have told me that they will commission a similar exercise to test the response before Hinkley Point C is brought into operation (Further Recommendation 7.13).

The Inspector recognised the dangers of excessive detail and the case for graduating the detail according to (amongst other factors) distance from Hinkley Point. I endorse the Inspector's proposal (Further Recommendation 7.11) that the main bodies around Hinkley Point C should combine to formulate their extended response to the HSE's NII's hypothetical scenario, that the response should be in outline form, and that the outline should be published: the HSE's NII will pursue this with the bodies concerned. While I accept that there is a possible need to involve authorities outside the area in which the station is situated in examining the response to the hypothetical scenario, I am not, on the basis of the argument put forward by the Inspector, convinced that it will be necessary to involve every body within a 40km radius of the plant (Further Recommendation 7.12). The degree to which it would be necessary to involve authorities more distant from the site will depend both upon their distance from Hinkley Point and on specific local circumstances. In many cases, involvement would be confined to the provision of assistance in support of the authorities responsible for the afflicted area, should those authorities' own resources prove inadequate. The HSE's NII have nevertheless agreed to make available a hypothetical scenario and an assessment of its implications to County Councils and Police and Health Authorities in South Glamorgan, Cardiff, Avon and Devon, as a basis against which the authorities can review the adequacy of their general emergency plans and procedures. Furthermore the HSE as a general policy have indicated that they would be prepared to discuss the implications of the hypothetical scenario with County Councils or Police Authorities which are neighbours to those authorities in whose area there exists a licensed nuclear site for which an off-site plan is required.

- "(14)The NII should satisfy themselves (in consultation with the operator and the Somerset Fire Authority) before permitting a PWR at Hinkley Point to be commissioned that there were arrangements in being (including arrangements for reinforcement fire-fighters to be made available) which would permit an efficient response by fire-fighters to a fire at a serious beyond design basis accident without the likelihood of individual fire-fighters being



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exposed to doses in excess of 100 mSv (or such other limit as might at the time be prescribed).

This recommendation is for the NII, Nuclear Electric and the Somerset Fire Authority."

I endorse this recommendation. The HSE's NII will be consulting with Nuclear Electric and the Somerset Fire Authority to satisfy themselves on this point.

"D General

- (15) It would be of assistance if well intended but vague phraseology describing possible accidents (such as "accidents having no practical possibility of happening") were replaced by a more accurate categorisation of:
- (a) those accident sequences which are believed to be incapable of occurring because no mechanism for the occurrence is known;
  - (b) those accident sequences which could occur but the probability of which is so remote that detailed emergency planning against their consequences is not justified;
  - (c) those accident sequences which could occur and the probability of which, though still small, is sufficiently large to justify detailed emergency planning.

This recommendation is for Nuclear Electric."

I share the Inspector's view that greater precision of phraseology would improve public confidence. The HSE's NII intend to consider the Inspector's definitions with Nuclear Electric with a view to categorising PWR accidents more accurately.

- "(16) Regulations similar to the present CIMAH Regulations should be applied to civil nuclear installations.

This recommendation is for the Health and Safety Commission and the appropriate Minister."

I endorse this important recommendation. As the Inspector noted the HSE have the preparation of such regulations in hand; and after due consultation it is expected that the Health and Safety Commission will submit proposals for the making of such Regulations to the appropriate Secretary of State. It is envisaged that the regulations will place a duty on local authorities in whose areas nuclear installations are sited to co-operate in nuclear emergency planning.

- "(17) Consideration should be given to clarifying the legal framework for emergency planning around civil nuclear installations, including the

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question of imposing specific obligations on the bodies and services involved in such planning. This is a general recommendation for the Department of Energy."

I have noted what the Inspector has said about a tighter legal framework for emergency planning around civil nuclear installations and have passed his comments to the Home Secretary as the question of a legal obligation on a local authority to draw up plans and on other bodies to cooperate in their preparation goes far wider than civil nuclear sites alone. In November 1989 the Home Secretary appointed an adviser on civil emergencies and asked him, as a matter of priority, to look closely at what is happening in practice on the ground, to talk to individual chief executives, county emergency planning officers, local government organisations and the emergency services, and to advise on what is necessary and what is desirable for local authorities to have or be told in order to achieve proper effective emergency planning. A review of the present legislative framework is part of these considerations.

"(18) The Department of Energy should provide a precise statement of their functions and responsibilities as the lead Department in respect of civil nuclear emergencies in the UK.

This is a recommendation for the Department of Energy. (see Chapter 50)".

I accept this recommendation and I am preparing such a statement for publication.

The Inspector is critical of certain other aspects of the safety and emergency arrangements, although these criticisms are not reflected in specific recommendations. For example, he voices concern about the problems of providing information to individual members of the public in an emergency: I share his concern and have asked my officials to discuss this matter with the main organisations concerned and to draw up satisfactory arrangements. He also draws attention to the large number of public bodies concerned with aspects of nuclear regulation and safety and suggests that longer-term consideration should be given to a rationalisation of regulatory functions and of the functions of the bodies involved. This is an important and far-reaching criticism which I shall consider carefully. In the meantime I agree with the Inspector that this issue is not material to my decision on Hinkley Point C.

Recommendation 8

"I recommend that when the alignment and manner of construction of a new sea wall have been agreed or determined Nuclear Electric should enter into a form of

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indemnity with the Wessex Water Authority or their statutory successor equivalent to the form now proposed. (see Chapter 56)".

I note that the CEGB offered an indemnity to the Wessex Water Authority in respect of the cost of the sea defence works which might be necessitated by the new sea wall as originally planned, but was unwilling at the inquiries to offer an indemnity in respect of the shorter sea wall proposed by the Inspector. I agree with the Inspector that the views of the Wessex Region of the National Rivers Authority should be taken into account in the detailed consideration of the new sea wall proposals. I have decided to add a condition to the planning permission I am directing should be deemed to be granted, which will ensure that an equivalent form of indemnity is offered by Nuclear Electric for the reasons set out by the Inspector at paragraph 56.60 of his Report. I have also attached to my direction as to deemed planning permission the other conditions (on survey of beach profiles and repositioning of shingle) proposed by the Inspector.

Recommendation 9

"I recommend that if the Secretary of State for Transport decides not to confirm the Orders and Bridge Scheme (other than two of the Compulsory Purchase Orders) necessary for the construction of the proposed Cannington and Bridgwater bypasses the Secretary of State for Energy should re-open the inquiries on which I am reporting, on the subject of transport issues only, if he is otherwise minded to grant consent for the construction of Hinkley Point 'C'." (see Chapter 62)".

I understand that the Secretary of State for Transport has today issued a decision announcing his intention to confirm the Side Roads Order and Bridge Scheme necessary for the construction of the proposed bypasses of Cannington and Bridgwater.

Recommendation 10

"I make the following recommendations:

- (1) Nuclear Electric should commission a full field survey of the visibility of the 'C' station in order to identify suitable sites for hedgerow reinforcement, woodland planting and management. They should then use their best endeavours to enter into legal arrangements with landowners and local authorities to establish and maintain woodland. The aim would be to screen so far as possible the visibility of the 'C' station.

RESTRICTED UNTIL PUBLICATION

- (2) If construction of a 'C' station commences Nuclear Electric should take all reasonable measures to prevent contamination by fumes and dust of all areas outside the site used for construction and should consult with the local planning authority on such measures in advance of the commencement of the main construction programme.
- (3) Nuclear Electric, the Somerset County Council, the West Somerset District Council and the Sedgemoor District Council should set up a group of representatives which should meet regularly to consider the question of observance of conditions and compliance with assurances. Reports should be prepared regularly on this question by the group which should be made public with a copy sent to the Department of Energy.
- (4) Nuclear Electric should, prior to the implementation of any consent granted, offer reasonable facilities for the carrying out of an archaeological assessment of the 'C' station site area by archaeologists nominated and employed by the Somerset County Council or West Somerset District Council and approved by the CEBG.

These recommendations are for Nuclear Electric and the three local authorities mentioned. (see Chapter 66)".

The Inspector's report sets out 15 assurances which the CEBG have offered me on such matters as off-site landscaping, archaeological assessment and arbitration. I share the Inspector's view that an assurance on arbitration is inappropriate and I have not accepted it. No assurance was offered in respect of prevention of fumes and dust during construction. I have considered the Inspector's recommendations in respect of the issues relating to amenity with great care and in the light of my duties under paragraph 1(2) of Schedule 9 to the 1989 Act. I accept the assurance on off-site landscaping so far as it goes, but I believe that Nuclear Electric can reasonably do more by off-site screening as recommended by the Inspector to mitigate the visual effect of the development. I also agree that it can reasonably do more to prevent dust and fumes from the construction site. I accept the assurance on facilities for archaeological assessment, but the assurance needs updating to be effective. In place of arrangements for formal arbitration of assurances, I agree that Nuclear Electric should participate in arrangements for the regular monitoring of their observance of conditions and compliance with assurances. For the reasons given above I have decided to attach conditions to the planning permission I am directing should be deemed to be granted, which will ensure that the Inspector's four recommendations set out above are given effect.

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Recommendation on Costs

"I recommend that statutory objectors to the compulsory purchase order who were represented at the inquiries in support of their objections on the days on which matters pertaining specifically to the compulsory purchase order were being considered should be paid their costs of those days by Nuclear Electric. Save as aforesaid I recommend that no orders be made as to costs at the inquiries which I was appointed to conduct."

As already noted I have agreed the Inspector's Formal Recommendation that the Central Electricity Generating Board (Hinkley Point 'C') Compulsory Purchase Order 1988 should not be confirmed. I am also minded to accept the Inspector's recommendation that Nuclear Electric should pay the costs of statutory objectors to the Compulsory Purchase Order. I am writing separately to Nuclear Electric about this. I make no further order as to costs.

COPIES

41. I am sending copies of this letter to the Somerset County Council and the West Somerset District Council, the local planning authorities, to statutory objectors entitled to receive them under the Inquiries Procedure Rules and to those bodies to whom the Inspector has addressed recommendations.

Yours faithfully

JOHN WAKEHAM  
Secretary of State for Energy

(1) Routeing of construction traffic

- (a) The routes to be used for commercial vehicles between the M 5 and Hinkley Point 'C' construction site and between the A 39 and the construction site during both site preparation and construction shall be:
- i) the Bridgwater (North), the Cannington (West) and the Cannington (South) bypasses when those bypasses are available for use;
  - ii) until the bypasses, or any of them, are available for use, the routes shown on drawing HPC/IC/248001/A; or
  - iii) as may be agreed from time to time with the local Highway Authority.
- (b) The Central Electricity Generating Board will use their best endeavours to ensure that all vehicles travelling to and from the Hinkley Point 'C' construction site, whether or not under the direct control of the Central Electricity Generating Board, follow the routes described in paragraph (a).
- (c) The Central Electricity Generating Board will pay the Highway Authority the reasonable costs incurred by the Highway Authority in erecting and maintaining during construction suitable direction signs identifying the routes described in paragraph (a) above, as appropriate.
- (d) The Central Electricity Generating Board will include term 1 of the model terms set out in Annex 2 to inquiry document S3362, Revision C, in all contracts with contractors involved in the construction of Hinkley Point 'C'.
- (e) The Central Electricity Generating Board will investigate without delay complaints by the Highway Authority of alleged contravention of the terms referred to in (d) above or alleged deviations from the routes designated under (a) above. Where complaints are justified, the Central Electricity Generating Board will take all reasonable steps under (d) above to ensure that contractors discharge their contractual obligations in this matter.
- (f) The Central Electricity Generating Board will monitor regularly the operation of the routes designated under (a) above and will make the results of such monitoring available to the Construction Consultative Committee for Hinkley Point 'C' at the earliest practicable date.

(2) Lorry and car parking

The Central Electricity Generating Board will include term 2 of the model terms set out in Annex 2 to inquiry document S3362, Revision C, in all contracts with contractors involved in the construction of Hinkley Point 'C' and will take all reasonable steps to ensure that contractors discharge their contractual obligations in this matter.

(3) Accidental discharges

(a) Plans:

HPC-WB-002330	HPC-WB-002342	HPC-OC-618085-500/B
HPC-WB-002335	HPC-WB-002348	HPC-OC-618086-500/B
HPC-WC-002335	HPC-WB-002351	HPC-OC-618087-500/B
HPC-WC-002336	HPC-WB-002352	HPC-OC-618088-500/B
HPC-WC-002337	HPC-WB-002353	HPC-OC-618089-500/B
HPC-WC-002338	HPC-OC-618081-500/B	HPC-OC-618001-500/B
HPC-WC-002339	HPC-OC-618082-500/B	HPC-OC-618002-500/B
HPC-WC-002340	HPC-OC-618083-500/B	HPC-OC-618003-500/B
HPC-WC-002341	HPC-OC-618084-500/B	HPC-OC-618000-500/B

HPC-OC-777 840-501/A  
HPC-OC-777 840-502/A  
HPC-OC-777 840-503/A  
HPC-OC-298 035-500/A  
HPC-OC-777 840-500/A  
HPC-OC-298 840-501/A  
HPC-OC-298 840-500/A

have been submitted to Wessex Water Authority to ensure the matters set out in Annex 5 to inquiry document S3362, Revision C, are complied with.

- (b) The Central Electricity Generating Board will consult the Wessex Water Authority and will take advice from the Authority before making or permitting any substantial alteration to the plans approved under paragraph (a) above.
- (c) The consultation and advice referred to in paragraph (b) above will relate to any substantial alterations affecting those items set out in the said Annex 5.
- (d) The Central Electricity Generating Board will supply copies of the plans set out in paragraph (a) above and any changes to those plans arising under paragraphs (b) and (c) above to the local planning authority for information.

(4) Off-site landscaping

The Central Electricity Generating Board will, on the areas identified for off-site planting on inquiry proof of evidence CEGB 15, Figure 11, if the landowners' consent and co-operation is forthcoming:

- (a) prepare a detailed scheme for the planting and future management of trees; and/or
- (b) prepare a scheme for the management of existing hedgerows; and
- (c) in either of the above schemes carry out and finance the necessary planting or works; and
- (d) consider further planting additional to that shown on the said Figure 11 where the landowner requests such planting and can demonstrate its relevance to Hinkley Point.

(5) Training of labour

- (a) The Central Electricity Generating Board will establish a Local Employment and Training Committee to monitor Hinkley Point 'C' construction site employment requirements; to identify local job opportunities; to receive reports on the availability of relevant local education and training; and to endeavour to ensure that these address construction site job opportunities.
- (b) Membership of the Local Employment and Training Committee will include representatives of contractors, Somerset County Council, West Somerset District Council, Sedgemoor District Council and potential providers of education and training.
- (c) The Central Electricity Generating Board will establish an on-site office for the Training Agency as early as possible.
- (d) The Central Electricity Generating Board will include the model term 3 set out in Annex 2 to inquiry document S3362, Revision C, in all contracts for on-site works of construction of the Hinkley Point 'C' power station.

(6) Accommodation for the construction work-force - caravan site

- (a) The Central Electricity Generating Board will use all reasonable endeavours to obtain and provide a site for 80 residential caravans at Doniford either by an appeal against the refusal of planning permission dated 3 July 1989 or alternatively by an application on an adjacent site.
- (b) If an approved site cannot be obtained at Doniford the Central Electricity Generating Board will use all reasonable endeavours, in consultation with the local planning authorities, to find, obtain planning permission for and provide an equivalent alternative site.

(7) Archaeology

- (a) The Central Electricity Generating Board will permit an archaeological assessment of the 'C' station site area within their ownership in autumn 1989 and will support any requests to obtain access during 1989 to that other land the subject of the Central Electricity Generating Board (Hinkley Point 'C') Compulsory Purchase Order 1988.
- (b) During the period of site preparation and construction the Central Electricity Generating Board will ensure, as far as is reasonably practicable, that work will be halted in the immediate area of any discovery of archaeological significance for a period of up to two weeks to allow rescue archaeology to take place. All such rescue archaeology will be under the control of the Site Manager and will be subject to the safety/working conditions imposed on a major construction site.



- (c) The assessment or rescue archaeology is to be carried out by archaeologists nominated and employed by Somerset County Council or West Somerset District Council and approved by the Central Electricity Generating Board

(8) Permanent contractors' storage area

The Central Electricity Generating Board will include the model term 4 set out in Annex 2 to inquiry document S3362, Revision C, in all contracts affecting the operational phase of Hinkley Point 'C'.

(9) Noise

The Central Electricity Generating Board will include the model term 5 set out in Annex 2 to inquiry document S3362, Revision C, in all contracts for on-site works of construction of the Hinkley Point 'C' power station.

(10) Decommissioning

When the decision to cease operations at each station on the Hinkley Point site is taken, the Central Electricity Generating Board will consult the West Somerset District Council, Sedgemoor District Council and Somerset County Council over the proposed programme for the phased demolition of plant, buildings and structures and the removal of certain materials from the site.

(11) Local liaison

- (a) The Central Electricity Generating Board will establish a Construction Consultative Committee for Hinkley Point 'C' and will arrange for it to meet on a regular basis during construction work for the exchange of information between the Central Electricity Generating Board and local interests affected by the work or matters relating inter alia to the opportunities for tendering by and the success of local contractors. The Central Electricity Generating Board will consult with Somerset County Council, West Somerset District Council and Sedgemoor District Council about the composition of the Committee.
- (b) The terms of reference of the existing Local Community Liaison Council will be amended to include the 'C' station when it becomes operational.
- (c) The terms of reference of the existing Emergency Planning Consultative Committee will be amended to include the 'C' station construction site and work-force, and in due course, the operation of the 'C' station.

(12) Acoustic insulation

The Central Electricity Generating Board will meet the reasonable cost of acoustic insulation for occupiers of residential properties which are:

- (a) situated along the C 182 from its junction with the proposed Cannington West bypass to Hinkley Point; and for which
- (b) the noise level criteria of the Noise Insulation Regulations 1975 will be exceeded due to traffic created by construction of the Hinkley Point 'C' power station.

(13) Provision of fire cover

- (a) During the construction of Hinkley Point 'C' a similar level of fire cover will be provided to that agreed with Suffolk County Council in respect of the construction of Sizewell 'B'. This will include the following express provision:
  - i) a water tender type 'B' fire appliance or similar vehicle;
  - ii) a road-going ambulance;
  - iii) a landrover fire appliance;
  - iv) a landrover rescue vehicle;
  - v) specialist fire-fighting and rescue equipment, eg thermal imaging camera, hydraulic rescue pack, portable pumps;
  - vi) the recruitment of a total of 16 firemen on a four men per shift basis, via the General Site Services Contractor;
  - vii) the appointment of a full time Liaison Fire Officer of Station Officer rank with the principal duties of advising on recruitment, training, fire prevention patrols and assessment, and familiarisation of local fire brigades with the ever changing site layout, in accordance with Conditions of Contract similar to those set out as an attachment to inquiry document S3822.
  - viii) the entering into an Affiliation Agreement with the Somerset Fire Brigade. The affiliation will include training, administration, supplies/uniform, equipment, communication and vehicle maintenance in accordance with an Affiliation Agreement similar to that set out as an attachment to inquiry document S3822.
- (b) During the operation of Hinkley Point 'C' the following will be provided:
  - i) a fully manned water tender type 'B' or similar vehicle; and
  - ii) a full complement of equipment compatible with that of other appliances on site and also with that of Somerset Fire Brigade.
- (c) Prior to each stage of decommissioning Hinkley Point 'C' there will be detailed consultation with the Somerset Fire Brigade (or any successor body) on the level of fire cover appropriate during each stage of such decommissioning.

(14) Central Electricity Generating Board (Hinkley Point 'C')  
Compulsory Purchase Order 1983

(a) Return of land to agriculture:

Inquiry proof of evidence CEGB 14 paragraph 52 states:

"The land to be taken would not all be required permanently and some 50 ha could be returned to agriculture as and when it became available."

This applies to all the land included in the CPO for construction (as opposed to operational) purposes subject to the requirement to use some land for landscaping or conservation, and subject to the proviso below.

(b) Return of interests compulsorily acquired:

- i) In general the Central Electricity Generating Board will apply Circular 18/84, Part III, as if the CEGB were a Government Department;
- ii) The interest in so much land as is acquired from the statutory objector, Lady Gass, for construction purposes will be offered back as provided for in Circular 18/84, Part III, on the following basis and subject to the proviso below:
  - (a) the interest offered back will be as near as may be the same as the interest compulsorily acquired and will be subject to an agricultural tenancy to Mr C F Knox if he so requests and terms are agreed;
  - (b) the offer back will be made on open market terms on completion of restoration works;
  - (c) any dispute as to the nature of the interest offered back or the open market value thereof shall be referred to and finally determined by a single arbitrator whose appointment is to be agreed between the parties or in default of agreement who shall be appointed by the President of the Royal Institution of Chartered Surveyors.

(c) Proviso:

The proviso is that if, at the time when the offer back would otherwise fall to be made, or restoration to agriculture would take place, the Central Electricity Generating Board, in association with an application for or grant of consent, resolved to develop any of the land compulsorily acquired under this CPO for construction purposes, and has resolved also to acquire, if necessary compulsorily, further land, if any, required for that development, it will offer back so much of the land as is needed for that development only when the proposals are either withdrawn or rejected.

(15) The West Somerset District Council Parish of Stogursey

Public Path Stopping Up (No. ) Order 19

- (a) The Central Electricity Generating Board will regularly monitor the availability and safety conditions of footpaths WL 23/48, WL 23/50, and WL 23/110 around the construction site during site preparation and construction and will notify West Somerset District Council and the landowner of any obstructions or hazards on those footpaths.
- (b) The Central Electricity Generating Board will use their best endeavours to secure the agreement of landowners for the suitable and adequate signposting of the alternative existing footpaths available during construction and, if such agreement is forthcoming, will pay for the erection and maintenance of signposts at Point 'Q', 'B' and at the junction of WL 23/48 and WL 23/95 near Bell's Caravan as shown on Plan BQ1/0474.



SCOTTISH OFFICE  
WHITEHALL, LONDON SW1A 2AU

~~LCPU~~  
A. G. P. M.  
BHP  
26/7

The Rt Hon John Wakeham MP  
Secretary of State for Energy  
Department of Energy  
1 Palace Street  
LONDON  
SW1E 5HE

26 July 1990

Dear John,

Thank you for copying to me your letter of 6 July to John Major about your proposal to set up a group under John Collier to consider civil nuclear R & D. *frap*

I think this a useful initiative and I am content with what you propose. No doubt you will be consulting further on the group's detailed terms of reference and its composition. I would wish my officials to be kept in close touch with the group's work and I think it would be highly desirable for SNL to be represented on it.

I am copying this letter to the Prime Minister, Tom King, Peter Lilley, John MacGregor, Chris Patten, Michael Howard, Sir Robin Butler and Sir Angus Fraser.

MALCOLM RIFKIND

ENERGY: Policy Part 13





a: /energy. dsj

10 DOWNING STREET  
LONDON SW1A 2AA

*From the Private Secretary*

23 July 1990

GOVERNMENT OBSERVATIONS ON THE ENERGY SELECT COMMITTEE REPORT

The Prime Minister was grateful for your Secretary of State's minute of 20 July covering a draft memorandum in response to the Fourth Report from the Energy Select Committee (Session 1989-90).

The Prime Minister considers that the proposed memorandum is a good, clear and robust response to the criticisms of Mr. Parkinson, the former Secretary of State for Energy, and of the Department of Energy over the handling of the privatisation of electricity.

I am copying this letter to Simon Whiteley (Department of Transport).

Barry H. Potter

John Neilson, Esq.,  
Department of Energy.

81



2 MARSHAM STREET  
LONDON SW1P 3EB  
071-276 3000

My ref:

Your ref:

n.b.p.m.  
BHP  
237

The Rt Hon John Wakeham MP  
Department of Energy  
1 Palace Street  
LONDON  
SW1E 5HE

27 July 1990

Dear Secretary of State

Thank you for sending me a copy of your letter of 16 July to John Major, about your proposal to set up a Group to consider civil nuclear R & D.

I note that the terms of reference for the Group have still to be spelt out in detail. As my Department has an extensive radioactive waste management R & D programme, and waste management will have an important bearing on maintaining the nuclear option, I consider it would be helpful if an official from my Department were represented on the Collier Group when any waste management issues were to be considered. I would of course expect my officials to be consulted by the Group's assessor as necessary.

I am happy for the review to be announced by means of an arranged PQ, and for reference to be made in the Environment White Paper.

I am copying this letter to the Prime Minister, Tom King, Peter Lilley, John MacGregor, Malcolm Rifkind, Michael Howard, Sir Robin Butler and Sir Angus Fraser.

CEJ Bosh

PP CHRIS PATTEN

(Approved by the Secretary of State  
and Signed in his Absence)





ENERGY: Polium P 773



Prime Minister

②

A suitably robust response to  
the Energy Select Committee report.  
Sections 2-4 are worth a glance:  
para 4.3 sums up the position.

Prime Minister

Good clear  
robust response  
mt.

BHP 20/7

The Energy Select Committee produced its Report on the Cost of Nuclear Power on 27 June. As you are aware it contained unjustified criticism of Cecil Parkinson and the Department of Energy over the handling of the privatisation of electricity. I wrote immediately to Michael Clark the Committee Chairman rebutting the criticisms but promising a full response in due course.

It is important for the flotation of the electricity industry that I make that response before the Recess and I intend to do so on Wednesday 25 July by means of a Memorandum to the Committee and drawing attention to it by means of a written PQ.

I attach a copy of the Memorandum which you will see reiterates our rebuttals and also criticises the speed in which the Committee reported and its failure to fully analyse the evidence presented to it.

I am copying this to Cecil Parkinson.



Secretary of State for Energy

20 July 1990

GOVERNMENT OBSERVATIONS ON THE FOURTH REPORT FROM THE  
ENERGY COMMITTEE (SESSION 1989-90) THE COST OF NUCLEAR  
POWER

1. Introduction

- 1.1 This memorandum sets out the Government's response to the Energy Committee's Report on "The Cost of Nuclear Power".
- 1.2 The Secretary of State for Energy wrote to the Chairman of the Energy Committee on 27 June 1990 giving his immediate comments on some of the criticisms in the Report. This letter is attached as Annex A to this Memorandum. As it made clear, the Government rejects the wholly unjustified criticisms made of the previous Secretary of State for Energy and the Secretary of State for Scotland and the assertions in paragraph 107 of the Report which are based on a misunderstanding about the relationship between nationalised industries and government departments and took insufficient account of the large amount of detailed material made available to the Committee and those in paragraph 109 which are based on incomplete information and a misunderstanding of the structure of the industry in Scotland. This memorandum deals with the recommendations summarised in paragraph 131 and the themes underlying those conclusions in paragraph 130 of the report which are directed at Government.

2. The Process of Privatisation

- 2.1 A recurring theme running through a number of the Committee's comments is that the information needed to decide whether it was practicable to privatise nuclear power, and if so on what terms, should have been procured earlier than in fact it was.
- 2.2 The Committee seems to have misunderstood the basis of the relationship between a statutory corporation and a government department. The Government does not interfere in the day to day operation of the industry. The Committee would no doubt be very critical of the Department if it attempted to take over the responsibilities of the CEGB. Its powers over the corporation are strictly confined to those set out in the relevant legislation. Even if the

powers to require specific information did exist, the Government could not have immediate access to information which was not available to the corporation itself. As the Committee is aware, much of the information required by the Department of Energy was not available to the Board of the CEGB in 1988 and the did not become available until late in 1989. The Committee is also aware from the evidence given to it that exhaustive attempts were made by the Department of Energy at all levels over a prolonged period, to obtain information from the CEGB/National Power, with only limited success. The pressure was also exerted at Ministerial level eg the Secretary of State for Energy's letter of September 1989. The only further action the Department of Energy could have taken was to dismiss one or more members of the Board for failing to provide the information requested in a timely fashion - a course that the Committee did not put forward. The Government therefore rejects the Committee's criticisms that the Department of Energy should have done more to obtain information in a timely way.

2.3 The Committee also criticises the Department of Energy for not making its own estimates of private sector nuclear costs before it took the decision to privatise nuclear power (paragraph 78). Again this misunderstands the relationship between the Board of a statutory corporation and the Department. It is the Board who manage the corporation and who have responsibility for its operation. It is the Board who sign the accounts and their auditors who certify them as representing a 'true and fair' view of the corporations financial position. The Department of Energy, with a small number of officials dealing with these matters compared to the staff of the CEGB, was entitled to regard information set out in published audited accounts as an accurate reflection of the corporation's financial position.

2.4 It is true that it was only possible to undertake a qualitative appraisal of the impact of privatisation on nuclear power at the time of publication of the White Paper. It is extremely doubtful, for the reasons alluded to by Mr Guinness (Oral evidence question 131), whether any fuller analysis undertaken before the decision to privatise nuclear

power would have produced more reliable results. It would have added very greatly to the costs of privatisation if all the options for restructuring the industry had been left open for a long period as well as adding an unsettling uncertainty in the industry. Nor is it clear how in 1987 the Department of Energy realistically could have foreseen the increases in nuclear provisions which came to light in 1989. Even the CEGB, who were the custodians of all the detailed technical and financial information and had very substantial expertise in the matter, did not become aware of the need to make very substantial increases in their provisions for some considerable time.

2.5 Indeed it is fair to say that the cost-plus nature of the electricity industry in the past had led to a tendency to avoid analysing nuclear costs as thoroughly and objectively as would have been desirable (see Section 4 below). The need for such a thorough analysis in the context of the privatisation proposals therefore involved breaking new ground in 1988 and 1989, particularly in relation to the nature and size of risks. This process inevitably took time, although in the Government's view some at least of the information on nuclear provisions which became available to the CEGB in spring 1989 should have been foreseen in 1988. In this context Mr Guinness's statement that 'you only actually get the information you need in order to reach a decision .... when you have the actual pressure of events' (para 104) reflects the reality of the situation and would be self evident to the Committee had it had first hand experience of privatisations.

2.6 Thus it was one of the advantages of electricity privatisation that it brought to light hidden costs, including nuclear costs. As Mr Parkinson said during Report Stage of the Electricity Bill: 'What we are arranging to do is to expose these costs. So in 80 to 85 per cent of the market we will have competition in the supply of electricity and in the 15 to 20 percent met by nuclear we will, for the first time, have transparency; people will know what they are paying for.' (OR 5 April 1989, col 277.)

- 2.7 Finally, the detailed terms of any privatisation necessarily involves lengthy and detailed discussions between the Government and the industry concerned. The Government may well have a variety of objectives such as the promotion of competition. Within this policy framework it will wish to maximise proceeds. The industry, however, will want financial, contractual and regulatory structures which give it the best possible prospects in the private sector and is unlikely to place the same priority on maximising proceeds. While both the Government and the CEGB/National Power were committed to privatising nuclear power, their objectives for the contractual and regulatory regime underpinning that privatisation were not identical. It is hardly surprising that NP sought to minimise any risks for its future shareholders while the Government sought the best deal for the taxpayer. A long and detailed negotiation was therefore inevitable. The Government would certainly be severely criticised by the Select Committee and the Public Accounts Committee if it accepted without question the negotiating position adopted initially on a variety of issues by the industry. The Committee seem to have failed to realise that there was a considerable element of negotiation in a number of the papers made available to it. If the industry had had firm facts and figures in 1987 and in 1988 to back up their statements they would have been very culpable for not putting forward such data. The Government, however, believes that the essence of the problem was that the industry did not have hard facts much before it handed over the new data on nuclear provisions in May 1989 and fuller details on prices in October 1989.
- 2.8 Even with hindsight a variety of different outcomes could reasonably have been foreseen in May 1988; the Government took the view then, and still takes the view, that the result was not predictable. It would have been wrong for the Government to take at face value negotiating statements (such as that made by the Secretary to the CEGB in May 1988).
- 2.9 The Committee failed to recognise that the Government could not take decisions on the generalised statements put forward by the CEGB and its advisors in 1988. It could only take a decision to alter its

policies when provided with the detailed facts; in May 1989 about the provisions required for Magnox costs; and in October 1989 about prospective AGR and PWR prices and the guarantees that the banks actually would require. It is inherent in the privatisation process that it reveals a great deal of additional information about the companies to be privatised, which has eventually to appear in the Prospectus.

- 2.10 The Committee's failure to understand and give proper weight to the above considerations undermine the greater part of its analysis and conclusions. In particular given the amount of evidence that was submitted on the important question of foreseeability, including a special report by the leading firm of accountants, Ernst and Young, the Government is surprised by the cursory treatment of the subject in a single inconclusive paragraph (paragraph 72). The Government regrets that the Committee did not undertake a more in depth study of all the evidence available to it and that it placed such a priority on speed.

### 3. Kleinwort Benson

- 3.1 The Government believes the criticisms of Kleinwort Benson are quite unjustified. It rejects the suggestion in p 111 of the Report that Kleinwort Benson underestimated the difficulties associated with the privatisation of nuclear power. Kleinwort Benson stressed those difficulties to the Department of Energy at an early stage and frequently thereafter. There were very many discussions between Kleinwort Benson and the Department of Energy throughout the period under review; these reflected the state of information available to Kleinwort Benson and the Department of Energy at the relevant times.
- 3.2 The Select Committee has seen Kleinwort Benson's letter of 11 September 1987 to the Department of Energy which drew attention to a number of risks associated with the nuclear business. This also made clear that Kleinwort Benson's preliminary conclusion was that investors would be prepared to invest in companies with nuclear generation provided that they were satisfied that the potential nuclear

costs to the companies associated with the nuclear programme were quantifiable and supportable.

3.3 In the early part of 1988, Kleinwort Benson, together with the Department, sought to ascertain whether the potential costs to the companies associated with the nuclear programme were quantifiable and supportable. Kleinwort Benson's conclusions, based on the limited information which was available, were that these potential costs were not quantifiable or supportable. Accordingly, Kleinwort Benson advised that any costs (ie including construction, operational and backend costs) arising from the risks associated with the nuclear programme would have to be capped. These conclusions were reflected in a number of letters and papers written by Kleinwort Benson in the course of much of 1988. This material could have been made available to the Committee if they had wished; and was reflected in the oral evidence given by Kleinwort Benson. The Government is surprised that the Committee chose to make such allegations without a proper investigation of the evidence.

3.4 The Government took this advice and the other information available to it into account when deciding in the autumn of 1988 to include in the Electricity Bill provisions for the fossil fuel levy and the power to make grants to the electricity companies and others in respect of the storage or reprocessing of nuclear fuel, the treatment, storage or disposal of radioactive waste or decommissioning of nuclear installations.

#### 4. The Cost Plus Arrangements

4.1 As the report points out, the operations of the electricity generation industry were for many years conducted on a largely "cost plus" basis. This applied both to the charging of costs to consumers, via the Bulk Supply Tariff, and to payments for fuel services provided by BNFL. As might be expected, this contractual system was a significant factor in determining the accounting principles adopted by the CEGB and its auditors. Whatever the merits of that approach, it clearly did not encourage the most searching examination of the extent of future



liabilities for fuel services and decommissioning relating to past generation.

- 4.2 BNFL's memorandum, submitted to the Committee and printed as Appendix 2 to the Minutes of Evidence, indicates that several years ago (and before ESI privatisation was under active consideration), work had begun on moving to a fixed price contract system. The Department of Energy welcomed this approach. It also encouraged BNFL to undertake a full review of its decommissioning costs and the consequent charges to its customers for such work. This review was commissioned in 1987 and completed September 1988. Both BNFL and SSEB reflected the conclusions of the review in their 1987/88 accounts but CEGB did not. This is a factor contributing to the Government's view (as recorded in paragraph 72 of the report) that, at least some of the increase in the CEGB's nuclear provisions which appeared in the 1988/89 accounts could have been foreseen in time for the 1987/8 accounts. The Department made available to the Committee a substantial amount of evidence on this point, including the report on the harmonisation of accounts produced by Ernst and Young. The Government is surprised that the Committee apparently made little or no attempt to study this issue or to reach its own conclusion. It believes that a complex issue of this kind deserved more thorough examination.
- 4.3 It would clearly have been desirable to have had the information about nuclear costs and prices during 1988 or even earlier, when the decisions about the structure of the industry after privatisation were being taken, rather than in 1989 when it eventually became available. However, the fact is that the CEGB took some considerable time to come to a full appreciation of the implications of the move away from "cost plus" for its accounts and in particular its provisions. The Department used all channels available to it to obtain information from the CEGB. However, since the new information that led to the decisions of 1989 simply did not exist within the CEGB in 1988, further efforts to obtain information in 1988 could not have changed the view of the financial position taken then. All the advice given by our Advisers in 1988, and the actions taken in consequence (for example, to introduce Schedule 12

into the Electricity Bill), reflected the information available at the time including the fact that there appeared to be considerable uncertainty surrounding nuclear costs.

4.4 In paragraph 64 the Committee implies that the Government should have provided a cash dowry to meet the costs of past nuclear liabilities. This is based on a complete misunderstanding of the position. It should be recognised that cash generated each year via the Bulk Supply Tariff in respect of provisions was either used to repay existing CEGB borrowings or was invested in fixed assets. No cash was removed by the Government other than for these purposes, nor was the asset base of the CEGB ever eroded as a result. Had the cash been left with the Board the Board's indebtedness would have had to be increased by the same amount. However, the reorganisation of the CEGB into (as was then envisaged) three separate companies clearly meant the Government had to consider the appropriate financial framework for each of the new companies.

4.5 The Committee has been given access to a large volume of the detailed correspondence relating to nuclear costs and risks, although this was a small fraction of the total papers on the subject. It has taken oral evidence from many of those involved. All have made clear the considerable effort devoted to addressing these issues at all stages of the privatisation process. The Government considers the Committee's assertion (paragraph 105) that insufficient priority was given to nuclear issues flies in the face of this evidence. During the autumn of 1988 the Department was concentrating on the priority aspects of the nuclear question and those aspects where the CEGB was able to provide hard facts. It is symptomatic of the Committee's approach that it reached no conclusions on the question of foreseeability of provisions (paragraph 72) when very full evidence was provided, even though there was a conflict of interpretation, but saw fit to reach an unjustified conclusion in this area when there was a conflict between the CEGB and the Department of Energys' evidence. At the very least the Committee might have taken the trouble to seek further evidence before arriving at an erroneous conclusion.

## 5. The Costs and Risks of Nuclear Power

### Recommendations

- *Any costs involved in extending the lives of the Magnox reactors should be fully and publicly accounted for, using a rate of return on avoidable costs compared to that of other forms of electricity generation and removing any distortion caused by the fixed element in BNFL's charges (paragraph 121).*
- *The rate of return used for appraising new investment by Nuclear Electric should be linked not to the standard public sector discount rate but to the rates of return expected in the rest of the generating industry, and the appraisal should take account of nuclear power's greater risk (paragraph 124).*

5.1 The Government shares the Committee's desire that the full costs and risks associated with nuclear power are transparent. The Government has made clear its intention that full information about the costs of nuclear power will be readily available. Much of this will occur through publication of the annual accounts of Nuclear Electric and Scottish Nuclear. Detailed accounting issues are dealt with in Section 6 of this memorandum.

5.2 The Government agrees that the risks of nuclear power should be fully taken into account in the investment appraisal process, whether the project is in the public or private sector. The treatment of such risks can take a number of forms, one of which is the use of discount rates higher than the 8% required rate of return for new investment in the public sector. Other methods include the use of capital cost contingencies and assessment of scenarios in which assumptions other than "best expectation" are employed. The relative weight given to these different approaches will be a matter of judgement which may vary according to the particular risk characteristics of the project in question. Simultaneous use of high discount rates, large contingencies and deliberately cautious assumptions can give rise to very high cost estimates and it was this feature of National

Power's October 1989 estimates which the Government did not believe to be fully justified by the risks the company were proposing to accept.

- 5.3 The judgements used to produce cost estimates and to quantify uncertainties reflect an assessment of the business and market environment in which the Company operates. Privatisation encouraged a new approach to risk analysis by those with the technical expertise to produce cost estimates as well as exposing the technical data to private sector financial experts. This exchange and absorption of information and attitudes took some time (indeed it is still going on). For these reasons the CEGB would not have accepted that its pre-privatisation cost estimates were unrealistic in the environment in which they were drawn up.
- 5.4 The Government shares the Committee's wish that any appraisal of investment by NE in new nuclear power stations should take proper account of the risks of nuclear power. The Government also acknowledges that in many cases, the transfer of nuclear power risks from utilities to the Government does not reduce the risk (para 44). The Treasury establishes the required rate of return for public sector enterprises on their new investment as a whole and this rate was used in the Department of Energy's assessment of the case for continuing construction of Sizewell B. The Department also took account of risk by the application of suitable contingencies and by a sensitivity analysis of the main assumptions (see also Section 9).
- 5.5 The Government agrees with the Committee that a case may emerge for extending the lives of Magnox stations. This is a matter for the management of the company, subject to economic considerations and to obtaining NII permission. These decisions should be based on the avoidable cost of the additional investment together with the likely benefit of the additional output at the market price (ie without the levy).
- 5.6 As the report points out the Government took steps to relieve National Power of some of the risks associated with nuclear power through the Non-Fossil Fuel Obligation and the Fossil Fuel Levy (see

Section 8 below) and risks of cost increases on the generators resulting from regulatory change were to be shared and underpinned by Schedule 12 to the Electricity Act 1989. The full scope of the risk sharing was set out as an appendix to the evidence from Kleinwort Benson.

## 6. Accounting Practices

### Recommendations

- *The accounts of Nuclear Electric and SNL should be compiled using the same accounting practices (paragraph 128).*
- *The Department should ensure that annual reports on nuclear generation costs for Magnoxes, AGRs and (eventually) Sizewell B are published in a form analogous to the CEGB's Grey Books, and information should be provided in the same form both for Scotland and for England and Wales (paragraph 127).*

- 6.1 Nuclear Electric's accounts will include a full set of figures based on the CCA convention. The Government regards this as the normal basis for public sector companies and as more appropriate for capital intensive organisations operating on very long timescales. Nuclear Electric's Report and Accounts will also contain HCA information.
- 6.2 Steps had already been taken in the 1987/88 and 1988/89 accounts to bring nuclear accounting policies of SSEB and CEGB more closely into line for example in the assumptions used for calculating reprocessing costs and in the approach to uranium credits.
- 6.3 The work commissioned by Department of Energy and the Scottish Office from Ernst & Young on harmonisation and verification of nuclear provisions, should further assist this process. It will be SNL's intention to provide both historical cost and current cost information in its published accounts. It is important that the accounting policies used properly reflect the particular circumstances of NE and SNL and the structures of the markets in which they operate.

- 6.4 The Committee criticises SSEB (paragraph 33) for using a historical rather than a current cost convention for measuring the returns on capital. Since 1979 the SSEB has provided current cost information in its accounts; and in line with the Committee's recommendations the financial performance of the business as a whole, in the form of its financial target, is measured in current cost terms. SSEB has, however, consistently used historical cost figures to show the costs being incurred by the business. The Scottish Office recognises that the SSEB figures do not provide a complete picture in that they do not fully take account of the effects of inflation and changing market conditions over the long lives of the assets involved.
- 6.5 Arriving at current cost asset values is however particularly complex in a position, as in Scotland, of substantial surplus capacity. It is by no means straightforward to arrive at a value for an optimum balanced system to meet required demand or to assign a value within it to a particular generating asset. The Scottish Office was in discussion with its accounting advisers and SSEB on these issues but no conclusions had been reached when the decision was taken to remove nuclear from privatisation. The Scottish Office will be discussing with SNL and its auditors appropriate methods of valuing its assets on a current cost basis.
- 6.6 The Government agrees that separate information about the costs of generation from Magnox, AGR and, in due course, PWR stations should be provided. SNL has advised the Scottish Office that it proposes to account separately for its Magnox and AGR businesses. For England and Wales the Department of Energy and Nuclear Electric will be discussing the form in which this information will be published. Under the Companies Act 1985 Nuclear Electric will publish audited accounts each year and the company's generation licence requires nuclear generation to be segregated from other operations in these accounts.
- 6.7 The Committee also recommends that the information about the costs of Magnox, AGR and Sizewell

generation should be provided separately. Under the Companies Act 1985 Nuclear Electric will publish audited accounts each year and the company's generation licence requires nuclear generation to be segregated from other operations in these accounts. SNL has advised the Scottish Office that it proposes to account separately for its Magnox and AGR businesses. The Government considered this to be an example of the company adopting a negotiating position.

- 6.8 The Committee also commented on the tax deductibility of provisions in paragraph 64. The Department of Energy's memorandum explains that the tax issue did not in the end affect the provisions in the 1988/89 accounts. The Government did not accept the assumptions underlying the calculations of the possible additional provisions required as a result of the tax problem perceived by National Power.
- 6.9 In paragraph 13 the Committee criticise the use of discounting by the industry when making provision for future decommissioning and reprocessing costs. As outlined in the response to the Committee's Third Report (1989-90) on BNFL's Report and Accounts, the purpose of discounting is to ensure that the customers who benefit from nuclear generation pay a fair price, taking into account the time value of money, for the decommissioning and reprocessing work that this involves. This is in keeping with standard accounting principles.

## 7. The Fossil Fuel Levy

### Recommendation

- *The Department of Energy and the Regulator should publish comprehensive information on how the Fossil Fuel Levy is set and the reasons for any changes (paragraph 114).*
- 7.1 The basis on which the fossil fuel levy is to be calculated is set out in Section 33 of the Electricity Act 1989, as amplified by the Fossil Fuel Levy Regulations 1990. The amount of money the levy has to collect is the difference between the total cost to public electricity suppliers (including any advanced or deferred payments) of

electricity supplied by them that was generated in fulfilment of the Non Fossil Fuel Obligation (NFFO), and what would have been the cost of that electricity if it had been generated by a fossil-fuelled generating station. The Regulations specify that this latter amount is calculated on the basis of the average market price of electricity.

- 7.2 The levy is imposed ad valorem on all sales of electricity by licensed suppliers other than sales of levy-exempt electricity. Levy-exempt electricity is non-fossil generated electricity which has not been purchased under NFFO arrangements. In order to calculate the rate of levy, estimates need to be made of the total amount to be recovered through the levy and total sale revenue of leviable electricity. Clearly, there is likely to be some difference between these estimates and the out-turn figures. The Regulations make provision for correction factors to be applied to the rate of levy for future years to take account of this difference together with interest accrued.
- 7.3 The levy rate for 1990-91 was set on this basis by the Secretary of State for Energy. The rate took account of nuclear capacity which was to be contracted for under the initial NFFO Order and the likely contribution from renewables under the further NFFO Order to be laid later this summer. The detailed forecasts underlying the calculation are commercially confidential because they depend, inter alia, on forecasts of the electricity pool price. But after the end of the year the amount of levy collected during the course of the year will be published by the Secretary of State for Energy.
- 7.3 The Department of Energy expects that there will be a substantial reduction in the rate of levy over the period to 1998. This will stem largely from reductions over the period in the real price of electricity purchased by the PESs from Nuclear Electric, expected increases in the electricity pool price and forecast increases in electricity demand. Because the levy has to be set each year in the light of the latest forecasts, it is not possible at present to be more precise about the level of the levy in years beyond 1990-91.



- 7.4 The levy rate for future years will be set and published by the Director General of Electricity Supply

## 8. SCOTTISH ISSUES

- 8.1 The Committee concludes that nuclear power in Scotland is no cheaper than that in England and Wales (paragraph 34) and that SNL's output will be subsidised by the taxpayer, distorting the electricity market in Scotland and between Scotland and England and Wales (paragraph 115).
- 8.2 Scotland has two efficient AGR stations. Most of the costs associated with nuclear generation are either sunk investment costs or inescapable back-end costs arising from the nuclear cycle already in train. Irrespective of the way in which the capital costs are derived, the incremental (mainly fuel) costs of generation from these AGR stations remain cheaper than those of any other fuel (including gas) except hydro. It therefore makes economic sense for the stations to run at maximum output providing customers with a stable source of baseload power.
- 8.3 The Committee recognises (paragraph 115) that a levy would not be appropriate in Scotland. Because of the high proportion of nuclear output there is danger that such a levy would increase average tariffs to a level above those in England and Wales. The Nuclear Energy Agreement is designed to capture the benefits of low nuclear running costs and attribute a proper value to nuclear output without distorting the market or undermining the competitive position of electricity in Scotland. Under the agreement SNL's output will be provided at a long-term sustainable price representing the market value of baseload power contracts. This arrangement ensures that the price for nuclear output will be neither too high to lead to uncompetitiveness nor too low to represent a subsidy to customers. It therefore strikes an appropriate balance between the interests of the taxpayer and the consumer.
- 8.4 Government recognised from the outset of the privatisation process that in order to maximise the proceeds to the taxpayer, the high level of debt in the electricity supply industry in Scotland would

have to be addressed by capital restructuring involving a significant level of debt extinguishment. These considerations were unaffected by the information about nuclear costs which subsequently became available or the decision to set up SNL as a separate company in the public sector.

- 8.5 The Committee also makes reference in paragraph 115 to the financial assistance available from Government in respect of long-term nuclear liabilities. In the case of SNL it would be distorted of its financial performance in respect of its AGR business if it had to bear the costs associated with maintaining the value of inherited Magnox liabilities when Magnox generation has ceased and produces no revenue flow. The Secretary of State for Scotland has therefore relieved SNL of some of its Magnox liabilities by entering into an agreement under Schedule 12 of the Electricity Act 1989 up to a total commitment of £716 million. It should be noted that no Schedule 12 payments will be made until the costs to be covered are actually incurred. Given the length of the nuclear cycle it is not expected that cash will actually be provided from Government funds for some time.
- 8.6 The "package of measures" referred to by the Committee in paragraph 115 is designed specifically to avoid the distortions which would otherwise exist both in the Scottish electricity market and between Scotland and England and Wales. The arrangements have been fully explained to the European Commission which has approved the debt extinguishment and the Schedule 12 assistance.
- 8.7 The Committee also criticises the Scottish Office for failing to obtain information earlier on the costs of nuclear generation in relation to other fuels, for paying insufficient attention to its advisers and for failing to give adequate priority to nuclear issues (paragraphs 97-101 and 109).
- 8.8 Neither the Scottish Office nor the Secretary of State for Scotland was invited to appear before the Committee. The only evidence provided was a short written memorandum by the Scottish Office towards the end of the Inquiry on a narrow range of specific

points raised by the Committee. It is regrettable that the Committee has chosen to draw sweeping and inaccurate conclusions from such limited information.

- 8.9 Secretary of State for Scotland's evidence of 22 February 1989 referred to in paragraph 98, contrary to the impression conveyed, was not given to this Inquiry but to a previous Energy Committee Inquiry into electricity privatisation. As the Secretary of State for Scotland made clear in that evidence he was using information supplied by SSEB that "the all in direct cost of Hunterston B output was 1.65 pence per unit compared with 2.20 pence per unit from coal-fired output". (This included the station operating costs, fuel, backend liabilities and HCA depreciation charges). Given the higher costs of generation from Hunterston A Magnox station this information about the cheapest nuclear units was not inconsistent with the Scottish Office view that overall the costs of nuclear were broadly commensurate with fossil generation.
- 8.10 The Committee has failed to grasp the significance of the different structure of the industry in Scotland compared with that in England and Wales and the fact that no new nuclear investment was in prospect. In the context of privatisation what was important commercially in a vertically integrated system was the overall cost structure of the companies. The information about BNFL cost increases which the CEGB raised in December 1988 and to which the Committee attaches much significance had already, following discussions with the Scottish Office, been incorporated by the SSEB in their 1987/88 accounts together with revised estimates of reprocessing costs which no longer assumed a dry store option; and the costs associated with withdrawing from the contract with BNFL for Chapelcross output. These adjustments totalled some £295 million. They were taken into account in their projections by the Scottish Office's financial advisers, with whom the Scottish Office was in close and continuing dialogue, and were not judged by them to affect prospects for privatisation. The Scottish Office and its advisers were however concerned about the risks and uncertainties implied by these revisions and estimates of provisions. In

particular they emphasised the need to put the relationship with BNFL on a more commercial basis and during the early part of 1989 the Scottish Office worked closely with the Department of Energy on regulatory risk sharing arrangements. Given the composition of nuclear plant in Scotland, the Scottish Office had a particular interest in ensuring that the proposed arrangements covered AGR as well as Magnox generation. It is therefore simply not the case that the Scottish Office "did nothing to find out the cost of nuclear generation in Scotland" and care was indeed taken to ensure that arrangements would be made "to ensure the sale of Scotland's nuclear output" (paragraph 105). The information about high costs which was emerging from the industry in the latter part of 1989 might well have altered the Scottish Office's and their financial advisers' view of the companies' viability but before those studies were complete the Secretary of State for Energy had decided to withdraw the nuclear stations in England and Wales from the privatisation. In that circumstance the unequivocal advice from the Scottish Office's advisers was that privatisation of nuclear generation in Scotland alone was not a practical proposition.

## 9. Sizewell B

### Recommendation

- *As a matter of urgency, the Department or Nuclear Electric should estimate as accurately as possible the costs of completing and operating Sizewell B during its intended life compared with the costs of cancelling it and generating the same power from other sources; and in so far as continuation is justified by non-economic benefits, comparison should be made with the cost of alternative ways of achieving those benefits. The Department should publish the estimate, explaining how it was calculated (paragraph 118).*

9.1 The Committee makes recommendations concerning the construction of Sizewell B. Shortly before its Report was published, the Secretary of State for Energy announced the Government's decision to maintain its commitment to the completion of the

project and made public the detailed reasoning underpinning the decision. This was done in his letter to the Chairman of the Select Committee of 26 June 1990 which was placed in the Library of the House together with further material from Nuclear Electric. Nuclear Electric carried out a full and thorough review of the cost of completing Sizewell B and of the avoidable costs of cancelling the station. As the letter shows, the Government gave Nuclear Electric's analysis very full consideration before taking the decision. This detailed analysis of the avoidable cost of proceeding with Sizewell B could only have been carried out after the announcement of the Government's decision not to proceed now with the three other PWRs. It was commissioned immediately after the announcement and has confirmed the result of the Department's work undertaken prior to the decision of November 9. The fact that a more detailed assessment was possible later does not invalidate the earlier preliminary one and which came to similar conclusions. The publication of the Department's analysis meets fully the Committee's recommendation in this area. A copy is attached at Annex B.

## 10. The Future of Nuclear Power

### Recommendations

- *Sufficient detailed material should be published at the time of the 1994 review to permit an informed public debate before any decisions are taken (paragraph 129).*
  - *It is essential that if further nuclear investment is justified in 1994 on the grounds of diversity of supply or reduced pollution, the economics of nuclear power are in no way glossed over, that the full costs and risks of nuclear power are ascertained as closely as possible, and that the analysis is fully exposed to public examination prior to decisions being taken (paragraph 123).*
- 10.1 The Secretary of State for Energy made clear in his statement to the House on 9 November 1989 (OR Col 1176) that the Government will not grant capital

expenditure approval to the Company for the construction of new nuclear stations by Nuclear Electric before 1994 when it will undertake a comprehensive review of the prospects for nuclear power in the future. Nuclear Electric's performance in bringing Sizewell B towards operation will be of direct relevance to the 1994 review. The exact form and content of the 1994 review has not been decided. However Government has made clear on several occasions since the November statement that the review will be comprehensive and that it is taking steps to ensure that much information about nuclear costs will be published than in recent years. It will certainly take account of the points suggested by the Committee.

Department of Energy

Scottish Office

July 1990

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Treasury Chambers, Parliament Street, SW1P 3AG

n. 5. P.M.

BHP

20/7

The Rt Hon John Wakeham MP  
 Secretary of State for Energy  
 Department of Energy  
 1 Palace Street  
 London  
 SW1E 5HE

20<sup>th</sup> July 1990

*John Major*  
 CIVIL NUCLEAR R & D

You wrote to John Major on 6 July proposing a review of Civil Nuclear R&D to be chaired by John Collier.

2. I agree that it is important for clear and consistent objectives to be set for all civil nuclear R&D, leading to better specification of the objectives of Government's own expenditure.

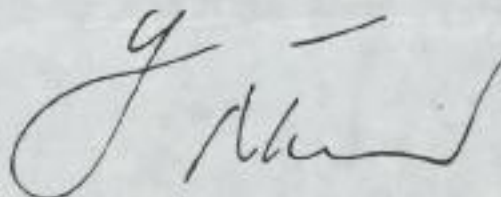
3. However, in my view, although it is sensible for a group comprising members of the industry and chaired by John Collier to consider their own R&D, it would not be appropriate for them to look at the strategy and policy of the nuclear R&D funded directly by the Government. This is a point which my officials made in discussion with yours on the Efficiency Scrutiny recently. There is a risk that if the group's remit runs too widely it would simply provide an opportunity for the industry to lobby in both public and private for additional funds. In particular, it would be unfortunate if they took the opportunity to challenge Government decisions on fusion and the fast reactor. It seems to me therefore that the group should be asked to consider the industry's R&D, with a view to rationalising it and focusing mainly on safety, waste management and decommissioning problems. We can then consider our response and the Government's own R&D - including the balance between R&D on nuclear power and on other energy sources - in the light of independent advice from ACORD. It is of course very important in this context to make progress with plans to strengthen the Department's own technical capacity for assessing nuclear R&D in the light of the Efficiency Scrutiny before decisions on the Group's report are taken.

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4. I agree therefore that the terms of reference must make it clear that the recommendations must be on the basis of, at the maximum, present and planned levels of Government expenditure on nuclear R&D. But I would suggest that they went a little further and said firstly that we intend that the industry should rationalise its own R&D, with a view to reducing its costs, and secondly that they must assume that the Government's share of spend on R&D will not be increased. If the industry is to comment on the Government's own programmes it should only be to identify overlap and scope for rationalisation.

5. I would be very grateful to have an opportunity of seeing the terms of reference, before you make any announcement.

6. I am copying this letter to the Prime Minister, Tom King, Peter Lilley, John MacGregor, Malcolm Rifkind, Chris Patten, Michael Howard, Sir Robin Butler and to Sir Angus Fraser.

A handwritten signature in dark ink, appearing to read 'N. Lamont', with a large, stylized initial 'N' and a horizontal line above it.

NORMAN LAMONT



ENERGY: Policy Pt 13



cc PR

THE RT HON JOHN WAKEHAM MP



Department of Energy  
1 Palace Street  
London SW1E 5HE  
071 238 3290

CNR

The Rt Hon Douglas Hurd MP  
Foreign and Commonwealth Office  
Whitehall  
LONDON SW1

19 July 1990

See Douglas

## INFORMAL ENERGY COUNCIL 16 JULY

I understand the Italian Presidency has already planned some 21 informal Councils during its tenure. This was one of the first. I attach a short report from Tony Baldry, who represented the UK. I fear it is likely to form the pattern for other informal Councils and colleagues should be forewarned.

We were fortunate in relation to the Energy Council that by diligent groundwork we were part of the general consensus and should be able to retrieve some of the ground apparently lost in the press release. We were also fortunate that only the Italian press was present at the press conference. Other informal Councils will doubtless be considering matters on which our position will be more isolated and which attract much more international press attention.

Tony's report gives rise to a number of tactical questions. Should we take the matter up in Coreper, given that the Rhodes European Council agreed that informal Councils should normally be limited to 7 per Presidency? What level of representation might be wise? Should we seek to bind the Presidency, at least while it is Italian, to agreed press communiques - or would that go too far towards formal conclusions?

I think we should ask officials to consider these questions. It would be helpful if their advice could be ready for Ministers before Community business starts up again in September.

JOHN WAKEHAM

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cc Members of Cabinet and Sir Robin Butler

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RU

10 DOWNING STREET  
LONDON SW1A 2AA

*From the Private Secretary*

19 July 1990

*Dear John,*

CIVIL NUCLEAR R&D

The Prime Minister has seen a copy of your Secretary of State's letter of 6 July to the Chancellor proposing the establishment of a group, under the Chairmanship of Mr John Collier, to consider what nuclear R&D should be undertaken in order to maintain the nuclear option. The Prime Minister has also seen a copy of the Employment Secretary's letter on this subject of 13 July.

The Prime Minister is broadly content to proceed as proposed. She very much agrees with your Secretary of State that the terms of reference of the group need to be narrowly and clearly defined. The Prime Minister would be interested to see the Chancellor's and others' views on how the terms of reference can best be drawn up.

I am copying this letter to John Gieve (Treasury), Simon Webb (Ministry of Defence), Martin Stanley (Department of Trade and Industry), Stephen Crowne (Department of Education and Science), Jim Gallagher (Scottish Office), Phillip Ward (Department of the Environment), Martyn Waring (Department of Employment), Sonia Phippard (Cabinet Office) and Sir Angus Fraser (Efficiency Unit).

*Yours,  
Barry*

BARRY H POTTER

John Neilson Esq  
Department of Energy

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PLS  
EAM

cc PU

10 DOWNING STREET  
LONDON SW1A 2AA

*From the Private Secretary*

19 July 1990

*Dear John,*

FUSION

Thank you for your letter of 16 July on future R&D work on nuclear fusion. We spoke about this on the telephone yesterday.

I did submit the letter to the Prime Minister yesterday evening. She has noted that your Secretary of State shares her concern that large-scale R&D on fusion is not a good investment. She has also noted that the Government's negotiating position will need to be very carefully considered.

The Prime Minister is content, subject to comments from other members of E(ST) and OD(E), to await your Secretary of State's further proposals which will be brought forward at the beginning of September.

I am copying this letter to the Private Secretaries of other members of E(ST), OD(E), Sir Robin Butler and Sir John Fairclough.

*Yours,  
Barry*

BARRY H POTTER

John Neilson Esq  
Department of Energy

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Prime Minister

②

THE RT HON JOHN WAKEHAM MP

A holding response -  
relevant notes attached.

Further paper from

John Wakeham in

September.

JH

18/7



Department of Energy  
1 Palace Street  
London SW1E 6HE  
071 238 3149

Barry Potter Esq  
Private Secretary to  
The Prime Minister  
10 Downing Street  
LONDON  
SW1A 2AA

16 July 1990

Dear Barry

**FUSION**

My Secretary of State has seen your letter of ~~18~~ June, as well as the Chief Secretary's letter of 12 June and the Secretary of State for Trade & Industry's letter of 18 June.

He entirely shares the Prime Minister's concern that large scale R&D on fusion is not a good investment. He agrees that the crucial point is to avoid being swept along by international enthusiasm into an ill-considered decision to construct an ITER device. This decision is however not likely to be taken before 1994 or 1995 and possibly even later. He feels therefore that we should consider whether we are more likely to achieve our goals by opposing the relatively cheap work on engineering design, where our present negotiating position is weak, or preparing a longer-term strategy focussing on the construction decision. He has asked officials here to prepare ideas on this, including the impact of such strategies on our partners' willingness to contribute to the costs of decommissioning JET.

My Secretary of State welcomes the Prime Minister's agreement to prepare a further paper. He intends to put this forward at the beginning of September, when officials here will have completed their lobbying of our partners and the Commission for aid with the decommissioning of JET. By that time too the report of the Fusion Review Board should have appeared, so that Ministers will be able to see more clearly the context in which we have to take decisions.

I am copying this letter to the Private Secretaries to other Members of E(ST), OD(E), Sir Robin Butler and Sir John Fairclough.

Yours  
John

J S NEILSON  
Principal Private Secretary

CONFIDENTIAL

ENBEGT . Foucault 173



COPIED



CCP

Department of Employment  
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Telephone 071-273 5802  
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Secretary of State

The Rt Hon John Wakeham MP  
Secretary of State for Energy  
Department of Energy  
1 Palace Street  
LONDON SW1E 5HE

13<sup>th</sup> July 1990

*Dear John*

**CIVIL NUCLEAR R&D**

*WILL REQUEST IF REQUIRED*

Thank you for copying to me your letter of ~~6~~ July to John Major on your proposals for civil nuclear R&D.

I support your proposal to set up the group which John Collier is to chair. I should like the Health and Safety Executive (HSE) to be represented on the group by a Deputy Chief Inspector of Nuclear Installations and where appropriate by a representative of HSE's Nuclear Safety Research Management Unit (NSRMU).

The knowledge and expertise of HSE's Nuclear Installations Inspectorate in relation to the various nuclear options and the safety requirements to be met would enable it to provide advice about the future direction of developments in nuclear power. In addition, NSRMU's representation would be valuable in view of its nuclear safety research management responsibilities on behalf of the Health and Safety Commission and the review it is conducting of the essential teams and facilities for providing a nuclear safety research capability.

I am copying this letter to the Prime Minister, John Major, Tom King, Nicholas Ridley, John MacGregor, Malcolm Rifkind, Chris Patten, Sir Robin Butler and to Sir Angus Fraser.

*Michael Howard*

**MICHAEL HOWARD**



Employment Department · Training Agency  
Health and Safety Executive · ACAS

Prime Minister

①

THE RT HON JOHN WAKEHAM MP



Department of Energy  
1 Palace Street  
London SW1E 5HE  
071 238 3290

Mr Wakeham's proposals for a 'Collier Group' to consider what R&D is necessary to maintain the civil nuclear option if supported by government. I understand the Chancellor is content also subject to defining sufficiently stringent terms of reference.

The Rt Hon John Major MP  
Chancellor of the Exchequer  
HM Treasury  
Parliament Street  
LONDON  
SW1P 3AG

Are you content for Mr Wakeham to announce by P.A. before the recess?  
6 July 1990  
BTP  
18/7

**CIVIL NUCLEAR R&D**

Last November I announced the Government would review nuclear prospects in 1994 as Sizewell B nears completion.

For the foreseeable future, Government will take all major decisions on nuclear policy and fund, directly or indirectly, virtually all nuclear R&D. I want to ensure clear and consistent objectives are set for all the civil nuclear R&D which the Government, directly or indirectly, funds. We must get maximum value for money from this expenditure and ensure it reduces the costs and improves the economics of nuclear power.

It will be for Government to decide the outcome but we need to involve the industry in this process since they have most of the expertise. They are already looking at the possibility of rationalisation within this area and I want to encourage this process. I therefore intend to invite John Collier, Chairman of Nuclear Electric, to chair a group of those involved in the nuclear industry to consider what nuclear R&D should be done to maintain the nuclear option, its timescale and who should pay for it.

I intend to set the Collier group stringent terms of reference to ensure they address the need to develop economic nuclear power, the scope for rationalisation, and the potential for cost savings from international collaboration. It will need to consider whether bodies outside the nuclear industry - such as universities - might do the R&D more cheaply with greater prospects of technology transfer. A senior official from my

*See Tom*





Department will be the Group's assessor and I would hope the SERC and HSE will be represented in at least part of the Group's work. My Department will contribute to the Secretariat. The Group's recommendations must be on the basis of, as a maximum, present and planned levels of Government expenditure on nuclear R&D.

Once the Group has reached views, I intend that they should be circulated widely outside the industry for comment. In the light of this consultation, the Government would reach its own conclusions which I would propose to publish. I would also want to review the objectives of the individual programmes my Department funds in the light of the overall conclusions. In doing all this, we shall meet a central recommendation of a recent Efficiency Scrutiny which proposed that my Department should consult widely and prepare and publish a rationale for its nuclear R&D funding and prepare new objectives for individual programmes.

On timing, it would take till the end of this year before the Collier group could form views. Thereafter, I would expect the consultative process to last around 3 months and the Government to take a further 3 months to reach conclusions.

If you are content, I would announce this review by an arranged PQ before the recess and refer to it in the nuclear chapter of the White Paper on the Environment.

I am copying this minute to the Prime Minister, Tom King, Nicholas Ridley, John McGregor, Malcolm Rifkind, Chris Patten, Michael Howard, Sir Robin Butler and Sir Angus Fraser.

A handwritten signature in dark ink, appearing to read "John Wakeham".

JOHN WAKEHAM

CONFIDENTIAL *file*

*PM*



10 DOWNING STREET

LONDON SW1A 2AA

*From the Private Secretary*

25 June 1990

*Dear John,*

SIZEWELL B

The Prime Minister has seen a copy of your Secretary of State's letter to the Chancellor of 21 June, proposing that he should confirm today that Sizewell B will be completed.

The Prime Minister is content to proceed as proposed by your Secretary of State.

I am copying this letter to Alan Ring (Department of the Environment), Ben Slocock (Department of Trade and Industry), Uriel Jamieson (Scottish Office) and Sonia Phippard (Cabinet Office).

*Yours,*

*Barry*

BARRY H. POTTER

John Neilson, Esq.,  
Department of Energy.

CONFIDENTIAL

*CU*

PRIME MINISTER

22 June 1990

SIZEWELL B

This is a short note in support of continuing with Sizewell B. Although the economics do not work in terms of total costs, they do on the basis of avoidable costs. In round numbers, total project costs are approximately £2 billion of which half are already spent or irrevocably committed. The question is therefore whether a further £1 billion should be invested.

In order to make a modest financial return on this further £1 billion, electricity from Sizewell B need only be sold at 2.6p per kilowatt hour which is less than the 3.5p required from a new coal station and comparable with a combined cycle gas turbine. Of course the total economics of Sizewell B would require a return to be made on the full £2 billion which would therefore need at least 5p per kilowatt hour which is completely uncompetitive.

There is therefore a financial case for completing Sizewell B although the stronger arguments are political and strategic. In November the Government decided to exclude nuclear electricity from the flotation because the commercial evidence was that the City, and private investors advised by the city, were not prepared to buy the CEGB's existing reactors. The argument was never that Government had lost its faith in nuclear generation in principle. Therefore, a decision to continue with Sizewell B will be a reaffirmation of the Government's long term belief in this form of power.

Sizewell B should therefore be completed on the basis set out in John Wakeham's minute. I understand the Treasury will also support it.

*D.A. Lewis*

*PP* GEORGE GUISE

Prime Minister

afu ①

THE RT HON JOHN WAKEHAM MP

It is agreed policy that

Yes - we must go ahead



Department of Energy  
1 Palace Street  
London SW1E 5HE  
071 238 3290

Sizewell B should go ahead. Treasury are content (they accepted that at the Chancellor's bilateral last week); and the attached Policy Unit with comments.

Nuclear Electric have revised upwards the costs of Sizewell B - mainly because the decision to postpone further power stations, adds to the design costs etc. attributable to Sizewell B.

Mr Wakeham will announce on Monday 25 June:

- the revised costs (these would be released by Nuclear Electric) 21 June 1990

- that a review of the economy shows it is still right to proceed with Sizewell B.

This would pre-empt a suspected hostile report from the Energy Select Committee not necessary. (intub?) 22/6

The Rt Hon John Major MP  
Chancellor of the Exchequer  
Treasury Chambers  
Parliament Street  
LONDON  
SW1P 3AG

Dear John

Last Autumn we reviewed the development of the PWR nuclear power programme in the light of the privatisation of the electricity supply industry and the expected growth in diversity in fuel supply. We concluded, and I announced in my statement to the House, that the non-fossil fuel obligation should be set at a level which could be satisfied without the construction of new nuclear stations beyond Sizewell B but that the Government attached the highest importance to the successful completion and operation of Sizewell B in order to maintain the PWR option in the United Kingdom.

We were aware at the time that the decision to at least postpone the later stations would increase the costs of Sizewell B. The Department's witness made this point at the Hinkley C public inquiry. We were not able to quantify the impact because only National Power had the necessary information and it was not possible to share our thinking with them. However, as soon as Nuclear Electric was created I asked the Chairman, John Collier, to review the Sizewell timetable and project cost in the light of the decision. He has now reported to me. Your officials have received a copy of his full report and have been fully involved in subsequent discussions with the company.

The company are confident that the project will be completed on time. The CEB Executive set a 72 month construction programme. To be sure of meeting this the project leader set himself a 63 month programme. He was about five weeks late on the faster timetable because of prolonged high winds in the winter and industrial action, but these problems are now behind him and he is recovering lost ground. The company believe there are no grounds for believing that



the 72 month timetable is at risk. We must not be complacent because the most difficult phase of the project is still to come and nuclear construction has a poor history, but overall my officials believe the project to be well managed and have found no basis for seriously questioning the company's judgement.

The company's review of costs has confirmed that, but for our decision last November, there would have been no reason to revise the total cost estimate of £1870 million in 1987 prices (the year in which the project was sanctioned). However, because Sizewell B will now be one of a kind, the company have had to revise the total cost to £2229 million, although they propose a write-off of £199 million to give a net cost to completion of £2030 million. The total increase of £359 million is due to three main factors. Certain design costs which were to be carried by four stations must now be allocated to Sizewell B alone (£106 million). Contractors are now seeking to redress the loss of future work by charging more or claiming compensation (£126 million). An additional contingency allowance (£110 million) is needed because the project is now more exposed to delay; contractors do not have the incentive of future contracts to produce good performance and the unions are likely to be more difficult.

I do not believe that the cost increase is any reflection on the management of the project. I also remain convinced, for reasons I explain below, that it would be entirely wrong to cancel the project. However, the revised costs will attract public comment and will intensify pressure for cancellation. I am also conscious that the Energy Select Committee review of nuclear costs is to be published on 27 June and may well demand a review of the economics of Sizewell B. We must therefore fully understand and be able to explain the economics of the project. You will also want to understand the public expenditure implications of continuing to construct. I therefore asked my officials to conduct a full review of the revised cost estimates and of the economics of the project at this stage; they have submitted the enclosed paper. The section on the economics has been agreed with your officials, (the remainder of the paper has been prepared by mine alone. *(not attached)*)

The demand projections accepted by the Sizewell Inquiry, developed in our privatisation planning, and reviewed at the Hinkley Point C Inquiry, confirm the need in the mid 1990s for a station of the capacity of Sizewell B. There is no doubt that to provide that capacity starting from scratch we would not chose to build a one-off nuclear station. The preferred choice today would probably be a combined cycle gas turbine (CCGT). However, we are not starting from scratch; one third of Sizewell B is built and a sum equivalent to over half the total cost is either spent or unavoidable. We must therefore assess Sizewell against a CCGT on an avoidable cost basis, assuming past costs are sunk. On this basis and taking a range of assumptions about capital cost and discount rate, fossil fuel prices and operational performance, Sizewell is still likely to produce at a cost comparable to the market price for electricity and only marginally higher than a CCGT. Officials have calculated that the



cost of power from Sizewell B is likely to be between 2.5 and 3 p/kwh at an 8% discount rate and about 0.25 p/kwh higher at 10%. This overlaps the range calculated for a CCGT of 2.2 to 2.7 at 8% and 2.4 to 2.9 at 12%, the rate we expect the established generators to look for in the private sector. The market price in the mid 1990s is estimated at 2.8 p/kwh.

I believe this likely additional cost for power from Sizewell B is justifiable and will enable a sound public defence to be mounted. I also believe that the case for cancellation disappears entirely when the wider economic and political considerations are taken into account.

My greatest concern is that the cancellation of Sizewell B will either make it impossible in practice to embark on a new nuclear programme in future or mean that we could only do so after many years delay. We could then no longer bank on the nuclear option. My officials have explained this in their paper. They have explained that the UK would lose the expertise needed to evaluate and manage such a programme even if, as is probable, the reactor system is bought from overseas. I place greatest weight on the almost irreparable damage we should do to the public's perceptions of nuclear power. A future government would face a daunting uphill task to win public support for a new programme if Sizewell B were abandoned. Even if successful, this would take considerable time and the public inquiry process would be much extended. Industry would also have little confidence that we would stick to a new programme. All these factors would increase the costs substantially.

I do not believe it is sensible effectively to abandon the option now, whilst the uncertainties about the greenhouse effect and future fossil fuel prices remain so great and nuclear power is one of the few proven solutions to both problems. I cannot say that nuclear power will be an essential part of the UK's response to the greenhouse problem. But it must be premature to rule it out now. Nor do we want to do anything to make it more difficult for other countries to rely on nuclear power for this purpose. We should also recognise that our commitment to stabilising greenhouse gases at 1990 levels by 2005 will become more difficult if Sizewell B is not completed.

Similarly, we cannot establish now that nuclear power will be needed in the foreseeable future to replace fossil fuel consumption and stabilise fossil fuel prices, although in the long term I believe nuclear power will be essential as these fuels cease to be available. However, most commentators are concerned that the oil supply/demand balance will harden in favour of the suppliers, including OPEC during the 1990s. If that happens, all fossil fuel prices will increase together; diversification of the UK electricity industry from coal to oil and gas will not alleviate the problem. As the position of the suppliers improves, we can also expect security of supply to weaken. OPEC might try to assert its new strength by reducing supply. We can also never rule out the



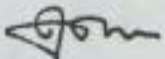
possibility of renewed difficulties in the coal industry. Nuclear power cannot be extended overnight to respond to oil shocks but those countries which can only respond slowly to the need for alternatives to fossil fuels will eventually suffer the greatest comparative disadvantage.

The uncertainties in the environmental debate and fossil fuel markets lay behind my proposal to colleagues last Autumn that the future of nuclear power should be reviewed in 1994. By then we will know whether Sizewell B has been built to time and cost and the wider environmental and economic uncertainties will to some extent be clarified. Colleagues accepted that proposal. The cancellation of Sizewell B now would completely pre-empt that review. Such a step would be most difficult to defend so soon after the review was announced; nothing has happened, either to clarify the factors which will inform the review, or to undermine our confidence in the management of the project, to call into question our earlier decisions.

For the reasons I have set out above and are covered in my officials' paper, I believe that it is right to continue with the project. I hope you will agree with this. From the mid-1990s Sizewell is expected to earn up to £100 million per annum and, if no other stations are built, by 2015 that will be Nuclear Electric's only income to offset against the heavy costs of decommissioning the Magnox and AGR stations. We must also recognise that the Commission could seize the opportunity of cancellation to review the NFFO and levy with severe consequences for NE's cash flow. Officials believe that it might be possible to save up to £50 million in one year of the PES period by a combination of bringing forward and deferring expenditure from other years. I should be happy to discuss the precise scope for such savings with you in the forthcoming IFR round.

The revised cost is for Nuclear Electric to announce and defend in the first instance. I shall, however, need to confirm our commitment to the project at the same time. The Energy Select Committee will publish its report on nuclear costs next week, 27 June. I expect them to call for a review of the economics. I see great advantage in being able to pre-empt this report by announcing on 25 June, either in First Order Questions or in the debate on energy, that we have undertaken such an analysis and can confirm that Sizewell B will be completed. If possible, I should therefore welcome your reaction by the end of this week although I appreciate that this is a very tight timetable.

I am copying this to the Prime Minister, Malcolm Rifkind, Chris Patten, Nicholas Ridley and to Sir Robin Butler.

*John Wakeham*  
  
 —

JOHN WAKEHAM



10 DOWNING STREET  
LONDON SW1A 2AA

*From the Private Secretary*

18 June 1990

*Dear John,*

FUSION

The Prime Minister has seen a copy of your Secretary of State's letter of 5 June to the Trade and Industry Secretary. She has also seen a copy of the Chief Secretary's letter of 12 June on this subject.

The Prime Minister understands that your Secretary of State is considering further what the Government's stance might be at forthcoming EC discussions on the JET fusion programme and its possible successor ITER.

The Prime Minister is not attracted to the approach set out in your Secretary of State's letter of 5 June. In essence, although it is not Government policy to permit further research work on fusion, the Department of Energy paper proposes acquiescence to the Commission's plans for extending the JET project and initiating ITER. She appreciates that such an approach might help generate funds towards meeting the costs of de-commissioning JET. But, like the Chief Secretary, the Prime Minister doubts whether this represents value for money - bearing in mind the potential huge cost of the ITER programme were it to be pursued in later years.

The Prime Minister would be content for your Secretary of State to prepare the further paper proposed following further consultations with the Chief Secretary and with the Commission.

I am copying this letter to the Private Secretaries to other members of E(ST) and O(DE) and to Sir Robin Butler and Sir John Fairclough.

*Yours,  
Barry*

(BARRY H. POTTER)

John Neilson, Esq.,  
Department of Energy.



# dti

the department for Enterprise

~~CCPC~~  
PU

n. 5. P.M.  
EHP 19/6

The Rt. Hon. Nicholas Ridley MP  
Secretary of State for Trade and Industry

The Rt Hon John Wakeham MP  
Secretary of State for Energy  
Department of Energy  
1 Palace Street  
LONDON  
SW1E 5HE

Department of  
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PE4AXE

18 June 1990

*Dear John*

## COMMUNITY FUSION PROGRAMME

*attached*

Thank you for your letter of 5 June outlining your proposed strategy for negotiations with our European partners on the new Community Fusion Programme (CFP) and the extension of JET.

I agree with you overall approach with reflects the discussion at EQO. I shall be interested to hear the outcome of officials' discussion with the Community partners - and receive your further recommendations in due course.

I am sending copies of this letter to the Prime Minister, Members of E(ST) and OD(E) and to Sir Robin Butler and Sir John Fairclough.

*John Wakeham*

*N Ridley*



Recycled Paper

PRIME MINISTER

FUSION

The attached minute (Flag A) from the Energy Secretary sets out a tentative line to take in EC discussions on the JET fusion programme and its possible successor ITER. At Flag B is a letter from the Chief Secretary objecting to the proposed line. And at Flag C is a short, but incisive, note from the Policy Unit.

In essence, the Department of Energy paper proposes acquiescence to extending the JET project, and initiation of ITER. In return, it is thought this will help generate funds from the EC towards meeting the costs of decommissioning JET, which the UK accepted in 1977.

This is a rather odd approach. First, as the paper acknowledges, it is not Government policy to pursue R&D on new fusion projects. Secondly, getting a contribution to decommissioning JET is a poor benefit for allowing the ITER programme to go ahead - with its potentially huge costs in later years. *And the decommissioning costs would be greater in absolute terms*

However, the Department of Energy letter exhibits a certain degree of uncertainty about whether the Department's proposals are right. The Energy Secretary offers to write again after further internal consultation and discussions with the Commission, setting out a final strategy.

- Are you content for him to prepare a further paper?
- Do you want to make the points above now *ie that the proposed negotiating stance seems weak, when Government policy is not to promote further research on fusion, and would seem to represent poor value for money?* *Yes, not*

*BHP*

BARRY H. POTTER

15 June 1990

c:\economic\fusion (kk)

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BARRY POTTER

14 June 1990

JET FUSION

I mentioned to you that it is important to resist pressures to increase spending on JET and its proposed successor ITER. These pressures began in the run up to the decision on the Second Framework programme last autumn - see extract from the EC working paper attached with my handwritten comments at the time (part of my brief to Paul Gray dated 8/12/89).

The Department of Energy paper, while arguing against any policy reason for pursuing fusion, proposes that we should meekly acquiesce (it actually uses the work in Paragraph 34 of the annex) to extending JET and the initiation of ITER in order to buy goodwill for EC help towards JET decommission.

The appalling weakness of such a stance is well set out in the Chief Secretary's minute which should be strongly endorsed. There is no case for overturning the E(ST) decision of 1988, least of all in "acquiescing" to a programme we don't believe in!



GEORGE GUISE

CONFIDENTIAL

take more account of problems associated with degradation of the environment (soils, water, forests), a basic factor in the development of agriculture.

## 5. ENERGY

Two main problems have surfaced during the past decades in this vital area : Europe's dependence on imports (45 %) and the damage to the environment due to energy production and consumption. To assure and improve European competitiveness, the challenge is thus two-fold : improving supply security and developing economically viable "clean" energy technologies. In order to optimise the production of energy and its use whilst limiting to a maximum the environmental impact, it is necessary to deploy a panoply of production techniques and to establish a suitable framework for their combined use. In consequence, the Community technological options address various aspects of energy production and use. Their rationale is different for different technologies : for non-nuclear energies, European norms and a common approach as to their impact on the environment; the development of a common approach to nuclear fission safety; and pooling of resources for fusion development.

*Safety is OK and the R+D a proper cost for Government*

It is proposed to maintain a constant level of support for energy research in real terms; in effect, it concerns a sector where the principle of subsidiarity must be fully applied; much of the research is already performed at national level, both public and private. Community resources allocated to fossil and renewable energies and use of energy should represent from 10 to 15 % of the envelope foreseen for the fifth action, 23-27 % being allocated to nuclear fission safety.

← Thermonuclear fusion research, in view of the scale of the programme envisaged, should draw on 55 to 60 % of the amounts envisaged for the whole of energy research.

*General support for fusion has always been accepted.*

*However in view of recent decisions on*

*JET (where our partners don't want to know about the vast escalation in decommissioning costs!)*

*these figures seem both arbitrary & huge. It is by no means certain that the fusion reactor of the future will be a TOKAMAK system like JET. There may be a wide variety of a quite different kind.*



RESTRICTED

*celp*

2 MARSHAM STREET  
LONDON SW1P 3EB  
01-276 3000

My ref:

Your ref:

The Rt Hon John Wakeham MP  
Secretary of State  
Department of Energy  
1 Palace Street  
LONDON  
SW1E 5HE

11 June 1990

*Dear Secretary of State,*

HINKLEY POINT C PUBLIC INQUIRY

*WITH 15% / WILL REQUEST IF REQUAL*

Thank you for your letter of 5 June.

I agree with your proposals for handling the Inspector's report: an early announcement of a decision in the late summer and an indication that the Inspector's report will be published with the decision. It is helpful to me that you are aiming for a decision date before publication of the White Paper on the Environment.

On the text of your Answer, you could delete the word "major" in line 5.

I agree that we can decide later whether we should issue two separate or one joint decision letter.

I am copying this letter to the Prime Minister, Geoffrey Howe, other Cabinet colleagues, and to Sir Robin Butler.

*Yours sincerely*  
*Chris Patten*

*pp*

CHRIS PATTEN  
(Approved by the Secretary of State  
and signed in his absence)



RECYCLED PAPER

RESTRICTED  
THE RT HON JOHN WAKEHAM MP



Department of Energy  
1 Palace Street  
London SW1E 5HE  
071 238 3290

The Rt Hon Chris Patten MP  
Secretary of State  
Department of the Environment  
2 Marsham Street  
LONDON  
SW1P 3EB

5 June 1990

*Dear Chris,*

**HINKLEY POINT C PUBLIC INQUIRY**

Michael Barnes QC, the Inspector appointed for the Hinkley Point C PWR Public Inquiry has now submitted his report to us jointly following his appointment under the Electricity Act and the Town and Country Planning Act 1971 in connection with Nuclear Electric's application to construct a PWR at Hinkley Point.

The Inspector's report contains 8 formal recommendations, including the recommendation that the Hinkley PWR should receive planning consent. Two of the recommendations - on the stopping up of local footpaths - fall to your Department. Although we shall each need to take our own decisions, there will clearly need to be close co-ordination between our officials. And I also think it would be sensible if at all possible to announce all the decisions together at the same time. We can decide in due course whether we should issue two separate or one joint decision letter.

I have been giving some thought to the timing of a Decision Letter. The report runs to 3300 pages and is even longer than the Inspector's report on the Sizewell B PWR. I believe a decision before Parliament rises this summer is not practicable given the size of the report and the need for it to be thoroughly assessed before a decision is reached. Delaying the decision until Parliament resumes would leave little time before the publication of prospectuses for the privatisation of the electricity distribution companies; ideally the decision should be announced at least a month before the issue of the Pathfinder prospectus on 2 November. This points to a decision date in early/mid-September. I would welcome your agreement that we should aim for this date, and that this will not pose problems for the timing of your White Paper on the Environment. We can no doubt expect some criticism that a decision is being taken whilst Parliament is in Recess but I hope that the statement which I made on 9 November last year about the postponement of further nuclear power station approvals until at least 1994 will remove some of the controversy and much of the immediacy from the present decision.

*CCPU*

*n.b P.M.  
BHP  
25/6*

RESTRICTED



I understand the normal practice with major public inquiries is to publish the Inspector's report at the same time as the decision letter. In the case of Sizewell B, our predecessors agreed to publish the report early as the basis for a parliamentary debate, but I do not think it is necessary to make such an exception in the case of Hinkley C, which is essentially a replica of the Sizewell B PWR. It would, however, be appropriate to inform Parliament at the outset how we propose to handle the publication of the Inspector's report, and I attach a draft PQ and answer which sets this out. I would welcome your agreement to the text by this Friday if possible please.

In taking the decision on Nuclear Electric's application we are of course in a quasi-judicial position. It is most important that we and colleagues do not comment on the Report or on the case for Hinkley Point C before the decision is taken. Moreover, the Inspector's report is wide ranging and the Government must therefore be cautious in what it says about nuclear matters wider than the Hinkley Point C application itself. I should therefore be grateful if colleagues could avoid any comments on Hinkley Point C; and it would be safest to confine comments on nuclear power merely to general statements or restatements of what we have previously said. Officials in my Hinkley Unit (telephone 071 276 8929, fax 071 276 8917) would like to be consulted on any proposed public statements on wider nuclear issues.

I am copying this letter to the Prime Minister, Geoffrey Howe, other Ministerial colleagues, and to Sir Robin Butler.

*John Wakeham*  
*John*

JOHN WAKEHAM

RESTRICTED

Draft Inspired PQ

Q. To ask the Secretary of State for Energy whether he has received the Inspector's report from the Hinkley Point C Public Inquiry and when he intends to announce his decision on Nuclear Electric's application and to publish the report.

A. I have just received the Inspector's report. I shall not be in a position to reach a decision on Nuclear Electric's application until I have thoroughly considered it, but I hope to reach this position by the late summer.

The normal procedure for major planning inquiries is for the Inspector's report to be published at the same time as my Decision.

I intend to follow this procedure in the case of the Hinkley Point C Inquiry.

Ref: A2a



CONFIDENTIAL

CC PC  
PU

THE RT HON JOHN WAKEHAM MP



COO  
24/2.

Department of Energy  
1 Palace Street  
London SW1E 5HE  
01 238 3149

Gareth Jones Esq  
Private Secretary to  
The Rt Hon Douglas Hogg MP  
Minister for Industry  
Department of Trade and Industry  
1 Victoria Street  
LONDON  
SW1H 0ET

21 February 1990

*Dear Gareth,*

**EC RESEARCH COUNCIL : 26 FEBRUARY: FUSION**

As you will remember from discussions on the Framework Programme for R&D, the new specific EC programme for fusion will involve strategic decisions, which could have major financial impacts well after 1994. The most important are the proposals for a further extension to JET's life and for a start of engineering design work on a larger successor device to JET, possibly in a continuation of the present ITER collaboration in which Euratom, Japan, the USA, and the USSR are co-operating in a limited conceptual design exercise.

ITER comes to an end at the end of this year and as you will be aware it was always intended that ITER should be a self-contained exercise: the UK insisted that there should be no commitment to any continuation of the work. The scientific community involved is predictably keen to move forward to engineering design work and are seeking to continue the collaboration. The Commission's Fusion Directorate is involved in these discussions. My Secretary of State fears that they are moving ahead too fast and may entangle the entire EC in expensive political commitments. He has asked if your Minister would use the opportunity of the lunch time discussion at the Research Council to sound a note of warning.

In this context, the Commission should also be reminded of the importance which we attach to the promised evaluation of the Community Fusion Programme. The panel was only set up after the

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Framework Programme decision, despite continuing pressure from ourselves and other Member States; I believe that it is to have its first meeting next week. My Secretary of State feels we should make it clear that the panel must be given time to do a proper job and that the Council must have time to digest and discuss the report before deciding on the Community Fusion Programme. The need for full and informed decision must be the first priority. Despite the Commission's insistence, their timetable of securing a Council decision at the Joint Research Council is artificial; the key date should be JET's need to know where it stands by the end of the year.

My Secretary of State hopes therefore that your Minister will agree to use the opportunity of the lunch to register our concerns. (I understand that UKRep have already told the Presidency that you may do so). Relevant points to make are:

- i) do not want to discuss the substance of the programme but the timing of our decision. There were suggestions that we should aim at decision in June. But major strategic issues will need full discussion. Do not think that we should commit ourselves to a rushed decision. JET does not need a decision until later in year;
- ii) in particular, the evaluation report is of great importance to us all. Panel must be given proper time to get to grips with the major issues. I shall not want to take decisions until the Council has time to digest report;
- iii) till then, we must all reserve our positions. Commission must therefore proceed very carefully at any meetings of ITER Council. Must avoid anything which could be considered as a political commitment. This may make discussions of a possible site in Europe especially delicate;
- iv) should like to comment on problem of decommissioning. Our recent experience with earlier types of power stations shows the need to plan dismantling and decommissioning well ahead, and indeed to take account of decommissioning in the initial design. There are lessons here for JET and for any next step.

I am sending copies of this letter to Charles Powell at No. 10, and to the Private Secretaries to the Chief Secretary, the Foreign and Commonwealth Secretary, the Secretary of State for Education and Science and to Sir Robin Butler, as well as to Sir John Fairclough and Sir David Hannay in Brussels.

*Yours  
John*

JOHN NEILSON  
Principal Private Secretary



file  
ds

10 DOWNING STREET  
LONDON SW1A 2AA

*From the Private Secretary*

25 September 1989

*Dear Chris,*

SIZEWELL B CAPITAL COSTS

Thank you for your letter of 22 September which the Prime Minister has seen. She has noted that the CEGB intend to inform the Hinkley Point C Inquiry today of a prospective increase in the capital costs of Sizewell B.

I am copying this letter to John Gieve (HM Treasury), Carys Evans (Chief Secretary's Office), Uriel Jamieson (Scottish Office) and Ben Slocock (Department of Trade Industry) and Trevor Woolley (Cabinet Office).

*Yours,  
Paul*

PAUL GRAY

Chris Strutt, Esq.  
Department of Energy

*ls*

70  
MICHAEL SPICER ESQ MP



Department of Energy  
1 Palace Street  
London SW1E 5HE  
01 238 3169

ccru  
Pric McAle<sup>2</sup>  
You will wish to be  
aware that X will  
become public on Monday.

ms  
REC  
22/9

Paul Gray Esq  
Private Secretary to  
The Prime Minister  
10 Downing Street  
LONDON  
SW1A 2AA

22 September 1989

Dear Paul

SIZEWELL B CAPITAL COSTS

X | In the Secretary of State's absence in Canada, Mr Spicer felt that the Prime Minister would wish to know that we have just learned from the Central Electricity Generating Board (CEGB) that they intend to inform the Hinkley Point C Inquiry on 25 September of a prospective increase in the capital costs of Sizewell B. This prospective increase is of the order of 10% on an estimate notified to the Inquiry of £1691 million in "money of the day" and including initial fuel or £1640 million at April 1987 prices, but excluding initial fuel.

The Board say that any increase in capital costs would be likely to become known, whether through contractual negotiations with the electricity distribution companies or in some other way, and that if this occurred after the Inquiry had closed but before the Inspector had completed his report, he might well feel obliged to re-open the Inquiry to enable the new cost figures to be scrutinised. If the cost increases became public later, for instance after the Secretary of State's decision on the consent application, opponents might have grounds for calling for a judicial review of a decision favourable to the Board, particularly if it became clear that the new cost information had been available before the Inquiry was concluded.

It is of course for the Board to decide what evidence they wish or need to present to the Inquiry. Although the CEGB must evidently make this announcement to the Inquiry, this does not amount to acceptance by them of the new estimate. We have insisted they enter into urgent negotiations with the contractors with a view to reducing the new price. They will be saying at the Inquiry that they are determined to take every action to keep any increases to a minimum and to maintain control of the project.

Officials have also made it clear that Ministers would be most concerned if the Board accepted, without making every effort to achieve a reduction, an increase of up to 10% in the costs,



particularly at such an early stage. The Board themselves emphasise that the prospective increases are subject to intensive review, and that the Board is in no way committed at this stage to accepting any increase, and will be acting through its project management organisation to explore the possibility with the contractors of avoiding or reducing cost increases or achieving compensating savings elsewhere so that the total cost estimate can remain unchanged.

It is clearly most unsatisfactory that the potential for such a large cost increase should occur at this early stage in the project, and we shall be continuing both to demand full explanations and to insist that the Board take a firm grip of the project. However, given that the Board's Counsel will be making the potential for the increases publicly known on Monday, my Ministers wished you to have advance notice.

I am sending copies of this letter to the Private Secretaries to the Chancellor, the Chief Secretary to the Treasury, the Secretary of State for Scotland and to the Secretary of State for Trade and Industry.

*Yours*

*Chris*

CHRIS STRUTT  
Private Secretary



From: The Secretary of State  
Department of Energy

1 Palace Street  
London SW1E 5HE

Fax No. 01 834 3771  
Switchboard 01 238 3000  
Direct Line 01 238 3290

*NBF*

*Rec'd 14/9*

The Rt Hon Malcolm Rifkind MP  
Secretary of State for Scotland  
Scottish Office  
Dover House  
Whitehall  
LONDON  
SW1A 2AU

*14<sup>th</sup>* September 1989

*Dear Malcolm*

**PROPOSED EDRP AT DOUNREAY**

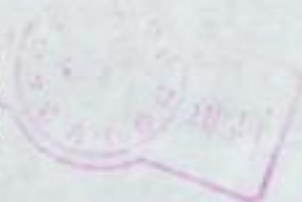
Thank you for your letter of 27 July. I have also seen Chris Patten's letter to you of 14 August.

I am content with your proposal to accept the Reporter's main recommendation that outline planning consent should be granted.

I understand your reasons for wishing to retain a role for the Secretary of State in considering the detailed plans for the plant, though I believe we should be careful lest a ratchet effect is created.

The question of leukaemia clusters, which was raised by the Reporter and which has also been raised at the Hinkley Inquiry, needs careful handling. As you say, the second COMARE report does not add to the factual information about the west Thurso cluster which was available at the public inquiry. Attaching special conditions in the case of EDRP would certainly be seen by objectors as an indication of growing Government concern. This would not be justified on the basis of the evidence so far considered by COMARE.

I do not have any difficulty with your proposal that the applicants should prepare an updated environmental assessment before construction is allowed to commence. This will have to cover a wide range of issues. I do not think it would be helpful at this stage to single out particular aspects which you expect the environmental statement to contain, when others may be equally or more important at the time. I should therefore be



grateful if you would consider amending the proposed conditions relating to the updated environment assessment to delete the words in the first sentence after "November 1985". This would not change the substance of the condition - an updated environmental statement would have to include a description of the likely significant direct and indirect effects of discharges and emissions from the plant - but I believe it would help the presentation of the decision considerably. You could explain the reason for amending the Reporter's recommendation in this respect by reference to the arguments in your letter about outline planning consents. If you are asked what account you took of the second COMARE report, you could say that the question of the effects of discharges and emissions from the plant will be one of the subjects which will be included in the updated assessment which you have required the applicants to submit.

I believe this presentation would be better than drawing specific attention to the question of leukaemia clusters, which might well be the effect of the proposed wording at present.

I am copying this letter to the Prime Minister, John Major and Chris Patten.

*John Wakeham*  
*John*

JOHN WAKEHAM

Energy = PE 13

Play





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*etc*



Foreign and Commonwealth Office

London SW1A 2AH

Prime Minister<sup>2</sup> 14 August 1989

*me*

*CS 15/8*

*me*

*Ian Stephen,*

Possible Supply of Nuclear Power from France

Thank you for the copy of your letter of 8 August to Paul Gray about PowerGen's discussions with EDF on importing French nuclear generated electricity. There would be advantages in such an arrangement. Others in addition to those you mention are that it would put us in a better position to counter European Commission criticism equating the non-fossil fuel provisions of electricity privatisation to a state aid.

I am copying this letter to the Private Secretaries of the Prime Minister, the Chief Secretary and Sir Robin Butler.

*Yours ever,*

*Richard Gozney*

(R H T Gozney)  
Private Secretary

S Haddrill Esq  
Private Secretary  
Department of Energy  
Thames House South  
London SW1

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Energy : Policy Pt 13





*clp*

2 MARSHAM STREET  
LONDON SW1P 3EB  
01-276 3000

My ref:

Your ref:

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*NBPM CAS 15/8*

The Rt Hon Malcolm Rifkind MP  
Scottish Office  
Dover House  
Whitehall  
LONDON  
SW1

14 August 1989

*Mr Malcolm*

PROPOSED EDRP AT DOUNREAY

Thank you for copying to me your letter of ~~27~~ <sup>14</sup> July to John Wakeham about your proposed decision on the EDRP application.

*Asp*

I agree that the developments since the closure of the inquiry, and the unresolved issues present some difficulties. In the circumstances, I am content with your proposed decision. I consider that the condition on the need to update the environmental impact assessment is the right way forward.

I am copying this letter to the Prime Minister, John Wakeham and John Major.

*Chris Patten*

CHRIS PATTEN

English: Poetry #13



copy



Treasury Chambers, Parliament Street, SW1P 3AG

9 August 1989

P R C Gray Esq  
Private Secretary to  
Prime Minister  
10 Downing Street  
LONDON  
SW1

Prime Minister 2

ans  
9/8

And have an advice effect  
on the Balance of Trade

Dear Paul, *gray*

The Chief Secretary has seen a copy of Stephen Haddrill's letter of 8 August to you about PowerGen's discussion with Electricite de France.

The Chief Secretary has asked me to indicate his support for the proposal that PowerGen should continue with these talks. Firm contracts will add to diversity, offer the prospect of a lower non-fossil levy to assist the process of agreeing contracts with National Power.

I am copying this letter to the private secretaries of the Foreign Secretary, the Secretary of State for Energy and Sir Robin Butler.

Yours,

Peter

PETER WANLESS  
Assistant Private Secretary

Note

I discussed this correspondence with Stephen Haddrill (DEN), and passed on to him the PM's manuscript correct doc. We agreed that the Department would "pound it out" in the discussion with PowerGen and, as promised in the 8/8 letter, report later following the second round of the PowerGen / French talks. PR-6 11/8

Energy - Policy PMS.



U.S. DEPARTMENT OF ENERGY

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File Str  
cc PU

10 DOWNING STREET  
LONDON SW1A 2AA

*From the Private Secretary*

9 August 1989

Thank you for your letter to Paul Gray of 8 August about the preliminary discussions which PowerGen is having with the Electricite de France for the purchase of dedicated nuclear power from one or possibly two French PWRs. The Prime Minister has seen and noted this.

I am copying this letter to John Gieve (Treasury), Stephen Wall (Foreign and Commonwealth Office) and to Sir Robin Butler.

CAROLINE SLOCOCK

Stephen Haddrill Esq  
Department of Energy

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Handwritten initials or mark in the bottom right corner.

cefu

Prime Minister<sup>2</sup>

CB

8/8

SECRETARY OF STATE FOR ENERGY  
 THAMES HOUSE SOUTH  
 MILLBANK LONDON SW1P 4QJ  
 01 238 2290

Paul Gray Esq  
 Private Secretary to  
 The Prime Minister  
 10 Downing Street  
 LONDON  
 SW1A 2AA

8↑ August 1989

mb

Dear Paul,

I am writing about preliminary discussions which PowerGen is having with Electricite de France (EDF) for the purchase of dedicated nuclear power from one or possibly two French PWRs. These negotiations are at the earliest stage but my Secretary of State felt that the Prime Minister would wish to be kept informed.

Bob Malpas, the Chairman designate of PowerGen, has been anxious from the outset to keep open the option of PG entering the nuclear field. He reaffirmed this aim to Mr Wakeham last week. To this end, PG has taken a stake in the design for the small safe integrated reactor (SIR) PWR and in due course might wish to build nuclear stations in the UK. A second nuclear generator would be a major boost for our nuclear and diversity of supply objectives. It would also introduce an element of competition into nuclear generation, which is sorely needed.

A deal with Electricite de France (EDF) could take a number of forms involving the outright purchase of new or old French PWRs, leasing them, or firm contracts to purchase power from them. The key factor, however, is that in all cases the power would be guaranteed and secure. The electricity provided under the existing interconnector contract is not firm but interruptible, and does not come from any particular source, although French electricity is, of course, predominantly nuclear generated.

PowerGen have only had one meeting with EDF, who expressed serious interest. A further meeting is planned later this month. It remains to be seen whether the figures are right and a deal can be struck subject, of course, to agreement by the two Governments. Any deal would initially use the existing interconnector, although it could possibly be economic to build a new interconnector in due course. (PowerGen are currently working out whether the fact that French PWRs are 40% cheaper than the Sizewell family will be sufficient to offset the cost of a lean interconnector, not the CEBG gold plated model.)





If PG signed a contract with EDF for dedicated PWR electricity, it would, of course, be counted towards the Non-Fossil Fuel Obligation (NFPO).

There are considerable attractions in letting PowerGen pursue their discussions. A major consideration is that a PG/EDF deal should provide much needed competitive pressures on National Power's PWR programme. We are at the moment discussing with National Power the PWR contracts that they are to strike with the Distribution Companies. Not surprisingly, they are negotiating hard and claiming the need for high prices. Their latest estimate is that the four PWRs might cost £10 billion at outturn prices and provide electricity at over 5p/KWH compared with 2.5p-3p/KWH from a coal station. National Power and their bankers are arguing that they would have to share the financing burden with the Distribution Companies and are seeking a range of guarantees from the Government under Schedule 12 of the new Electricity Act for unforeseen cost increases in the backend of the PWR fuel cycle and decommissioning. They argue that without a combination of such guarantees, high premia and low risk, the company will not be floatable despite the decisions we have just taken on Magnox. It is difficult at this stage of the discussions to be clear just how much of this is simply negotiating tactics. However, the figures are clearly worrying and we are investigating what can be done to reduce NP's demands to more realistic levels. Real competition will increase the chances of this happening. The prospect of an alternative way of meeting our objective of maintaining the availability of secure nuclear power at its current level could turn out to be vital.

We will report further following the second round of PG's discussions with the French.

I should add that we are looking at two further policy options to strengthen our security and diversity of supply, notably against the NUM. First, the possible extension of the lives of the Magnoxes beyond 30 years - after their huge backend costs have been amortized over their 30 year life, their variable costs should be low. Secondly, greater use of gas. It is paradoxical that while the most economic fuel at the moment is gas, we currently burn hardly any gas at all. Other than nuclear stations, a very high proportion of new stations over the next decade are likely to be gas-fired, if the market is allowed to choose.

I should be grateful if this matter could be treated in strict confidence and this minute copied only to those with a clear need to know. I am sending copies to the Private Secretaries to the Chancellor, the Foreign Secretary and Sir Robin Butler.

*Yours ever,*

*Stephen*

S HADDRILL  
Principal Private Secretary



SCOTTISH OFFICE  
WHITEHALL LONDON SW1A 2AU

cf- RA  
Rec 21/11

cell

**CONFIDENTIAL**

The Rt Hon John Wakeham MP  
Secretary of State for Energy  
Department of Energy  
Thames House South  
Millbank  
London  
SW1

Prime Minister<sup>2</sup>  
You will wish to be aware of this.  
Rec 6  
21/11

27 July 1989

ms

Dear John,

**PROPOSED EDRP AT DOUNREAY**

As you may know I have before me a planning application from the United Kingdom Atomic Energy Authority and British Nuclear Fuels for outline planning consent for the construction and operation of a European Demonstration Reprocessing Plant (EDRP) at Dounreay in Caithness. The application was submitted as long ago as May 1985 and following a public inquiry in 1986 the Reporter submitted his report to me in March 1988. I am writing to inform you of the decision I have reached on the application, which I hope to announce in September.

Although this application enjoyed the support of Highland Regional Council, the planning authority for the area, it was strongly opposed by the Islands Councils of Orkney, Shetland and the Western Isles, a number of national environmental groups and several groups of local residents. Representations were also made against the proposal by a community on the west coast of Norway. The public inquiry sat for 95 working days, making it by some way the longest such inquiry ever held in Scotland.

Since the inquiry closed there have been a number of developments which in the view of the objectors have strengthened the case against the proposal. Firstly the Committee on the Medical Aspects of Radiation in the Environment (COMARE) published their second report dealing with the possible increased incidence of leukaemia in young people near the existing Dounreay nuclear establishment. The Committee concluded that there was evidence of a raised incidence of leukaemia among young people living in the vicinity of Dounreay, and that this evidence, taken in conjunction with that relating to the area around Sellafield, tended to support the hypothesis that some feature of the nuclear plants leads to an increased risk of leukaemia in young people living in the vicinity of those plants. The Committee recommended a number of further studies of the issue. Secondly Cecil Parkinson announced last July the conclusions of our review of the fast reactor programme, involving a sharp reduction in expenditure and the phasing out of funding of the existing establishment at Dounreay. Thirdly the European collaboration has altered its strategy and no longer envisages, as it did at the public inquiry, that three fast

reactors would be built in sequence to different designs in different countries. Instead it is proceeding much more cautiously and on a much less urgent timetable. Taken together with Cecil Parkinson's statement this has led opponents to conclude that the EDRP is now most unlikely to be sited in the UK, a view which the UKAEA itself has appeared to confirm in some of its public statements.

In addition, the decision by Nirex to select Dounreay as one of the two sites in the UK for further investigation as sites for a national repository for intermediate and low level nuclear waste has led to a distinct change in the previous local enthusiasm for the nuclear industry. In place of a thriving research establishment dealing with advanced technology, and the prospects of providing the site for the first of a new generation of nuclear power stations, the Highlands now sees itself being offered waste disposal and reprocessing facilities, which have a much less attractive image. Lastly, and most recently, COMARE published last month a further report on cancer incidence in west Berkshire and North Hampshire, concluding that there was a small but statistically significant increase in the incidence of childhood leukaemias and other childhood cancers in the vicinity of the atomic weapons establishments at Aldermaston and Burghfield in Berkshire.

The Reporter concluded that there was no reason to believe that the EDRP could not be built and operated within the safety requirements of the regulatory authorities, and that the erection and operation of the EDRP at Dounreay was unlikely to have any adverse effect on the economy, environment or health of the Highlands and Islands or the surrounding seas. He therefore recommended that outline planning consent should be granted, subject to detailed planning conditions set out in the Annex to his report. In reaching his main conclusions, however, he inserted a caveat which related to the presence of a leukaemia cluster in west Thurso. He commented that while the statistical evidence was inconclusive and no link with Dounreay could be established, there was a cause for concern requiring further investigation, which was being undertaken by COMARE. He therefore recommended that no decision should be taken until the COMARE report had been received and new consideration given to its conclusions on the Thurso cluster. The Reporter's recommendations must remain confidential until I announce my decision.

I propose to accept the Reporter's main recommendation. The conclusions which he reached are clearly justified by the evidence put forward at the inquiry and there is no basis either in that evidence or in the developments following the inquiry for a decision to refuse planning permission. Even if the possibility of the plant being built is now remote I have to reach a decision on the application unless the applicants withdraw it, which I understand they have no intention of doing. In announcing my decision to approve the application, however, I have to respond in some way to the Reporter's recommendation concerning the second COMARE report.

The report does not add to the factual information about the west Thurso leukaemia cluster which was available at the public inquiry. His conclusions are however certainly seen by objectors as lending weight to the argument advanced at the inquiry that no EDRP should be permitted at Dounreay until the cause of the cluster had been established. None of the various studies initiated following the report is yet complete, and the results of some will not be available for several years. It would not be realistic to postpone a decision, especially as there is no sign at present

that a clear explanation of the cluster will emerge. Equally, however, there is no sign that an early start on the EDRP is likely if, against expectation, a decision is eventually taken to site it in the UK, and considerably more information might be available about the possible link between nuclear plants and childhood leukaemia by the time the applicants are ready to commence construction.

In theory I could simply note that the COMARE report contains no new factual information and point out that any relevant findings arising from the follow-up studies would be taken into account by the regulatory authorities in issuing the various further consents which would be required before any EDRP could be built and operated. I have concluded however that in the circumstances of this application that would be indefensible. The COMARE report highlights the fact that the major planning issue in this outline application cannot at the moment be satisfactorily resolved. It may be that it will remain unresolved for many years, but since several years are certain to elapse before construction of any EDRP can commence I think I am obliged to put myself in a position to review the issue if and when that point is reached.

I propose to do this by requiring the applicants to prepare an updated environmental assessment. The Reporter found as a fact that the environment assessment prepared by the applicants before the inquiry did not amount to a full assessment, and that no full risk assessment of the proposed plant was possible at this stage. Because this is an outline application the full details of the proposed design of the plant and the associated safety case were not available at the inquiry. The Reporter recommended a condition in the following terms:-

"Before development commences and at appropriate stages thereafter commensurate with the production of detailed design, the applicants will require to obtain the planning authority's written approval of an updated and revised environmental impact assessment in respect of any significant changes in baseline conditions."

I propose to substitute a condition in the following terms:-

"Before development commences the applicants will require to prepare to the satisfaction of the Secretary of State an environmental statement updating the information in the environmental impact assessment dated November 1985 and including a description of the likely significant direct and indirect effects of discharges and emissions from the plant, and an assessment of the risks associated with its operation. Development shall not commence until any requirement of the Secretary of State in the light of the statement has been complied with."

This will enable me to assure objectors that if the project proceeds, and if the studies initiated in the wake of the COMARE report produce further information, I will have the opportunity to satisfy myself that this further information has been taken into account in the detailed design of the plant. I think it is essential that I demonstrate in this way the Government's concern about the possible risks associated with the plant.

I am aware that a condition in these terms may cause some concern to the nuclear industry, because it would be an addition to the existing requirement to satisfy the regulatory authorities and represents a further source of uncertainty for the applicants. But it must be remembered that this is only an outline planning application. Since there is no provision

for outline consents in the electricity legislation the Sizewell B inquiry and the Hinkley C inquiry have had before them full details of the proposed design of the plants and of the associated safety case. As a result the health and safety implications of the Sizewell B project were much more fully investigated before Cecil Parkinson issued consent for the station, and you will have a much more detailed assessment of these aspects of the Hinkley C proposal before you than I have at present in the case of Dounreay. Any applicant for outline planning consent faces the possibility that securing subsequent detailed consents may not be entirely straightforward. I am therefore satisfied that the proposed condition is the proper and responsible way for me to deal as Planning Minister with the application which is before me, quite apart from being presentationally essential if I am to defend a decision to approve the EDRP proposal.

I would be grateful for confirmation that you are content with my proposed decision. I am attaching as an Annex to this letter a draft of the complete set of conditions. These are subject to further examination by the Scottish Law Officers. You will understand, in view of the sensitivity of the subject and the possibility of a legal challenge to my decision, that the circulation of this letter must be carefully restricted.

I am sending a copy to the Prime Minister, John Major and Chris Patten.

A handwritten signature in dark ink, appearing to read 'Malcolm Rifkind', with a stylized flourish at the end.

**MALCOLM RIFKIND**

## TERMS OF CONSENT

Outline planning permission is hereby granted for the construction and operation of a reprocessing plant for fast reactor fuel at the Dounreay Nuclear Power Development Establishment, Thurso, on condition that:-

1. Before development commences the applicants will require to obtain the written approval of the Planning Authority of the following reserved matters, for which application must be made within 8 years of the date of this permission:-

## RESERVED MATTERS

Siting and Design of Buildings and Plant

1.1 The siting of all buildings and means of access thereto and egress therefrom;

1.2 The layout, location, scale and proposed use of all such buildings and of all plant and process areas;

1.3 The plans, elevations, details of external finishes and colours of all buildings and external plant;

Landscaping

1.4 A scheme of land management to include proposals for the maintenance and treatment of those parts of the site not required for construction operations;

1.5 Details of final landscaping proposals and planting of grass, trees and shrubs including all earthworks, soil cover, hard surfacing, fencing and walls;

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Siting of Roads and Services

1.6 The siting of pipelines and services, (both above and below ground), roads, parking areas and rail tracks;

1.7 The location, detailed design and specification of the site access leading from the A836 public road, and all other means of access to, and egress from, the site;

Noise and Dust

1.8 The standards for both construction and operational noise that they propose to adopt, having consulted the Environmental Health Authority and taken due account of the British or International Standards and Codes of Practice current at the appropriate time.

1.9 The proposed measures to control construction dust;

Construction Waste

1.10 The proposals to tip, spoil or waste during the construction phase, the quantities and types of such spoil or waste; the proposed spoil tipping areas, and the proposals for surfacing or finishing spoil tips in a stable and acceptable state;

Emergency Planning

1.11 The plans to deal with on-site emergencies and those which affect land or people beyond the site boundary.

2. Before development commences the applicants will require to prepare to the satisfaction of the Secretary of State an environmental statement updating the information in the Environmental Impact Assessment dated November 1985 and including a description of the likely significant direct and indirect effects of discharges and emissions from the plant, and an assessment of the risks associated with its operation. Development shall not commence until any requirement of the Secretary of State in the light of the statement has been complied with.

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3. All temporary buildings, compounds, fences and material storage areas required in connection with construction operations shall be removed within 6 months of completion of any part of the reprocessing plant to which they relate, or as otherwise agreed by the planning authority, and the site thereof shall be reinstated to the satisfaction of the planning authority.
4. Fences restricting public access to the site shall be erected at the commencement of construction.
5. Prior to the commissioning of the reprocessing plant, the site access shall be closed to public traffic.
6. Vehicles entering or leaving the site carrying loads which constitute a potential dust or dirt nuisance, such as aggregates, sand, gravel and soil shall be secured so that no significant quantities of such material shall leave the vehicles whilst in transit outwith the site.
7. In the event of construction being abandoned at any time prior to completion, the applicants will remove so much of the work as the planning authority may require to be removed and will reinstate to a condition satisfactory to the planning authority, as much of the site as they may required to be reinstated.
8. Before reprocessing operations commence, the applicants shall satisfy the planning authority that an adequate supply of treated and untreated water sufficient for the purposes of the reprocessing plant is available.
9. When reprocessing operations commence, the existing fast reactor fuel reprocessing plant shall cease to be used for the reprocessing of fast reactor spent fuel.
10. During the commissioning of, and from the commencement of operations at, the fast reactor fuel reprocessing plant, radioactive emissions to the atmosphere and discharges to the sea from both it and from other facilities on land in the control of UKAEA at Dounreay shall

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not exceed levels previously determined by HMIPI. (In this connection it is noted that the applicants have undertaken to ensure that the annual level of marine radioactive discharges from the Dounreay Nuclear Establishment once the reprocessing plant is operational, will not exceed the average level of such discharges from the Dounreay Nuclear Establishment during the 5 years 1981-85).

11. The quantity of irradiated fast reactor fuel stored at the site for reprocessing shall not at any time exceed 1,000 sub-assemblies.

12. Not more than an average of 80 tonnes per annum of spent fuel shall be reprocessed over any period of 5 years with a maximum of 100 tonnes in any one year.

13. No short cooled fuel will be processed on the site.

14. No waste other than that arising from operations at the reprocessing plant will be stored on site.

15. The maximum storage on site of high-level, intermediate or low-level waste in whatever form shall be limited at any time to those quantities of waste arising from the reprocessing of 800 tonnes of spent fuel, and any further storage of additional quantities of waste shall require to be the subject of a separate planning application.

16. High level liquid waste shall be vitrified and intermediate level waste shall be encapsulated, such vitrification and encapsulation to be accomplished as soon as the plant and processes are approved by the regulatory authorities.

17. No processing of spent fuel from countries other than the United Kingdom shall be undertaken other than pursuant to contracts which contain options for the return of waste to the countries of origin.

18. The products of the reprocessing plant shall only be transported from the site in oxide form.

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19. At the cessation of the operation of the reprocessing plant, the facility and the site shall be decontaminated and decommissioned to the satisfaction of the planning authority and other relevant regulatory authorities.

20. Before development commences, the applicants will lodge with the planning authority:-

(a) their construction schedule showing the proposed dates of commencement of construction, its phasing and completion which shall have been agreed with HMNII; and shall inform the planning authority of any changes thereto;

(b) their proposals for the accommodation of construction workers, including, if deemed necessary by the planning authority, provision of a construction work camp (which will require separate planning permission);

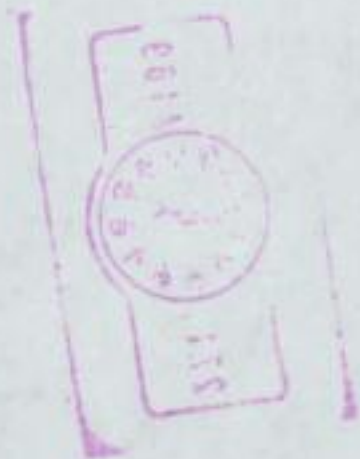
(c) details of their proposed sources of bulk construction materials, the routes to be used by road vehicles bringing them to the site and taking spoil and other bulk material from the site; and the type and frequency of road vehicles likely to be used for such transport;

(d) their proposals to construct the necessary transport links for the flasks containing irradiated fuel between the reprocessing plant and the port of entry, whether by road or rail, and the means of transport to and from the reprocessing plant for other process materials and the waste product;

(e) their proposals for the future use of the existing fast reactor fuel reprocessing facility (which future use may require planning permission) including predictions of wastes arising of either a radioactive or non-radioactive nature, and proposed methods for dealing with such arisings;

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(f) their proposals for eventual decontamination and decommissioning of the reprocessing plant.



c-6-14

CONFIDENTIAL

PAUL GRAY

17 July 1989

NUCLEAR POWER

I understand that Parkinson will send a two-page minute tonight for tomorrow morning's meeting. It now emerges that the decommissioning liabilities for the eight Magnox plants are £4bn plus £1bn for Scotland. I understand these total figures include AGRs. Such a liability on the balance sheet of National Power would make it insolvent before it is floated. There is therefore great urgency in deciding how to proceed.

Three courses have been identified:

- (a) A £4bn special equity injection into National Power. This is the line which Parkinson will support;
- (b) The Magnox reactors to remain in the private sector but with the State taking over the liabilities. This sounds like a mish-mash with no clear division of responsibility. Neither the Treasury nor the Department of Energy are enthusiastic;
- (c) Leave Magnox in the public sector and float National Power exclusive of Magnox. This is the route favoured by the Treasury and the Scottish Office.

COMMENT

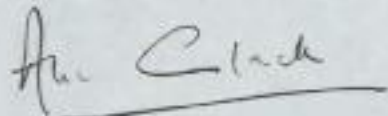
I have not tracked the detailed background and what follows is therefore an instinctive reaction rather than adamant advice.

We should not agree an injection because it would mean recognising a net deficit on the sale of electricity, thereby bringing it into the Rover and Shorts category of a distressed sale of a national disaster! Furthermore, the amount provided might not be enough and would leave the Government open to future claims, possibly legal and certainly moral, if decommissioning costs actually exceeded the injection.

Investors would want some protection against the capital provision being inadequate. This could harm the multiple at which the shares would subsequently trade and therefore seriously jeopardise the flotation.

RECOMMENDATION

The Government is in this mess principally because of bad advice from the Department of Energy over the past two years. The least damaging route seems to be to leave Magnox in the public sector and therefore to ring-fence its attendant costs from electricity privatisation. Parkinson and other Ministers may try to delay this decision beyond the recess. This would be a mistake and we must focus on this extremely serious problem now. The Prime Minister should therefore insist that this matter is at least resolved in principle before the recess. The detailed numbering can then come later.

  
P. GEORGE GUISE



CONFIDENTIAL

CCP

FCO/89/125

CCP  
JG/6

SECRETARY OF STATE FOR ENERGY

URENCO: Possible Collaboration in  
Laser Isotope Separation (LIS)

1. Thank you for your letter of 16 May. You asked if I had any objections to URENCO's proposal to extend current collaboration to LIS techniques.
2. I have no objection to URENCO's proposal, subject to the caveats about peaceful purposes, security of information and technology and continuing separation of civil and military work on LIS. All of these are important for nuclear non-proliferation and security reasons and were clearly explained to URENCO and to the Troika partners at a sub-committee meeting of the Joint Committee on 21 April.
3. There remains the question of the appropriate mechanism for extending current URENCO collaboration on the gas centrifuge method of uranium enrichment to cover LIS. Our respective officials (in conjunction with those of other Troika partners) will need to work this out. For the immediate future, however, I can endorse the principle of URENCO collaboration in LIS techniques and agree that this could usefully serve the interests of BNFL, the British commercial partner involved.

/4.

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4. I am copying this minute to the Prime Minister, the Defence Secretary and Sir Robin Butler.

A handwritten signature in dark ink, appearing to be 'G. Howe', written in a cursive style.

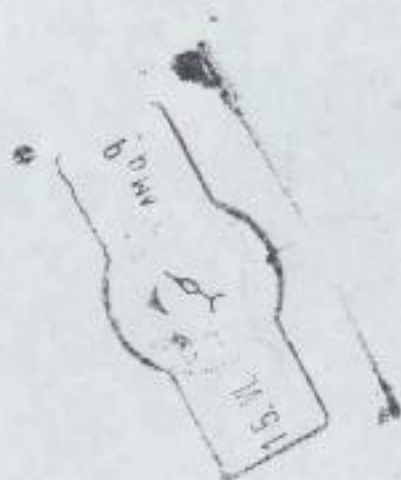
(GEOFFREY HOWE)

Foreign and Commonwealth Office

15 June 1989

CONFIDENTIAL

ENERGY : PA - PR 13





CONFIDENTIAL



*cc/*

SECRETARY OF STATE FOR ENERGY  
THAMES HOUSE SOUTH  
MILLBANK LONDON SW1P 4QJ  
01 238 2149

Paul Gray Esq  
Private Secretary to the  
Prime Minister  
10 Downing Street  
LONDON  
SW1A 2AA

Note  
Policy Unit have  
now decided not  
to pass this idea.

14 June 1989

- There is  
no need to  
clarify P.M.

*David Laird*

PRC6  
2/6

We spoke about the suggestion that the fossil-fuel levy might be levied on the amount of carbon used to generate a supplier's electricity.

I attach a note setting out the response my Secretary of State would feel obliged to give to such a suggestion. You may wish to show this to the Prime Minister before she decides whether this option should be pursued further. It concludes that the proposal would have no effect on the amount burnt unless it were converted into a "carbon tax" on generators.

*Yours  
David*

DAVID MURPHY  
Private Secretary

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CONFIDENTIAL

js465

Draft letter from Secretary of State for Energy

FOSSIL FUEL LEVY OR CARBON TAX

I understand that you would like an assessment of the option of charging the fossil-fuel levy on the basis of the carbon content of the fuel used to generate electricity.

The Present Position

2. The proposal in the Electricity Bill is that the area supply companies should be obliged to contract for non-fossil generating capacity. The Bill enables a levy to be imposed on all suppliers to recover the difference between the extra costs of non-fossil generation, which would then be paid to the area supply companies. This allows any extra costs of non-fossil generation to be borne by all customers.

3. The amount to be recovered by the levy will effectively be fixed by the difference between nuclear and coal-fired generating costs. Our current thinking is that this amount would be recovered by a percentage levy on the final sales price to customers, or as a percentage levy on transmission and distribution charges. Our proposals are set out in more detail in a separate paper on electricity contracts.

The New Option

4. The option we have been asked to consider is to fix the levy in proportion to the amount of carbon in the fuel used to generate electricity. A supplier contracting with a coal-fired generator would pay a higher levy than a supplier contracting with an oil-fired or gas-fired generator.

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5. It is difficult to model the effect of this proposal. But the first point to make is that it has no effect on the amount of carbon burnt in power stations. It therefore makes no contribution to reducing the greenhouse effect. It would be hard to explain why we were adopting this measure.

6. This is because the obligation to pay the levy is placed on supply companies. Under the option proposed, they would certainly call on contracts with oil-fired and gas-fired plant in preference to coal-fired plant. But the levy would not affect the price of generation; and so an oil-fired generator called on to run under contract would simply sub-contract his generating requirement to coal-fired generators. If the arrangements for despatching power stations in merit order work as they should, the lowest cost generators would run regardless of the levy. The net effect would be to change the basis on which contracts are struck and used by supply companies, without affecting the actual pattern of generation.

7. The effects on payments between suppliers and generators are extremely difficult to estimate. The danger is that the proposal would greatly complicate the negotiation of contracts, have no effects on actual generation, but reduce contract payments to generators, confuse investors and so lead to lower proceeds for the existing fossil-fired plant. This would come on top of the costs that will anyway be imposed on these generators by the EC emission controls and the resulting Flue Gas Desulphurisation Programme. A tentative preliminary analysis suggests that the proposal could eliminate most of the profits of the fossil generating businesses.

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A Revised Option or Carbon Tax

8. To make the proposal affect the pattern of generation and reduce CO<sub>2</sub> emissions would require fundamental changes to the Electricity Bill. The obligation to pay the levy would have to be placed on all generating companies, rather than the supply companies, so that it affected the behaviour of generators. The levy would then become a carbon tax on generators, not a means by which suppliers recover the extra costs imposed by their non-fossil obligation. The basic philosophy underlying the levy would be changed and this would have to be explained to Parliament.

9. While this change might reduce CO<sub>2</sub> emissions, it would do so as follows:

- it would lead to higher oil burn and lower coal burn, so aggravating the impact of ESI privatisation on British Coal, which will anyway be substantial (see my separate paper);
- it would reduce further the value of the coal-fired stations, so reducing proceeds for National Power and PowerGen, already reduced by the FGD programme; as set out in my other paper, the proceeds for conventional generators cannot bear too many reductions;
- it would probably mean dramatic price increases for industrial customers, for the reasons set out in my other paper; and
- it would greatly complicate the calculation of the levy. The levy effectively has to recover the difference in price between nuclear and coal-fired

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electricity. In this option, the size of the levy affects the difference in price.

10. Either of these options would greatly complicate the negotiation of contracts. These are complex anyway. The timetable for privatisation could be threatened.

11. Nor would either option be likely to have a significant short or medium-term impact on investment decisions for new generating capacity. Gas-fired capacity is already likely to be the economic choice for new stations, and will probably remain so for at least 10 years. If PWRs are economic by then, there will then be no levy in any case.

Conclusion

12. Our privatisation proposals will introduce competition in generation and lead to more commercial decisions about investment in new plant. For the foreseeable future, new capacity is likely to be gas-fired or nuclear. The main effect of the proposals discussed in this paper would therefore be to reduce the value of existing plant. Unless the levy were converted into a carbon tax, there would also be no effect on <sup>the</sup> amount of carbon burnt. A carbon tax would increase oil burn at the expense of coal burn and further reduce the value of existing plant and the volume of British Coal's sales.

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## MINISTRY OF DEFENCE WHITEHALL LONDON SW1 2HB

MO 30E

TELEPHONE 01-218 9000  
DIRECT DIALING 01-218 2111/3

13th June 1989

EJ 16/6

Dear Cecil,

URENCO: POSSIBLE COLLABORATION IN LASER ISOTOPE SEPARATION

Thank you for sending me a copy of your letter of 16th May to the Foreign Secretary. <sup>Har</sup>

I am content with the proposal for collaboration on Laser Isotope Separation within URENCO under the conditions set out in your letter. However, I would wish to emphasise that notwithstanding these conditions restricting collaborative work on Laser Isotope Separation to peaceful purposes only, the Treaty of Almelo still permits the UK, as a Nuclear Capable State, to exploit any technology developed within URENCO for our own military purposes if we so wish.

I am sending copies of this letter to the Prime Minister, the Foreign Secretary and to Sir Robin Butler.

Yours sincerely,  
George Younger

George Younger

The Rt Hon Cecil Parkinson MP

ENKAT : POUAN PTIS



FILE KK

PRIME MINISTER

NON-FOSSIL FUEL LEVY

Earlier this year you agreed that Greg Bourne in the Policy Unit should pursue work on finding the most environmentally beneficial way of distributing the non-fossil fuel levy. That work is different from the proposals for a "carbon tax" which Mr. Ridley raised some time ago and which you said should not be pursued. Greg's note attached reports that the Department of Energy have dug in their heels on the non-fossil fuel levy and recommends you should minute out to the department to secure a more co-operative attitude.

My understanding is that while the precise form of the non-fossil fuel levy is not prescribed by the Electricity Bill, the Department of Energy are a long way down the track on work based on Option A in Greg's note. They will be putting a paper to you on the contracts with the Generating Companies based on that option shortly. To backtrack now could (to put it no higher) delay the privatisation timetable.

For that reason and because, in the current circumstances I do not think we need another source of friction between Mr. Ridley and Mr. Parkinson, the best thing is to give the Department of Energy a free hand to pursue Option A and forget about the search for the environmentally ideal solution.

Agree?

DOMINIC MORRIS

13 June 1989

KK1ARO



PRIME MINISTER

---

You saw Nick Ridley's CPS pamphlet on the environment which he is preparing for the Euro Elections and which he is announcing in the press conference tomorrow. It has in it one or two speculative thoughts which touch on the possibility of a carbon tax (the relevant extract is attached).

Tony Blair, the Opposition Energy spokesman, is trying to make a meal of this and I understand will be on news at Ten tonight with a representative from British Coal. His angle will almost certainly be to assert there is a rift between Mr. Ridley and Mr. Parkinson. Neither of the Secretaries of State think it would be right for them to go on news at Ten to dignify this with a response. They have now agreed a common line and Nick Ridley will emphasise, if asked, that this was a personal contribution on the way things might develop in future; that the questions he poses are bound to be raised in international discussions and countries will need to form a view on them. But the Government certainly has no plans for a carbon tax. Our Press Office have the same line.

*Patricia A. Parkinson*

DOMINIC MORRIS

8 June 1989

*Ph. under on*

*ms*

" ... when firm scientific evidence is forthcoming (and this should be within the next few years) governments will have to get together to agree to cut back on those processes which realise greenhouse gasses. These agreements might range from reductions in consumption of energy from burning fossil fuels (one means to achieve this might be to impose a 'carbon tax' on fuels causing the problem, proportionate to the carbon dioxide they emit, in order to encourage consumers to turn to less polluting forms of energy), to reforestation .... etc".

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SECRETARY OF STATE FOR ENERGY  
THAMES HOUSE SOUTH  
MILLBANK LONDON SW1P 4QJ  
01 238 2290

The Rt Hon Sir Geoffrey Howe QC MP  
Foreign Secretary  
Foreign and Commonwealth Office  
LONDON SW1

16<sup>th</sup> May 1989

Dear Geoffrey,

**URENCO: POSSIBLE COLLABORATION IN LASER ISOTOPE SEPARATION**

The Treaty of Almelo, concluded in 1970, is an agreement between the Government of the UK, the Netherlands and the Federal Republic to collaborate in the commercial development and exploitation of the gas centrifuge process of uranium enrichment. Within the framework of this Treaty, URENCO has been set up as a collaboration between a commercial partner in each of the three countries (in the case of the UK, BNFL). A Joint Committee of senior officials from the three countries was also set up by the Treaty to deal with political and strategic aspects of the collaboration.

At present, the gas centrifuge is the most economic commercial process for enriching uranium. Other countries, however, notably the US and France, who rely on the less economic diffusion process, have committed substantial resources to developing laser-based processes (LIS: Laser Isotope Separation). There is a general belief that these processes are technically feasible, although it is not certain whether they will be economically competitive with the centrifuge.

BNFL have, therefore, like their partners started their own programme of R&D on LIS, to protect their commercial position should LIS prove to be competitive. The three commercial partners have now decided to pool these efforts and to extend their collaboration initially to R&D on LIS, and eventually, should the circumstances be right, to commercial operation. They have sought agreement from the Joint Committee on behalf of the three Governments.

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Officials discussed the line which the UK should take in NP Committee under Cabinet Office Chairmanship. They agreed that there was no objection in principle provided that:-

- i. the collaboration was for peaceful purposes only and that material produced as a result of the collaboration was used for peaceful purposes only;
- ii. there was the strictest attention to security of information and technology, since this technology could prove attractive to would-be nuclear proliferators; and
- iii. to protect MOD's position in their own collaboration with the USA, work in this collaboration should continue to be kept strictly separate from military applications. There should be a clear limitation on the collaboration to the production of material for civil use. As a visible sign of the separation, the Committee proposed a limit of no more than 20% enrichment of U235 to the end product of each pass through any production unit operated by the collaboration, while recognizing that the exact formulation might need to be reviewed when the operation of a commercial report was better known.

I am content with these conclusions. Extending the URENCO collaboration would spread the increasing costs of the R&D, and ultimately the risks of building and operating a commercial plant. BNFL are also seeking to persuade their partners to concentrate the pooled R&D at Capenhurst.

However, before I inform the Joint Committee of our decision, I should be grateful to know that you have no objections to the proposals.

I am sending copies of this letter to the Prime Minister, the Secretary of Defence and to Sir Robin Butler.

*James Lees,  
Lead*

CECIL PARKINSON



SECRETARY OF STATE FOR ENERGY  
THAMES HOUSE SOUTH  
MILLBANK LONDON SW1P 4QJ

*Pine Mistle 2*

01 211 6402

*fac 6  
13/3*

The Rt Hon Nigel Lawson MP  
Chancellor of the Exchequer  
Treasury  
Parliament Street  
LONDON  
SW1P 3AG

*13* March 1989

*Dear Nigel,*

*ms*

PRODUCTION AND ECONOMIC CONSEQUENCES OF PIPER, BRENT AND FULMAR INCIDENTS

I wrote to you in early January with an assessment of the probable economic impact of the accident to the Fulmar offshore-loading system, and a delay in restarting production on some fields affected by the Piper Alpha accident. You may find it useful to have an up-dated assessment.

As at February of this year, total oil production shut-in because of the Piper, Brent and Fulmar incidents was 0.54 million barrels per day. Total UK production in February was some 1.8 million barrels per day. Of the shut-in production, some 46% was due to Piper and fields affected by Piper; 42% due to the Fulmar incident; and 12% due to Brent.

The Piper field itself is unlikely to resume production until mid-1992 but other fields affected by accidents are expected to be back to full production during 1989.

Production deferred is at least partly recovered over the period to 1993. The overall loss and recovery profile is shown below with its implications for the balance of trade and tax receipts. All of these figures are relative to an estimate of what oil production would have been without these recent incidents.

Production and Macro-Economic Consequences\*

	1988	1989	1990	1991	1992	1993
Loss & recovery in oil production (million barrels per day)	-0.15	-0.16	-0.01	+0.00	+0.03	+0.06
Direct impact on visible trade (£ million)	-450	-580	-50	+20	+130	+240
Impact on balance of payments (£ million - current account)	-350	-480	-150	+20	+80	+200
Impact on Exchequer revenue (£ million - calendar years)	-110	-390	-30	+65	+120	+85

\* Note: The economics will depend on what happens to future prices. The analysis contained in this table assumes that future prices remain at or about their present level in sterling terms.

The first row sets out the losses and recovery in oil production 1988-1993. These figures take no account of any subsequent effects on production of possible modifications to platforms and pipelines through changes in the safety regime which may be recommended by the Cullen Inquiry. The second row sets out the direct 'visible' effect on the trade account: this is before taking account of any profits, interest, dividends or insurance claims which cross the exchange. The overall impact on the balance of payments, taking into account the above 'invisible' items, is shown in the third row. We cannot, of course, be very certain of the timing and size of these 'invisible' flows, and hence we cannot be completely confident in which year they might arise.

The final row sets out the impact on Exchequer revenue on a calendar year basis. My Department does not have direct access to the companies' tax returns and hence cannot be sure in which particular year claims and payments will be made. This is particularly true for 1988 and 1989.

I am copying this letter to the Prime Minister and to David Young and Malcolm Rifkind.

*Yours*  
*Cecil*

CECIL PARKINSON



*CCP*

*Arb*

*Arb  
11/1*

SECRETARY OF STATE FOR ENERGY  
THAMES HOUSE SOUTH  
MILLBANK LONDON SW1P 4QJ  
01 211 6402

Jonathan Taylor Esq  
Private Secretary to  
The Rt Hon Nigel Lawson MP  
Chancellor of the Exchequer  
H M Treasury  
Parliament Street  
LONDON  
SW1P 3AG

11 January 1989

*Seed Selection*

**PULMAR**

*Aap.*

My Secretary of State minuted the Prime Minister on 5 January about the economic effects of the Fulmar oilfield incident. A table showing the cumulative effects of Piper Alpha and Fulmar was included in the minute. Unfortunately an error crept into the figures. The "combined impact" figure for 1989 should have read 9.54 million tonnes instead of 8.85. Apologies for this.

I have copied this letter to **Paul Gray at No 10**

*Yours sincerely  
D. Murphy*

**DAVID MURPHY**  
Private Secretary

ENBCCG: POUIS PTTB





FILE KK  
DC BG



10 DOWNING STREET  
LONDON SW1A 2AA

*From the Private Secretary*

6 January 1989

**FULMAR OIL FIELD INCIDENT**

The Prime Minister was most grateful for your Secretary of State's minute received yesterday which she has noted.

I am copying this letter to Alex Allan in HM Treasury.

(PAUL GRAY)

Stephen Haddrill, Esq.,  
Department of Energy.

Prime Minister

FULMAR OIL FIELD INCIDENT

*see FSU*  
*Prime Minister*  
*mb* You will wish to see this  
*state of play report*  
*Page 57*

You may find it helpful to have our latest assessment of the consequences of the shut down of the Fulmar, Clyde and Auk fields following the failure of the Floating Storage Unit (FSU) over Christmas.

The failure occurred at seabed level in the coupling at the base of the tower through which oil is pumped from the Fulmar platform and to which the FSU is moored. The tower and the FSU are now at Stavanger, and Shell (the operators) are lifting it to see if they can establish why it broke. But until we know the reasons, all estimates about the time needed to repair the damage must be very uncertain. However, our best estimate at this stage is that there will be no production until 1 March 1989; 60% capacity during March; 70% during April and May; with full production being resumed on 1 June. This translates into the following table, based on Shell's estimate of production loss:-

	PRODUCTION LOSS (million tonnes)	NET EFFECT ON VISIBLE TRADE BALANCE (million pounds)
1988	0.23	-15
1989	2.64	-185
<u>Total</u>	<u>2.87</u>	<u>-200</u>

However, there will be some compensating savings on the current account because of reduced outflow of profits and dividends. The impact on the current account is, therefore, likely to be reduced to the following:-

	IMPACT ON CURRENT ACCOUNT (million pounds)
1988	-15
1989	-155 to -165

Loss of tax revenue from the Fulmar area could amount to £10m in the financial year 1988/89, and £140m in the financial year 1989/90.

The cumulative effects of Piper Alpha and Fulmar are as follows:-

	PRODUCTION LOSS (million tonnes)	NET VISIBLE TRADE EFFECT (million pounds)	BALANCE OF PAYMENTS EFFECT
Piper Alpha (incl. contingency for safety measures and insurance effects)			
1988	7.0	-410	-310
1989	6.9	-445	-225
"Fulmar" (No insurance payments incl.)			
1988	0.23	-15	-15
1989	2.64	-185	-155-165
Combined Impact			
1988	7.23	-425	-325
1989	8.85	-630	-380-390

The latest estimate of the loss of tax revenue from the Piper area could amount to £390m in the financial year 1989/90 offset by a gain of £90m resulting from insurance payments in 1988/89 for the loss of the platform.

Our most recent estimates of the continuing effects of the Piper Alpha accident during 1990 show a direct loss of around 1.4 million tonnes against pre-accident forecasts for 1990; at current oil prices and exchange rate, the net visible trade effect is -£90 million. As in 1989 we also include a contingency of a further 2 million tonnes which could be lost through production interruptions caused by possible safety modifications

to UKCS platforms and pipelines. This indirect effect could cause a further loss of some £130 million - ie some £220 million in all. We have not attempted to calculate the balance of payment effect this far ahead.

Following an incident on 1 January on Brent 'D' production from the Brent field has been reduced by 90,000 b/d. My inspectors are currently investigating the incident and we hope that full production can be resumed within 1-2 months. I shall report further when the position is clearer.

I have copied this minute to the Chancellor of the Exchequer.

C.P.

C P

dti

the department for Enterprise

*seto*

The Rt. Hon. Lord Young of Graffham  
Secretary of State for Trade and Industry

The Rt Hon Cecil Parkinson MP  
Secretary of State for Energy  
Thames House South  
Millbank  
LONDON  
SW1P 4QJ

Department of  
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*MBM*  
*REC*  
*14/12*

Direct line 215 5422  
Our ref PBI AJ0  
Your ref  
Date 13 December 1988

*Mr C...*

UK ATOMIC ENERGY AUTHORITY: MMC REFERENCE

Thank you for your letter of 28 November proposing that the UK AEA reference planned for next January be deferred until September.

In view of all the circumstances, described in your letter, I accept that this delay is now inevitable. It would, however, have been helpful if we could have had a little more advance notice of the likely problems. The MMC, who at best have an unpredictable workload, had set aside resources for the reference to begin in early January. Those resources included a senior secondment from Shell UK which has now had to be deferred. We have been urging MMC to draw in outside expertise particularly for the section 11 work. They have not found this easy and the Shell case has set them off rather badly.

The withdrawal of UKAEA (and London Underground) from the current programme means that only one of the candidates announced by Kenneth Clark last May - Northern Ireland Buses, sent to the Commission in October - now survives. There is, therefore, an urgent need for us to draw up a future programme of references and Tony Newton will be putting forward our own suggestions shortly.

I am copying this letter to other members of E(NI) and to Sir Robin Butler.

*Young*  
*14/12*



ENERGY: Policy Pg 13



PERSONAL



FILE

KK

DC NLW  
ML-B

10 DOWNING STREET

LONDON SW1A 2AA

*From the Principal Private Secretary*

13 December 1988

*Dear Peter,*

Here is the draft statement which Mark Lennox-Boyd, the Prime Minister's Parliamentary Private Secretary, wishes to issue in his constituency about the CEGB's plans for a dry buffer store.

Mark Lennox-Boyd would, of course, issue the statement on his own authority. But in view of his close relationship with the Prime Minister, I think it is in everybody's interest to check that it is written in as acceptable terms as possible. I should therefore be grateful for urgent comments. In particular, could you provide a strong paragraph on the Nuclear Installations Inspectorate for the square bracketed passage marked.

It would be extremely helpful if I could have a reply by close tomorrow so that I can finish this before I leave the office.

*N. L. Wicks*

*Nigel Wicks*

(N. L. WICKS)

Sir Peter Gregson, K.C.B.

PERSONAL

DRAFT

The C.E.G.B. has been investigating the possibility of building a dry buffer store for spent nuclear fuel at Heysham for some time now. I have during this period made extensive enquiries myself to assess the opinions of my constituents. Views have been expressed to me by correspondence, through the newspapers, by discussion with a range of different contacts and by means of the public meeting which I have held.

As I have indicated publicly, I will reflect the views of my constituents on every appropriate opportunity and in every appropriate quarter. But I have also indicated publicly that I must assess not only the strength of local opinion but also the reasons for the objections.

I believe that the overwhelming majority of my constituents recognise that nuclear power stations have operated safely in the United Kingdom for 30 years or more, producing cheap electricity which has benefitted industry and domestic consumers. Furthermore we have the experience of the nuclear power stations at Heysham, with which we have lived in the main happily for many years now. The record of safety has been second to none. It is of paramount importance that this record of safety must continue.

The proposal for a buffer store raises issues of safety and of general environmental planning which are of very great concern to my constituents. Successive governments have established impartial procedures - notably through the planning enquiries - to ensure that these safety and environmental planning issues are thoroughly and impartially examined before any decision on such sensitive development is made.

The CEGB has not taken a decision whether to seek approval for the dry buffer store. But if they decide to go ahead with the proposal, I believe that there is certain to be a planning enquiry. I shall do my utmost to ensure the views of my constituents are given the fullest weight in all future



consideration of this proposal, including at the planning enquiry and at any subsequent consideration by the Secretary of State.

Under the heading of safety, I will make clear that the safety of the buffer store is nonetheless a major concern of many who live in the area. The evidence of the Nuclear Installations Inspectorate will be crucial here.

[Please could you insert a strong paragraph here on the NII - its role, its independence and impartiality, its increase in strength in recent years].

But the concerns of my constituents go wider than the issue of safety. Their objections are simply stated by such phrases as:

We have done our duty to the nation by accepting the existence of two power stations. We do not want any further such development. We are a tourist area which has suffered decline for a number of years and a major development of this kind is hardly likely to revive our tourist industry. The view across Morecambe Bay is one of the finest in Britain and it would be further spoiled by a major construction of this kind. Our roads, particularly to Heysham, are already too crowded and such a major development would lead to an even more intolerable overcrowding on our roads, with damage to our environment, our quiet neighbourhood, our peace of mind and the value of our properties.

These are just the issues which a planning enquiry will consider if the Generating Boards wish to proceed with the proposal. I repeat that I will make sure that the enquiry and the Minister are aware of the strength of my constituents' feelings.

No-one should assume that the buffer store at Heysham will be built merely because the C.E.G.B. is currently conducting a

feasibility study. If the C.E.G.B., having heard the strong views of my constituents, proceed to make a planning application next year the matter should, as I have indicated, be considered by a planning enquiry. I will most certainly insist to the Government that such an enquiry should take place. It would last many months and every possible aspect about these controversial proposals would be most carefully considered.

It is my job to ensure that my constituents' views are understood by the C.E.G.B., by the Government and, should the matter reach a planning enquiry, by that enquiry itself.



SECRETARY OF STATE FOR ENERGY  
 THAMES HOUSE SOUTH  
 MILLBANK LONDON SW1P 4QJ  
 01 211 6402

NBPm

RAC

28/11

The Rt Hon The Lord Young of Graffham  
 Secretary of State for Trade and Industry  
 1 Victoria Street  
 LONDON  
 SW1H 0ET

28 November 1988

Dear David,

UK ATOMIC ENERGY AUTHORITY: MMC REFERENCE

When earlier this year we discussed the public sector efficiency references to be made to the Monopolies and Mergers Commission (MMC), we agreed that the UKAEA should be included in the current programme. We recognised, however, that the Authority should not be referred until towards the end of the programme both because of the commercial pressures on a relatively new management team and because of the Value for Money Study by the National Audit Office (NAO) then in progress on aspects of the Authority's funding and controls.

The commercial pressures on the UKAEA have intensified over the last few months. Since we agreed on the MMC reference, several decisions have been taken - on the fast reactor, fusion, the transfer to the Health and Safety Executive of customer responsibility for thermal reactor safety research and the impending licensing by the Nuclear Installations Inspectorate of the UKAEA's sites - which will have a major impact on the Authority's commercial prospects, as will the likely reductions in funding of nuclear R & D by the electricity supply industry. The Authority's management is heavily engaged in getting to grips with a radically changed situation and with improving the Authority's commercial position. Amongst the many steps they are taking to improve their profitability, they are preparing to commission a major strategic study from external business consultants to help them to plan a robust corporate strategy. John Major and I both believe that such a study will be of prime importance for the Authority's future and the management must be able to devote sufficient time to ensure that the consultant's advice is soundly based. The firm advice of John Collier, the Chairman of the UKAEA, is that this would not be possible, if at the same time management was having to deal not only with the NAO Value for Money Study but with a major MMC investigation as well. In these circumstances, both John Major and I believe that priority must be given to the formulation of a robust Corporate Strategy.



The original timetable for the NAO's Value for Money Study was that the report would be submitted to the Public Accounts Committee by October. There have, however, been significant delays, and the latest estimate from the NAO is that it will certainly not be completed before the end of this year and may well not be available until February or March 1989. If the PAC wishes to take evidence on the Report, it seems unlikely that the Study will be out of the way before the summer. If the MMC were to start on its investigation at the beginning of the year, it would not have the benefit of either the NAO Report or the PAC's comments on it.

I hope, therefore, that you will agree that it will be sensible to defer the UKAEA reference until September.

I am copying this letter to John Major and to the other members of E(NI).

*Yours Ever,  
Cecil*

CECIL PARKINSON



10 DOWNING STREET

~~Nigel~~

This was my first draft  
(not sent in) which you  
might find as usefull  
background

A handwritten signature, possibly 'S/O', written in cursive.

DRAFT TO

PRIME MINISTER

19 October 1988

NUCLEAR POWER

(NON FOSSIL FUEL OBLIGATION)

No convincing commercial argument can be put forward advocating the building of new nuclear power stations - indeed it would be unwise to try so to do. However a strategic argument, beyond the commercial decision-making timeframe, can be articulated. It is this argument that you will need to pursue.

THE CURRENT ARGUMENTS

There are three reasons for advocating the use of nuclear power:

- 1 Economic production of electricity,
- 2 Diversity of fuel source, and
- 3 Reduction in atmospheric pollution.

All three arguments can be dismantled by competent bodies as indeed is being attempted now at the Hinkley Point "C" inquiry. What is most disturbing however is that DEN, HMT, DTI and indeed a privatised ESI would probably argue the same way in the absence of the Non Fossil Fuel Obligation (NFFO) proposed in the White Paper.

1 Economic Production of Electricity

The argument centred around the economic production of electricity is likely to prove fallacious. Already it is doubtful if any private company would contemplate building a new nuclear power station. The construction costs, operating and maintenance costs and decommissioning costs together with the high degree of uncertainty associated with each cost component, are strong disincentives to invest. Conventional power stations are seen as a better bet!

With existing nuclear power stations, where the construction costs can now be considered as sunk costs, the decision maker is faced with trying to ensure that his average revenues exceed his average variable costs. Should he continue to produce so that at least some contribution is being made to his fixed costs, or should he shut down and get out of the business altogether?

Evidence is beginning to emerge showing that operating and maintenance costs are ever increasing together with the costs of decommissioning. Nuclear power stations are likely to prove to be the high cost producer rather than the low cost producer originally envisaged. Preliminary results from the scrutineering accountants at the CEGB are indicating a direct operating cost for nuclear power in pence/KWh to be some 45% higher than for conventional power. This is mostly due to the poor operating performance of the Dungeness B, Heysham I and Hartlepool AGRs together with the high overheads associated with nuclear power.

The DEn and CEGB will argue at the Hinkley C inquiry that the predicted "most likely" cost-KWh for PWR electricity is about the same as that for a coal station of equivalent size. The argument is a distorted view of the possible outcomes of costs. Indeed, the probability distribution of costs is so highly skewed towards upside-costs that the "mean" could be as much as 50% higher than the "most likely" value. Further, DEn and CEGB will not compare the costs

with modern combined cycle gas turbine power stations which would definitely prove to be the cheapest option.

At the Sizewell Inquiry, the CEGB were able to argue about "fossil fuel" price rises and point to the type of oil price shocks that occurred in 1973 and 1979. Since then, the 1986 "reverse" shock has occurred and thus the argument centres on "uncertainty" rather than price rises. Their opponents at the inquiry will argue that construction and operating costs increased after Three Mile Island and Chernobyl. Indeed, the United States Department of Energy recently published a report which shows that "operations and maintenance" and "capital additions" costs have escalated by 12% and 17% real per annum in the years 1974-1984. Most of the costs are directly correlated with safety demands from the Nuclear Regulatory Commission, their equivalent of the NII.

The CEGB and DEN will lose the economic argument at the Hinkley Inquiry - they will fall back on the NFFO as their reason for wanting to pursue the building of more PWRs.

## 2 Diversity of Fuel Source

The diversity of fuel source argument is firstly about security of supply disruptions caused by industrial action and secondly about hedging the price risks.

The following table shows the percentage of electricity generated from the various fuel sources during the miners' strike and during 1987/88.



	<u>1984/5</u>	<u>1987/8</u>
Coal	44.4	81.7
Oil	37.9	4.1
Gas	0.7	-
Nuclear	17.3	14.4
Hydro/Pumped	(0.3)	(0.2)
	<hr/>	<hr/>
	100	100

Three facts should be noted:

- a) The diversity of fuel supply argument is strongest in favouring developing of gas-fired power stations - particularly combined cycle gas turbine generators.
- b) Even during the miners' strike, 40% of normal production was achieved mainly due to the efforts of miners in what are now typically UDM areas. Intrafuel diversity is as helpful as interfuel diversity.
- c) The percentage of electricity generated from oil is low despite low oil prices only due to the predatory pricing policies of British Coal. In normal market conditions oil firing would be close to the 1984 figures in percentage terms.

The newly privatised ESI will further diversify the supply lines by investing in coal import facilities, conversion of more coal stations to dual oil/coal firing and building of

gas fired stations.

Hedging the price of the input fuel is mostly a function of the contract market for the fuel source rather than the spot market. If allowed to, with the disbanding of "joint understandings" between the CEGB and British Coal, long-term oil and gas contract markets will develop. The side effect will be to put downward pressure on coal prices. (You will have noted that BC have recently announced that they intend to freeze prices for 14 months - starting at the end of this October. A reduction in price in real terms).

In the commercial decision-making timeframe of 10-15 years, there is no reason to make decisions now about the shifting global balance of oil supply. This is not "short-termism", rather it is a prudent approach taken by prudent companies who have their shareholders at heart rather than "long-term national interest" or "public good" concepts.

### 3 Reduction in Atmospheric Pollution

With regard to pollution, commercial companies respond firstly to statutory regulations; secondly to self regulation with vested interest in mind; and thirdly, but to a less widespread extent, to corporate environmental consciousness.

In terms of cash spent on each of three factors, the amount spent on regulatory considerations is by far the greatest. It is spent knowing that the "playing field" stays level. The remaining two factors generate investment in the environment to a much less extent. The more that is spent, the more uncompetitive the company becomes. It is interesting to note that Dupont is unilaterally developing CFC replacements ahead of legislation at great expense. Partly this is vested self interest in that they stand to gain the largest market share. Partly they will greatly

enhance their corporate image which will certainly not harm sales of other products.

For the electricity generators, the pollutants of note are primarily NO<sub>x</sub> and SO<sub>x</sub> with CO<sub>2</sub> fast becoming a subject of debate but not of action. The reasons are obvious. "Acid rain" is a relatively local effect as far as the generators are concerned. The EC directives are levelling the playing field for all in Europe. No one, apart from the worst polluter, is being put at a competitive disadvantage. On the other hand reduction of CO<sub>2</sub> emissions will be an extremely costly exercise which, when passed on to consumers may drive industry away to areas where regulations are not so forcefully pursued.

With the "greenhouse" effect being a global problem, driving steel production, for example, to Korea or China, does nothing for your economy and nothing for the global problem.

Thus for the moment at least, commercial and economic considerations are likely to militate against active reductions in CO<sub>2</sub> emissions.

#### THE STRATEGIC ARGUMENT

The strategic argument for advocating the use of nuclear power uses the same three reasons as before. However, it recognises that there is no commercial incentive to expand or even maintain the level of nuclear power capacity. The strategic argument is based on national interest, public good and harkens back to "The Next Moves Forward".

#### "ENERGY

Britain is the only major Western industrial country that is a net exporter of energy. This owes much to North Sea oil so successfully developed by free

enterprise. But it is an advantage that will not last indefinitely.

Coal will continue to meet much of the steadily rising demand for electricity. Renewable sources of energy can make some contribution to the nation's energy needs, which is why government-sponsored research has been increased. Nevertheless, to reject, as our opponents do, the contribution of nuclear energy to supplying reliable, low-cost electricity, and to depend on coal alone, would be short-sighted and irresponsible.

The world's resources of fossil fuels will come under increasing strain during the 21st century; so may the global environment if the build-up of carbon dioxide - the so-called "greenhouse effect" - significantly raises temperatures and changes climates.

After the most careful and painstaking independent assessment of the safety case for a new pressurised water reactor at Sizewell, therefore, the Government has decided to proceed with the next phase of our nuclear programme. It is vital that we continue to give the highest priority to safety. Our nuclear industry has a record of safety and technical excellence second to none.

We intend to go on playing a leading role in the task of developing abundant, low-cost supplies of nuclear electricity, and managing the associated waste products."

We now need to go on the say:-

"Although at present, oil prices are low, coal prices are falling and gas is beginning to enter the market at

favourable prices; this will not always be the case. The global balance of oil supplies will inexorably move towards the Middle East and the USSR. Demand will eventually exceed supply with attendant price rises. The oil balance will move into deficit.

At this time, generators who burn fossil fuels attract few of the external costs associated with pollution. Global awareness is increasing to a point where it will soon be accepted practice to regulate to ensure that NO<sub>x</sub> and SO<sub>x</sub> emissions are eliminated and CO<sub>2</sub> emissions are reduced. These regulations will inevitably increase the costs of fossil fuel based electricity.

Notwithstanding the fact that nuclear electricity costs are also increasing, we believe there will come a time when the balance will again be in favour of nuclear power. Therefore, even though in purely commercial terms nuclear power in the short term may be disfavoured, we believe that the nation should continue to have a proportion of its power generated in nuclear power stations."

The danger in this statement however lies in the arguments being used by DEN officials which essentially says:

**The Non-Fossil Fuel Obligation = Build Four PWR's**

Your opponents will link the two statements in the opposite causal relationship ie in order to justify building four PWR's, embrace the "greenhouse effect" and create the concept of the NFFO.

To defuse this plausible criticism, the government needs to more actively encourage:

- Better load management

- Increased use of industrial co-generation
- Combined Heat and Power/District Heating Schemes
- Electricity imports
- Changes to planning margin
- Efficiency improvements
- Seven/Mersey barrages
- Other renewables
- Use of combined cycle gas turbine generators.

Embracing the above actively would probably do more to reduce CO2 emissions than the building of the 4 PWR's; and at less cost. Thus the NFFO should be read as a drive towards the most cost effective and pollution minimising methods of generating electricity rather than a rather circular justification for building 4 PWR's.

#### THE LEVEL OF THE NFFO

The Energy Secretary in his statement on the 11th May this year, clarified (?) the NFFO. (Q & A attached).

"... the government's present intention is that, when it is set, the figure for the year 2000 will not be below the present level of existing and committed nuclear and renewable generating capacity."

The level is currently being added up by the CEGB and endorsed by DEN to be 12.225 GigaWatts. The figure has been "massaged" to ensure that there is always a case for 4 PWR's. 3.123 GW of retirements are due by the year 2000, a further 1.960 are due by 2002. This is equivalent to 4 PWR's but does not take into account possible imports from Scotland and a possible further link to France.

In the event that imports become a "threat" to the justification for building 4 PWR's then I would predict that the Declared Net Capabilities of Dungeness B, Hartlepool

and Heysham I will be down rated from 3.12 GW total to their expected "on stream" capability of about 1.050 GW thereby providing a justification for 2 further PWR's.

The motive within the CEGB at the moment is get the government hooked on the highest level of the NFFO. Commit the government to 4 PWR's whilst still in the Public Sector and follow up with 4 further PWR's by about 2010.

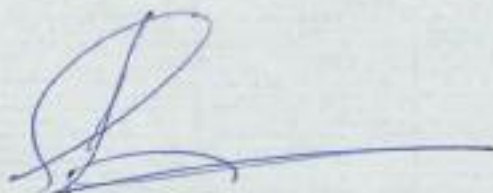
The effect would be to provide Big G with a guaranteed base load, underwritten by the Government with fiscal incentives which drives out all competition. Big G will be highly motivated to increase the life and output of their nuclear and conventional stations thereby prolonging over capacity and suppressing competition.

If the level of the NFFO is set at 12.225 GW and 4 PWR's are committed to; essentially in one tranche; the French experience shows that it is difficult to stop the momentum of building more stations. A rapid build up followed by sudden retraction will inevitably lead to increased costs as well as social and political tensions. (At the height of the French building programme 200,000 people were working in the nuclear industry).

It will be more prudent; following Hinkley C; to view each additional power station on a case by case basis. No guarantees, written or unwritten should be given to Big G for an extensive programme.

CONCLUSION

- No convincing commercial argument can be put forward advocating the building of new nuclear power stations.
- A strategic argument, based on "The Next Moves Forward" can be articulated but it needs to recognise the current non-commerciality of nuclear power.
- The Government must not risk being accused of using the circular argument that the NFFO justifies the building of 4 PWR's.
- The Government should actively encourage other cost effective and pollution minimising measures in parallel with its support of the NFFO.
- The CEGB and DEN are trying to maximise the NFFO in order to justify PWR building programmes.
- You may need to soften the line of the NFFO and indeed the manifesto statement in the light of the latest cost figures for nuclear power.



GREG BOURNE



NON FOSSIL FUEL CAPACITY

MEGAWATTS

	<u>QUOTED</u>	<u>DECLARED</u>	<u>EXPECTED</u>
<u>MAGNOX</u>			
Berkeley	276		
Bradwell	245		
Dungeness A	424		
Hinkley A	470		
Oldbury	434		
Sizewell A	420		
Trawsfyndd	390		
Wylfa	840		
	<hr/>	<hr/>	<hr/>
	3499	3499	3499
	<hr/>	<hr/>	<hr/>
<u>AGR</u>			
Hinkley B	1120	1120	1120
Dungeness B	1000	450	350
Hartlepool	1060	-	350
Heysham I	1060	-	350
Heysham II	1230	-	1230
	<hr/>	<hr/>	<hr/>
	5470	1570	3400
	<hr/>	<hr/>	<hr/>
<u>PWR</u>			
Sizewell B	1175	1175	1175
	<hr/>	<hr/>	<hr/>
<u>OTHER</u>			
Hydro	117		
EdF	1500		
Calder Hall	168		
Winfrith	100		
Chapelcross	196		
	<hr/>	<hr/>	<hr/>
	1964	1964	1964
	<hr/>	<hr/>	<hr/>
Existing & Committed	12,225	8208	10,038
	<hr/>	<hr/>	<hr/>



10 DOWNING STREET

Price Mark<sup>2</sup>

This was one of the items  
in your "unfinished business"  
folder this morning. I am  
putting it back in the box  
in case you had not quite  
finished with it.

PLC6

v(7)

Price Minister \*

This has come via Greg Baines (Policy Unit)  
from BP. Was it something you requested  
from Peter Walker?

ETHANOL

Use as a fuel substitute

The use of ethanol as an alternative or an addition to gasoline is not viable, primarily because the production of such alcohol consumes more energy than it provides as an automotive fuel. Moreover, the cost of producing this ethanol is significantly greater than consumers are prepared to pay for gasoline unless substantial government subsidies and/or restrictions on free choice of automotive fuel are applied.

REC 6  
1/7

Yes - some  
Aff. Ministers are  
talking about  
it.

Distortion to Trade within the OECD

Ethanol (Ethyl Alcohol) is made both chemically from oil (industrial) ethanol and by traditional fermentation and distillation from a wide variety of agricultural products, notably sugar cane, sugar beet, molasses, cereals and grapes. Industrial ethanol is not used in markets involving internal human consumption, which is supplied solely by agriculture alcohols. The world market for ethanol in industrial outlets (excluding motor gasoline) rather than human consumption purposes is 1.5m tonnes per annum, which is overshadowed by the much larger market for human consumption, coupled with surplus production of agricultural alcohol. BP Chemicals International, the world's largest producer of industrial ethanol has a capacity to produce 310,000 tonnes per annum.

The estimated European costs of production are:

	£/ton
Industrial	240-290
Molasses	315-400
Wheat	400-530
Wine	3000

B

Outside Europe the cost of agricultural ethanol varies substantially, but is normally higher than industrial alcohol. These costs compare with an average price of £350 pmt for industrial ethanol in the EEC, where the common external tariff is equivalent to £114 pmt.

All OECD countries, except the UK, protect their agricultural alcohol interests by giving substantial aid and tax discrimination to fermentation alcohol. This directly and indirectly damages the more economic industrial ethanol producers and in particular BP Chemicals in the UK who is the world's industrial ethanol producer.

#### Summary

All OECD countries with the exception of the UK subsidises the production of ethanol from agricultural surpluses.

Industrial ethanol derived from oil is the most economic source for consumers of ethanol in outlets other than human consumption.

The continued production of surplus agricultural alcohol represents a major drain on national funds, and distorts the world market for industrial ethanol. The wine alcohol surplus in the EEC, and uneconomic production of ethanol for the motor gasoline pool are the two main contributors to the surplus.

#### West Germany

- a) 8,000 tonnes of ethanol used in cosmetics is reserved for agricultural ethanol.
- b) The State run Bundesmonopol supports producers of about 60,000 tonnes of fermentation ethanol by purchasing

their ethanol at a price of about DM 3,700 per ton and selling at DM 1,117 per ton, a subsidy of £820 per ton.

### Italy

- a) Surplus wine alcohol is distilled and after appropriate subsidy is sold on world markets to compete with EEC production of industrial ethanol. EEC subsidies are received at the wine stage and Italian State subsidies at the distillation stage. The EEC estimates the cost of production at 338 ECU's/hectolitre = £3,300 pmt, with a subsequent subsidy granted to enable exports at prices less than £100 per ton.
- b) Industrial ethanol is taxed at 12,000 lire/hectolitre on synthetic ethanol, but a tax of 1,000 lire/hectolitre on fermentation ethanol, i.e. a discrimination against industrial ethanol of £60/pmt.

### France

Good progress has been made in removing the final distortions to their internal market. However, some wine alcohol is still exported by the State as with Italy.

### Japan

They have a monopoly selling organisation which distorts free trade, but progress is being made in lifting trade barriers against industrial ethanol, so enabling exports from Europe to Japan.

### USA

The US has a complicated system for subsidised grain alcohol production for use in gasoline. The subsidy is given as federal capital grants and favourable federal and state tax

treatment for gasoline containing ethanol. Marginal production from this subsidised industry enters the industrial markets and disrupts it. Furthermore, the subsidies on the ethanol effectively cross subsidises the co-produced corn gluten and corn syrup which are exported to the EEC amongst other markets.



cc/PU

nbpm

SECRETARY OF STATE FOR ENERGY  
THAMES HOUSE SOUTH  
MILLBANK LONDON SW1P 4QJ

01 211 6402

Private Secretary to  
The Rt Hon John Major MP  
Chief Secretary  
Treasury Chambers  
Parliament Street  
LONDON  
SW1P 3AG

4 August 1988

Dear private Secretary,

My Secretary of State wrote to the Chief Secretary on 25 July concerning the National Nuclear Corporation. I am afraid there is an error in the penultimate line of paragraph two; "participation in the Corporation falling into unwelcome hands and" should read:

"participation in the Corporation. We have also obtained assurances on such subjects as non-proliferation, the prevention of the Corporation falling into unwelcome hands and"

I am copying this letter to the Private Secretaries to the Prime Minister, David Young and Malcolm Rifkind.

Yours Sincerely,

PP *Jandy Patel*

JACQUE BRESNIHAN  
Assistant Private Secretary

ENERGY: Policy 1913





Treasury Chambers, Parliament Street, SW1P 3AG

The Rt Hon Cecil Parkinson MP  
 Secretary of State for Energy  
 Department of Energy  
 Thames House South  
 Millbank  
 London  
 SW1P 4QJ

27 July 1988

Dear Secretary of State

**NATIONAL NUCLEAR CORPORATION**

Thank you for your letter of 25 July. I am pleased that the negotiations have been successfully concluded with GEC. Subject to colleagues' comments I am content with the proposed PQ.

I am copying this letter to the Prime Minister, David Young and Malcolm Rifkind.

Yours sincerely  
 Caryl Evans

PP      JOHN MAJOR  
 (approved by the Chief  
 Secretary and signed  
 in his absence.)



SECRETARY OF STATE FOR ENERGY  
THAMES HOUSE SOUTH  
MILLBANK LONDON SW1P 4QJ  
01 211 6402

ce PU

NBM

REC

2/7

Zoe Everest-Phillips  
Private Secretary to  
The Rt Hon John Major MP  
Chief Secretary  
Treasury Chambers  
Parliament Street  
LONDON  
SW1P 3AG

27 July 1988

Dear Zoe,

I am afraid that due to a typing error a line was missed out of the letter my Secretary of State sent Mr Major on 25 July about NNC. The second paragraph should read:

with p.?

"The agreement will remove GEC's ability to put their shares on us at their discretion and will indemnify the UKAEA against any liabilities which may arise by virtue of the UKAEA's former participation in the Corporation. We have also obtained assurances on such subjects as non-proliferation, the prevention of the Corporation falling into unwelcome hands and the continuation of an open purchasing policy."

(I have underlined the words which were omitted). I apologise for any inconvenience this might have caused. I believe officials have already been informed.

A copy of this letter goes to Stephen Ratcliffe, in Lord Young's office, Margaret Jones in the Scottish Office and Paul Gray at No 10.

Yours

Stuart Brand

STUART BRAND  
Private Secretary



RA

SLP

SECRETARY OF STATE FOR ENERGY  
THAMES HOUSE SOUTH  
MILLBANK LONDON SW1P 4QJ  
01 211 6402

Miss Mink<sup>2</sup>  
Recd  
vlt

The Rt Hon John Major MP  
Chief Secretary  
Treasury Chambers  
Parliament Street  
LONDON  
SW1P 3AG

25 July 1988

Dear Chief Secretary,

mt

**NATIONAL NUCLEAR CORPORATION**

at para 12.

In your letter of 24 May you said you looked forward to a successful conclusion to our negotiations with GEC on the sale of the UKAEA shareholding. I am glad to tell you that we have reached an agreement with GEC on the terms of the sale.

The agreement will remove GEC's ability to put their shares on us at their discretion and will indemnify the UKAEA against any liabilities which may arise by virtue of the UKAEA's former participation in the Corporation falling into unwelcome hands and the continuation of an open purchasing policy.

I propose to announce the agreement with GEC in the terms of the attached draft PQ for answer on Wednesday. You will note that at this stage we can only refer to an "understanding" being reached with GEC who do not wish to sign the Sale Agreement until it has been definitely confirmed that the deal will not be referred to the MMC. On this point I understand that David Young is content at this stage with the advice he has received from the OFT, based on an exhaustive series of consultations with the main interested parties, that the deal should not be referred. We must now allow the deal two weeks in the public domain to allow representations to be made to the OFT from any other interested parties. I fully expect that at the end of that period the agreement will be signed and the sale completed.

I am copying this letter to the Prime Minister, David Young and Malcolm Rifkind.

Yours sincerely,  
*Cecil Parkinson*

CECIL PARKINSON

Approved by the Secretary of State  
and signed on his behalf



ENERGY: Policy  
Pg 13



## Consolidated Fund (Appropriation) Bill

4.13 pm

**Mr. Deputy Speaker:** I have a short statement to make about arrangements for the debate on the motion for the Adjournment which will follow the passing of the Consolidated Fund (Appropriation) Bill on Thursday 28 July 1988.

Hon. Members should submit their subjects to Mr. Speaker's Office not later than 9 am on Wednesday 27 July. A list showing the subjects and times will be published later that day. Normally the time allotted will not exceed one and a half hours, but Mr. Speaker proposes to exercise his discretion to allow one or two debates to continue for rather longer—up to a maximum of three hours.

Where identical or similar subjects have been entered by different Members whose names are drawn in the ballot, only the first name will be shown on the list. As some debates may not last the full time allotted to them, it is the responsibility of hon. Members to keep in touch with developments if they are not to miss their turn.

I also remind hon. Members that on the motion for the Adjournment of the House on Friday 29 July, up to eight hon. Members may raise with Ministers subjects of their own choice. Applications should reach Mr. Speaker's Office by 10 pm on Monday next. A ballot will be held on Tuesday morning and the result made known as soon as possible thereafter.

## Fast Reactor Programme

4.15 pm

**The Secretary of State for Energy (Mr. Cecil Parkinson):** With permission, Mr. Deputy Speaker, I should like to make a statement about the Government's future funding of the research programme being carried out by the United Kingdom Atomic Energy Authority into the fast reactor.

The programme involves the major facilities at Dounreay in Caithness—the prototype fast reactor, known as the PFR, which started operation in 1974, and the associated plant for reprocessing fast reactor fuel. The rest of the programme takes place at a number of other authority sites including Harwell, Risley and Windscale. This is chiefly concerned with materials and fuel development, plant performance and safety.

In the current financial year, net expenditure on the programme is planned at £105 million, of which the CEGB is contributing £28 million. Of that total, some £50 million represents the net cost of the Dounreay operations.

The Government have carried out a review of the programme in the light of the expectation that commercial deployment of fast reactors in the United Kingdom will not now be required for 30 to 40 years. Our overall aim in the review has been to retain a position in the technology for the United Kingdom at economic cost. In considering the programme, we have also had firmly in mind the importance of Dounreay to the Caithness economy, and the contribution of the people of Caithness to the development of the fast reactor.

We recognise that there is continuing benefit to be secured from operation of the prototype fast reactor. We have therefore decided to fund the reactor until the end of the financial year 1993-94. This will enable operating experience to accumulate for a further five years. We have also decided to fund the reprocessing plant at Dounreay until 1996-97, to process spent fuel from the reactor. Our decisions will ensure continuing and substantial employment at Dounreay into the late 1990s.

In addition to the work at Dounreay, we have decided to maintain a core programme of fast reactor research and development of £10 million a year. The present research programme will be phased down to that level over the next 18 months. This will enable us to make a continuing contribution to the development of the technology. We shall also continue our support for the existing collaboration between European countries on fast reactor research. Moving to the core programme could mean the loss of over 1,500 jobs over the next two to three years at sites other than Dounreay.

The programme that I have set out recognises that the commercial requirement for the fast reactor in the United Kingdom is likely to be some decades away. At the same time it will retain a position in the technology for the United Kingdom at economic cost; it recognises the special contribution of Dounreay to the Caithness economy; and it provides a basis for continued collaboration with our European partners.

**Mr. John Prescott (Kingston upon Hull, East):** The Minister's statement offers some welcome if short-term relief for the Dounreay site in Scotland, but it yet again increases the redundancies in essentially high technology areas in Harwell, Risley and Windscale. Since the Minister

[Mr. John Prescott]

has made it clear that he does not see a use for a commercial fast breeder reactor for 30 or 40 years, is he offering Dounreay a role for only five to eight years? There is clearly a long time gap, which suggests a phased closure programme. Therefore, does the Secretary of State anticipate a role for Dounreay after 1993?

Does the Secretary of State agree with and confirm Lord Marshall's statement that ending the contribution to the research programme is justified, since a privatised industry would not fund such research for benefits that are 30 years away? What will be the future funding for a privatised electricity industry in that area?

The Secretary of State states that the research programme will be reduced to £10 million. What is the cut in funding and what effect will that have on the spin-off advantages of non-nuclear technology, which we have seen particularly in oil rig structures and computer controls? What skills and jobs are affected by the statement and will the Secretary of State identify them by the authority's sites in Harwell, Risley and Windscale? What future will they have for re-employment?

Finally, does the Secretary of State accept that the reality of today's statement arises directly out of the Government's programme for the privatisation of the electricity supply industry where the short-term commercial criteria are in direct conflict with the long-term national interests?

**Mr. Parkinson:** First, I must make it clear that this does not arise from the privatisation proposals. Had the industry stayed in the public sector, the same examination would have had to take place and we would have come to the same conclusion that there is no likely commercial application for 30 to 40 years. The privatisation issue is a red herring.

**Mr. Prescott:** What about Lord Marshall?

**Mr. Parkinson:** Lord Marshall would have had to persuade the Government to put up the substantial funds that would be necessary if we were to continue, and I have no reason to think that he would have been in any way successful.

Dounreay will be a major employer in the region until the late 1990s. It will be available as a site for other nuclear purposes should they arise during that period. My right hon. and learned Friend the Secretary of State for Scotland will be making intensive efforts during the nine years that this programme offers to find work to replace that at Dounreay.

I told the House that £105 million was being spent on the programme; that £50 million was being spent at Dounreay; and that the other £55 million represents the cost of the rest of the programme. I said that that would be scaled down over the next 18 months to a core programme of £10 million a year.

**Hon. Members:** What does that mean?

**Mr. Neil Hamilton (Tatton):** Will my right hon. Friend confirm that, contrary to the assertions of the hon. Member for Kingston upon Hull, East (Mr. Prescott), there is no necessary connection between fast breeder reactor technology and ownership in the private sector? Such investment as takes place in Germany comes from the private sector.

Will my right hon. Friend confirm that the National Nuclear Corporation's design team which is working in this area has 20 years' expertise behind it and there will at some stage be a future for fast breeder technology, so that it is important to keep this technology going? However, it is perfectly understandable that, in view of long-range forecasts for fuel prices in the future, it should be put on the back burner at this stage.

**Mr. Parkinson:** Yes, I recognise the important work done by the NNC in this area. The best news for the NNC is that the Government have committed themselves to a major new programme of pressurised water reactors which will ensure that that important national facility and skill continue to be used.

**Mr. Robert Maclellan (Caithness and Sutherland):** Why has the Secretary of State taken such grave and damaging decisions before the reorganisation of the electricity supply industry and before it could give him a coherent statement of its view of consumers' needs? Why has he done this before the responsibility for carrying out research and development into all our long-term fuel needs has been reallocated, as it will have to be following privatisation?

The Government's intention to reduce participation in the European collaborative programme to a mere £10 million may well be seen by our European competitors as a cop out, and it may even scupper the collaboration. Has he taken soundings of those Governments before announcing this, or is he prepared to let our lead in this area pass to France?

Why has the right hon. Gentleman not stated more precisely the loss of jobs associated with the decision at Dounreay and in the north of Scotland? What steps have been agreed by him and his Cabinet colleagues to offset the undoubted economic damage that will be done to the north of Scotland? He has been vague on that, and that will not be acceptable.

I recognise that forecasts of energy supply needs are notoriously difficult to make, but why has the Secretary of State suddenly changed the Government's forecast from approximately 20 years to approximately 40 years? Has he simply plucked that figure out of the air?

Finally, will the Secretary of State recognise that the dismay which was felt by my constituents and many people throughout the country about this programme stems not only from anxiety about its impact on the economy of the north and those other establishments where the work is more immediately being cut, but because they have a sense that two generations of work on producing a superb British technological achievement which leads the world is being handed to our commercial competitors?

**Mr. Parkinson:** If the Opposition listened to the statement instead of thinking about their supplementary questions, they might hear the answers to the questions that they subsequently ask. The statement made it clear that 1,500 jobs will be lost in the next 18 months at the sites other than Dounreay. That was in the statement. There is no question—

**Mr. John Garrett (Norwich, South):** How many redundancies at each site?

**Mr. Parkinson:** That has not yet been settled, because the distribution of the work has to be determined in the light of the new programme.

Lord Marshall has made it clear on privatisation that he would not propose to support the programme beyond 1990 and it is clear that there will be no commercial need for a reactor for some considerable time.

The hon. Member for Caithness and Sutherland (Mr. MacLennan) talks about European collaboration, but let me remind him that at this moment the French Superphenix is out of action and the Germans, who were supposed to build the next reactor, cannot even obtain a licence for the operation of their demonstration fast reactor, so that programme is in abeyance. We are offering a continuing programme of work on fast reactors and reprocessing, coupled with a core programme of research. That will enable us to play a substantial part in the European collaboration.

Several Hon. Members rose—

**Mr. Deputy Speaker (Mr. Harold Walker):** Order. I remind the House that we have another important statement and a number of important debates to follow. Therefore, may we have brief questions, please?

**Mr. Ian Bruce (Dorset, South):** Will my right hon. Friend say a few words about Winfrith, the Atomic Energy Authority facility in my constituency, which I believe is doing some work on this programme? Will he also say a few words about the nuclear energy research programme? We all saw at the last general election that the Conservative party was the only one committed to continuing nuclear energy. I am amazed at the comments coming from the Opposition. Will he say something about our continuing research on pressurised water reactors and other areas?

**Mr. Parkinson:** My announcement today represents about a quarter of the work of the Atomic Energy Authority. That is the £105 million programme, of which, as I have explained to the House, about £60 million is due to be retained well into the next decade. Therefore, the authority has a substantial programme of other work. The authority will have to make some major adjustments as a result of this announcement, and that is recognised. The authority commands the almost exclusive use of some skills that are in short supply and we expect there to be quite a demand for the personnel that the authority releases.

**Mr. Tony Benn (Chesterfield):** Is the Secretary of State aware that although his statement was cast in bland language, he is plainly saying that the fast reactor is not commercial and cannot be seen to be commercial for the foreseeable future?

The right hon. Gentleman will know better than anyone that Lord Marshall was one of the most passionate advocates of the fast reactor and that in 1974, during my period in the Secretary of State's office, he was demanding the immediate building of a full-scale fast breeder reactor?

The right hon. Gentleman's statement will be welcomed because it is the first statement by a Minister in this Government that a complete line of nuclear reactor systems is to be phased out. The many skills of those in the industry need to be safeguarded, but I hope that the Secretary of State will come clean and tell us that the decision has been dictated in part by the fact that there is a big pressurised water reactor programme from America.

Furthermore, while I strongly disapprove of privatisation, I know that when one privatises one does not back

non-commercial projects such as the fast breeder reactor programme. One of the reasons why the whole nuclear programme in the United States has been at a halt for 10 years is that no private utility in America is prepared to build any reactor system, and that includes the pressurised water reactor to which the Secretary of State now seeks to commit us by a statutory requirement that a given amount of electricity must be generated by nuclear means.

**Mr. Parkinson:** I have announced clearly that there will be no commercial demand for this technology for some decades. That was not always the case. Presumably the right hon. Member for Chesterfield (Mr. Benn), who supported the programme when he was Secretary of State, did not always hold the view that he now holds, or he would have made a decision, like the decision that I have announced today, to reduce this technology and its costs to a more bearable size. He did not do that.

The right hon. Gentleman asked about privatisation, and privatisation has forced us to face up to questions that should probably have been asked some years ago.

**Sir Ian Lloyd (Havant):** It is extraordinary how the nuclear cookie crumbles. My right hon. Friend the Secretary of State has made a statement with grave and far-reaching implications, which I have no doubt the Select Committee on Energy will wish to investigate in some detail. In advance of that, however, perhaps my right hon. Friend will elucidate four points.

First, what are the crucial assumptions that he has made in reaching his decision that a commercial fast breeder reactor will not be required for 30 to 40 years?

Secondly, what financial contributions does he expect to be made by the Central Electricity Generating Board and its successors after 1993-94?

Thirdly, why does he believe that the core programme of fast reactor research can be sustained on the minuscule sum of £10 million when the existing programme has cost well over £100 million and has not been successful?

Fourthly, what will be the financial level of the British contribution to the European fast breeder reactor programme, and finally, have we abandoned all intention of taking part in the possible construction of a commercial fast breeder reactor in Europe?

**Mr. Parkinson:** My hon. Friend asked me about the crucial assumptions. The commercial electric utilities see no possibility of ordering a commercial fast breeder reactor for the foreseeable future—for many decades—and that is very important. If there is no customer, to continue with a huge programme, which assumes that there will be a customer, is to fool oneself. Secondly, the £10 million core programme, coupled with the additional work which will be continued at Dounreay, will enable us to continue to maintain and increase our knowledge of fast breeder reactors and their working for the foreseeable future.

I have already mentioned that the European collaboration is in some disarray. My hon. Friend may have noted that, in addition to the fact that the German programme has been stalled, the Italians have held a referendum and have virtually been ordered to pull out of the European collaboration. I have had discussions with my German and French counterparts, and I shall be having further discussions, to establish how we can maintain a sensible programme that will not cost as much as the previous programme.



[Mr. Parkinson]

My hon. Friend asked whether we will contribute to the cost of a European fast reactor. I should have thought that it was clear that we do not think that there would be any purpose in making the huge £100 million investment that would be needed, and we shall therefore not be taking part in the European fast breeder reactor construction programme.

**Mr. Alex Salmond** (Banff and Buchan): The Secretary of State referred to Dounreay being available for other nuclear purposes should they arise. Are they codewords for nuclear dumping in Caithness? Is not the clear implication of the statement, which puts a fine time scale on the operations at Dounreay, part of a softening-up process to make the area acceptable for EDRP, the European demonstration reprocessing plant, or nuclear dumping—the dirty end of the nuclear industry? Does not the future of the Caithness economy lie in diversifying out of the nuclear industry and into alternative and renewable energy resources, whose total research budget from the Department of energy is only one sixth of the budget of the fast breeder programme?

**Mr. Parkinson:** The hon. Gentleman would be quite wrong to say that I was suggesting that we should keep Dounreay open so that it could accept the Nirex proposals. That is not the case. During the next eight or nine years, there may be other nuclear work which may be suitable for the area. I do not say whether there is, but if the facility is available, the work could be done. There are possibilities of other work but they are so general that I cannot give further details of them at the moment. The facility will be there if it is needed and it will be there for the next eight or nine years.

It is clear that the hon. gentleman does not represent the constituency that contains Dounreay. If I had announced that we were closing the reactor forthwith, that 2,000 jobs would be lost and that we hoped for a programme of diversification, he would have been the first person to stand up and start shouting. In fact, we are announcing a continuing programme and my right hon. and learned Friend the Secretary of State for Scotland has announced that he will work to try to ensure that other jobs become available as Dounreay runs down.

**Mr. John Hannam** (Exeter): Will my right hon. Friend confirm that the main reason for the non-viability in the immediate future of the fast breeder reactor and other energy technologies such as liquefaction and gasification is the long-term forecast of lower electricity fuel costs? Will he also confirm that we shall be maintaining a British-based technology?

**Mr. Parkinson:** We are trying to maintain a position in a technology which we still believe has a future—albeit much delayed as compared with original expectations. It will be some considerable time before the fast breeder reactor is needed—if ever. We believe that the technology has been proved at Dounreay; we have shown that we can construct and operate a fast breeder reactor, which is at the moment pumping electricity into the grid. By the time we close it down, Dounreay will have served its purpose in showing that the fast breeder reactor is a technical possibility.

**Mr. Bruce Millan** (Glasgow, Govan): The answer that the right hon. Gentleman has just given is the first clear

statement of what is going to happen after 1993. We welcome the fact that there are to be no immediate redundancies at Dounreay, but the Secretary of State has now said, has he not, that in 1993-94 Dounreay will close down; is that the reality? [Interruption.]

**Mr. Parkinson:** I am afraid that that is wishful thinking on the part of the hon. Gentleman who is violently opposed to nuclear power in any form—

**Mr. Millan indicated dissent.**

**Mr. Parkinson:** Not the right hon. Gentleman, but the hon. Member for Kingston upon Hull, East (Mr. Prescott), who has been busy doing a bit of electioneering on this important issue.

The facility will not close down in 1993. What will close down in 1993 is the reactor, and the reactor employs a small proportion of the people on the site. We estimate that by 1995 there will still be 1,600 people working on that site—on reprocessing, decommissioning and security. At the end of the operation, there will still be 500 continuing jobs on the site in security and maintenance.

**Sir Trevor Skeet** (Bedfordshire, North): Following from the Secretary of State's decision, what does he propose to do with the 45 tonnes of plutonium that would have been used in the fast reactor system, which we now understand is to be deferred for 30 to 40 years? Will he bear in mind that the international collaboration has been seriously set back on three fronts—CERN, space and nuclear energy?

**Mr. Parkinson:** I have already said that there is no purpose in continuing with the programme, which was originally based on the assumption that commercial fast reactors would be needed early in the next century. It is now clear that they will not be needed. The Government have faced up to that and have come forward with a set of proposals that recognise the contribution of Dounreay and the need to run the Dounreay site down in a careful way over a long period. They also recognise that we should retain a position in the technology, and that is what we are doing.

I am not here today to discuss the other projects that my hon. Friend mentioned. We are recognising the realities of the fast reactor programme and making arrangements to maintain the technology in an economic way.

**Mr. Tam Dalyell** (Linlithgow): When the Secretary of State was pressed by the hon. Member for Banff and Buchan (Mr. Salmond) on what he had said to my hon. Friend the Member for Kingston upon Hull, East (Mr. Prescott) about other nuclear purposes, should they arise, his reply was to say, "After all, they are so general that I cannot go into them." But some of us have gone into them with the directorate of Dounreay. As the Secretary of State well knows, one possible purpose is reprocessing and another is the problem of what to do with those 10 Ministry of Defence submarine reactors, which must be reprocessed, monitored and stored somewhere by the early 1990s. Will the right hon. Gentleman be a little more forthcoming about those alternatives?

**Mr. Parkinson:** The hon. Gentleman has mentioned some of the possibilities, but no one is prepared to make any commitment that the Dounreay site will be used for any of those purposes, although they are the sort of purpose for which it might be used. The Ministry of

Defence and other bodies that have been consulted do not want to be committed to using the site. That is why I said that if the site is available and needs arise it will be possible to use it. But there is no commitment of any sort that it will be used for any purpose other than its present one.

**Mr. Allan Stewart (Eastwood):** Does my right hon. Friend agree that the logic of the SNP policy—as far as such a description is appropriate—is that Dounreay should be closed immediately? Is not this announcement a positive outcome for Dounreay and Caithness, because it guarantees substantial employment until the late 1990s?

Will my right hon. Friend say anything further about the work that our right hon. and learned Friend the Secretary of State for Scotland will undertake? Can he give an assurance that it will involve the Highlands and Islands Development Board and the local authorities? Might it not be helpful if there were a meeting with the Scottish Office in the near future to consider the long-term economic opportunities for Caithness?

**Mr. Parkinson:** Yes, my right hon. and learned Friend will be discussing this matter with the Highlands and Islands Development Board. I confirm what my hon. Friend said about the Scottish National party. The only suggestion that the hon. Member for Banff and Buchan (Mr. Salmond) made was that we should extend the renewables programme. I suppose he means that we should cover Caithness and Sutherland with windmills. That is not a particularly sensible policy, and it would ensure that 2,000 people were put out of work now, with only the possibility of work in the future.

Several Hon. Members *rose*—

**Mr. Deputy Speaker:** Order. I shall call all hon. Members who are rising.

**Mr. Charles Kennedy (Ross, Cromarty and Skye):** Does the right hon. Gentleman appreciate that this statement marks the final nail in the coffin for an economic programme for the Highlands and Islands that has been fostered by successive Governments of both political colours and which involved the Corpach pulp mill—now closed—the Invergordon aluminium smelter—now closed—and the Dounreay fast reactor programme which, in the words of the Secretary of State, is to close in the 1990s?

I refer to the question asked by the hon. Member for Eastwood (Mr. Stewart). Will the Secretary of State say anything more about the intensive efforts over the next nine years that the Secretary of State for Scotland will make to try to undo the structural harm done to the economy of the Highlands. I can tell him, on behalf of my constituency and that of my hon. Friend the Member for Caithness and Sutherland (Mr. MacLennan), that if they are as successful as the efforts of the past nine years made by the Scottish Office, unemployment will continue to rise and the economy will continue to collapse.

**Mr. Parkinson:** I have already told the House that there will be substantial employment at Dounreay. I mentioned the figure of 1,600 in the mid-1990s. That figure will slowly decline. At the end of the decade, about 500 people will still be working at Dounreay on maintenance and security. That will be a continuing commitment. Right through to the end of the 1990s, at least 500 will be employed, and there will be considerably more than that for most of the 1990s. During that time, my right hon. and learned Friend

will be working hard with the Highlands and Islands Development Board to see what other jobs can be attracted to the area. At least he will have a lot of time in which to work to make this transition as painless as possible.

**Dr. Michael Clark (Rochford):** Is my right hon. Friend aware that many of us who take an interest in the technology of nuclear generation are somewhat apprehensive about today's statement? Is it not possible that the right hon. Member for Chesterfield (Mr. Benn) was right to say that this is the beginning of the end for the fast breeder programme? Does my right hon. Friend agree that it is difficult to mark time in technology? Either we go forward with others or we stay behind on our own. Will his Department do all that it can to ensure that we keep abreast of the know-how in this technology so that we can re-enter at some later time, as we will almost certainly want to do?

**Mr. Parkinson:** We are not leaving this technology. As I have said, we shall operate various parts of the plant for at least nine years. We shall still have a substantial research programme after that. It would not have been justified to continue with expenditure on this scale and then to invest another £800 million in a European fast reactor, knowing that there was not likely to be a commercial customer for the technology for decades. We have faced up to the realities of the fast reactor programme and we are retaining a position in it.

**Mr. David Heathcoat-Amory (Wells):** This is a sad and difficult, but correct, decision. I congratulate my right hon. Friend on facing up to the issue rather than postponing the decision. With the continuing low price of uranium and the comparative success of other reactor types, it must be right to reduce expenditure on the fast reactor, whose prospects are comparatively poor.

Will my right hon. Friend confirm that his commitment to the rest of the nuclear programme, and in particular to the PWR programme, is undiminished? Will he see whether research staff can be transferred from the fast reactor to the PWR programme?

**Mr. Parkinson:** I am happy to confirm to my hon. Friend that the Government remain committed, as they were in their election manifesto, to maintaining a substantial nuclear programme. I was at Sizewell on Monday and I have had news for the Opposition. Sizewell is running ahead of schedule and all the signs are that it will be built to time and to cost and that it will be an efficient station pumping electricity into the grid in 1994. I have set up an inquiry into Hinkley Point. I have had no other applications from the CEGB. I understand that there will be two more. The Government remain committed to maintaining a substantial nuclear programme.

**Mr. Tony Baldry (Banbury):** Given that fast breeder reactors are unlikely to be commercially viable, at least for decades, is not the only responsible decision that any responsible Government could take that which my right hon. Friend has announced this afternoon? Is it not clear that the logical conclusion of the energy policies of all the opposition parties would have been the decimation of Dounreay—and of the whole of the rest of British nuclear industry—a long time ago? So their indignation this afternoon is quite synthetic.

**Mr. Parkinson:** My hon. Friend has identified the Opposition's problem. That is why they sit muttering and shouting from sedentary positions. They are wholly opposed to the entire nuclear programme. Had they been in power, they would have closed Dounreay years ago, and thousands of other people in the industry would have been put out of work.

## Short Brothers plc

4.49 pm

**The Parliamentary Under-Secretary of State for Northern Ireland (Mr. Peter Viggers):** With permission, Mr. Deputy Speaker, I wish to make a statement about Short Brothers plc.

My right hon. Friend the Secretary of State for Northern Ireland informed the House on 29 June that we are seriously interested in possibilities for privatisation. We are, therefore, actively seeking the return of Short Brothers plc into the private sector from state ownership.

In this connection, I wish to make it clear that the Government are ready to consider suitable proposals that might lead to the acquisition of Short Brothers by private sector interests. I invite organisations which can secure the necessary financial backing to come forward as soon as possible.

The Government would prefer to transfer the company as a whole to the private sector. We would not, however, rule out the sale of the different parts of the business to separate interests.

In considering any proposals, the Government will give full weight to the contribution that a continuing viable business could make to the Northern Ireland economy.

My statement today follows the government's consistent approach throughout the United Kingdom of seeking to replace state ownership with the benefits and opportunities that flow from effective private sector leadership. Those benefits have been clearly demonstrated in the companies that have already been privatised.

Shorts has many achievements to its name, especially in exports, and it is an important contractor for the Ministry of Defence. The Government believe that the future of a strong viable business at Shorts is best served not by continued dependence on public ownership, but by the disciplines and opportunities of the private sector. Returning the company to private ownership, therefore, offers the best prospects of its future development and levels of employment in the longer term.

**Mr. Jim Marshall (Leicester, South):** I hope that the Under-Secretary will not misunderstand if I welcome him to the Dispatch Box. We have read a great deal about the Government's intentions towards Government-owned companies in the North of Ireland, but the presence of Ministers in the Chamber to make those intentions clear has been rare. Even the Under-Secretary will have to agree that the Opposition, especially my hon. Friend the Member for Kingston-upon-Hull, North (Mr. McNamara) have had to go to great extremes to encourage the Under-Secretary to make a statement before Parliament rises at the end of next week.

Although the statement has been made today, the Under-Secretary must agree that it is very short on what will happen to Shorts and long on the Government's intentions. We believe that it is regrettable that the future of Harland and Wolff will still be subject to conjecture and uncertainty. The future of Shorts should be determined as quickly as possible. I am sure that the Minister agrees that we are witnessing the continued victory of Thatcherite economic dogmatism over the real economic needs of Northern Ireland. The Minister must also accept that the Government are seeking to escape their responsibility for the industrial and economic well-being of the Province.



Ref. A088/2231

PRIME MINISTER

The Fast Reactor Programme E(A)(88) 37

May I suggest one supplementary point to Mr Wilson's brief of 20 July?

2. I understand that the fast breeder decision involves a sharp run down of staff at Harwell. As you know, Aldermaston and Burghfield urgently need technically qualified staff for Trident. I have asked Sir Michael Quinlan to explore the scope for ensuring that Aldermaston and Burghfield get as many as possible of the Harwell staff who could be used for Trident warheads.

3. It would help if you could give a remit to be recorded in the minutes for this to be pursued vigorously.

FE.R.B.

ROBIN BUTLER

21 July 1988



Prime Minister <sup>16</sup>  
(A.G.)

See especially  
the [redacted] parts

u.s. 7-10.

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P 03190

PRIME MINISTER

THE FAST REACTOR PROGRAMME

E(A)(88)37

N.C.W.

20.7

DECISIONS

Mr Parkinson proposes that the UK Atomic Energy Authority's research and development programme on the fast reactor, which has cost £3.5 billion at current prices since it began, should be drastically reduced over a lengthy timescale, on the grounds that it can no longer be justified on energy policy grounds. You will wish E(A) to decide:

- i. whether it accepts Mr Parkinson's proposals. His paper sets out four options: see Annex II. His recommendation is for a modified version of option 3, involving closure of the Prototype Fast Reactor (PFR) in 1993/94, continuation of reprocessing at Dounreay for three years after that and retention of a "core" programme of R&D costing £20m in 1989-90 and £10m per annum after that;
- ii. whether Mr Parkinson should make an oral report to Cabinet, followed by a statement to Parliament in the afternoon.

2. The financial implications of Mr Parkinson's proposals are not clear from his paper. You will wish to clarify the cost of Mr Parkinson's option and whether he is asking for more money, and decide in principle whether or not there should be a Scottish contribution. The detailed numbers may need to be left to be sorted out in PES.

3. In considering the implications of closure for Northern Scotland, you may wish to ask colleagues whether any other public sector work could be transferred to the Dounreay area. You could

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also ask Mr Parkinson whether further work is needed on the future of the UKAEA, given this decision and last week's agreement to wind up fusion work when JET ends.

#### BACKGROUND

4. You considered the future of the fast reactor programme at two meetings with the Chancellor, Mr Parkinson and Mr Rifkind on 5 and 14 July. The options considered then, which are discussed in Mr Parkinson's paper, were:

- Option 1. continuation of the present programme at a somewhat reduced level, plus participation in a European Fast Reactor. This is the option recommended by the UKAEA;
- Option 2. closure of the Dounreay plant by April next year, with a residual R&D programme on the fast reactor of £10m a year thereafter;
- Option 3. closure of the Dounreay prototype fast reactor in 1993-4 when its fuel is used up, with reprocessing continuing for three further years and a residual R&D programme as in option 2;
- Option 4. closure of the Dounreay reactor by April next year, with reprocessing continuing until April 1992 and a residual R&D programme as in option 2.

The costs and employment implications of these options are shown in Annex II to Mr Parkinson's paper. He recommends option 3, modified to accommodate a residual programme of £20m, rather than £10m, in 1989-90.

5. Inaccurate reports about the Government's consideration of the fast reactor programme have appeared in today's press. They suggest that European collaboration will not be pursued, but that the UK's own programme will continue.

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## ISSUES

### Options for closure

6. There is unlikely to be much debate about the fundamental decision to withdraw from substantial fast reactor work. There may also be a fairly ready acceptance of option 3, given that the Chancellor has accepted the political case for allowing a longer transitional period for Dounreay. The Foreign Secretary may, however, wish to discuss the international implications of withdrawal. It is likely to be regarded as an unwelcome development by those countries still committed to major fast reactor programmes. Our European partners are in some disarray over their present fast reactor work (paragraphs 10-14 of Annex 1). They are likely to be disappointed by our withdrawal from plans for a European Demonstration Reprocessing Plant (EDRP) at Dounreay as part of the European Fast Reactor proposals. Mr Parkinson says that they should welcome the 'retention' of Dounreay but, given plans for eventual closure of PFR and the reprocessing plant, this does not appear to be a strong card. You may wish to ask Mr Parkinson to confirm that there will be no major international difficulty in implementing his proposals.

### Costs of option 3

7. The financial implications of the proposed rundown are unclear. Two questions arise:

- Ask
- i. what is the cost of option 3, modified as proposed, and how does it compare with the provision in the baseline? In other words, does it involve a bid for extra expenditure?
  - ii. should there be a contribution from the Scottish Office to meet some of the costs resulting from a slower rundown at Dounreay?
- Who meets it?

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8. At first sight option 3 might produce a small public expenditure saving, taking the present financial year and the next three financial years together.

	1988-89	1989-90	1990-91	1991-92
<u>Option 3 as set out in Annex II</u>	97	78	61	58
<u>Present Baseline</u>	<u>77</u>	<u>76</u>	<u>75</u>	<u>73.5</u>
	+ 20	+ 2	- 14	- 15.5

9. There are however two factors which suggest that the net effect could be a net increase in public expenditure over the period, if the proposals in the paper are accepted. First, Mr Parkinson proposes that the residual R&D programme should be £20m, not £10m, in 1989-90 (see paragraph 15 of his paper). The effect of this on the figures above is not known because the additional £10m will affect the pattern of redundancies year by year; but whatever the precise figures are, it will be an offset against the savings which would otherwise be expected. And second, we understand from the Treasury that the figures for option 3 in the paper do not take account of the cost of the UKAEA's 10% levy on Department of Energy programme expenditure which finances their underlying research. If the effect of this levy (which is included in the baseline) is added to option 3, the costs of that option go up by:

+ 10	+ 8	+ 6	+ 6
------	-----	-----	-----

10. You will not want the meeting to get bogged down in the detailed figuring. But you may want to ask Mr Parkinson to say how his modified option 3 compares with the baseline and whether he is making an additional bid. At your meeting on 14 July you said that any costs of phasing beyond option 3 should be contained within existing expenditure programmes. If necessary, the figures may need to be sorted out as part of this year's PES exercise.

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But you may wish to make it clear that the Sub-Committee has not automatically approved any bid for extra expenditure by approving the proposals in the paper.

A contribution from the Scottish Office

11. The Chancellor has reserved his right to raise at E(A) the possibility of obtaining from the Scottish block the extra costs of pursuing Option 3 rather than Option 4. These would be (from Annex 2):

1989-90 1990-91 1991-92 1992-93

12            4            2            7

The question also arises whether there should be a contribution from the Scottish Office to the extra £10m which Mr Parkinson is proposing to add to the residual programme in 1989-90.

12. Here again the figures are complicated and the Sub-Committee will probably not be able to decide at this meeting how big the Scottish contribution should be. The issues would be more suitable for detailed discussion in PES. But you may wish to reach a decision now on the principle of whether or not there should be a Scottish contribution.

Announcement

13. Given the sensitivity of the decision, there is a strong case for making an immediate announcement. You may wish to ask the Lord President to confirm that an oral statement would be appropriate.

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Consequences for Caithness

14. At the last meeting of Ministers, Mr Parkinson reported that MOD might be able to transfer to Dounreay work in connection with the nuclear submarine programme, but that a decision on this would not be taken before 1990 at the earliest. You may wish to ask Mr Younger whether this date could be brought forward, and whether any other MOD work could be considered for transfer. The support for nuclear work in the local Caithness community is valuable, and should be made use of if practical. You could also ask Mr Ridley about the prospects for a NIREX nuclear store in Caithness. More generally, colleagues might be able to suggest other areas of public sector work which could usefully be transferred to the area.

Consequences for the UKAEA and for BNFL

15. With the conclusion of the major fast reactor programme and with fusion work finishing after the end of JET, the UKAEA will become much smaller. You may wish to ask Mr Parkinson to consider (over, say, the next 6 months) whether any organisational changes should be made to the Authority in the future. He may say that there is a strong case for continuing its work on forms of energy other than nuclear, much of which is privately funded, and on nuclear safety and environmental issues, on some viable basis: but the changes are sufficiently radical to raise important questions about the role and organisation of the Authority.

16. A more limited issue concerning the finances of the UKAEA may be raised. There is some doubt about whether it would be legal for the Government to make grants to cover the rundown costs of the fast reactor programme. If these doubts are correct, the costs may have to be met by further borrowing by the Authority. But the Authority in future may not possess the resources to repay such borrowing. You may wish to suggest that this be sorted out bilaterally between Mr Parkinson and the Treasury.

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17. Mr Parkinson says (paragraph 7) that recycling of plutonium in the fast reactor constitutes the main rationale for reprocessing. This implies that ending the fast reactor programme would have serious consequences for BNFL. You may wish to ask Mr Parkinson about the decision's implications for BNFL's long-term viability.

**HANDLING**

18. You may wish to ask the Secretary of State for Energy to introduce his paper. The Chancellor of the Exchequer and the Secretary of State for Scotland may wish to comment first. The Secretary of State for Foreign and Commonwealth Affairs and the Secretary of State for Defence have been invited to the meeting. Other Ministers may wish to contribute to the discussion.

RJW.

R T J WILSON  
Cabinet Office  
20 July 1988

FA

*PS*  
(A-D)

SECRET (UNTIL CLOSE OF PLAY 21.7.88)



1 of 3

SECRETARY OF STATE FOR ENERGY  
THAMES HOUSE SOUTH  
MILLBANK LONDON SW1P 4QJ

01 211 6402

Nigel Wicks Esq CB  
Private Secretary to  
The Prime Minister  
10 Downing Street  
LONDON  
SW1A 2AA

20<sup>th</sup> July 1988

*Dear Nigel,*

FAST REACTOR

As promised I attach a copy of the draft statement for tomorrow. A copy goes also to Richard Wilson in the Cabinet Office.

*Yours ever,*  
*Stephen*

S HADRILL  
Principal Private Secretary

SECRET (UNTIL CLOSE OF PLAY 21.7.88)

B

SECRET (until c.o.p. 21:7:88)

DRAFT: 20/07/88

17.30

With permission, Mr Speaker I should like to make a statement about the Government's future funding of the research programme being carried out by the United Kingdom Atomic Energy Authority into the fast reactor.

This programme involves the major facilities at Dounreay in Caithness - the Prototype Fast Reactor known as the PFR, which started operation in 1974, and the associated plant for reprocessing fast reactor fuel.

The rest of the programme takes place at a number of other Authority sites including Harwell, Risley and Windscale. This is chiefly concerned with materials and fuel development, plant performance and safety.

In the current financial year, net expenditure on the programme is planned at £105m of which the CEGB is contributing £28m. Of this total, some £50m represents the net cost of Dounreay operations.

The Government have carried out a review of this programme in the light of the expectation that commercial deployment of fast reactors in the UK will not now be required for 25-

## SECRET

30 years. Our overall aim in the review has been to retain the technology for the UK at economic cost. In considering the programme, we have also had firmly in mind the importance of Dounreay to the Caithness economy.

Mr Speaker, we recognise that there is continuing benefit to be secured from operation of the Prototype Fast Reactor. We have therefore decided to fund the reactor until the end of the financial year 1993/94. This will enable operating experience to accumulate for a further 5 years.

We have also decided to fund the reprocessing plant at Dounreay until 1996/97, in order to process spent fuel from the reactor.

Our decisions will ensure continuing and substantial employment at Dounreay into the late 1990s.

In addition to the work at Dounreay, we have also decided to maintain a core programme of fast reactor research and development of £10m a year. The present research programme will be phased down to this level over the next eighteen months. This will enable us to make a continuing contribution to the development of the technology. We shall also continue our support for the existing collaboration between European countries on fast reactor research. However moving to the core programme could mean the loss of

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over 1500 jobs over the next 2-3 years at sites other than Dounreay.

Mr Speaker, the programme which I have set out recognises that the commercial requirement for the fast reactor in the United Kingdom is likely to be some decades away. At the same time, it will retain the technology for the UK at economic cost; it recognises the special contribution of Dounreay to the Caithness economy; and it provides a basis for continued collaboration with our European partners.

SECRET



14  
(A-B)  
G. Bourne  
(NW agree)

Treasury Chambers, Parliament Street, SW1P 3AG  
01-270 3000

15 July 1988

The Rt Hon Cecil Parkinson MP  
Secretary of State  
Department of Energy  
Thames House South  
Millbank  
London SW1

*Dear Secretary of State*

**ALLOCATION OF POWER STATIONS TO BIG G AND LITTLE G**

Thank you for your <sup>will this?</sup> letter of 12 July.

I am content with the proposed allocation of power stations.

I was concerned, as I know you were, by the proposal to allow the CEGB's successors to retain potential power station sites. That could put them in a powerful position to hinder the growth of competition from new entrants. I nevertheless recognise the need to press ahead, and to avoid unravelling the deal. I therefore consider it essential that an arrangement is devised, along the lines that you suggested, that will remove the potential barriers to entry. In particular, it should allow other generators to acquire the sites which Big and Little G do not need or which, if retained by them, would hinder the development of new competition. I should be grateful if my officials could be consulted about the detailed arrangements; clearly the necessary statutory provisions, and the role to be given to the regulator, must be drafted with some care, and the procedures for the potential new entrant should not be too cumbersome or time consuming.

I also think it important that you make clear to Bob Malpas and Walter Marshall that their proposals are acceptable to the government only on the basis that they will be accompanied by arrangements that allow potential new generators access to the sites. You could note that, if asked, you will indicate publicly your intention to make sure arrangements.

On this understanding, I am content for you to proceed with your announcement.





I am copying this letter to the **Prime Minister**, David Young and Sir Robin Butler.

*Yours sincerely*

*Nigel Lawson*

*N.L.* NIGEL LAWSON

*[Approved by the Chancellor  
+ signed in his absence.]*

ENERGY: Policy Pt. 13.



SECRET

The Rt. Hon. Lord Young of Graffham  
Secretary of State for Trade and Industry

The Rt Hon Cecil Parkinson MP  
Secretary of State for Energy  
Department of Energy  
Thames House South  
Millbank  
LONDON  
SW1P 4QJ

Department of  
Trade and Industry

1-19 Victoria Street  
London SW1H 0ET

Switchboard  
01-215 7877

Telex 8811074/5 DTHQ G  
Fax 01-222 2629

Direct line 215 5422  
Our ref PS5BDA  
Your ref  
Date 15 July 1988

*Dear Secretary of State,*

ALLOCATION OF POWER STATIONS TO BIG G AND LITTLE G

Thank you for copying me your letter to Nigel Lawson of 12 July. ✓

I agree that CEGB's proposals will put Big and Little G in a fair position to compete with each other. But a crucial issue for competition is whether other generators will have enough access to sites. I therefore welcome your intention to provide private generators with powers to acquire sites. I should be grateful for prior sight of your announcement, and an opportunity for my officials to discuss with yours the relevant details of the proposed legislation.

I am copying this letter to the Prime Minister, Nigel Lawson and Sir Robin Butler.



GARETH JONES  
Private Secretary

(Approved by Lord Young and  
signed in his absence)

*with NLW?*

ENERGY Policy Pt. 5.



FILE

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5. Sir Robin Butler
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10 DOWNING STREET

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SECRET

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10 DOWNING STREET

LONDON SW1A 2AA

*From the Principal Private Secretary*

14 July 1988

*Dear Stephen,*THE FAST REACTOR PROGRAMME

The Prime Minister had a further discussion today about the future of the fast reactor (FR) programme with your Secretary of State, the Chancellor of the Exchequer, and the Secretary of State for Scotland. Mr. George Guise (No. 10 Policy Unit) was also present. The meeting had before it the papers on Dounreay Employment and the costs of the options, attached to Stuart Brand's letter of 12 July, and a note on the economic implications of the rundown at Dounreay, attached to David Crawley's letter of the same date.

I should be grateful if recipients of this letter could ensure that it is shown only to named officials and that no copies are taken without the authority of this office.

Your Secretary of State said that the Ministry of Defence could see a possibility that they might want to transfer to Dounreay work in connection with the nuclear submarine programme. But decisions on such work would not be taken until 1990 at the earliest. In any event, the Ministry would not want to contribute to the costs of mitigating the employment consequences of the rundown of the fast reactor programme. The UKAEA, who were extremely shocked at the prospect of the rundown envisaged, saw no scope for moving work to Dounreay. The best hope of new nuclear work for the area appeared to be a NIREX development.

In discussion of the employment consequences of the rundown of the FR programme, it was pointed out that even small numbers of new jobs could help the Caithness economy. Private sector employers, including a deep freeze company and an electronics firm, were able to run viable businesses there. The phased rundown envisaged in Option 3 would be helpful in providing greater time to create new jobs in the area.

In discussion of the options for closure, considerable disquiet was expressed about the increased estimates of the various options shown in your Secretary of State's latest paper. These costs needed further probing. It was argued that Option 4 represented the best choice on both energy and economic grounds. Nevertheless, there were compelling political and presentational reasons for preferring Option 3.

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The Chancellor of the Exchequer said that the extra costs of Option 3 over Option 4 should be found from savings within the Scottish Office block. The Secretary of State for Scotland replied that it was not reasonable to expect the Scottish Office block to compensate for these extra costs, especially since Option 3 resulted in savings, not extra costs, from the public expenditure base line.

It was suggested that there was a case for some further phasing of the transition to the £10 million 'informed customer' programme. This might be done by reducing expenditure from the £54 million to £20 million next year and £10 million in the following year. The CEEB might react to a decision to an immediate move to the £10 million informed customer programme by withdrawing their support in a way which would make it harder to manage Option 3. This strengthened the case for some phasing of the move to the £10 million informed customer programme. The extra costs of such phasing should be kept to the absolute minimum and the expenditure should have the maximum effect in mitigating the consequences of the rundown.

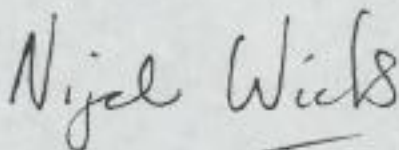
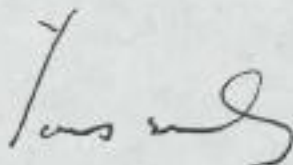
In further discussion it was pointed out that the rundown of the FR programme would require a major restructuring of the AEA. The AEA maintained that the substantial costs involved could not be met from borrowing. But such costs, it was argued, were a proper use of borrowing and there was advice that it might not be legal for the Government to make grants to the authority for this purpose. Against this, it was argued that, while the Authority might be asked to borrow as much as they could possibly sustain, it was not sensible to ask them to take on loans which they would be unable to service. These issues needed to be discussed further between the Department and the Treasury.

Summing up the discussion, the Prime Minister said that the group of Ministers agreed that your Secretary of State should circulate a paper to E(A) Committee with a recommendation for Option 3. The Department should explore with the Treasury a strictly limited additional phasing of the transition to the £10 million informed customer programme. Such phasing should be achieved by the end of the financial year after next. All the costs involved in the transition to the £10 million informed customer programme should be kept within existing public expenditure programmes. The group had noted that the Chancellor of the Exchequer had reserved his position to E(A) Committee on the possibility of finding from the Scottish Office block the extra costs involved in pursuing Option 3 rather than Option 4. Once the decision was announced, your Department would need to ensure that there were sound arrangements with the Authority for its implementation according to the timetable envisaged by Ministers. The presentation of Option 3 should make it clear that Ministers had deliberately decided to phase the closure in order to allow time to pursue the possibilities for enabling new jobs to be found in the Caithness area.

Your Secretary of State should circulate next Tuesday

evening a paper to E(A) Committee for a meeting of that Committee on Thursday 21 July with a view to reporting the Committee's decision to that morning's Cabinet. Subject to the decision of Cabinet, your Secretary of State should make a statement to Parliament that afternoon.

I am sending a copy of this letter to Alex Allan (HM Treasury), Sir Robin Butler and two copies to David Crawley (Scottish Office).



N. L. Wicks

Stephen Haddrill, Esq.,  
Department of Energy.



SECRET

MR WICKS

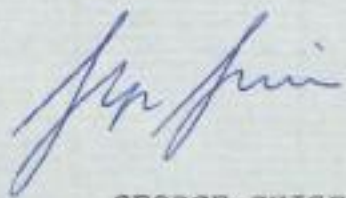
13 July 1988

FAST REACTOR

The reason that Ministers have not selected the fast closure Option 2 is to buy time for Caithness. The AEA now tell us that both Options 3 and 4 are more expensive than indicated last week. Furthermore they argue for a further amelioration in the reduction of the research programme in order to ease job losses elsewhere. This seems to ask for both the penny and the bun.

At last week's discussion I sought to explore the possibility of salvaging any commercially viable parts of the operation, and was told by Parkinson, supported by Lawson, that the analysis had not been hurried, that its figuring was correct and no commercial possibilities had been identified. The PM sought to buy time for Caithness by asking whether the 'nuclear friendly' attitude in Caithness could not be exploited by developing alternative nuclear activity there. The options were therefore sent away for further analysis.

What that analysis has led to is an attempt to wring more concessions for the research programme outside Caithness. A five year run-down for this seems unwarranted and DEN should be told to go back to Option 3 as presented last week with the overall financial limits on expenditure as defined by their previous costings.



GEORGE GUISE

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P 03183

PRIME MINISTER

UKAEA'S FUSION PROGRAMME

E(ST)88)19

DECISIONS

Mr Parkinson has concluded that the UKAEA's national fusion programme should be brought to a close, because the energy policy case for continuation is no stronger than that for participation in major international fusion research.

2. The main decision for the meeting is:

i. whether to reduce the present level of expenditure on the national fusion programme gradually over the period up to 1992-93, keeping it at a viable level for as long as JET continues but aiming to end JET in 1992. Mr Parkinson favours this course. He thinks it will strengthen our negotiating position in Brussels for minimising future Community fusion work. But it would mean that the fusion programme would extend beyond 1992 if we fail to persuade the Community to end JET then;

or ii. whether to wind down our national fusion programme as fast as our legal commitments allow. This could add up to £12m to public expenditure over the next three years because of restructuring costs, but it would bring work to an end by 1992-93.

3. In reaching a decision, you will wish to take into account the much larger impact on the UKAEA of decisions on the fast reactor programme.

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#### BACKGROUND

4. In January E(ST) decided that there was no justification in energy policy for the UK to take part in future major international fusion projects (E(ST)(88)1st meeting). Mr Parkinson was asked to review the £15m a year programme of national fusion research, which is additional to our participation in Euratom's JET project. His paper reports his conclusions. E(ST) reluctantly agreed to a two-year extension of JET to 1992, in view of our existing international commitments to the project.

#### ISSUES

##### The options

5. Mr Parkinson sets out four options in paragraph 2 of his covering note, but then outlines in paragraph 5 a new option which is not in the detailed paper and is not fully costed or described. The conclusion to his paper suggests that the main aim would be to effect a gradual reduction in the level of expenditure in the period up to 1992-93 and then bring JET to an end at that time. There would however be a review of progress in 1990. You may wish to begin the discussion by asking Mr Parkinson to spell out what he has in mind.

6. It might be best to organise the discussion in terms not of options but of the questions to be settled and then asking Mr Parkinson and the Chief Secretary to agree the resulting profile of expenditure.

7. The questions to be settled are:

- a. Should the programme continue indefinitely at its present level? This is the UKAEA's preferred course and is Option A in the detailed paper. Nobody is likely to support it. You could rule it out at the start.
- b. Should the aim be eventually to end the programme? Mr Parkinson says in paragraph 2 of his note that this should be the aim. It may be possible to get ready agreement to this.

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- c. How fast should the programme be run-down? This is the effective point of decision. There are two choices:
- continue a viable national programme, including work not directly in support of JET, until JET finishes. This seems to be the option in paragraph 5 of Mr Parkinson's note;
  - 13 - undertake only what is legally required for JET, and aim to terminate the national programme as soon as possible. (Option D in Mr Parkinson's paper).

The discussion may in practice be about the choice between these two options.

8. Mr Parkinson's arguments for a continuing programme are:

- a. it would help to obtain a Commission contribution to JET's decommissioning costs and their agreement to reductions in our JET Host County premia. But the paper makes clear that any such assistance would be linked by the Commission to our continued participation in the Community Fusion Programmes. Thus we should have to continue spending money on JET or its potential successors and probably continue a national fusion programme to benefit. You may wish to ask Mr Parkinson whether the Commission's assistance is worth having on those terms.
- b. any lack of support from the UK to JET could be used by the Commission as a reason for justifying a further extension of JET beyond 1992. Against this it could be argued that it would give a clear signal to the Commission of the seriousness of our decision on fusion if we made a clear break on the national programme and continued only to the extent that we were legally contracted.

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*Vicki.  
revised letter.*

- c. the closure of UKAEA's work at Culham would make it more difficult to persuade South Oxfordshire District Council to allow JET decommissioning to be deferred for 20 years. There is no direct link between the national programme and a decision on JET decommissioning. You might ask Mr Parkinson to assess the risk of greater difficulty. You could also ask him whether South Oxfordshire have the final say on the deferment decision.

Early termination of the national programme

9. The option of continuing only with what we are legally committed to (option D) is described in paragraphs 35-37 of the note by officials. All work is assumed to cease after 1992-93. The main arguments in support of this option are:

- a. that it is the logical step to take in our national interest given that the energy policy case for fusion is not strong;
- and b. that it would lead to significant public expenditure savings from 1993 onwards.

10. The arguments against early termination are:

- a. it would produce early redundancies amongst the UKAEA's staff at Culham. This would be another blow to the Authority;
- b. there would probably be an increase in public expenditure over the next three years to meet rundown costs, before savings became available. Mr Parkinson's paper estimates that the higher expenditure on early termination over option B (perhaps the closest to his proposal) would be £4.4m in 1989-90, £4.8 in 1990-91 and £2.6m in 1991-92. The estimates of rundown costs may, however, be overstated: some staff might be redeployed to JET, and some to MOD establishments nearby;

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- c. it would be particularly awkward not to commission the COMPASS tokamak, in May 89, after it had been constructed at a cost of £10.6m. The £3.5m grant for this from the EC might have to be repaid. It may be argued that the COMPASS work would be particularly useful to JET, at least as regards the experiments due to be carried out on it in the first 2 years. Mr Fairclough may suggest that there could be a case for allowing COMPASS to be used until 1991, as the sole exception to pursuit of option D. This compromise, if accepted, would need to be worked up further by Mr Parkinson in consultation with the Chief Secretary.

#### NET

11. NET (Next European Torus) could be the next stage in the development of fusion after JET if the Community decided to proceed. The costs could be very high. It is therefore important to avoid a creeping commitment. The UKAEA already spend a small amount in direct support to the NET pre-design team. You might ask Mr Parkinson if he is satisfied that NET expenditure has to continue.

#### Culham's commercial activities

12. Culham's commercial activities have grown in recent years and had a turnover of £5.7m in 1987. The paper suggests that they could cease to be competitive if they were not able to share equipment and overheads with the national fusion programme. Whatever decision is taken on the national programme, you may wish to ask Mr Parkinson to look into the prospects for these commercial activities, either at Culham, in the private sector or in another research establishment.

#### HANDLING

13. You may wish to ask the Secretary of State for Energy to introduce his paper. The Chief Secretary, Treasury will wish to respond. We understand that the Secretary of State for Foreign and Commonwealth Affairs is expected to support the proposal for a

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continuing national fusion programme. The Chief Scientific Adviser, Cabinet Office will wish to comment. Other Ministers may wish to contribute to the discussion.

RJW.

R T J WILSON  
Cabinet Office  
13 July 1988

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*for*



2 of 17.

10A (A-)

CGS.9.  
not agreed

*ce G. Bourne*  
*(not agreed)*

2

SECRETARY OF STATE FOR ENERGY

THAMES HOUSE SOUTH  
MILLBANK LONDON SW1P 4QJ

01 211 6402

*Pme Runters*  
*to see; HNT*  
*are content.*

*N.C.U.*

*15.7*  
12<sup>th</sup> July 1988

The Rt Hon Nigel Lawson MP  
Chancellor of the Exchequer  
H M Treasury  
Treasury Chambers  
Parliament Street  
LONDON  
SW1P 3AG

*Dear Nigel,*

ALLOCATION OF POWER STATIONS TO BIG G AND LITTLE G

As you know, we have been anxious to make rapid progress on preparation of the CEGB for privatisation. For their part, the CEGB have responded magnificently. Walter Marshall and Bob Malpas have now come forward with proposals on the allocation of power stations which they are satisfied is a balanced split. I have consulted David Jefferies as Chairman elect of the Grid company and as representative of the Area Boards' interests. He believes the allocation is satisfactory and provides a real prospect of competition between Big and Little G.

I attach a copy of the letter Walter has sent to me on the split. You will see that the CEGB set themselves various criteria that they felt should be satisfied. They constitute a mixture of practical engineering constraints and economic considerations. Having made the split on this basis the CEGB tested the allocation against various criteria of fairness.

I and my advisers have examined the allocation critically. In particular, I have looked at the viability of the two generating companies. There are of course a number of uncertainties. But I believe the split gives both generators a satisfactory prospect of viability. Walter Marshall and Bob Malpas agree. I attach the results of some analysis the CEGB have carried out to confirm this. I have also looked closely at the scope to introduce competitive pressures. I am satisfied that there has been a balanced allocation across the range of fossil fuel capacity and that the two companies will be well placed to compete against each other. I also believe Little G has potential to provide competitive pressure on Big G's building of baseload fossil stations.

*I think you should write him a letter to a level of discussion he has been good. Agree to write him. N.C.U.*

*Yes*  
*me*

*ml*





3

One particular point that I have considered is the allocation of the CEGB's sites for new power stations to Big and Little G. My concern has been to ensure that this does not disadvantage potential new generators. To take away some of the CEGB's sites now would, however, completely re-open the allocation of assets, which has to be viewed as a package. Instead I am examining the possibilities of using the privatisation legislation to provide private generators with powers to acquire sites, including the redundant sites of Big and Little G; and we are looking at the role the regulator would have in such a process.

It is vital that we make early progress on the allocation of assets. Walter Marshall is coming under increasing pressure from the unions. The CEGB workforce is showing understandable concern about their future. It is very important that the enthusiasm of the new management should not be stifled by delay, which would put at risk our timetable. I would like to let Walter Marshall and Bob Malpas know within a week that we are content that they should carry their plans forward on the basis of the proposals they have made to me. I would also like to announce this decision in a written Parliamentary answer on 18 July. I hope you agree this is the best way forward.

I am copying this letter to the Prime Minister, David Young and Sir Robin Butler.

Yours Ever,  
Cecil

CECIL PARKINSON

SECRET

C  
COSTS AND PROFIT INDICATORS  
FROM SPLIT OF CEGB FOSSIL CAPACITY

1. Assumptions

- (a) Year of calculation and price levels - 1990/91.
- (b) Income derived from CCA costs plus 7% return on CCA assets after proposed aggregate write down of about £2Bn for fossil plant. It is assumed that contracts will be agreed to produce a similar level of income for each company.
- (c) Fuel price levels based on:
  - (i) Oil as forecast for 1990/91
  - (ii) Standard pithead prices for all stations for BC coal, assuming no reductions from present operation of joint understanding (i.e. reductions are effected after 1990/91).
- (d) Fuel costs:
  - (i) Actual 1987/88 freight differentials.
  - (ii) Present level of imports.
  - (iii) Specific station thermal efficiencies.
  - (iv) Order of merit derived from the above data.
- (e) Division of Assets:
  - (i) Power Stations as set out in the attachment to the letter from Lord Marshall to the Secretary of State dated 17 June [except that Agecroft was, for modelling purposes, assumed to be in Little G. Agecroft has 232MW capacity, has CC net asset value of £20M in 1990, and produced 1Twh in 1987/88. Its late switch between companies is not regarded as material to these results].
  - (ii) Non-operational assets are arbitrarily divided between the companies pro rata to power station values.

d

Allocation of costs to sites, and apportionment of overheads between companies, and between the fossil and nuclear divisions of Big G, are necessarily broadbrush but are on the bases expected to be used for track record purposes: there are no residual Big G overheads for this purpose.

- (g) Capital structures and capital programmes to 1990 have been set arbitrarily (but comparably between the two companies).
- (h) Staff and OMGS are consistent with IFR forecasts.

2. ADG-VALUES (see attached schedule)

- (a) Nuclear G is excluded from this presentation. Its poor profitability is expected to be dealt with by other measures and will therefore not affect the distribution of fossil assets.
- (b) The percentage price differential between stations is small (0.054 p/Kwh : 1.41%).
- (c) Little G stations are marginally more efficient which explains a part of its fuel cost advantage and its higher load factor.
- (d) Drax is with Big G. It is the newest coal fired station and therefore has the highest net value per MW. This is the most significant factor in explaining why the cost per unit for CC depreciation for Big G is a little higher than for Little G.
- (e) Drax, particularly Drax second half, was the most expensive large set coal fired station in real terms. That factor, plus its newness compared with other large fossil plant, results in Big G have a larger HC net asset value per MW than Little G (£122 v £95/MW). This explains principally why Big G makes a lower return on HC net assets than does Little G.

f

		BG Fossil	LG	BG v LG	%
DNC	MW	30644	18996		
TWh		118	77		
Load Factor	%	44	46		
		p/kWh	p/kWh	p/kWh	
<u>Current Costs</u>					
Fuel		2.253	2.223	+ 0.030	1.33
Depreciation		.299	.294	+ 0.005	
Other		.809	.830	(-) 0.021	
Operating costs		3.361	3.347	(+) 0.014	0.42
Tax and interest		.215	.197	(+) 0.018	
<u>Current Cost Profit</u>					
		.253	.231	+ 0.022	
<hr/>					
Total charge per unit		3.829	3.775	+ 0.054	1.41
<hr/>					
		£m	£m		
<u>Current cost trading profit</u>					
CCA net assets		553	329		
CCA return on net assets		7896	4703		
		7%	7%		
HC trading profit		777	474		
HC net assets		3693	1854		
HC return on net assets		21%	25.6%		

SECRETARY OF STATE'S OFFICE

TO Mr Rickett

FOR ADVICE (AND DRAFT REPLY IF APPROPRIATE)

PLEASE BY: 27/6

VIA PS/POSS

COPIES TO:  
 Mr Guinness  
 Mr Grawatt  
 Mr MacIntyre  
 Mr Wilcock  
 Mr Dyer  
 Dr Egginton

CENTRAL ELECTRICITY GENERATING BOARD

Sudbury House, 15 Newgate Street, London EC1A 7AU. Telephone 01-634 5111

Box  
 Mr Deelrick.

From the Chairman  
 The Lord Marshall of Goring Kt, CBE, FRS

17 June 1988

The Rt. Hon. Cecil Parkinson, MP,  
 Secretary of State for Energy,  
 Department of Energy,  
 Thames House South,  
 Millbank, London SW1P 4QJ

CEGB CONFIDENTIAL



Dear Secretary of State,

Division of CEGB Power Station Sites Into Big G/Little G

Some time ago I promised you that we would divide our assets between Big G and Little G as rapidly as possible, so as to get shadow organisations working and effective by 1 January 1989. But it was not plausible for us to do that until you had first chosen the senior management of the companies involved. That has necessarily taken some time but we have now moved quickly and Gil Blackman has proposed a division of power station sites which is acceptable to Ed Wallis and John Baker, which I approved two days ago, and which Bob Malpas accepted today after a discussion with Gil Blackman.

Everything else in this letter presupposes that you still wish us to move quickly and that you would like to tell your colleagues and the House of our progress before the Summer recess.

If I can have your blessing, I shall invite Gil to present this proposal to the July Board of the CEGB and I will recommend to my Board that we accept it as a fair and equitable division, which meets all the objectives set out in your White Paper. We will then undertake to tell our staff and unions, sell this proposal down the management chain and bring it to successful fruition by the end of the year. We regard it as essential that we begin this process before the Summer break. We are already being asked questions by our trade unions, and we cannot commence the difficult task of team selection and the division of manpower resources until we have done this next step.

May I now invite your officials, and you yourself, to look over these proposals and satisfy yourself about their content, because before we begin this difficult process I would like your assurance that this will form the basis of division between the two generating companies when the time comes to create them formally rather than in shadow form. As I am sure you will agree, it would be totally unacceptable for us to present and 'sell' one plan to our staff and then have you impose a different plan at a later date. I therefore hope you can accept these proposals as they stand. We are all satisfied that they launch the two companies on a level-playing field.

cont/d..

H

The Rt. Hon. Cecil Parkinson, MP

-2-

Of course, Gil Blackman is available to meet with you, or your officials, to explain in greater detail the logic adopted in his proposals, and he will happily demonstrate the balance which he has established. We have been able to reach agreement by making a number of trade-offs between generating assets and between generating and prospective locations. As a result the package is intrinsically complex in its make-up and involves judgements concerning the immediate and future positions. Any one change would, in my opinion, lead to a domino-effect demanding many other changes - at the very least that would lose us a lot of time. That is a further argument in favour of the agreement now we have it.

The next step will be to split off the transmission assets. This must take place at the individual generator transformer busbar isolators in every case and we do not anticipate difficulty in doing this. However, the agreement of the details must await the return of David Jefferies from America. On this matter also we will rely on Gil Blackman to make a fair and equitable proposal, and I will write to you again when we have that agreement from David Jefferies and myself.

My Board meets on Wednesday, 6 July, and I hope I can tell them on that day that this proposal has your blessing. I shall be away in Russia until the end of June and I have, therefore, asked for an appointment for Gil Blackman and I to see you on Monday, 4 July. Of course, your officials must independently get confirmation from Ed Wallis and Bob Malpas, that they are content.

I enclose a descriptive paper from Gil Blackman together with his list of proposals with this letter.

If you are content with these proposals you will also wish to give thought to a public announcement of them. We could discuss that on the 4 July.

Yours sincerely,

*Walter Marshall*

Marshall of Goring

## LISTING OF CEBG GENERATION ASSETS

17-Jun-88

STATION/SITE	DNC MW	FUEL TYPE	UNIT SIZE MW	COMMENT	PLC
Aberthaw A	376	Coal	100		1
Aberthaw A	188	Oil	100	Reserve plant	1
Aberthaw B	1350	Coal	500		1
Aberthaw B	51	Gas Oil	17	Auxiliary GT plant	1
Acton Lane	-	CCGT	-	* (see below)	1
Agecroft	232	Coal	124		1
Ashford	-	CCGT	-	*	2
Barking	-	CCGT	-	* Discussing with priv. gens	1
Belvedere	230	Oil	120	Reserve plant	1
Berkeley	276	Magnox	63		1
Blackburn	-	CCGT	-	*	2
Blackburn Meadows	-	CCGT	-	*	2
Blyth A	448	Coal	120		1
Blyth B	1100	Coal	260/330		1
Bold	168	Coal	60		1
Bradwell	245	Magnox	52		1
Bulls Bridge	140	Gas Oil	70	Main GT plant	2
Bulls Bridge	140	Gas Oil		Reserve Main GT plant	2
Carmarthen Bay	-	CCGT	-	* Existing windpower site	1
Carrington	240	Coal	64		2
Castle Donington	564	Coal	100		2
Cliff Quay	-	CCGT	-	* Sizewell B simulator site	1
Cottam	1920	Coal	500		2
Cottam	75	Gas Oil	25	Auxiliary GT plant	2
Cottam	25	Gas Oil	25	Reserve Auxiliary GT plant	2
Cowes	140	Gas Oil	70	Main GT plant	1
Cym Dyli	10	Hydro	-		1
Denver	-	Nucl/Coal	-	** (see below)	1
Didcot	1900	Coal	500		1
Didcot	75	Gas Oil	25	Auxiliary GT plant	1
Didcot	25	Gas Oil	25	Reserve Auxiliary GT plant	1
Dinorwig	1728	Hydro	300	Pumped storage plant	Tran
Dolgarrog	27	Hydro	-		1
Drakelow B	448	Coal	120		2
Drakelow C	910	Coal	255/325		2
Drax	3750	Coal	660		1
Drax	140	Gas Oil	35	Auxiliary GT plant	1
Drax	35	Gas Oil	35	Reserve Auxiliary GT plant	1
Druridge Bay	-	Nuclear	-	**	1
Dungeness 'A'	424	Magnox	110		1
Dungeness 'B'	1000	AGR	600		1
Dunston	-	CCGT	-	*	2
Eastbourne	-	CCGT	-	**	1
Eggborough	1720	Coal	500		1
Eggborough	51	Gas Oil	17	Auxiliary GT plant	1
Eggborough	17	Gas Oil	17	Reserve Auxiliary GT plant	1
Elland	168	Coal	60		2
Elstow	-	Coal	-	**	1
Fawley	1932	Oil	500		1
Fawley	68	Gas Oil	17	Auxiliary GT plant	1



STATION/SITE	DNC MW	FUEL TYPE	UNIT SIZE MW	COMMENT	PLC
Ferrybridge B	282	Coal	100		2
Ferrybridge C	1932	Coal	500		2
Ferrybridge C	51	Gas Oil	17	Auxiliary GT plant	2
Ferrybridge C	17	Gas Oil	17	Reserve Auxiliary GT plant	2
Ffestiniog	360	Hydro	90	Pumped storage plant	Tran
Fiddlers Ferry	1880	Coal	500		2
Fiddlers Ferry	51	Gas Oil	17	Auxiliary GT plant	2
Fiddlers Ferry	17	Gas Oil	17	Reserve Auxiliary GT plant	2
Grain	2680	Oil	660		2
Grain	87	Gas Oil	29	Auxiliary GT plant	2
Grain	58	Gas Oil	29	Reserve Auxiliary GT plant	2
Hams Hall	366	Coal	65		2
Hartlepool	1120	AGR	660		1
Hastings	-	CCGT	-	*	2
Heysham I	1140	AGR	660		1
Heysham II	1230	AGR	660		1
High Marnham	930	Coal	200		2
Hinkley Point 'A'	470	Magnox	74		1
Hinkley Point 'B'	1160	AGR	660		1
Ince	960	Oil	500		2
Ince	50	Gas Oil	25	Auxiliary GT plant	2
Inswork Point	-	Coal	-	**	2
Ironbridge	950	Coal	500		1
Ironbridge	34	Gas Oil	17	Auxiliary GT plant	1
Killingholme	-	Coal	-	**	1
Kingsnorth	1920	Coal/Oil	500		2
Kingsnorth	68	Gas Oil	17	Auxiliary GT plant	2
Leicester	102	Gas Oil	51	Main GT Plant / CHP planned	2
Letchworth	140	Gas Oil	70	Main GT plant	1
Lister Drive	110	Gas Oil	55	Main GT plant	1
Little Barford	-	CCGT	-	*	1
Littlebrook	2055	Oil	660		1
Littlebrook	105	Gas Oil	35	Auxiliary GT plant	1
Maentwrog	24	Hydro	-		1
Marchwood	-	Coal	-	** Site of Research Labs	2
Mary Tavy Group	3	Hydro	-		1
Meaford	224	Coal	60		1
Nechells	-	CCGT	-	*	1
Northfleet	684	Oil	120	Reserve plant	1
Norwich	110	Gas Oil	55	Main GT plant	1
Ocker Hill	280	Gas Oil	70	Main GT plant	1
Oldbury	434	Magnox	225		1
Padiham	112	Coal	120		1
Padiham	112	Oil	120	Reserve plant	1
Pembroke	1940	Oil	500		1
Pembroke	50	Gas Oil	25	Reserve Auxiliary GT plant	1
Pembroke	50	Gas Oil	25	Auxiliary GT plant	1
Plymouth	-	CCGT	-	*	2
Poole	-	CCGT	-	* Discussing with priv. gens	1
Portskewett	-	Nucl/Coal	-	**	1

STATION/SITE	DNC MW	FUEL TYPE	UNIT SIZE MW	COMMENT	PLC
Ratcliffe	1940	Coal	500		2
Ratcliffe	51	Gas Oil	17	Auxiliary GT plant	2
Ratcliffe	17	Gas Oil	17	Reserve Auxiliary GT plant	2
Rheidol	53	Hydro	-		2
Richborough	342	Oil	120	Reserve plant/Windpower site	2
Rugeley A	560	Coal	120		1
Rugeley B	966	Coal	500		1
Rugeley B	50	Gas Oil	25	Auxiliary GT plant	1
Rye House	-	CCGT	-	*	2
Sizewell 'A'	420	Magnox	250		1
Sizewell 'B'	-	PWR	-	Under construction	1
Skelton Grange	448	Coal	120		1
South Denes	-	CCGT	-	* Discussing with priv. gens	2
Staythorpe	336	Coal	120		1
Stella North	224	Coal	60		1
Stella South	300	Coal	63		1
Taylor's Lane	140	Gas Oil	70	Main GT plant	2
Thorpe Marsh	942	Coal	2x250		1
Thorpe Marsh	56	Gas Oil	28	Auxiliary GT plant	1
Tilbury	1344	Coal/Oil	350		1
Tilbury	51	Gas Oil	17	Auxiliary GT plant	1
Tilbury	17	Gas Oil	17	Reserve Auxiliary GT plant	1
Trawsfynydd	390	Magnox	118		1
Uskmouth	336	Coal	115		1
Wakefield	234	Coal	63		1
Watford	140	Gas Oil	70	Main GT plant	2
West Burton	1920	Coal	500		1
West Burton	51	Gas Oil	17	Auxiliary GT plant	1
West Burton	17	Gas Oil	17	Reserve Auxiliary GT plant	1
West Ham	-	CCGT	-	*	1
West Thurrock	1240	Coal/Oil	200/300		1
Wigsley	-	Coal	-	**	2
Willington A	392	Coal	104		1
Willington B	376	Coal	200		1
Wylfa	860	Magnox	248		1

## KEY

- \* Closed power station sites with development potential  
 \*\* Greenfield sites with development potential

## NOTES: 1) Operational Sites

A number of these sites offer further development potential of varying scale and quality, by replanting or incremental or new development. These include nuclear sites Dungeness, Hinkley Point, Sizewell, Trawsfynydd and Wylfa; and fossil fuel sites, Fawley Hams Hall Kingsnorth and West Burton. This potential has been taken into account in arriving at the overall allocation of generating capacity, actual and prospective.

## 2) Closed Sites

Closed sites which are currently under offer for private generation, Connahs Quay, Rogerstone and Roosecote, are not included, nor are other closed sites for which disposal arrangements are well advanced.

L

GUIDELINES FOR  
SPLITTING THE CEGB

Go through the fossil fuel plant categories separately, trying to maintain an appropriate split in each, and apply the following considerations:-

- (i) Keep Kingsnorth and Grain in the same company. Grain receives its fuel via Kingsnorth.
- (ii) Keep Fawley and Didcot in the same company. For the future the prospective coal import terminal at Fawley would naturally supply Didcot.
- (iii) Keep Littlebrook and Grain separate. These are the only stations with immediate access to the spot oil market and should be split between the companies.
- (iv) Keep Drax in GEN 1. The large size of Drax would make it 22% of GEN 2's capacity and provide too much of a single risk. Drax also shares common plant with Heysham "2".
- (v) At least one Aire Valley Station should go to GEN 2. This is for geographical diversity and to spread the burden of the most vulnerable area.
- (vi) Split the Trent Stations. Apart from achieving a good geographical split this broadens the benefit from the least vulnerable area.
- (vii) Split coal plant in the south. This ensures that benefits/miseries of transmission restrictions are shared.
- (viii) Keep West Burton and Cottam together, in GEN 1. The two stations are closely tied on fuel supply and, like Drax, are perhaps too big a lump to be contained in GEN 2.\*
- (ix) Put Blyth in GEN 1. Supports Hartlepool on the north-east ring.
- (x) Littlebrook and Hams Hall have central workshops associated with them. They should be split so that one goes to GEN 2.
- (xi) Share sites having immediate development potential. They are Kingsnorth, Fawley, Hams Hall and West Burton.
- (xii) Split the immediate FGD sites between the two companies.
- (xiii) Do not split common sites i.e. Aberthaw "A" from Aberthaw "B".
- (xiv) Try to keep plant families together.
- (xv) Try to give equality of opportunity for importing coal.
- (xvi) Make GEN 2 compact geographically - recognising its small size.

\* In the event, West Burton and Cottam were split to ensure that GEN 1 had reasonable development potential (West Burton B) while GEN 2 retained a large station close to the prospective Killingholme coal import terminal (Cottam).

M

SUMMARY OF ALLOCATIONS

17-Jun-88

	CEGB MW	GEN 1 MW	GEN 2 MW	Alloc. to Gen 2 per Category	Cumulative allocatn to GEN 2
Dual	4504	2584	1920	42.6%	
HFD 660/500	9567	5927	3640	38.0%	39.5%
Coal 660/500	20228	12556	7672	37.9%	38.6%
Coal 200/375	4258	2418	1840	43.2%	39.1%
Coal 100/120	4534	3240	1294	28.5%	38.0%
Coal 60s	1924	1150	774	40.2%	38.1%
Oil (Reserve)	1556	1214	342	22.0%	37.5%
Main GTs	1302	780	522	40.1%	37.6%
Aux GTs	1215	782	433	35.6%	37.6%
Reserve GTs	435	161	274	63.0%	37.8%
Hydro	117	64	53	45.3%	37.8%
Sub-Total	MW 49640	30876	18764		
	% 100	62.2	37.8		
ADD					
Nuclear AGR	5650	5650			
Magnox	3519	3519			
Pumped Storage	2088	2088			
GRAND TOTAL	MW 60897	42133	18764		
	% 100	69.2	30.8	i.e. SOME 30%	

TESTS FOR "FAIRNESS"

EXCLUDING NUCLEAR, GTs, HYDRO, PUMPED STORAGE & RESERVE SMALL OIL PLANT

	TOTAL MW	GEN 1	GEN 2
	45015	27875	17140
	% 100	61.9	38.1
Staff Level Nos	19098	12017	7081
	% 100	62.9	37.1
Oil Overburn MW	6036	4061	1975
	% 100	67.3	32.7
OMGS & Staff £m	732	466	266
	% 100	63.6	36.4
Efficiency	% 36.3	36.2	36.4
AACA	% 80.6	80.8	80.3
WPCA	% 87.5	88.0	86.6
Age	Years 17.8	17.8	17.9

NOTES:

- 1) Efficiency is a MW weighted average
- 2) AACA = Average annual plant availability
- 3) WPCA = Winter peak plant availability



10A-f CCS/UP  
CCPV - [unclear]  
[unclear]  
[unclear] appd

ST. ANDREW'S HOUSE  
EDINBURGH EH1 3DG

**SECRET**

Nigel Wicks Esq  
Principal Private Secretary  
10 Downing Street  
LONDON  
SW1A 2AA

12 July 1988

*Dear Nigel,*

**FAST REACTOR PROGRAMME**

My Secretary of State has asked me to circulate the attached paper on the economic implications of a rundown at Dounreay prior to the meeting on 13 July.

I am copying this and the attachment to Alex Allan (HM Treasury), Stephen Haddrill (DEn), Brian Hawtin (MOD) and Sir Robin Butler (Cabinet Office).

*Yours sincerely,  
David*

**DAVID CRAWLEY**  
Private Secretary

## FAST REACTOR PROGRAMME

## ECONOMIC IMPLICATIONS FOR CAITHNESS OF A RUNDOWN AT DOUNREAY

1. This note examines the importance of Dounreay to the Caithness economy, and traces the possible effects of the 4 options posed by the Secretary of State for Energy.

Current Impact of Dounreay

2. Employment at Dounreay currently stands at around 2,100 making UKAEA by far the largest employer in Caithness and the largest employing unit in the Highlands and Islands. The facility supports directly and indirectly around 3,500 jobs in the area amounting to one third of total employment in Caithness. It also contributes around £47m annually to the local economy (see Annex, Table 1). The majority (87%) of the direct jobs provided at Dounreay are for males and are full-time. Most employees live in Caithness District and around two thirds were recruited locally. There is a high skill content in the work and a large proportion of the staff are technically and professionally qualified. Consequently, earnings are high relative to the average in the Highlands and Islands.

3. A significant proportion of the resident population is dependent one way or another on Dounreay. Immediately following the establishment of Dounreay and following a century of decline, the population of Caithness rose by 4,600 to 27,370 and has remained stable at around 27,000 over the last 30 years. There has been a substantial increase in the provision of local infrastructure and services.

Possible Effects of Rundown at Dounreay

4. The Secretary of State for Energy has defined 4 options and the effects are estimated as follows (see also Annex Table 2):

- (1) UKAEA proposal: continue full R&D programme with industrial contributions. This option has the least damaging employment effect with a 25% decline in employment to the mid-90s through efficiency

savings followed by a reasonable degree of stability. Overall, in the Caithness economy, around 720 jobs would be lost increasing unemployment by 8 points to over 20%, over one and a half times the current average for Scotland and twice the current UK average.

(2) Dounreay plants close in April 1989. This option has the worst employment effects with an immediate loss of 1,000 jobs followed by a steady loss of a further 500 to reach the base position by 1994. Overall at least 2,400 jobs would be lost to the Caithness economy and unemployment would rise by over 20 points to 34%, over two and a half times the current Scottish average and almost three and a half times the current UK average.

(3) the PFR closes in 1993/94 when present fuel stocks run out and the reprocessing plant closes in 1996/97. This option results in a deferral of job losses with a gradual loss of 500 jobs to the mid-1990s followed by 2 substantial drops of around 500 each with base position reached by the year 2000. By the mid-1990s 600 jobs would be lost to the Caithness economy, and unemployment would rise by 7 points to 20%, one and a half times the current Scottish average and twice the current UK average. By the year 2000 the effects on jobs lost and unemployment levels would be the same as Option 2.

(4) the PFR closes in April 1989 and the reprocessing plant closes April 1992. This option slightly moderates option 2 and results in an immediate loss of 700 jobs followed by a progressive loss of 600 jobs and the base position is reached by 1995. The effects on jobs lost and unemployment levels are slightly less severe than Option 2 by the mid-1990s but are the same by the year 2000.

5. In effect there are 2 scenarios for Dounreay in the Secretary of State for Energy's options: (a) Continuation of the R&D programme ie Option 1, resulting in about 25% of jobs lost at Dounreay and (b) virtual cessation of the R&D programme with closure of the PFR and reprocessing plants, ie Options 2, 3 and 4, resulting in 80% of jobs lost at Dounreay leaving employment at around 400. The difference between Options 2, 3 and 4 is the timing of the closures and therefore the speed of the employment rundown.

6. Half of the UKAEA's employment on the PFR programme is at Dounreay and under options 2 and 4 Dounreay loses as many jobs as all the other sites put together. The other localities may find it easier to absorb job losses as they are larger (the travel to work areas embracing Sellafield and Risley contain 33,000 and 73,000 employees respectively compared with only 11,000 in Caithness) and currently have lower unemployment rates (9.3% in the Sellafield area and 10.2% in the Risley area compared with 13.3% in Caithness). They are also in a less isolated part of the UK.

#### Alternative employment possibilities

7. The Secretary of State for Energy's paper will deal with possibilities for civil and defence nuclear-related work.

8. As far as other activities are concerned the narrow base of the Caithness economy and the lack of large firms limits the opportunities immediately available for job creation and economic diversification. In the manufacturing sector, expansion of existing companies could at best generate around 200-300 jobs. In the primary sector further tree planting will only create jobs in wood processing in the longer term. In the service sector, there is very limited opportunity for the expansion of tourism due to distance from markets and lack of a marketable product. At best, forestry and tourism might create an additional 100 jobs by the turn of the century. Substantial effort through a co-ordinated programme of action will be required to achieve even these modest increases. To attain higher levels or to significantly advance the programme of action will require greater effort and associated resources.

#### Conclusion

9. Whatever decision is taken, substantial job losses will occur with significant economic consequences in Caithness because of the dominance of Dounreay in the local economy. If the scale and speed of rundown can be moderated, then the impact over the next few years will be reduced and an opportunity provided for action to stimulate job creation in the local economy and to provide opportunities for diversification at Dounreay



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into other nuclear-related activity. Even with these initiatives, and with substantial support by Government and its agencies, there is no possibility that the job losses in the local economy can be replaced.

Industry Department for Scotland  
8 July 1988

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TABLE 1:  
EMPLOYMENT AND EXPENDITURE IMPACT OF DOUNREAY

	Estimated Local Expenditure £m	Jobs
Direct Employment at Dounreay	28.0	2,100
Income Multiplier	12.0	1,200
Local Purchases	6.0	200
Regional and District Rates	1.4	-
	—	—
Total Direct and Indirect Expenditure and Jobs	47.4	3,500
	—	—

TABLE 2:  
EFFECTS ON UNEMPLOYMENT IN CAITHNESS

		Option 1	Option 2	Option 3	Option 4
By 1995	Jobs lost	720	2400	600	2100
	Unemployment increase (%)	8	23	7	21
	Unemployment rate (%)	21	37	20	34
	Unemployment relative to:				
	current Scotland (%)	155	265	145	245
	current UK (%)	205	355	195	330
By 2000	Jobs lost	900	2550	2550	2550
	Unemployment increase (%)	10	25	25	25
	Unemployment rate (%)	23	38	38	38
	Unemployment relative to:				
	current Scotland (%)	165	275	275	275
	current UK (%)	220	370	370	370

SECRET*Pne Monte**9A-B*PRIME MINISTER*See also George  
Gunn's unit*FAST REACTOR PROGRAMME*below**vw*

You have a further meeting with the Secretary of State for Energy, the Chancellor of the Exchequer and the Secretary of State for Scotland tomorrow to discuss the future of the Fast Reactor (FR) programme.

Last week's meeting concluded that there was a political case for adopting "Option 3" - continuation of the programme until present fuel stocks are used up in 1993/4 and continuing reprocessing thereafter for a further three years. But before coming to final conclusions you asked Mr. Parkinson and Mr. Rifkind to explore whether the employment consequences of the other two, and more severe, closure options could be mitigated by bringing some nuclear related, or other, jobs to Dounreay.

As a result Mr. Parkinson has circulated the paper at Flag A below. This concludes that while there are possibilities (e.g. Naval reprocessing and fuel manufacture, and a NIREX facility) the uncertainties are such that there can be no guarantee that new jobs would proceed. Mr. Rifkind has produced the paper at Flag B which underlines the serious consequences of closure for the Dounreay economy.

Mr. Parkinson's paper also produces revised, and considerably increased, costings for Options 3 and 4. These increases do not, however, seem to alter the conclusions which were emerging from your last meeting; namely that continuing the full R&D programme, as proposed by the AEA, could not be justified and that the objective should be to put the Fast Reactor R&D programme on a £10 million per annum "informed customer basis".

The choice for achieving this objective still looks to be between Options 3 and 4. Option 4 produces public expenditure savings faster. But Option 3 postpones, at some considerable

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cost, but does not in the longer run avoid, the decline in employment. We now need to come to an early decision. If the group is unwilling to adopt Option 4, I recommend that you should adopt Option 3.

The last meeting envisaged an early discussion in E(A) - one is in the programme for Thursday week - with an early announcement to Parliament. Subject to the outcome of E(A), the announcement could take place on Thursday 21 July. (As reference, Mr. Parkinson's paper for the previous meeting is at Flag C and the note of the discussion at Flag D.)

Finally, you should be aware that E(ST) will be considering the paper Flag E this Thursday on the UKAEA's fusion programme. This decision is not related to the Fast Reactor decision except that both concern the AEA. Mr. Parkinson's recommendation for the fusion programme - bringing it to an end at the time when we plan to leave JET in 1992-93 - while unwelcome to the AEA is of a lesser order than withdrawing from the FR programme. Clearly presentation of the two decisions will have to be managed carefully.

---

N.L.V.

N. L. WICKS

12 July 1988

COVERING CMO

8A-5



SECRETARY OF STATE FOR ENERGY  
THAMES HOUSE SOUTH  
MILLBANK LONDON SW1P 4QJ

01 211 6402

Nigel Wicks Esq CBE  
Principal Private Secretary  
10 Downing Street  
LONDON  
SW1A 2AA

12 July 1988

*Dear Nigel,*

As agreed between yourself and Stephen Haddrill I attach a copy of our paper on Dounreay Employment for tomorrow's meeting, together with an additional note on the costs of the options. My Secretary of State has asked me to emphasise that the paper has been classified SECRET and for Cabinet Minister's eyes only.

I am copying this and the attachments to Jonathan Taylor and to David Crawley.

*Yours,*

STUART BRAND  
Private Secretary

COVERING CMO

## DOUNREAY: EMPLOYMENT

This paper examines the possibilities of moving work to the area of Dounreay including:

- work associated with the nuclear submarine programme; and other defence-related work;
- work associated with a continuing R&D programme of £10m; and other UKAEA work.

Work associated with the Nuclear Submarine Programme

2. There are three main aspects:

- (i) reprocessing;
- (ii) fuel manufacture;
- (iii) decommissioning.

On (i), MOD will decide in 1990 whether to start reprocessing spent naval propulsion fuel. Options include a new plant which might be located at Dounreay or at a BNFL site or alternatively using an existing reprocessing plant in the US. A new plant at Dounreay could cost between £25-30m built to commence operation in about 1996 with a life of 30 years. This estimate was made on the basis of the existing Dounreay site, and the economics could become less attractive if other facilities closed leaving more of the site overheads to be carried on this plant. Further work would be needed in the light of decisions on the fast reactor programme and the Dounreay site. The work could create up to 100 long-term jobs - more, obviously, during the construction phase.

3. There may also be a chance for work on fuel manufacture. At present, this is carried out in a specialised facility at Rolls Royce at Derby. A decision on new fuel is planned for 1990 with a new production plant to be completed by 1992. The contractor will be expected to invest about £20m in this plant and recover this by selling output to MOD. Both production of fuel materials and fuel fabrication could be located at Derby but other sites, including Dounreay, could be considered if they meet the necessary economic security and technical requirements. The work could create about 100 long-term jobs.

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4. The prospects under (iii) are even more speculative. MOD's preferred option, if sea dumping is not pursued, is long-term shallow storage. This does not offer the prospect of substantial employment. As and when a deep NIREX site is available, there may be a question of cutting up submarine compartments for long term emplacement, but this would be very costly and result in a high radiological dose to operators. MOD do not at this stage envisage construction of any facility dedicated to this activity.

#### Other defence-related work

5. We have considered the use of Dounreay for production of nuclear materials and plutonium residue recovery. The fast reactor would be technically unsuitable as a production plant for tritium. MOD would be interested in Dounreay plutonium if this were available at a competitive price. However, the plutonium would need to be formally transferred from civil to military ownership. Ministers have hitherto stated that there are no plans to use the fast reactor programme for defence purposes. An important policy change would therefore be involved. Reprocessing of this material, which could be carried out in the existing facilities, would probably not add significantly to employment. Furthermore, plutonium work gained by AEA would be lost by BNFL (although MOD might have substitute work for BNFL). The presentational disadvantages, together with the lack of significant employment effects, argue against developing these ideas.

6. On plutonium residue recovery, MOD have an existing contract with Harwell of the value of about £0.25m pa over the next 15 years. Logistics and economics would appear not to favour Dounreay for this task. It would in any event have only marginal employment effects.

#### The continuing £10m Fast Reactor Programme, and other UKAEA work

7. There are no immediate prospects of transferring work from other AEA sites to Dounreay. Much of the Authority work on safety, fusion and nuclear materials for instance is closely tied to facilities at Harwell, Culham and Winfrith. One area of work which the Authority would like to develop at Dounreay is waste disposal, in association with the NIREX repository. However, the siting of waste disposal facilities remains controversial, and it is very uncertain whether Dounreay can be developed in this way. If it did, perhaps 150-200 jobs could be provided on a long term basis (about 1500 during construction). Even if it proves possible for NIREX to build a facility at Dounreay, work would be unlikely to commence in under 4-5 years.

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8. Prospects for transferring any significant part of the continuing £10m fast reactor programme are poor, for two main reasons. First, the adjustment at other Authority sites from current levels will be extremely painful; the Authority will certainly want to use the residual programme as best they can to mitigate the consequences of job losses of 1600, chiefly at Risley (though all other sites will be affected to a greater or lesser extent. Harwell will, additionally, lose about 200 jobs through a knock-on reduction in underlying research). Present indications are that, for efficiency reasons, the Authority would wish to concentrate the programme entirely on Risley. Secondly, it would be prohibitively expensive to move the appropriate rigs and equipment to Dounreay.

#### Scottish Measures

9. Scottish Office are supplying a separate note.

#### Other Measures

10. We have considered the scope for transferring work from the renewables programme to Dounreay. However, it is badly situated for the central management task currently carried out by Harwell, nor does it have useful characteristics for the current programme.

11. We have also considered whether BNFL might place work at Dounreay. Apart from the Company's existing involvement in fast reactor fuel development, however, there appear to be no real prospects.

#### Conclusion

12 Of the foregoing, naval reprocessing and fuel manufacture work could produce jobs within the next 2-3 years should MOD select Dounreay for new facilities. A NIREX facility would also bring jobs. All of these, however, are uncertain and there can be no guarantee that they will proceed. No other significant opportunities have been identified.

Department of Energy

12 July 1988



SECRET CMO

## COSTS OF OPTIONS

Since the circulation of my paper on the fast reactor programme on 29 June, my officials have carried out further work on Options 3 and 4 in conjunction with the AEA. The estimated annual costs of both Options in the earlier years have increased for two main reasons - redundancy costs and the costs of operating the Dounreay plants. The revised figures are given in the Annex to this paper.

2. The AEA estimate that redundancy costs of some £20m would be incurred in the current financial year, if they were to reduce to a R&D spend of £10m by 1.4.1989. As I mentioned in my earlier paper, managing the redundancies would be a severe challenge for them. To carry out a major programme of redundancies by 1.4.1989 would in their view have an extremely disruptive effect across the whole of the Authority's business. It would also severely prejudice the chances of adjusting to a £10m programme which makes the most effective use of resources. They have thus asked for a staged reduction. The effects of their proposed plan are shown in a separate line in the Annex. This is too long drawn out. Some phasing however may be desirable.

3. The increased costs of operating the Dounreay Plants arise in 1989/90, as a result of the incidence of payments for fuel and some earlier underestimation of the plants' operating costs (including the management of plutonium and wastes).

Restructuring Costs

4. As stated in Note 4 to Annex III of my earlier paper, the figures did not include the cost implications of the considerable restructuring which will inevitably follow the

SECRET CMO

fast reactor decision. The Authority have now identified the following costs other than redundancy and early retirement which are already in the figures:

(i) Transfer Costs (people and equipment) The AEA's broad estimate of up £20m is very approximate, and can only be refined in the light of studies on the detailed consequences of the fast reactor decision, and to an extent, decisions on other programmes. Together, these are bound to require a major effort of rationalisation;

(ii) Closure of sites/waste arrangement implications outside the fast reactor programme. The AEA say that loss of fast reactor funding will increase the likelihood of other radioactive facilities having to be decommissioned, leading to additional waste management costs. They cannot at present provide any definite estimate, but say the cost could be of the order of some millions;

(iii) Increases in overhead/loss of business. The AEA foresee a major increase in overheads per unit which could damage their future business prospects until they can get them down. The precise effects on programme charges to their customers, including Government Departments, cannot at present be quantified. At least in the short term, however, there would be a need for increased charges, or financial assistance of some kind from Government, or perhaps both.

Detailed work will be needed on all of these elements, which could amount to some tens of millions of pounds. There is little doubt however, that major restructuring of the AEA will be required. The AEA will seek substantial assistance with these costs from Government. They do not believe they can or should be met from borrowing.

## REVISED COST FIGURES AND EFFECT OF PHASING

	£m (money of the day)					
	88/89	89/90	90/91	91/92	92/93	93/94
OPTION 3						
Previous estimate	77	60	62	58	60	60
Revised figures	97	78	61	58	58	57
. . . with phasing	77	99	76	63	58	57
OPTION 4						
Previous estimate	77	57	56	57	53	50
Revised figures	101	66	57	56	51	47
. . . with phasing	81	86	72	61	51	47

## NOTES:

- 1 The AEA's proposal for phasing would involve R&D expenditure (in constant price terms) of:

1988/89	£54m	(current figure)
1989/90	£30m	
1990/91	£20m	
1991/92	£15m	
1992/93	£10m	

- 2 The AEA's proposed phasing would eliminate the 1988/89 redundancies in option 3 and reduce them to £4m in option 4. The total extra cost of the AEA's proposed phasing (in both options) would be £13.5m in net present value terms.



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10 DOWNING STREET

*From the Principal Private Secretary*

8 July 1988

I attach a further letter which I received a little time ago from Allen Sykes. I am not responding to his letter, because I really do not think this is an issue in which the Prime Minister, or her office, ought to become involved. This is not to say that the matters raised by Mr. Sykes are not important. They certainly are. But the claims on the Prime Minister's time are many and legion and I would not want to involve her in these matters unless your Secretary of State wished to do so.

N. L. Wicks

Stephen Haddrill, Esq.,  
Department of Energy.

from

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COPY NO. 6 OF 8 COPIES

7A-D

10 DOWNING STREET

LONDON SW1A 2AA

From the Principal Private Secretary

5 July 1988

Dear Stephen,

THE FAST REACTOR PROGRAMME

The Prime Minister discussed with your Secretary of State, the Chancellor of the Exchequer and the Secretary of State for Scotland the paper on the future of the fast reactor programme which you circulated under cover of your letter of 29 June. Mr. George Guise (No.10 Policy Unit) was also present.

I should be grateful if recipients of this letter could ensure that it is shown only to named officials and that no copies are taken without the authority of this office.

Opening the discussion your Secretary of State described the four options set out in his paper. The Atomic Energy Authority (AEA) supported Option 1 - the continuation of the fast reactor programme with a view to the United Kingdom taking part in a European fast reactor. Closure of the plant would have serious consequences for the AEA and would have substantial repercussions for BNFL (who were, nevertheless, willing only to contribute some £2 million a year to the project's development). Closure would have a severe effect on the economy of Caithness and the North of Scotland generally and would lead to the immediate loss of some 1600 jobs in Lancashire, as well as a further 1500 in due course at Dounreay. Nevertheless, his firm assessment was that there was neither an economic nor an energy case for the continuation of the programme, as the AEA recommended. Indeed, both the economic and energy case had deteriorated since the 1982 review; now so that even Lord Marshall, formerly a strong protagonist for the fast reactor, did not envisage commercial orders before the year 2040. The European fast reactor programme was in disarray: the French Superphenix had encountered technical difficulties, the Italians had recently voted against continued spending on the programme and the Germans could not obtain a licence for their development. UK industry was unwilling to provide financial support for a UK development. The second option - closure next year - and the fourth - continuing reprocessing until 1992 - were preferable on economic and energy policy grounds. Option 4 was favoured on technical grounds, though it raised political problems in view of its impact on employment in the early

years of the next decade. Option 3 - continuing reprocessing for three years after fuel stocks are used up - avoided those problems; employment was broadly maintained at Dounreay (but not elsewhere in the AEA) until 1990/1, and was kept at some 1600-1750 for the next three years. Option 3 could be justified on the grounds that it provided an orderly run down while fuel was used up and the site was cleared. It was easier to present internationally than either Options 2 or 4. Of the three options for closure, it should be noted that none produced substantial immediate savings.

The following points were made in discussion:

1. The essential fact was that the research phase for the fast reactor programme had been concluded. Further work could only be justified on the basis of a development phase. But there was now no economic or energy case for that development.
2. Scarce scientific talent continued to be devoted to fast reactor development. This could be better used either in the private sector or in areas of the public sector with greater priority, such as the safety of PWRs.
3. The life of the Dounreay plant was likely to come to an end in ten years' time. This was bound to have difficult consequences for the local economy. In the circumstances it might be better for the plant's run down to begin earlier so that the transition to a more viable economy could begin at an early stage. If run down was prolonged unduly, the best people would leave, both in the plant and the locality.
4. Run down would have a devastating effect on the economy of the North of Scotland where Dounreay accounted for one-third of the employment of Caithness. The effects of run down would be felt throughout the local economy affecting for example the local hotel trade, housing, and so on. This blow to the area's economy would follow the loss, earlier in the decade, of the Invergordon smelter and the Port William pulp mill. The possibility of early alternative, non-nuclear sources of employment were slender. It was important to explore the possibility of transferring nuclear work, including work connected with the nuclear submarine programme, to the area. Such an assessment should take account not only of MOD's departmental interest but also the wider national interests involved.
5. The United Kingdom possessed a considerable asset in Caithness in that the local people were strong supporters of the nuclear programme and welcomed its development in their area. The Government needed to ensure, to the extent possible, that that asset was utilised to the best advantage. The Government had a moral obligation to mitigate the impact on the area of a decline in fast reactor employment since it had been Government action which had moved that employment to the area in the first place.
6. It was suggested that the AEA had not explored

sufficiently the possibilities of selling their fast breeder capability to, for example, France and Japan who were continuing its development. Such a course could be compatible with the three run down options. Against that it was argued that the French had little need for the AEA's facilities. Sale of reprocessing capability by the AEA could well jeopardise BNFL's sales prospects which were not as buoyant as had been expected some years ago. More generally, the AEA were keen to adapt their activities to the market and were aiming to recoup 35 per cent of their costs by 2000.

7. A decision by the UK to pull out of fast breeder work would run counter to international developments where all the major countries concerned, including Europe, Japan, the Soviet Union and the USA were planning to continue, in some form or another, fast reactor development. In those countries the debate was about the timing and pace of development, not about the continuation of the programme itself. Against that, it was pointed out that in all countries there was uncertainty about the future of the fast reactor. Any decision to alter the direction of the European programme was made harder because international agreements locked France, Germany and Italy together.

8. Cancellation of the UK programme would make the UK dependent on foreign fast breeder expertise and would put us at the mercy of other countries' licences. But attempts to avoid dependence on foreign suppliers had been the cause of the UK's problems with the development of the thermal nuclear reactor programme. For too long we had wasted money on developing the AGR programme, only to switch at a late stage to the PWR system. There had been no reluctance for the owners of PWR technology to sell their equipment and expertise and none was expected in the case of fast reactor technology.

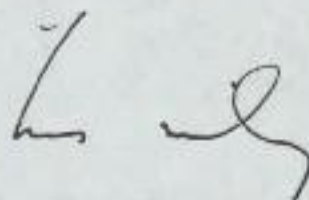
9. Funds from the Scottish Office budget might be made available to help deal with the local employment consequences.

10. For the longer term, there was the possibility of building a deep store for nuclear waste in the Caithness area. Though such a store would be represented as a "dustbin", it was in fact a highly engineered project. It would employ thousands in its construction with one hundred or more permanent jobs. Such an option was not relevant to the decision on the PWR and should be considered after decisions were made on that project.

Summing up the discussion the Prime Minister said that the meeting agreed that option 1 - the AEA proposal of continuing the full R&D programme - could not be justified and the choice lay between options 2, 3 and 4. Option 4 looked to be the route which was justified on economic and energy grounds. But there was a political case for adopting Option 3 - continuation until present fuel stocks are used up in 1993-94 with reprocessing continuing for three years thereafter. The Group needed to consider whether the employment consequences of Option 2 and 4 could be mitigated

by bringing some additional nuclear related jobs to Dounreay and the Caithness area. With that in mind, your Secretary of State should prepare a paper, in full consultation with the Scottish Office and the Ministry of Defence as necessary, which should examine in particular the possibility of moving to the area work connected with the nuclear submarine programme, such as decommissioning and fuel manufacture, the possibility for spending locally as much as possible of the £10 million "informed customer" programme as well as any other relevant route for increasing employment locally. The paper should be prepared in time for a meeting of the Group of Ministers next week with a view to an early discussion in E(A) and an announcement before Parliament rose for the summer recess. The Treasury should be given the opportunity within the next week to confirm the figures for the various options quoted in your Secretary of State's paper. Knowledge of all this work should be very tightly controlled with the minimum number of officials involved in the Departments concerned.

I am copying this letter to Alex Allan (HM Treasury), David Crawley (Scottish Office), Brian Hawtin (Ministry of Defence) and to Sir Robin Butler (Cabinet Office).



Nigel Wicks.

N.L. Wicks

Stephen Haddrill, Esq.,  
Department of Energy.



MR WICKS4 July 1988DOUNREAY

I confirm the point made to you verbally, that my paper to the Prime Minister does not recommend any procrastination in the decision to discontinue taxpayer funded 'research'.

The meeting should support one of the hard closure Options 2 or 4 rather than 3 which does procrastinate and still spends at the £60m per annum level by 1994. Option 4 continues reprocessing until 1992 and it is within the confines of such an option that the UKAEA might be encouraged to examine the commercial potential for exploitation.

Once the UKAEA has been told the Government's decision and the consequent financing implications, it is reasonable to listen to commercial proposals within the boundaries of those financial constraints. It is in this sense that I have encouraged the PM to ask for further thought about the middle ground in my third recommendation.



GEORGE GUISE

DEPARTMENT OF ENERGY

Thames House South, Millbank, LONDON, SW1P 4QJ

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Switchboard 01-211 3000

4 July 1988



PERSONAL AND  
CONFIDENTIAL

George Guise Esq  
Policy Unit  
No 10 Downing Street

*Dear George,*

FAST REACTOR

I attach some further background material, as follows

(i) an update of the paper on "how fast reactors work". You will note in para 3 that this calculates the energy resource in the present stocks of depleted uranium as having the potential, if used in fast reactors, to meet the total electricity needs of the UK at current rates of consumption for 600 years. My people here seem to think this is a better way of expressing the thought than by making the comparison with coal alone. Either way, the broad message is clear;

(ii) the annexes to the note on uranium demand, which were missing from the earlier piece. I also attach a chart which shows how exploration activities have fallen away with the fall in prices over the 1980's. This suggests strongly what would happen if the market started to turn;

(iii) a note on the costs of options. This brings out the important point that the expenditure figures given do not take account of the knock-on effects on other AEA business, and that further work remains to be done on this. I can now confirm that Options 3 and 4 assume that a research programme of £10m would start in 1989/90. Option 2 phases in the £10m over a couple of years;

(iv) a note on the scope for running Dounreay as a commercial operation. This mentions the lack of any current major Japanese interest in contracting work to Dounreay. We simply do not know at this point of course whether the Japanese would be prepared to place significant business with Dounreay, and under what conditions. If Dounreay goes on for a bit, however, one would certainly hope that AEA could make something out of the Japanese - though the size of any business of this kind can only be speculative;

(v) a note on the "informed customer" programme. This brings out the necessarily broad-brush nature of the figure.

*John Morphet*  
*D.I.*

D I MORPHET

(Encs)

## HOW FAST REACTORS WORK

A fast reactor generates heat by using fast neutrons to split atoms of plutonium or uranium. It is the use of fast neutrons which distinguishes fast reactors from thermal reactors (such as the PWR, AGR and Magnox) which use slower neutrons to split atoms of uranium and plutonium. Fast reactors do not require a moderator (such as water or graphite) to slow down the neutrons emitted by fission.

### Plutonium

2 Fission of atoms with fast neutrons does not occur so readily as with the slower, thermal neutrons. Fast reactor fuel is manufactured with a high concentration of fissile material. In plutonium-fuelled reactors, the concentration of plutonium is up to about 30% by weight. In thermal reactors, the fissile material (Uranium-235) is present in the fuel at a level of around 3% or less.

3 Plutonium is made when "depleted" uranium (which is uranium depleted of its naturally-occurring level of Uranium-235) captures a neutron. The depleted uranium is not fissile but much more common than the fissile Uranium-235. In fact natural uranium has only 0.7% of Uranium 235 the rest being the heavier Uranium 238. There are large stocks [20,000 tonnes] of depleted uranium in the UK,

constituting an energy resource which if used in fast reactors, would meet the total electricity needs of the UK at current rates of consumption for 600 years. These stocks are increasing each year.

#### Breeding

4 The crucial difference between the plutonium production of fast and thermal reactors is that thermal reactors consume more fissile atoms than they create. Fast reactors can be so set up - with a breeder "blanket" of depleted uranium around the core - that they "breed" more Plutonium than they consume. There would be no need for an external supply of plutonium, after the initial fuel charge; an external supply of depleted uranium would be all that would be required.

#### Fuel Efficiency: The Advantage of Fast Reactors

5 The ability of fast reactors to exploit up to 60 times more of the energy content in natural uranium than thermal reactors is the principal advantage offered by the fast reactor system. Once a fast reactor is fuelled with its first charge of plutonium, it need never require an external source of plutonium for the rest of its life. It can utilise depleted uranium produced from thermal reactor reprocessing and enrichment activities. A major part of the UK's Fast Reactor Programme is aimed at developing fuel designs that enable more of the plutonium to be burnt during its stay in the reactor core ("higher burn-up"), enabling the fuel rods to stay

longer in the reactor and thereby minimising generating costs and maximising fuel efficiency.

#### The Need for Reprocessing

6 The fast reactor's ability to make the most efficient use of plutonium depends upon reprocessing the spent fuel to recycle the fissile plutonium which has been bred from depleted Uranium in the reactor.

7 It is possible to reprocess fast reactor fuel in a plant designed for thermal reactor fuel, suitably modified. If fast reactors were to be built in quantity, it would probably be worth building a dedicated fast reactor fuel reprocessing plant such as the European Demonstration Reprocessing Plant (EDRP), which is designed to prove the reprocessing technology on a commercial scale.

#### The Reactor Coolant - Sodium

8 The heat generated in the core of a fast reactor is so concentrated that a highly efficient coolant is needed to take it away from the core. Gas has been considered as a possible coolant, but most development work around the World, including the UK, has concentrated on sodium. This is excellent at transferring heat and stays liquid without being pressurised at temperatures up to 900<sup>o</sup>Centigrade - well above the usual operating temperature of a fast reactor. The sodium coolant in a fast reactor is capable of

removing decay heat (the heat produced by the core after the chain reaction has been stopped through the continuing decay of radioactive elements) by natural convection. This means that a fast reactor is capable of cooling itself, after shut-down, even if the sodium circulating pumps are not working. The primary circuit of a sodium cooled fast reactor operates at close to atmospheric pressure.

9 One drawback of sodium is that it reacts violently to contact with water and burns in air. This has led to much design and development work in order to ensure the safety of the reactor itself. A blanket of inert gas surrounds the sodium in the primary circuit between the top of the pool of sodium and the roof of the reactor vessel and between the inner and outer vessel walls. A critical component in any sodium-cooled fast reactor is the boiler, where water and steam pass through tubes immersed in hot sodium. The Prototype Fast Reactor (PFR) at Dounreay has had many problems with leaks in its boilers, which have limited its output of electricity since it started in 1974.

10 Sodium is a very efficient heat transfer medium and special design measures are required in order to control metal fatigue caused by temperature fluctuations.

11 A major part of the AEA's programme and also the CEGB's Design and Component Proving Programme is aimed at designing around these problems.

12 Once the sodium coolant has transferred the heat from the core to the water, turning that to steam to drive the turbines and hence generating electricity, the process plant in a fast reactor power station is the same as in a conventional fossil fuelled or thermal nuclear power station and no special problems have to be solved by the designers.

### Safety

13 The fast reactor design is so different from either the PWR or the AGR that a new safety case has to be developed. Certain features of the fast reactor are good from a safety point of view: the coolant is not under pressure, and the core can be cooled even if the circulating pumps are not working. Others are bad: sodium has to be handled with care; and there is a very small possibility that, as a result of a highly unlikely sequence of events, the core could be so distorted as to produce a recriticality and physical damage within the reactor vessel and within the reactor buildings. Parts of the core have a positive void coefficient; if the sodium coolant were to boil, reactivity would increase. This would be offset by reactivity decreasing as the temperature of the fuel rose (negative power coefficient).

14 It is not possible to reach a conclusion that one reactor system is more or less safe than another. They all have inherently safe and inherently unsafe features. These are all well recognised by



the designers who have devised engineered safeguards as protection against the unsafe features. The UK programme recognises that every new design development has to be carefully considered from the point of view of safety.

#### Site Security and Safeguards

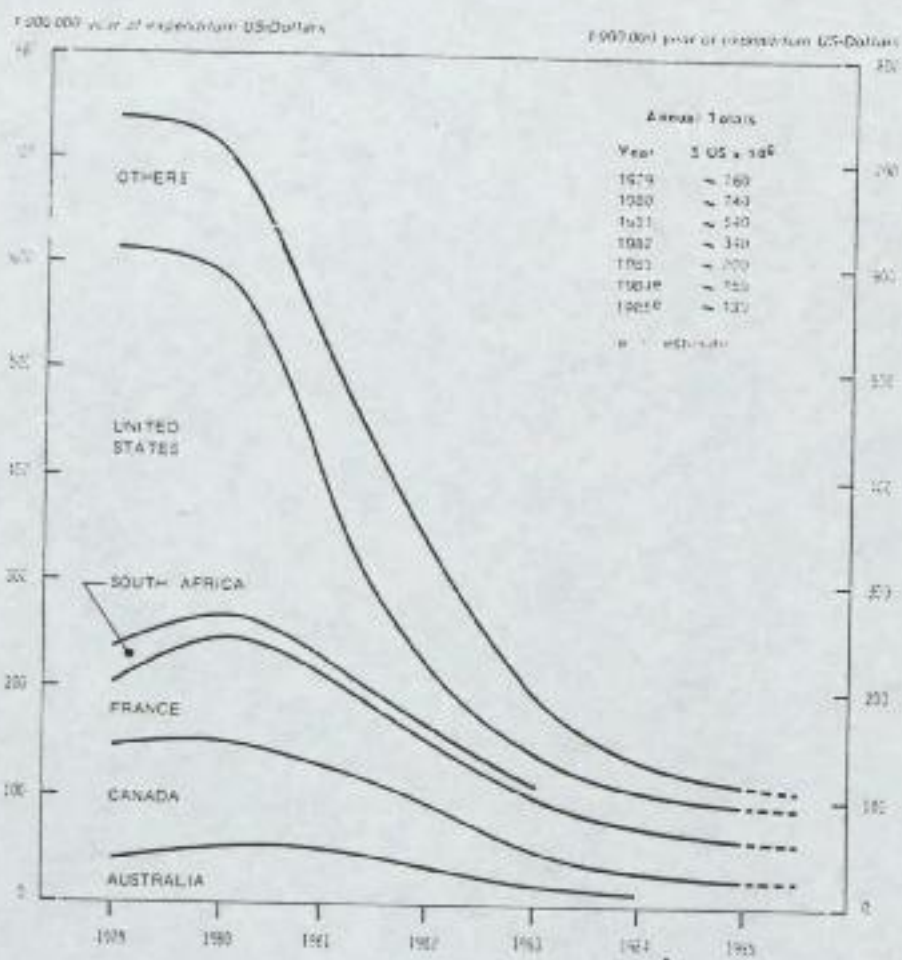
15 The other use of plutonium is for weapons. Whilst plutonium remains in spent fuel rods, it cannot be used again. Reprocessing isolates plutonium into a form where it can be readily used for weapons although for really efficient weapons one would "breed" the Plutonium rather differently from what is done in power reactors. Security has to be tight wherever plutonium is handled, as in reprocessing plants. These overheads add to the overall costs of the R & D Programme and would add overheads to the generating costs of a commercial system.

16 The handling, transport and export of plutonium also requires safeguarding procedures under the Non-Proliferation Treaty. One of our collaborative partners, France, has a "free use" policy for the plutonium it owns, reserving to itself the right to use that plutonium for weapons.

AE3

30 June 1988

Figure 4. URANIUM EXPLORATION EXPENDITURES WITHIN WOCA COUNTRIES



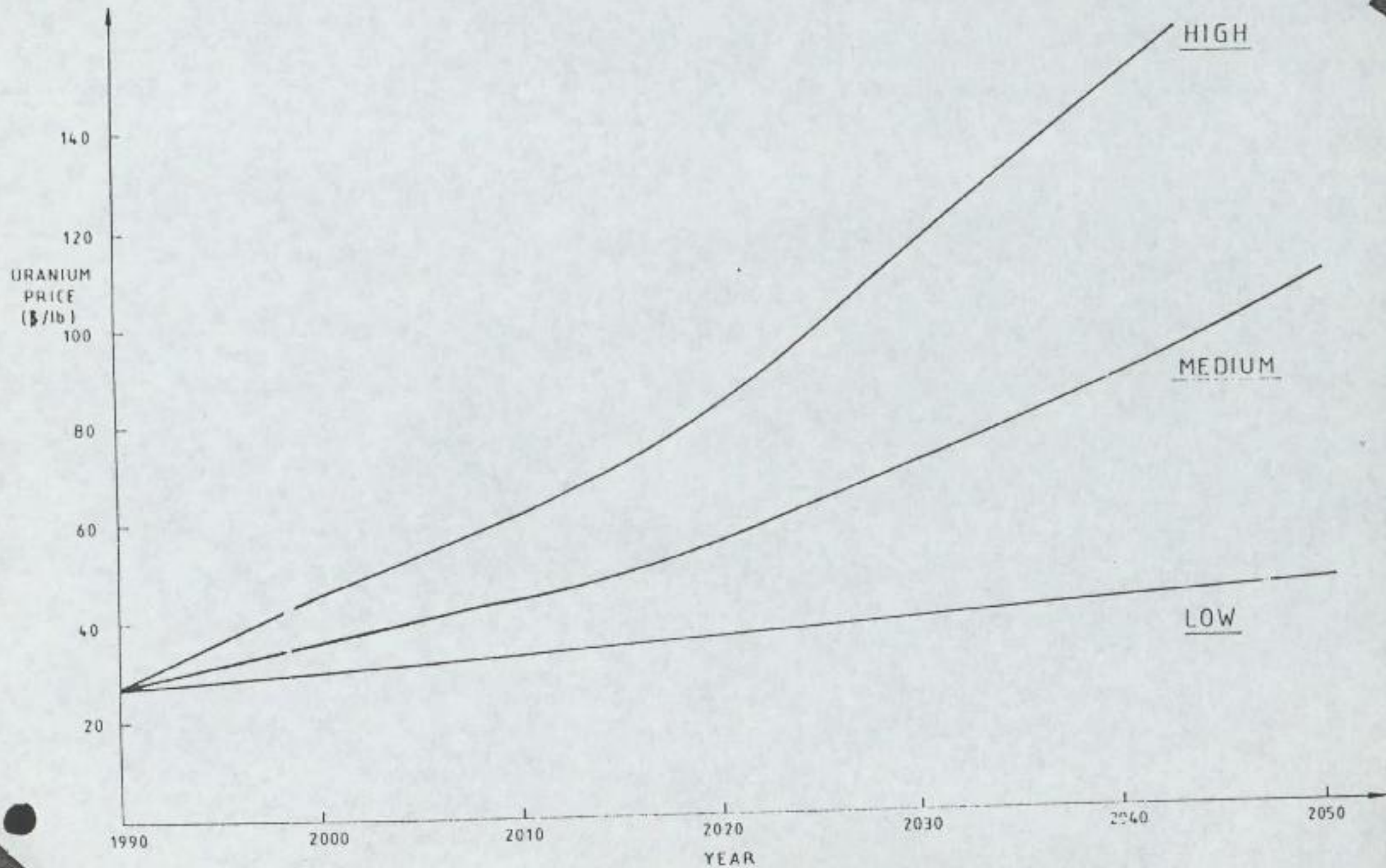


FIGURE 3 NAC URANIUM PRICE PROJECTIONS

Figure 6  
REPORTED AVERAGE URANIUM PRICES BY YEAR AND AREA

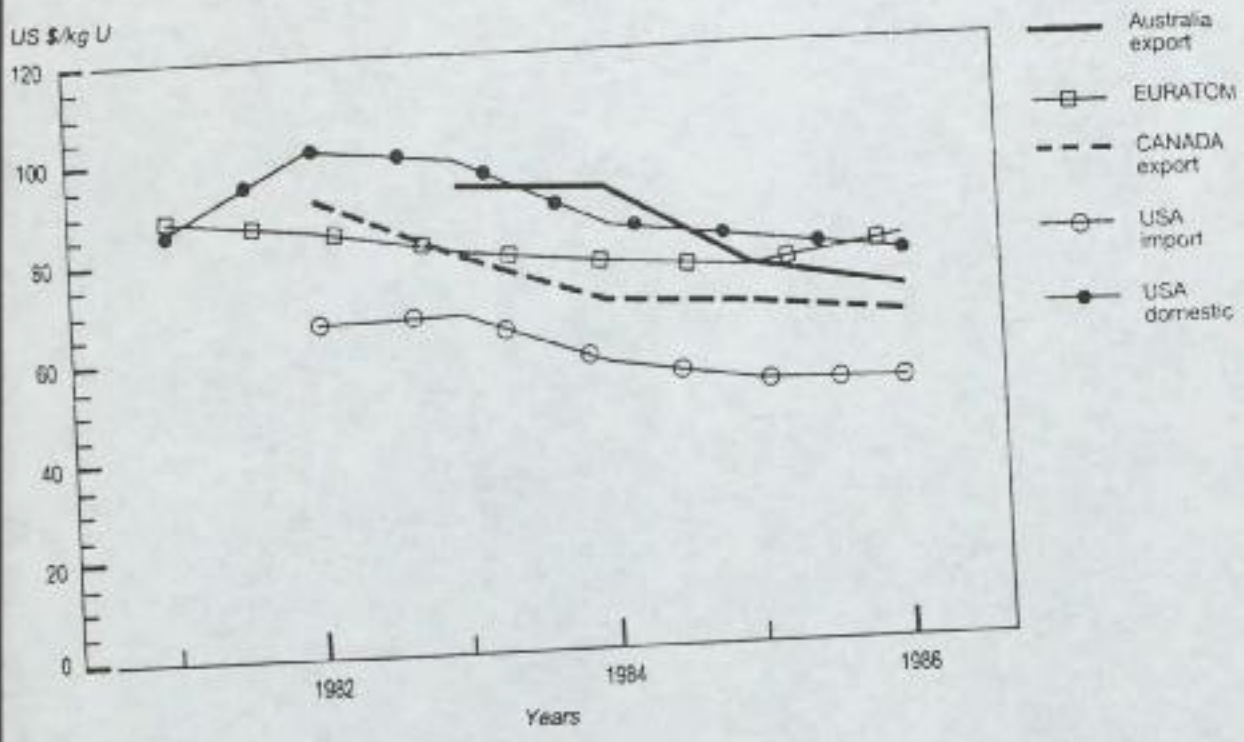


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B. OUTLOOK FOR THE SHORT TERM (TO 2000)

For the purpose of this analysis it is assumed that there will be no significant restrictions on the import and export of uranium within WUCA. Over the period under review there will be considerable potential for improvements of reactor and fuel cycle technologies as well as for plutonium utilisation in LWRs. The questionnaire which produced the replies on which this analysis relies was designed to take into account such factors.

Reactor related uranium requirements are expected to continue to rise from their current level of 39 200 tonnes U to about 52 400 tonnes U per year by the year 2000. Because uranium inventories are, in general, still above desired levels, some utilities will meet part of their requirements by a drawdown of inventories. Therefore, while production capability will exceed reactor requirements until the early 1990s, actual production of uranium is expected to remain below reactor requirements until desired levels of stocks are reached.

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ANNEX

COSTS OF OPTIONS

Points to Make

- 1. The expenditure implications of the four options are outlined in Annex III to the paper.
- 2. They are only approximate numbers and will need to be firmed up with the AEA when we are clearer on the way forward. There will be effects on the AEA which have not been quantified at this stage.

Broadly, the figures show that

- Option 1 is much more expensive than the others (and we cannot rely on the industry contribution)
- there is not much difference between Options 2 to 4 in the five years we have analysed. In the long term, taking costs to 2009, there is not much to choose between Options 2 and 4; Option 3 is probably about £60m more expensive in present value terms.

3. Redundancy and DRAWMOPS costs are obviously higher in Option 2, broadly balancing the savings on the operation of the Dounreay plants, in the PES period. Savings, particularly in relation to

Option 2, appear in the mid - to late - 1990s.

4. The figures in Annex III of the paper are broad estimates only of the direct costs of the four options. They have been developed in discussion with the AEA, but because of the limited circle of those the AEA have brought into the exercise, must be regarded as approximate. Particular uncertainty surrounds the DRAWMOPS expenditure, where a number of assumptions have had to be made about the ability to reprocess spent PFR fuel elsewhere if the PFR reprocessing plant is closed at the same time or before PFR (as in options 1 and 2) and about the phasing of expenditure.

5. The expenditure figures do not take account of the knock-on effects on other AEA business. At the AEA sites other than Dounreay, there are few people working full-time on the fast reactor. They are in specialist teams probably working on several programmes. The AEA has not analysed how these teams would be affected by a sharp drop in fast reactor work. It is, however, certain that some teams would cease to be viable and the AEA would lose the ability to carry out other work.

6. The other effect for which no allowance has yet been made is that it may not be possible for the AEA to cut its overhead costs pro rata to the cut in fast reactor funding, as the figures assume. In that case, the overheads would be loaded onto other customers, who would be getting less value for money and whose business with the AEA would be at increasing risk.

## SCOPE FOR RUNNING DOUNREAY AS A COMMERCIAL OPERATION

1. Dounreay's total turnover in 1988/89 is expected to be £90m:, made up as follows:

	<u>£m</u>
Fast Reactor	78
DRAWMOPS	4
Applied Nuclear	2
Other	1
	—
Sub-total	85
Underlying research surcharge	5
	—
Total	90

2. Fast Reactor expenditure at Dounreay is made up as follows:

	<u>£m</u>
PFR operations	30
PFR replacement fuel	10
R&D support for PFR	5
	—
Total PFR	45
	—
Reprocessing and radwaste plant	15
R&D support for reprocessing plant	3
	—
Total reprocessing plants	18
	—
Fast Reactor development R&D	15
	—
Total	78

(a) PFR as a power station

3. Annual income from electricity sales is currently estimated at £14m. This is based on a within-run load factor of 68%. If this can be increased to 80% (comparable with Phenix in France and other prototype AEA reactors such as SGHWR at Winfrith), the income at current tariff levels would increase to about £17m.

4. If grid links between Scotland and England could be strengthened and the AEA could export PFR electricity income to English Area Boards, a higher target might be negotiable. If PFR generated at target levels (see paragraph above) and obtained the same target as SGHWR currently does, PFR's output would earn £29m. Strengthened grid links will probably not be available until 1993 at the earliest.

5. This would leave a deficit of about £10m. This would disappear once PFR stopped ordering new fuel. Depending upon which option is chosen, this could be at any time between now and 1994 (assuming PFR closes in 2000).

(b) Reprocessing

6. The reprocessing plant costs about £15m p.a. Apart from its use in DRAWMOPS under some scenarios (involving the closure of PFR), other potential customers include:

- i) France
- ii) Germany
- iii) Japan
- iv) Ministry of Defence (MOD)

A factor here is that the AEA might be taking business from BNFL.

7. The prospects of new reprocessing business are not bright:

i) the French put out an enquiry last Autumn about reprocessing 15 tonnes of spent fuel from Phenix at Dounreay; much of this work if it materialised would be done under the SERENA Services Agreement (the AEA's ticket into the collaboration) free or at a discount; this work is by no means certain and profitable work would be limited in any case;

ii) spent fuel from SNR - 300 is currently planned to be reprocessed by the French, though the Germans are thought to be unhappy about the French terms and have enquired about the practicability of using Dounreay; a small amount of work on test pins has been agreed;



iii) there seems to be no major Japanese interest in contracting work to Dounreay

iv) MOD's main reactors are Magnox, whose fuel could not be reprocessed at Dounreay without extensive modifications to the reprocessing plant; a small amount of work is done for the HERALD reactor and on the recovery of plutonium residues; for AWRE, Aldermaston.

9. One other possibility in reprocessing is a new plant for naval reactor fuel. This is still at the pre-conceptual stage and the MOD have other options available.

**(c) Waste Management and Decommissioning**

10. The Dounreay Establishment itself sees this as its main growth area in the future, building on the experience it has already on waste management and, with a likely need for decommissioning at Dounreay in any case building on its skills in that area.

11. The waste management area would be tied in with any decision to use Caithness for the NIREX deep disposal facility. Decommissioning is likely to be a highly competitive area.

AE  
D/Energy  
1 July 1988

## RETAINING THE TECHNOLOGY: THE "INFORMED CUSTOMER" PROGRAMME

Options 2-4 envisage replacing the full R&D programme with an "informed customer" programme costing up to £10m a year.

Inevitably, this is a broad judgement and the precise size would depend on the size of money we could obtain. It would be our aim to get as much as possible from industry (the RS' manufacturers and BNFL).

The most important uncertainty is the expenditure that would be required to remain as a member of the European Collaboration. UK entry was negotiated on the basis of more or less equal sharing of the R&D costs between France, Germany and the UK. With a R&D programme of £10m pa, the UK would not be able to remain an equal partner.

Nevertheless, the Europeans may think that some help with the R&D and the avoidance of the public withdrawal of a main partner would be sufficient reason to the UK remaining as a junior partner. We would have to explore the options. If achievable this would be the best way for us to retain the technology in the UK.

Leaving aside a programme that might make sense within this Collaboration, a £10m pa R&D programme would enable a detailed working brief to be maintained on world developments, together with a small R&D programme that would probably be concentrated on safety aspects of the technology if the Government remained the major source of funds.

If the main funding came from industry, the orientation of the R&D would of course depend on their particular interests: perhaps reactor design and safety if the major funding came from utilities, design and components if from industry, and fuel if from BNFL.

AE  
D/Energy  
July 1988

M

PRIME MINISTERFAST REACTOR PROGRAMME

You are meeting the Chancellor of the Exchequer and the Secretaries of State for Scotland and Energy on Tuesday to consider the Energy Secretary's paper on the Fast Reactor Programme. He concludes that we should retain a modest R&D programme of up to £10 million per annum. His paper suggests three options for accomplishing this objective:

Option 2 Dounreay plants close 1.4.89: main R&D programme replaced by £10 million p.a. "informed customer" programme.

Option 3 PFR continues until present fuel stocks used up (1983-4): reprocessing continues for a further three years. Main R&D programme replaced by £10 million p.a. "informed customer" programme.

Option 4 PFR closes 1.4.89: reprocessing continues until 1.4.92. Main R&D programme replaced by £10 million p.a. "informed customer" programme.

The public expenditure (and employment) consequences of these options are given in Annex III of the paper. Paradoxically, the most radical option - option 2 - does not produce the quickest rundown in expenditure, at least in the early years. This is because that option has the earliest decommissioning costs with substantial early redundancies. The benefits of that option are seen in the later years when expenditure falls away faster than under options 3 and 4.

Mr Parkinson's analysis (and George Guise's interesting note in the folder) demonstrate that investment in the fast reactor technology on the scale envisaged in option 1 simply is a waste of public money. Just as important, it is a waste of highly skilled manpower, which ought to be used for more profitable, market-orientated purposes. There is therefore a

strong economic case for the radical option 2 - closing the Dounreay plants next April.

Certainly, option 3 and 4 cushion the blow on Caithness (and Risley). But I wonder whether that would, in the longer run, be the "kindest" option for those areas. The plain fact is that fast reactor technology is not an economic proposition and the quicker that those areas can adapt to new business, the better for their future prosperity. To extend the gloomy process of rundown by spinning out the life of an uneconomic business will not help, rather the reverse, those areas prepare for a new future. Much better, to decide to close the plants and use some of the savings achieved thereby to try to attract into the areas new enterprise, which might have a long-term future.

George Guise's note suggests that there may be middle ground between closure and carrying on - through foreign participation in commercial reprocessing and fuel fabrication. I have warned Mr Parkinson's office that he should be ready to speak to this possibility. But even if this possibility is a starter, and it looks rather a long shot, it should not be allowed to delay implementation of the main decision.

N.L.W.

N. L. WICKS  
1 July 1988

DS3AAN

COMMERCIAL IN CONFIDENCE - STAFF IN STRICT CONFIDENCE

Appendix 4THE IMPACT ON CAITHNESS OF A RUNDOWN AT DOUNREAY

The Atomic Energy Authority is by far the largest single employer in the Caithness District of the Highland Region, with a current workforce of around 2,150 at Dounreay. This represents around 20% of the total number of jobs in Caithness (approximately 11,000). It is estimated that there are around 6,300 jobs in the service sector and about 600 jobs in small manufacturing industry, the remaining 1,950 jobs being predominantly in farming and fishing, with a small number at MOD's Naval Nuclear Propulsion Testing Establishment (410) adjacent to Dounreay.

Assuming that a rundown at Dounreay (DNE) would have little or no impact on the level of employment in the traditional industries of farming and fishing, then the effect on the Caithness job situation is restricted to the manufacturing and service sector. It is reasonable to assume that the loss of jobs in manufacturing could be in direct proportion to the reduction in jobs at Dounreay and that the drop in jobs in the service sector would be proportional to the reduction in jobs in Caithness District as a whole ignoring any multiplier effect (ie the loss of jobs in the service sector leading to a further loss in that sector).

The various DNE rundown scenarios involving plant closures lead to a range of job losses over different timescales from the least pessimistic of around 550 to 1550 following the total closure of the Fast Reactor element of present site operations. The effect of these DNE losses on the Caithness employment is judged to be:

Position at:	Immediate Closure at 1.4.89 of:-		
	<u>PFR + Plants</u>		<u>Plants</u>
	<u>1992</u>	<u>1996</u>	<u>1992</u>
Loss of DNE jobs	1450	1550	550
Loss of jobs in manufacturing	400	430	<u>150</u>
Loss of jobs in service sector	<u>1060</u>	<u>1130</u>	<u>400</u>
	<u>2910</u>	<u>3110</u>	<u>1100</u>

*ie DNE.*

The unemployment level in Caithness has seldom dropped below 10% in recent years and is now 13.8% at present. The loss of the numbers of jobs identified above within 4 years would therefore increase the unemployment level to 24% on the least pessimistic scenario and to just under 40% in the worst case. This could lead to emigration of between 2,500 and 6,500 people from Caithness District, ie 10-24% of the current population of around 27,000. This is a trend already established in the adjacent Sutherland District and is a trend which other Government Agencies - notably the Highland & Islands Development Board - are desperately trying to reverse with generous subsidies from Government and EEC funds. The observed effect of development efforts in Caithness in recent years has been mainly in the sponsoring of small factory developments and assistance to tourism. It is hard to see how the present Agencies could stimulate 1,110 replacement jobs let alone 2,900 in the community by 1992.

Another aspect of the rundown of Dounreay, related to the loss of jobs in the service sector, would be the effect on small businesses in Caithness, many of which were started in response to the needs of Dounreay in the early days of the Establishment (1954 onwards). This is an area of the local economy which the Chairman of the Highlands & Islands Development Board (Mr R Cowan) has been trying to stimulate. Dounreay payments to local firms for goods and services in 1986/87 amounted to some £5,000,000 which represents around 7% of the Establishment's gross cash expenditure or 22% of that part of the expenditure related to stores, materials and capital.

A further effect of rundown at Dounreay would be a substantial reduction in the rates income of both the Caithness District Council and the Highland Regional Council. Payments to Caithness District Council amounted to £205K in 1986/87 (22% of their rates income of £924K); payments to Highland Regional Council in the same period were £930K which was around 2% of the Region's rates income of £53,150K. Presumably much of that loss would have to be made good by other ratepayers or by central Government.

The town of Thurso 10 miles east of Dounreay grew over a period of years from a population of 3,000 to 9,000. Three new schools and a Technical College were built and new housing estates were built by the local authority. These new investments would be largely wasted if Dounreay were rundown to the extent indicated.

The Atomic Energy Authority still owns around 480 houses in Thurso for letting to Dounreay employees. These houses were built for imported staff in the period 1955/63 and have been well maintained. If Dounreay were to be run down by up to 1,450 employees over a 4 year period, it is highly probable that the majority of comparatively mobile employees (ie skilled craftsmen and science and engineering staff) who occupy these houses would move away, leaving up to 280 of the AEA houses unoccupied.

In parallel with employees purchasing their houses from the Authority over the past 4 years, many also entered the private housing market displaying a confidence in the future of Dounreay engendered by the success of the reactor and fuel plants and Government statements of support to nuclear power and the fast reactor element. There is no doubt that the emigration of such large numbers from Caithness would lead to a total collapse of the housing market leaving many owner-occupiers losing their investment and indeed most of the area resembling the Highland Clearances.

PRIME MINISTER30 June 1988PROTOTYPE FAST REACTOR AT DOUNREAY

This is a classical example of technical success and commercial failure. 250 MW of electricity is being generated and fed into the Scottish Grid from the energy produced by the fission of plutonium bred from natural uranium. This breeding process takes place within the fast reactor core and could ultimately transform all Britain's 20,000 tonnes of depleted uranium into an active fuel. The proliferation of Fast Breeder Reactor (FBR) technology could therefore make the country self-sufficient in fuel reserves for over a hundred years. There would be no need to import any fresh uranium supplies and dependence upon fossil fuels would automatically fall away.

Such a goal may sound Utopian, but it does not make economic sense. The overall costs of the FBR fuel cycle exceed that for the thermal Pressurised Water Reactor (PWR) both in capital intensity (30%) and operating costs (20%). Furthermore, the overall PWR costs, including capital depreciation, compare unfavourably with fossil fuel alternatives, as we noted during the electricity privatisation discussions. The FBR route is therefore commercially uncompetitive twice over. It would require a quadrupling of natural uranium prices to gain an edge on conventional PWR technology which on economic criteria runs second choice to oil, gas and coal. One would therefore need to posit future economic circumstances which would force not only substantial price rises in fossil fuels, but a consequent acceleration in the rate of installation of conventional thermal nuclear power.

B

The FBR programme is a massive example of Government folly in trying to pick winners on economic criteria projected far into the future. In the 1950s, when the FBR programme was conceived, the case for accelerating depletion of natural fossil fuel and subsequently uranium reserves made some sense. It is significant however that, even though the science was understood in principle, industry showed no inclination to use its own money to sponsor such a programme. That was left to Government and the taxpayer who has unfortunately put £3.5 bn into a programme that is almost certain to be discontinued with little return. This is a most apposite lesson for the current debate about 'enabling technologies' and 'exploitable science'.

#### Is the FBR Safe?

No nuclear system is absolutely safe as evidenced at Three Mile Island and Chernobyl. However, in the West and increasingly elsewhere, public enquiries and regulation ensure that safety measures both in design and operation go as far as current understanding permits. Indeed, the high costs of maximising safety is a principle factor in making nuclear power uneconomic.

Since the PWR is by definition a pressurised system it can in principle still run amok. As temperature rises, so does nuclear reactivity with any uncontrolled loss of coolant exacerbating the cycle. In principle, therefore, any thermal reactor which transfers energy to boilers through a pressurised interim stage can explode. This may throw lethal radio-active debris into the atmosphere, as at Chernobyl, but the danger is not equivalent to the detonation of a nuclear weapon.

However the FBR has a negative temperature characteristic because fast neutron absorption by core materials increase



with temperature. As the temperature of the core rises, the reactivity falls leading to less heat generation. The fact that the core is surrounded by a bath of unpressurised liquid sodium could be an additional safeguard because sodium has a low melting point, a high boiling point and a high specific heat. The core of an FBR is therefore embedded in a massive heat absorber. Taken together with the negative temperature characteristic, the FBR system is arguably inherently safer than the PWR. This is a positive point which has not been adequately publicised and about which I was in ignorance until my recent visit to Dounreay.

Dangers of uncontrolled explosion do exist in the secondary sodium and the steam generating circuits which power the turbines. These circuits are beyond the 'nuclear' part of the system and therefore outside the area where radio-activity is present. Dounreay has had problems with its secondary sodium circuits and steam generators but they were the kinds of problem that could have arisen with any industrial plant involving heat transfer mechanisms. The chemical reactivity of sodium is of course an additional hazard. However they were not problems specifically associated with nuclear processes and radio activity.

It may be difficult to separate the issues in the public mind, particularly among the anti-nuclear lobby who are against everything, but it is important for Government to recognise that from a nuclear point of view there is an argument that the FBR could be inherently safer than the PWR.

#### Is There Research Done at Dounreay?

The answer is yes, but very little of the type for which the project was originally conceived. The processes of fast reactor dynamics are sufficiently well understood for there

to be commercial reactors already in existence. The research at Dounreay is on optimising fuel element assemblies and the reprocessing cycle. Indeed, the French send their spent fuel rods to Dounreay for analysis of plutonium utilisation rates and pay a fee for such work but I doubt whether it is adequately costed and priced.

The possibility of British exploitation of its technological lead in such areas as fuel rod assembly and fuel re-processing should be examined. In other countries, such as Japan, the pressure to exploit FBR technology is greater because of acute lack of fossil and uranium fuel resources. Japan is planning a commercial FBR programme from 2020 while France is already strongly committed to FBR technology through centralised decisions already made. One of the great problems of the UKAEA and all its offshoots is that commercial thinking is so alien. When I raised the question of whether anyone had considered seeking Japanese or French equity participation in Dounreay there was nonplussed silence!

Dounreay research is therefore of the highly specific applied kind without commercial rationale for the UK. Domestic industry is therefore unlikely to fund it and Government should certainly not. Walter Marshall has already indicated that a privatised CEGB would not continue funding Dounreay at the £30m level or anything like it. This is seen as a great betrayal by the Dounreay staff who spoke bitterly about Marshall's volta face.

#### Operating Costs, Staffing and Employment

Dounreay is funded as to £75m from the Department of Energy via the UKAEA, and £28m from the CEGB. Total operating costs are therefore approximately £103m per annum net of some £12m per annum received for electricity generated. The

site employs some 2,150 people of whom 500 are professional engineers and scientists. The ratio at 4.4 is therefore better than at CERN (10 to 1). Direct support staff in the form of technical assistants and blue collar workers in the reactor and reprocessing units number 1,000, leaving a balance of 650 security, administrative and clerical staff including trainees.

The AEA is the largest employer in Caithness accounting for some 2,000 jobs out of 11,000. The service sector and small manufacturing total 7,000 while 2,000 are in the traditional industries of farming and fishing. There are also 400 jobs at the MOD's naval establishment near Dounreay. Closure of the AEA plant would therefore have a devastating effect on employment leading to job losses of about 5,000 people including knock-on effects in the service and manufacturing sectors. Annex A shows the employment effects in more detail. This is however an AEA document which I have obtained and will therefore tend to present the worst possible picture.

### Conclusions

The strongest argument for the FBR is strategic fuel self-sufficiency. It may also be inherently safer than other nuclear alternatives. Nevertheless, expenditure at Dounreay should no longer be classed as part of the research budget. The bulk of its net operating costs are spent in keeping an uncommercial but working reactor going with a puny electrical power output. The current prototype reactor has already been in operation for 14 years and must in any case be terminated or replaced in 10 years.

The closest analogy to Dounreay in my experience is that of a worked-out mine in a remote place. The directors know that it must be closed even though it is the primary source

of wealth generation in the vicinity. Dounreay's demise will be a sad blight for Caithness and it is appropriate that methods of cushioning the impact are under investigation. The phased withdrawal Options 3 and 4 do seem rather unimaginative and still incur an annual spend level of over £50m in 1994. The tail-off to a net spend level of £10m per annum, which seems a fair cost for staying in the game, may take up to 10 years which seems too long.

The analysis in the D/En paper has necessarily been rushed and may have missed a more commercially palatable middle way. In particular the possibilities of continuing the fuel cycle research, either under contract or with equity participation by countries such as Japan and France should be thoroughly examined. However, Europe as a whole appears to be in such disarray on the nuclear issue in general and the FBR issue in particular, that the likelihood of a realistic, early solution coming from that direction seems remote.

The problem of Dounreay is a specific case of the general question mark over the UKAEA. This has been hopelessly uncommercial in its thinking for decades and this has been starkly exposed by the electricity privatisation decisions. The authority should be forced to think commercially about its own future in general and Dounreay in particular. The only choice it has really offered for Dounreay is either to keep going or close down. The former preferred option is justified by exhortation about the long term national interest rather reminiscent of the protagonists of the space programme.

What is needed is some commercial thinking about how the successes of Dounreay can be harnessed. The fact that the commercial case is unsound for the UK does not necessarily exclude some form of commercial collaboration with countries such as France and Japan who see matters differently.

Recommendations

1. The FBR programme should cease to be part of UK taxpayer financed research as quickly as possible.
2. The Scottish Office should recognise that the problems caused by winner picking and political science are just as much theirs as the D/En. They should therefore participate both financially and imaginatively in finding a solution.
3. You should ask for a fuller analysis of the middle ground between closure and carrying on. In particular, the question of foreign participation in commercial reprocessing and fuel fabrication should be examined.
4. Funds saved on the FBR programme should be redirected into fundamental R&D elsewhere in the science base.



GEORGE GUISE

3A-U



COPY NO 2 OF 5

## SECRETARY OF STATE FOR ENERGY

THAMES HOUSE SOUTH  
MILLBANK LONDON SW1P 4QJ

01 211 3092

Jonathon Taylor Esq  
Private Secretary to  
The Chancellor of the Exchequer  
Treasury Chambers  
Parliament Street  
LONDON  
SW1P 3AG

29 June 1988

Dear Jonathon,

## FAST REACTOR PROGRAMME

The Chancellor and the Secretary of State for Scotland are to discuss this matter with the Prime Minister and my Secretary of State on 5 July. I attach a copy of the paper my Secretary of State has prepared for the discussion.

Could you please note the classification. I cannot emphasise too strongly that my Secretary of State regards this as a most sensitive matter.

I am copying this and the attachment to Paul Gray in No 10 and to David Crawley in Mr Rifkind's office.

Yours,

James Brown

PP S HADDRILL  
Principal Private Secretary

THE FAST REACTOR PROGRAMME

Introduction

When the Government last reviewed this programme in 1982, it concluded that, while it would be of major strategic significance for energy supplies, the ordering of a commercial series of reactors was not likely before the earlier part of the next century. It was decided to continue with a substantial development programme, based on international collaboration, and Nigel Lawson made an announcement to this effect. Events since 1982 are summarised in Annex 1, which also sets out the strategic case for the fast reactor. Expenditure in 1987/88 was £115m, of which the Department paid £75m: it is the Department's largest R&D programme.

2. Some £3.5bn in current prices has been spent by the UK in developing this technology since 1951, and further large sums have been spent by other countries. We need to consider whether we can, at economic cost, retain the fast reactor technology for the UK.

3. In recent years the case for continuing with a significant UK effort has become much weaker. It is hard to

see commercial deployment of fast reactors for another 25-30 years, or even longer. Low uranium prices make it very difficult for them to overcome their inherent capital cost disadvantage in relation to the PWR, and utilities do not see a need for them for some decades.

4. Whilst the Government's electricity privatisation proposals have not affected the substance of the case for and against continuing expenditure, they have brought the issue into sharper focus. Lord Marshall has told the UKAEA that the CEGB wishes to phase out by 1 January 1990 its contribution (currently £28m per annum) to the programme. The prospects for a contribution from the eventual privatised industry at anything like this level are very poor. HMG is therefore likely to have to finance most of any large continuing R & D programme, should there be one.

Views of the UKAEA

5. I have discussed the position at length with the Chairman of the UKAEA, who has made proposals (see Annex II) for continued investment in fast reactor R&D up to 2005, and in the construction of a European Fast Reactor (EFR) from 1995. These would involve a leading role for Government, and major public expenditure - a further £700-900m on the R&D alone. In addition, some £800m would have to be invested by UK concerns in EFR. Even then, his strategy



would involve shedding 1,000 jobs by 1992 (500 at Dounreay) from the present 4,000 working in the AEA as a whole on the fast reactor. The financial and employment implications are set out in Annex III, Option 1.

6. The AEA wish to keep going because of the programme's strategic importance, and in order to preserve the option of British industry getting a good share of any eventual commercial programme. Their proposals are, in my view, unrealistic. First, it is not clear that the economies assumed by the AEA through rationalisation can be achieved. Though some progress has been made, the French and Germans have still not agreed for instance in which of their countries the next demonstration reactor should be located. Secondly, the prospects for the UK manufacturing industry are very limited. British industry is likely to be much more interested in the PWR programme than in a share of perhaps two fast reactors over the next 30-40 years. Indeed, the length and uncertainty of the timescale for development accounts for the reluctance of the electricity industry, and of manufacturing industry, to make any large continuing contribution to research. In no sense do they see it as being "near market". They, and BNFL, may decide to spend relatively small sums to maintain a watching brief, or perhaps to participate in international work in a limited way, but this is not likely to amount to more than single

million figures: by comparison, the AEA's proposal involves the UK investing some £800m in EFR.

7. As a variant on their proposal, AEA have supplied figures for a lower-cost option, which would involve restricting UK investment in EFR to £500m; the R&D programme would however be unaffected. This is open to the same basic objections.

8. I have discussed the possibility of a contribution from BNFL, who would like the fast reactor to continue, as recycling of plutonium in the fast reactor constitutes the main rationale for reprocessing. (By the year 2000, we shall have enough plutonium for the initial fuelling and sustaining of about 5 commercial-scale fast reactors. Thereafter there will inevitably be a growing stockpile of plutonium for which there is no early requirement.) BNFL say it could also affect prospects for further THORP business if the Japanese thought that our commitment to nuclear was weakening. On the other hand, they cannot quantify this claim, and in the light of our privatisation proposals, the Government's commitment to nuclear can scarcely be in doubt. In any event, BNFL do not seem prepared to commit more to the fast reactor programme than the £2m or so which they are currently spending.

9. The AEA proposals cannot be sustained in energy policy terms. They are designed to maintain a leading position in a technology which is not going to be needed for decades. The future electricity industry can be expected to wish to licence the technology, as and when it needs it. They clearly do not intend to lock up resources of their own on a large scale, against that day. The same, a fortiori, is true of UK manufacturing industry. In these circumstances, it is difficult to see what we would get for the further expenditure which AEA propose. Undoubtedly, there would be R&D gains, but in the absence of any obvious UK beneficiary other than the AEA itself, we would not be getting value for money.

Closure of Dounreay

10. Given the weakness of the energy policy case I have considered the implications of closing down Dounreay forthwith, and all other fast reactor work except for a programme of about £10m to maintain a position in the technology and keep abreast of developments. This course would leave the option of licensing the technology in due course, probably from Japan or France. Decommissioning and redundancy costs would initially be high under this option, but would fall thereafter. The financial and employment implications of this are set out at Option 2 of Annex III.

A phased approach

11. I am naturally in no doubt of the extremely serious consequences for the Caithness economy of closing Dounreay. I have therefore considered the cost and implications of a phased withdrawal from fast reactor activity on the site. Two broad possibilities are:

(i) continuing with PFR until the present fuel stocks are used up (1993/4); and with reprocessing for 3 years after closure of PFR in order to assist with PFR decommissioning; the main R&D programme would be replaced, as under option 2, by a £10m "informed customer" programme;

(ii) PFR would close on 1.4.89; reprocessing on 1.4.92; a £10m programme as before.

These are Options 3 and 4 of Annex III.

12. Closure of the Dounreay plants will of course involve significant decommissioning costs. These will have to be borne sometime; PFR is expected, in any case, to reach the end of its useful life in about another 10 years. These costs will be heaviest in the early years under Option 2 which involves the early closure of all the Dounreay Plants

and they will also be significant in Option 4 which involves the early closure of PFR. These options incur the heaviest redundancy costs - decommissioning provides far fewer jobs. Option 3 postpones decommissioning costs, and redundancies. Indeed for the years immediately ahead it is, in terms of employment at Dounreay, not much different from AEA's preferred strategy. There would however be severe employment consequences at other AEA sites, with Risley (Warrington) being the hardest hit. Up to 1,800 jobs could be lost directly, with probable knock-on effects on other areas of the Authority's work. Managing these redundancies would be a severe challenge for the AEA with whom we would need to discuss the phasing. The precise phasing of closure at Dounreay would need to be determined after consultation with the health, safety and environmental regulatory authorities. About 500 jobs would remain at Dounreay under any option, to deal with site clearance and maintenance tasks.

#### The European Collaboration

13. I have also considered the effect of reduction on our collaborative partners, by whom it will be seen as a serious setback. After 2-3 years of uncertainty over design work, the recent utilities (EFRUG) initiative referred to in Annex I has shown a way forward. There has been

considerable progress in putting together over 80 collaborative R&D packages. For the FRG authorities, the fast reactor is in the front line of the nuclear debate: they do not want to give the victory to the Greens, or to the anti-nuclear SPD. They are currently striving to keep alive the prototype Kalkar reactor which the Land Government is refusing to license. The French would see withdrawal as prejudicial both to the collaboration and the general nuclear climate, on which, with their large nuclear dependence, they are very sensitive.

14. I shall in due course wish to discuss the implications of our decisions with the French and German authorities, for whom the presentation of our position will be important. It may prove possible, on the basis of a continuing programme, even though massively reduced, to avoid formal withdrawal (of which, technically, we need to give a year's notice). I should want to enter discussions with our partners before any announcement of our decisions.

#### The EDRP Inquiry

15. The Secretary of State for Scotland now has before him the Report on the AEA's and BNFL's application for outline planning consent for a European Demonstration Reprocessing Plant at Dounreay. While it now seems highly improbable that such a plant will be required for many

years, the effect of his decision on the nuclear debate will be important, not least because of its conjuncture with the present review.

Conclusion

16. The case for early development of the fast reactor has weakened further since 1982. Lord Marshall, a strong supporter of the fast reactor, does not see series ordering before 2040. There is no clear prospect of benefit from the forward programme recommended by the UKAEA. Current levels of expenditure on the fast reactor cannot be justified on energy policy grounds. We expect to be able to license the technology as and when it is needed. Radical reduction involving closure of Dounreay would however have serious implications for Caithness, for the AEA, and for our position in the European Collaboration. A phased approach to closure would help mitigate the consequences and a residual R & D programme of £10m would allow us to retain a modest position in the technology in which we have invested so heavily over the years. It may prove possible to secure a contribution from the electricity boards and BNFL towards this residual programme, following the CEGB's withdrawal in 1990. Expenditure at this level might provide the basis for limited continuing association with the fast reactor collaboration, though this would be for negotiation with our partners.

K

SECRET - NO COPIES TO BE TAKEN

COPY NO 2 OF 5

17. As I have said in paragraph 9 above, the AEA's proposals cannot be sustained in energy policy terms and Option 1 should not therefore be considered further. I believe we should retain a modest R & D programme of up to £10 million p. a. to retain a position in the technology, and seek as large a contribution as possible from the electricity boards and BNFL. This is common to the remaining Options (2-4). The choice between these options is essentially a political one, which we should discuss.

Secretary of State for Energy

June 1988

2

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FAST REACTOR

THE 1982 MINISTERIAL REVIEW AND DEVELOPMENTS SINCE THEN

Ministers reviewed policy on the fast reactor in 1982. It was decided that a substantial UK development programme, based largely on the Atomic Energy Authority's (AEA) site at Dounreay, should continue; but, in the light of the longer timescales available before fast reactors would be needed, the Government wished to explore the potential for collaboration with other countries.

2. Following the review, the UK negotiated entry into the European Collaboration with the signature of the inter-Governmental Memorandum of Understanding (MOU) in January 1984 by the UK, France, Germany, Italy and Belgium. In 1985 the AEA and British Nuclear Fuels (BNFL) applied for outline planning permission for a European Demonstration Reprocessing Plant (EDRP) for processing fast reactor fuel at Dounreay. The Inquiry Reporter's recommendations were submitted to the Secretary of State for Scotland before Easter.

3. Total expenditure on the programme has been cut by some 40% in real terms since 1981. The CEGB became joint funders of the programme in April 1987, contributing some 30% to the programme's net costs. As a result of this and earlier reductions, the Government's own contribution has fallen by nearly 60% in real terms since 1981. It now stands at £75 million per annum. The CEGB has recently informed the AEA that it wishes to phase out its contribution by January 1990.

The Strategic Case for the Fast Reactor

4. The 1982 policy review concluded that the fast reactor would be of major strategic significance for the UK and the world's future energy supplies and the UK was among the world leaders in its development. The strategic case rests upon the UK's ability, using fast reactors, to produce electricity

- a) without recourse to imported ore or fossil fuel and
- b) at a cost at maximum not much more than present best generating costs

Fast reactors extract 50 times more energy from uranium than can thermal reactors. To do this, they need reprocessing plants to extract the plutonium which is bred in the core. Reprocessing is therefore an integral part of the fast reactor system.

5. Behind the strategic case is the fact that the UK has large stocks of depleted uranium from thermal reactors - enough, if used in fast reactors, to produce 500 years of electricity at current rates of consumption. These stocks, together with an initial charge of plutonium (of which we currently have enough stocks for three commercial-size fast reactors and this stockpile is being added to at a rate of 1.5 - 2 tonnes p.a.), mean that a programme of fast reactors could be implemented without the need to import more uranium.

6. On the basis of present designs, the specific capital cost (£ per KW of output) of a fast reactor would be some 30% higher than that of PWRs. Unless these capital costs can be brought down significantly, the economic case for fast reactors rests on the running costs being lower. This in turn depends on the price of uranium rising significantly.

Developments since 1982

(i) Fossil Fuel Prices

7. The outlook for oil and gas prices has changed since the time of the last review. The high oil price between 1979 and 1985 encouraged exploration and new discoveries were made. It is now estimated that the world has enough to last another 45 years at current rates of consumption. In 1982, the estimate was less than 30 years. World oil reserves are also more widely spread. Forecast prices for oil and gas, and coal, are therefore lower.

(ii) Uranium and the outlook for nuclear power

8. Lower fossil fuel prices, together with other factors such as the effect of the Chernobyl accident and the lowering of the forecasts for the demand of electricity, have led to a slackening of the pace of development of nuclear power. Forecasts of demand for uranium have therefore fallen since 1982. On the supply side, new deposits have been found, for example, in Canada. At current rates of consumption, there is enough uranium to fuel thermal reactors, at increasing cost, for at least 100 years.

(iii) Fast Reactor Cost Reduction

9. The design and development work that has been undertaken since 1982 has led to significant reductions in the costs of the fast reactor system. The most recent study by the UK industry estimated that the fast reactor's generating cost (pence per KWh) would be 1.2 times higher than that of a PWR.

(iv) The European Collaboration

10. France, which has the technological lead, brought the world's first commercial-scale fast reactor, Superphenix, to full power at the end of 1986 but has since hit a severe technical problem with a leak of sodium from the fuel storage vessel. The reactor is not expected to restart until the Autumn at the earliest. The French electricity utility has put back plans for a second station by 5 years. The French development programme has been reduced although it remains much larger than the UK's.

11. Germany has been unable to commission its 300 MW prototype fast reactor, started in 1975, because the local licensing authority is controlled by anti-nuclear Social Democrats. A decision is not expected until after the local elections in 1989. Nuclear power in Germany has taken a severe knock because of the Transnuklear affair.

12. In Italy, the referendum of last Autumn forbade the electricity utility, ENEL, from participating in nuclear projects overseas (as it had done in Superphenix). This makes it difficult for Italy to take an equity stake in a European demonstration reactor.

(v) The EFRUG Initiative

13. Due to disagreement between the French and Germans about the siting of the first of the three demonstration reactors envisaged at the time of the MoU, the European Collaboration reached an impasse. In attempt to take things forward, the European Fast Reactor Utilities Group (EFRUG - of which CEGB is a member) has initiated work on a common European model - EFR, the European Fast Reactor. This will involve the design companies and the R&D organisations in a five to six year programme of work to produce a design acceptable to the utilities. This will take into account and develop the best features of current designs (CDFR in the UK, SPX 2 in France and SNR 2 in Germany).

14. The national design and R&D organisations will need to establish formal links if the opportunities offered by full collaborative working are to be taken. Agreements covering working arrangements and the transfer of intellectual property have been negotiated and are nearly ready for signature. Both the AEA and the National Nuclear Corporation have asked for Governmental approval for them to sign.

(vi) European Demonstration Reprocessing Plant (EDRP) Application

15. The AEA and BNFL's joint application for outline planning permission for EDRP at Dounreay was made to enable the UK to bid, within the Collaboration, for the reprocessing plant that would be necessary if the three demonstration reactors were to be built. This is now most unlikely to happen in the timescale envisaged at the time of the application.

(vii) Other countries

16. Japan, the USSR and the US continue to fund large fast reactor programmes. Japan in particular is spending about four times as much as the UK at present. It is building a prototype reactor which is due to be commissioned in 1992 and plans to build a commercial-scale reactor thereafter. Its long-term aim is to introduce fast reactors commercially by about 2020 - 2030.

Department of Energy  
June 1988

UKAEA PROPOSALS FOR TAKING FORWARD FAST REACTOR DEVELOPMENT  
IN EUROPE

The UKAEA believes that electricity utilities will require commercial fast reactors to be available by 2020, and possibly somewhat earlier as an option to replace the current series of nuclear power stations. (Some PWR stations in France will be 30 years old by 2010, as will some of our AGRs.)

2. On the assumption that it would take 10 years to design, obtain planning consent and then build a large station, the decision to order the first of a commercial series of stations would have to be taken around 2010. Allowing 5 years to assimilate the lessons of a Demonstration Station would require such a station to be commissioned in 2005 and ordered, therefore, in 1995. This is close to the currently envisaged timescale for the EFRUG initiative and the EFR.

3. The UKAEA recognises that much remains to be done within the European Collaboration to achieve the most efficient use of resources and the elimination of duplication in both the design and the R&D organisations. This has not been achieved to date because of the lack of a clear lead from the utilities, rivalries amongst the industrial parties and an unwillingness on the part of the R&D organisations to compromise their bargaining positions in the absence of firm agreements about the division of work.

4. The UKAEA proposal is aimed at:

- i. securing a commitment that EFR will be built in the timescale that the Authority thinks is required;
- ii. achieving a fully-integrated European programme with a unified management system for both the EFR project and the supporting R&D.

The European Fast Reactor (EFR)

5. EFR is estimated to cost about £2.5 billion. If the UK were to take a one-third stake (as would be envisaged if equity amongst the main R&D partners were to be maintained) the UK would have to contribute about £800 million. The UKAEA thinks that this would be found largely by industry (there would be a return in the form of electricity generated), but believes there is a case for the first of a kind costs of EFR, estimated at 20%, being met by Governments on the grounds that this would be the final establishment of a strategic option.

6. If, despite the promised return, UK industry was unwilling to provide £800 million, a lower figure of £500 million would give the UK a one-third share of the Nuclear Steam Supply System (NSSS) of EFR and maintain the UK's position in fast reactor technology, with full sharing of design and R&D information across the Collaboration. A figure lower than this might also be negotiated, but would adversely affect the UKAEA's and NNC's ability to obtain knowledge and expertise from the other major countries in the Collaboration, and the prospects for UK industry.

The European R&D Programme

7. The UKAEA envisage the R&D programmes of the members of the Collaboration being rationalised and the total size reduced to the extent that the annual rate of expenditure would fall from about £300 million at present to £150 million by 1995 and £100 million by 2000. (All expenditure figures are in 1988/9 prices.) The UK's share of this would be about £50 million p.a. in 1995 and £30 million in 2000. This would however depend upon a full rationalisation, including the closure of all but one of the prototype reactors - PFR, Phenix and the completed but not yet operational SNR-300.

8. The total cost of the UK R&D programme to 2005 is estimated by the UKAEA on this basis to be £700 million and £900 million if all three prototypes keep operating but the programme is otherwise rationalised. These costs do not include any further work on fuel reprocessing (the PFR fuel

reprocessing plant being assumed to close in 1989), nor do they include the costs of running Superphenix, which are assumed to remain with its owners (French, German and Italian utilities).

Funding the UK R&D Programme

9. The UKAEA argues that, since the R&D spend will be directed at the needs of the EFR project, the industrial companies and the ESI should take on an increasing share of the programme from 1990 onwards. (This would have to be negotiated by the UKAEA or Government but the agreed amounts would have to be added to the costs for industry of investing in EFR.)

10. The Department has assumed, for the purposes of estimating the effects on public expenditure in Annex III, Option 1, that industry will steadily take over the R&D funding leaving some £10 million p.a. coming from Government, essentially for safety work, by 2005.

Department of Energy  
June 1988



1551

FINANCIAL AND EMPLOYMENT IMPLICATIONS OF OPTIONS

	1988/89	89/90	90/91	91/92	92/93	93/94	Subsequent trends
<u>Department of Energy expenditure</u>							
	Em						
Option 1	77	96	105	92	87	87	Slowly falling
Option 2	77	68	62	59	56	52	Falling at first then stable
Option 3	77	60	62	58	60	60	Slowly falling
Option 4	77	57	56	57	53	50	Slowly falling
<u>Employment at Dounreay</u>							
Option 1	2000	1900	1800	1700	1600	1500	Steady for Several years
Option 2	2000	900	700	500	500	500	Slowly falling
Option 3	2000	2000	1950	1750	1700	1600	Steadily falling
Option 4	2000	1300	1150	1000	900	700	Steadily falling
<u>Employment elsewhere in the AEA</u>							
Option 1	2000	1900	1900	1800	1600	1400	Steadily falling
Options 2 - 4(*)	2000	400	400	400	400	400	Stable

(\*) Note: The precise phasing of the run-down will need to be discussed with the AEA.

Description of options

- Option 1 UKAEA proposal. Continuing full R&D programme, with industry contributions. No rationalisation of European prototypes.
- Option 2 Dounreay plants close 1.4.89; main R&D programme replaced by £10m p.a. "informed customer" programme.
- Option 3 PFR continues till present fuel stocks used up (1993/4); reprocessing continues for a further 3 years. Main R&D programme replaced by £10m p.a. "informed customer" programme.
- Option 4 PFR closes 1.4.89; reprocessing continues till 1.4.92. Main R&D programme replaced by £10m p.a. "informed customer" programme.

Notes

- 1 All numbers are approximate.
- 2 Expenditure is in money of the day; assuming 4% p. a. inflation.
- 3 For Option 1, expenditure figures assume £11m contribution from CEGB in 1989/90 and £10m per annum from UK industry from 1991/92 onwards.
- 4 Options 2 - 4 will involve considerable restructuring for the AEA, affecting other sites and programmes. The AEA have not hitherto been able to provide a full analysis of the effects. The expenditure figures above do not include the cost implications of this restructuring.

Department of Energy  
June 1988



SECRETARY OF STATE FOR ENERGY  
THAMES HOUSE SOUTH  
MILLBANK LONDON SW1P 4QJ

01 211 6402

The Rt Hon Kenneth Clarke QC MP  
Chancellor of the Duchy of Lancaster  
Department of Trade and Industry  
1 Victoria Street  
LONDON  
SW1H 0ET

Note  
Spoke P. Smith (COE's  
office) and said that  
while I thought the PR  
would tolerate 48 rather  
than 50, she would not  
accept any lower number.

REC6  
28/6

28<sup>th</sup> June 1988

*Dear Ken,*

**RESEARCH COUNCIL, 29 JUNE: FUSION**

I have been thinking further about the line which you might take on fusion at Wednesday's Research Council.

As you know, I reached a personal understanding with Riesenhuber on a figure of 50 mecu for the "tail". He also agreed that the Presidency should take the lead in securing a consensus on this figure.

I believe that Riesenhuber gave this undertaking in good faith, and that he will make real efforts to secure this decision when he takes the Chair in the Research Council. We should, therefore, rely on him to do so, and second his efforts as necessary. Indeed, if all goes well, you may not need to say very much.

If, however, Riesenhuber simply cannot secure agreement on a tail of 50 mecu, we need to consider how to react. In my view, the case for reaching agreement at this Research Council is extremely strong. Apart from the risk of blame if we are perceived to have prevented agreement, there must be a real risk that we should not be able to secure even so large a tail as 50 mecu. We have no reason to expect help from the Greeks, and Riesenhuber may feel that his promise only covered the period when the Germans had the Presidency. We might well, therefore, not be able to get a figure even as high as 48 mecu, if discussions drag out.

In the last resort, therefore, if despite all efforts a consensus is only possible on a tail of 48 mecu, I do not believe that you should prevent agreement. We should not, however, go any lower than 48 mecu.

I am sending copies of this letter to the Prime Minister, the other Members of E(ST), to Sir Robin Butler and to Mr Fairclough.

*Yours  
Edward*

Allen Sykes

31 Charles II Street  
St James's Square  
London SW1Y 4AG  
01-930 6200

N L Wicks Esq <sup>or</sup>  
10 Downing Street  
London SW1A 2AA

22 June 1988

*Dear Nigel*

Resolving Scotland's Energy Dilemma

Thank you for your 13 June letter. <sup>at top</sup>

You and Michael Spicer are both making similar points concerning my original paper. You are saying that the case is interesting and well argued but that the main decisions fall primarily to British Coal and the South of Scotland Electricity Board. Accordingly you suggest that I put my ideas directly to them to see if they view them with favour. I am, with the help of Sir Alistair Frame, RTZ's Chairman, doing this but it is difficult for an outsider to successfully persuade two nationalised corporations and four Government Departments without some help.

Rather than write you a separate letter on all this I am enclosing a copy of my letter of today's date to Michael Spicer which covers nearly all of the points in your letter. The only point not covered concerns the realism of my estimates for coal and electricity supply and demand. While no outsider can be fully sure of the detailed facts, nevertheless, having carefully checked the facts with informed experts, I am quite happy that they are sufficiently correct to support the careful arguments which are built upon them. The arguments will continue to be valid even if the underlying facts were rather different.

Sir Alistair and I will do our best with the SSEB and perhaps British Coal but we do hope the Government will take more interest in the matter. Given the serious consequences to Scotland from not resolving the coal and electricity dispute, I do hope the arguments put forward in my paper will receive further consideration.

With kind regards

Yours sincerely

*Allen*

Allen Sykes

M Spicer Esq MP  
Parliamentary Under Secretary of State  
Department of Energy  
Thames House South  
Millbank  
London SW1P 4QJ

22 June 1988

Dear Michael

Resolving Scotland's Energy Dilemma

Thank you for your letter of 1 June. I apologise for not replying sooner but I have been out of the office a great deal of the time and I wanted to reflect on what you wrote.

I quite understand that what I have proposed in my Scottish paper requires the support inter alia of both British Coal and the SSEB. The reason I sent the paper first to Nigel Wicks in Downing Street and subsequently to you and later Cecil Parkinson (Nigel Wicks has sent a copy to Malcolm Rifkind), was because the solutions that I propose requires the full co-operation of your Department, the Scottish Office, the Treasury and the Department of the Environment. When one has proposals to make touching six or more Government and public sector parties, it is difficult to know where to begin, hence my starting off with Nigel Wicks.

The SSEB is only justified in making a substantial contribution to the redundancy of affected underground miners in Scotland if the Government (presumably advised in particular by the Department of the Environment and your Department) were to ensure accelerated planning permission for both extra opencast coal mining in Scotland, and the upgrading of the transmission links to England and Wales. Without such Government support SSEB and British Coal cannot resolve their dilemma.

In early July the three month truce between BC and SSEB is over. They must then try and resolve their differences as best they can. I had hoped that my suggestions, if they found favour in Government, could have resolved their differences to the clear advantage of all parties and most particularly to the advantage of Scotland. Accordingly I hope you will look again at my paper to see if the Government, i.e. the various major departments involved, could reach a common position. If they do not the dispute will continue to the disadvantage of all

contd.....

concerned, including the Government. SSEB can probably build a new coal terminal in Edinburgh within 18 months. Once they have done this there is no likely future for the Scottish underground mines. Scotland will then import coal which can be produced even more cheaply from the Scottish opencast reserves and British Coal will be left with many thousands of redundant miners but no contribution from SSEB. This outcome is to no ones advantage, so the alternative ought to be worth investigation.

Sir Alistair Frame and I will, however, follow your suggestion of trying to talk directly to some of the other parties. We expect to see the SSEB Chairman, Donald Miller, on his next London trip in mid July. I would stress, however, that with so many entities involved (four Government Departments and two nationalised industries), it is very difficult for outsiders, however sound their recommendations, to be effective. We have no direct interests in the outcome of the Scottish energy dilemma, but because we knew a good deal about the coal and electricity industries there we thought the Government, particularly given their difficulties in Scotland, would appreciate some practicable suggestions.

With kind regards

Allen Sykes

cc: N Wicks Esq

ENERGY: Poling Pt 13





*[Handwritten signature]*  
PAS AYV

10 DOWNING STREET  
LONDON SW1A 2AA

*From the Principal Private Secretary*

13 June 1988

*Dear Allen,*

Thank you for your letter of 6 May enclosing your views on how Scotland might become a major exporter of power. I am sorry I have not replied before now.

Your paper raises many interesting and challenging views. But as Mr Michael Spicer, Parliamentary Under Secretary at the Department of Energy, said in his letter to you, a key point is that the issues raised are primarily for the managements of British Coal and the SSEB. In particular, the suggestions about the future of the Scottish coalfield and the commercial relations between SSEB and BCC fall largely within the management responsibilities of those organisations and are not matters in which the Government would wish to intervene; for example, decisions about closures - which are central to your plan - are a matter for British Coal, and not for the Government and Ministers.

The SSEB and BCC management may be interested in aspects of your proposals in their commercial negotiations on future coal supplies. Indeed, the two industries are best placed to assess the consequences of their operations and the practicality of your proposals. You may therefore think that it would be useful for you to discuss your ideas with the SSEB and BCC. They will be in a position to confirm whether your estimates of future supply and demand are realistic; the need for open cast mining; and the prospects for greater inter-connector trading. In connection with this last point, you will no doubt have seen the statement in paragraph 51 of the White Paper on the Privatisation of the Scottish Electricity Industry (Cm 327) about the examination of the scope for strengthening inter-connector links so that trading can be maximised to the limits, justified commercially and economically.

*[Handwritten signature]*  
Nigel Wicks

N. L. WICKS

*[Handwritten mark]*

Allen Sykes, Esq.



CONFIDENTIAL



EU

bc BE

10 DOWNING STREET  
LONDON SW1A 2AA

*From the Private Secretary*

13 June 1988

*Dear Stephen,*

**FUSION**

The Prime Minister was grateful for your Secretary of State's minute of 3 June. She agrees reluctantly that 50 mecu seems to be the highest attainable figure for the "tail", and is therefore content for agreement to be reached at that level in the research council. The Prime Minister has also noted that your Secretary of State will be reporting further in due course on the position with South Oxfordshire and on the UK national fusion programme.

I am copying this letter to Private Secretaries to members of E(ST), Sir Robin Butler and John Fairclough (Cabinet Office).

*Yours,  
Paul*

**PAUL GRAY**

Stephen Haddrill, Esq.,  
Department of Energy.

CONFIDENTIAL

*cc*

CONFIDENTIAL

PRIME MINISTER

FUSION

Cecil Parkinson's minute of 3 June (Flag A) reports on the latest position on discussions with the Commission and the South Oxfordshire District Council about JET. You may like to refer back to his earlier letter of 30 March (Flag B) and your summing up of the E(ST) discussion on 26 January (Flag C).

Some progress has been made. Prospects for delaying restoration of the JET site to 2020 seem reasonable. And the Commission are making soothing noises about a joint programme for decommissioning and a reduction in the UK's Host Country Premium. But it is too early to judge what these various assurances will actually be worth.

But the immediate question is what line should be taken at the next Research Council at the end of June on the size of the 'tail' expenditure, and the extension of JET's statutes until 1992 (on which the UK currently has a reserve).

At E(ST) it was agreed that we should aim for a 'tail' of 100 mecu. At the last Research Council we stuck to our negotiating position of 98. Mr. Parkinson now says that he thinks 50 is the highest obtainable figure. Although he does not say so explicitly in his latest minute, I understand he envisages that if agreement on 50 is reached at the next Council, the UK would then lift its reserve on an extension until 1992.

I gather that neither the Treasury nor DTI propose to comment on this, and George Guise also has no comments.

Content with acceptance of 50 for the 'tail' and removal of the UK's reserve of an extension to 1992?

PRCG.  
PAUL GRAY  
9 June 1988

Jan - It is the best we  
can get

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~~RT~~

RT

Refer  
letter to PM from  
Sof State Energy dtd  
3/6  
+ E(ST) 1st Meeting

F 0301  
MR MONGER  
8/6

No. 10.  
Re see below.

FUSION

Mr Parkinson reports only limited progress on the remits he received from E(ST) in January. His statement that South Oxfordshire District Council's Chief Planning Officer foresees no difficulties in delaying restoration of the JET site for 20 years to 2020 is a welcome development, if it can be relied upon. However, minimal progress seems to have been made with the Commission on our payment of Host Country Premium for JET. Their offer to consider this "in the context of the next revision of the Fusion Programme" presumably relates to the five years 1992-96, when we hope to have ceased work on JET. It is not surprising that the Commission are holding out a prospect of some reduction in the Premium if they think this will lead us to agree to a substantial fusion programme for another 5 years.

2. Some progress will be achieved if the Fusion Programme tail can be increased to 50 mecu, but this is still only half the objective endorsed by E(ST). However, we have to recognise that our negotiating position in Europe is not strong. I believe Mr Parkinson intends to remove our formal veto on the extension of JET to 1992 if he can get agreement to a tail of 50 mecu; however, his minute does not state this explicitly.

3. All in all, we have gained little in exchange for consenting to extend JET for 2 years. However, I suspect that Ministers did not expect to obtain a materially better outcome when they reluctantly agreed at E(ST) that we should not ultimately exercise our veto. I doubt if the Prime Minister would wish to tell Mr Parkinson that he must renegotiate the deal with the Commission before our formal veto is lifted; no advice to No 10 therefore seems necessary.

Mr Grant

8/6  
a. McCallan  
Mr Neilson

J S Neilson  
J S NEILSON  
7 June 1988

You might like to note that Mr Parkinson is preparing to agree to extension of JET to 1992 at the Research Council at the end of June, on the terms set out in his minute. This might be said to be implicit in his minute; but it should have been explicit.

The Treasury are still considering the proposals on the tail query comment.  
I can do a proper note if you wish. 8/6

CONFIDENTIAL

MR WICKS

7 June 1988

SCOTTISH COAL INDUSTRY  
ALAN SYKES' PAPER

1. Sykes' paper imaginatively gives a solution to the current dispute between BC and SSEB.

He suggests that SSEB pay 'ex gratia' payments to BC to enable them to make redundancy payments and to close the inefficient mines leaving the opencasts to operate cheaply and efficiently.

The cheap opencast coal would be used to fuel the excess capacity power stations in Scotland, thereby enabling them to export power to England.

The interconnectors between Scotland and England together with the transmission links would need to be strengthened.

The overall aim is to make Scotland a third force in electricity generation in the UK.

2. The Department of Energy's reply is dismissive mainly because they have more facts at their disposal. The tone of their reply plus the draft reply from you to Sykes suggests that their reaction was one of non-acceptance of any suggestions made by outside persons who might directly or indirectly have a vested interest.

I believe they have missed or glossed over the value of the main thrust of the paper - creating a third generator of importance in the UK.

3. Talking to the Scottish Office, I find the SO/D/En/SSEB are having discussions regarding the economics of upgrading the Grid.

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- This will not be in the CEGB's interest because it would introduce a sizable non-fossil fuel competitor.
- This will probably not be in the Area Boards interest as their plans will be focussing more on building their own power stations.
- This may not be in D/Energy's interest as it might be an admission that they wished they had broken the CEGB into more than two units.

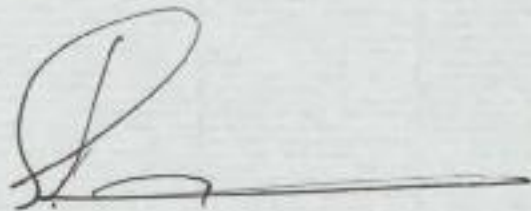
Within a few weeks the SO should be able to put forward a case for economically upgrading the Grid - to what level I don't yet know. They will wish to bid for monies in this current public expenditure review.

4. My gut feeling at the moment is that I will be actively encouraging 'economic' grid enhancement and even possibly condoning 'uneconomic' over-enhancement. There is a window of opportunity here that we may choose not to miss. I believe the threat of a true third force in generation, close to cheap (in the future) coal, hydro-electricity and North Sea gas may well be what is needed to truly stimulate competition in the south.
5. I believe that your eventual reply to Sykes should be less dismissive than that drafted by D/Energy. It should confirm that the Government is rightly considering that the dispute between BC and SSEB is left to those two companies. It should also, however, indicate that the suggestion of upgrading the Grid is a good one and is indeed being looked into by the Scottish Office and the Department of Energy. (The fact that the Scottish Office and the Department of Energy are looking into this matter is in the public domain as it is referred to in the Scottish White Paper on privatisation of electricity).

CONFIDENTIAL

CONFIDENTIAL

6. I will keep in close touch with the Scottish Office and keep you appraised.

A handwritten signature in black ink, appearing to be 'G. Bourne', with a long horizontal line extending to the right.

GREG BOURNE

CONFIDENTIAL



CABINET OFFICE

70 Whitehall London SW1A 2AS Telephone 01-270

0067

Fax No : 270 0462

CONFIDENTIAL

Hw 0944

Mr P Smith  
PS/Chancellor of the Duchy of Lancaster  
Department of Trade and Industry  
1 Victoria Street  
London SW1

6 June 1988

Dear Peter

FUSION

WITH PG?

You asked for advice on the Secretary of State for Energy's minute of 3 June to the Prime Minister.

It was always recognised that the set of objectives agreed by E(ST) on 26 January amounted to a tall order. As was forcibly brought home to us at the Research Council on 11 April, the UK did not have much leverage which it could bring to bear. The Department of Energy has stayed in close touch with us over the conduct of the negotiations since then. The package of conclusions which Mr Parkinson outlines seems to us in all the circumstances to be reasonable.

The only one of these which will be for decision at the Research Council on 29 June is the size of the "tail". The figure of 50 mecu agreed between Mr Parkinson and Riesenhuber is a reasonable achievement against the 20 mecu originally proposed and the sharp setback to 35 mecu from the 48 mecu which was available at the start of the last Research Council. We have made it abundantly clear to the Germans that we do not feel ready to go below that figure of 50 mecu now. It is therefore up to the German Presidency to bring the Commission and other Member States along with this figure. They should be able to do this. There was some grumbling from the French at the end of last week and a preference from them for 48 mecu but I doubt that they will press to extremes such a minor discrepancy. I therefore hope for a straightforward discussion of this issue at this month's Research Council.

The above, which I have discussed with John Fairclough, is directed solely to the international aspects of fusion. We shall be looking forward with considerable interest to the Department of Energy's promised further report on the national fusion programme.

In view of your discussions with Paul Gray at No. 10 I am copying this letter to him as well as to the Private Secretary to Lord Young, the Private Secretary to Mr John Butcher, the Private Secretary to Sir B Hayes, Mr Murray and Dr Keddie.

R E ESCRITT

ceBt

Prime Minister

## FUSION

In my minute to you of <sup>19</sup>30 March, I reported on progress since our discussion of fusion in E(ST) on 26 January. In brief, the Commission have recognised the case for Community support in due course for some kind of joint programme in relation to the first steps of JET decommissioning. They are also prepared to consider a reduction in the UK's Host Country Premium in the context of the next revision of the Fusion Programme, which will get under way next year. While we shall not be able to judge the specific value of these assurances for some time, I think it is useful to have obtained them. The Commission undoubtedly see such assistance as part of a continuing UK involvement in the Community fusion programme. For our part, we have made it clear that there can be no automatic development of the programme, and that careful assessment of prospects for success is an essential pre-requisite for the loading of tritium into JET. As I mentioned in my earlier minute, the Commission have agreed to join us in inviting the JET Council to formulate clear technical milestones by which progress on JET can be judged. I have also registered with Commissioner Narjes, with whom I held discussions last week, our interest in the composition of a Panel of distinguished international experts which will be appointed, probably next year, to carry out a peer review of the fusion programme.

You will recall that a key factor in reducing the costs of decommissioning JET will be consent by South Oxfordshire District Council to extend the requirement for restoration to greenfield conditions from 2000 to 2020. I myself recently met the Chief Planning Officer during a visit to Culham. He foresaw no difficulties in obtaining an extension, but emphasised that there would have to be a formal planning application. The UKAEA are currently preparing this.



I have concluded in the light of my exchange with Narjes that we have now taken the Commission as far as we can in the directions indicated by E(ST). There remains the question of the "tail". It was clear from the last Research Council that we were completely isolated in our wish to achieve a tail of 98 mecu. Indeed, the German Presidency withdrew its earlier proposal of 48 mecu (which, it seems, had not been authorised by Bonn) and tabled one of 35 mecu which all except ourselves were prepared to accept - the Commission wanted 20 mecu. I have pressed on Narjes the need to move towards our position. I have also discussed the matter with my German colleagues. In the light of those exchanges, and of indications of other member state positions, I am clear that 50 mecu is the highest attainable figure. I have spoken to Riesenhuber the German President of the Research Council and he is ready to promote agreement at that level. I propose that we accept the figure.

We shall continue to press the Commission to develop ways and means of providing tangible assistance from the Community on decommissioning costs; and will now take steps to firm up the agreement on JET milestones. I will report further in due course on the position with South Oxfordshire. I also propose to report back to E(ST) at the end of the month on the UK national fusion programme.

I am sending copies of this minute to Kenneth Clarke, the other members of E(ST), to Sir Robin Butler and to Mr Fairclough.

S/R

Secretary of State for Energy

(Approved by the Secretary of State and Signed in his absence)

3 June 1988



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Prime Minister

G. Grieve

FAST REACTOR

At our meeting on 25 April, we had a preliminary discussion of the way forward on the fast reactor.

As you will see, I do not believe that the AEA's proposals can be supported, though I consider that we should maintain a modest R&D programme of about £10 million to retain a position in the technology, seeking as large a contribution as possible from the electricity supply industry and BNFL. In energy policy terms we are not getting value for money from the Dounreay plants and, if the decision were to be taken on these grounds alone, I would recommend closure. I recognise, however, the devastating effect this would have on Caithness and I have therefore put forward options for phasing the closure. The choice we face is, I think, essentially a political one.

Prime Minister

I think that the next step is to discuss this paper with Mr Parkinson, Mr Righton and Mr Lawson.

Agree?

N.C.U 6.6

for first week in July on the

Fast Breeder Reactor, + say D/EA will circulate a paper a few days before the meeting.

N.C.U 7.6

Yours

a paper a few days before the meeting.

say D/EA will circulate a paper a few days before the meeting.

Agreed with S. Brand that D/EA will circ pp before the meeting. N.C.U 7.6

Secretary of State for Energy  
3 June 1988  
(Approved by the Secretary of State and signed in his absence)

NB. Mr Parkinson does not want this covering note circulated

## THE FAST REACTOR PROGRAMME

## Introduction

When the Government last reviewed this programme in 1982, it concluded that, while it would be of major strategic significance for energy supplies, the ordering of a commercial series of reactors was not likely before the earlier part of the next century. It was decided to continue with a substantial development programme, based on international collaboration, and Nigel Lawson made an announcement to this effect. Events since 1982 are summarised in Annex I, which also sets out the strategic case for the fast reactor. Expenditure in 1987/88 was £115m, of which the Department paid £75m: it is the Department's largest R&D programme.

2. Some £3.5bn in current prices has been spent by the UK in developing this technology since 1951 and further large sums have been spent by other countries. We need to consider whether we can, at economic cost, retain the fast reactor technology for the UK.

3. In recent years the case for continuing with a significant UK effort has become much weaker. It is hard to

see commercial deployment of fast reactors for another 25-30 years, or even longer. Low uranium prices make it very difficult for them to overcome their inherent capital cost disadvantage in relation to the PWR, and utilities do not see a need for them for some decades.

4. Whilst the Government's electricity privatisation proposals have not affected the substance of the case for and against continuing expenditure, they have brought the issue into sharper focus. Lord Marshall has told the UKAEA that the CEGB wishes to phase out by 1 January 1990 its contribution (currently £28m per annum) to the programme. The prospects for a contribution from the eventual privatised industry at anything like this level are very poor. HMG is therefore likely to have to finance most of any large continuing R & D programme, should there be one.

#### Views of the UKAEA

5. I have discussed the position at length with the Chairman of the UKAEA, who has made proposals (see Annex II) for continued investment in fast reactor R&D up to 2005, and in the construction of a European Fast Reactor (EFR) from 1995. These would involve a leading role for Government, and major public expenditure - a further £700-900m on the R&D alone. In addition, some £800m would have to be invested by UK concerns in EFR. Even then, his strategy

*European  
Fast  
Reactors*

would involve shedding 1,000 jobs by 1992 (500 at Dounreay) from the present 4,000 working in the AEA as a whole on the fast reactor. The financial and employment implications are set out in Annex III, Option 1.

6. The AEA wish to keep going because of the programme's strategic importance, and in order to preserve the option of British industry getting a good share of any eventual commercial programme. Their proposals are, in my view, unrealistic. First, it is not clear that the economies assumed by the AEA through rationalisation can be achieved. Though some progress has been made, the French and Germans have still not agreed for instance in which of their countries the next demonstration reactor should be located. Secondly, the prospects for the UK manufacturing industry are very limited. British industry is likely to be much more interested in the PWR programme than in a share of perhaps two fast reactors over the next 30-40 years. Indeed, the length and uncertainty of the timescale for development accounts for the reluctance of the electricity industry, and of manufacturing industry, to make any large continuing contribution to research. In no sense do they see it as being "near market". They, and BNFL, may decide to spend relatively small sums to maintain a watching brief, or perhaps to participate in international work in a limited way, but this is not likely to amount to more than single

million figures: by comparison, the AEA's proposal involves the UK investing some £800m in EFR.

7. As a variant on their proposal, AEA have supplied figures for a lower-cost option, which would involve restricting UK investment in EFR to £500m; the R&D programme would however be unaffected. This is open to the same basic objections.

8. I have discussed the possibility of a contribution from BNFL, who would like the fast reactor to continue, as recycling of plutonium in the fast reactor constitutes the main rationale for reprocessing. (By the year 2000, we shall have enough plutonium for the initial fuelling and sustaining of about 5 commercial-scale fast reactors. Thereafter there will inevitably be a growing stockpile of plutonium for which there is no early requirement.) BNFL say it could also affect prospects for further THORP business if the Japanese thought that our commitment to nuclear was weakening. On the other hand, they cannot quantify this claim, and in the light of our privatisation proposals, the Government's commitment to nuclear can scarcely be in doubt. In any event, BNFL do not seem prepared to commit more to the fast reactor programme than the £2m or so which they are currently spending.

9. The AEA proposals cannot be sustained in energy policy terms. They are designed to maintain a leading position in a technology which is not going to be needed for decades. The future electricity industry can be expected to wish to licence the technology, as and when it needs it. They clearly do not intend to lock up resources of their own on a large scale, against that day. The same, a fortiori, is true of UK manufacturing industry. In these circumstances, it is difficult to see what we would get for the further expenditure which AEA propose. Undoubtedly, there would be R&D gains, but in the absence of any obvious UK beneficiary other than the AEA itself, we would not be getting value for money.

#### Closure of Dounreay

10. Given the weakness of the energy policy case I have considered the implications of closing down Dounreay forthwith, and all other fast reactor work except for a programme of about £10m to maintain a position in the technology and keep abreast of developments. This course would leave the option of licensing the technology in due course, probably from Japan or France. Decommissioning and redundancy costs would initially be high under this option, but would fall thereafter. The financial and employment implications of this are set out at Option 2 of Annex III.



A phased approach

11. I am naturally in no doubt of the extremely serious consequences for the Caithness economy of closing Dounreay. I have therefore considered the cost and implications of a phased withdrawal from fast reactor activity on the site. Two broad possibilities are:

(i) continuing with PFR until the present fuel stocks are used up (1993/4); and with reprocessing for 3 years after closure of PFR in order to assist with PFR decommissioning; the main R&D programme would be replaced, as under option 2, by a £10m "informed customer" programme;

(ii) PFR would close on 1.4.89; reprocessing on 1.4.92; a £10m programme as before.

These are Options 3 and 4 of Annex III.

12. Closure of the Dounreay plants will of course involve significant decommissioning costs. These will have to be borne sometime; PFR is expected, in any case, to reach the end of its useful life in about another 10 years. These costs will be heaviest in the early years under Option 2 which involves the early closure of all the Dounreay Plants

and they will also be significant in Option 4 which involves the early closure of PFR. These options incur the heaviest redundancy costs - decommissioning provides far fewer jobs. Option 3 postpones decommissioning costs, and redundancies. Indeed for the years immediately ahead it is, in terms of employment at Dounreay, not much different from AEA's preferred strategy. There would however be severe employment consequences at other AEA sites, with Risley (Warrington) being the hardest hit. Up to 1,800 jobs could be lost directly, with probable knock-on effects on other areas of the Authority's work. Managing these redundancies would be a severe challenge for the AEA with whom we would need to discuss the phasing. The precise phasing of closure at Dounreay would need to be determined after consultation with the health, safety and environmental regulatory authorities. About 500 jobs would remain at Dounreay under any option, to deal with site clearance and maintenance tasks.

#### The European Collaboration

13. I have also considered the effect of reduction on our collaborative partners, by whom it will be seen as a serious setback. After 2-3 years of uncertainty over design work, the recent utilities (EFRUG) initiative referred to in Annex I has shown a way forward. There has been considerable progress in putting together over 80

collaborative R&D packages. For the FRG authorities, the fast reactor is in the front line of the nuclear debate: they do not want to give the victory to the Greens, or to the anti-nuclear SPD. They are currently striving to keep alive the prototype Kalkar reactor which the Land Government is refusing to license. The French would see withdrawal as prejudicial both to the collaboration and the general nuclear climate, on which, with their large nuclear dependence, they are very sensitive.

14. I shall in due course wish to discuss the implications of our decisions with the French and German authorities, for whom the presentation of our position will be important. It may prove possible, on the basis of a continuing programme, even though massively reduced, to avoid formal withdrawal (of which, technically, we need to give a year's notice). I should want to enter discussions with our partners before any announcement of our decisions.

#### The EDRP Inquiry

15. The Secretary of State for Scotland now has before him the Report on the AEA's and BNFL's application for outline planning consent for a European Demonstration Reprocessing Plant at Dounreay. While it now seems highly improbable that such a plant will be required for many years, the effect of his decision on the nuclear debate will

be important, not least because of its conjuncture with the present review.

#### Conclusion

15. The case for early development of the fast reactor has weakened further since 1982. Lord Marshall, a strong supporter of the fast reactor, does not see series ordering before 2040. There is no clear prospect of benefit from the forward programme recommended by the UKAEA. Current levels of expenditure on the fast reactor cannot be justified on energy policy grounds. We expect to be able to license the technology as and when it is needed. Radical reduction involving closure of Dounreay would however have serious implications for Caithness, for the AEA, and for our position in the European Collaboration. A phased approach to closure would help mitigate the consequences and a residual R & D programme of £10m would allow us to retain a modest position in the technology in which we have invested so heavily over the years. It may prove possible to secure a contribution from the electricity boards and BNFL towards this residual programme, following the CEGB's withdrawal in 1990. Expenditure at this level might provide the basis for limited continuing association with the fast reactor collaboration, though this would be for negotiation with our partners.

17. As I have said in paragraph 9 above, the AEA's proposals cannot be sustained in energy policy terms and Option 1 should not therefore be considered further. I believe we should retain a modest R & D programme of up to £10 million p. a. to retain a position in the technology, and seek as large a contribution as possible from the electricity boards and BNFL. This is common to the remaining Options (2-4). The choice between these options is essentially a political one, which we should discuss.

SECRET SECRET

## ANNEX I

## FAST REACTOR

## THE 1981 MINISTERIAL REVIEW AND DEVELOPMENTS SINCE THEN

Ministers reviewed policy on the fast reactor in 1982. It was decided that a substantial UK development programme, based largely on the Atomic Energy Authority's (AEA) site at Dounreay, should continue; but, in the light of the longer timescales available before fast reactors would be needed, the Government wished to explore the potential for collaboration with other countries.

2. Following the review, the UK negotiated entry into the European Collaboration with the signature of the inter-Governmental Memorandum of Understanding (MoU) in January 1984 by the UK, France, Germany, Italy and Belgium. In 1985 the AEA and British Nuclear Fuels (BNFL) applied for outline planning permission for a European Demonstration Reprocessing Plant (EDRP) for processing fast reactor fuel at Dounreay. The Inquiry Reporter's recommendations were submitted to the Secretary of State for Scotland before Easter.

3. Total expenditure on the programme has been cut by some 40% in real terms since 1981. The CEGB became joint funders of the programme in April 1987, contributing some 30% to the programme's net costs. As a result of this and earlier reductions, the Government's own contribution has fallen by nearly 50% in real terms since 1981. It now stands at £75 million per annum. The CEGB has recently informed the AEA that it wishes to phase out its contribution by 1 January 1990.

The Strategic Case for the Fast Reactor

4. The 1982 policy review concluded that the fast reactor would be of major strategic significance for the UK and the world's future energy supplies and the UK was among the world leaders in its development. The strategic case rests upon the UK's ability, using fast reactors, to produce electricity

- a) without recourse to imported ore or fossil fuel and
- b) at a cost at maximum not much more than present best generating costs

Fast reactors extract 50 times more energy from uranium than can thermal reactors. To do this, they need reprocessing plants to extract the plutonium which is bred in the core. Reprocessing is therefore an integral part of the fast reactor system.

5. Behind the strategic case is the fact that the UK has large stocks of depleted uranium from thermal reactors - enough, if used in fast reactors, to produce 500 years of electricity at current rates of consumption. These stocks, together with an initial charge of plutonium (of which we currently have enough stocks for three commercial-size fast reactors and this stockpile is being added to at a rate of 1.5 - 2 tonnes p.a.), mean that a programme of fast reactors could be implemented without the need to import more uranium.

6. On the basis of present designs, the specific capital cost (£ per KW of output) of a fast reactor would be some 30% higher than that of PWRs. Unless these capital costs can be brought down significantly, the economic case for fast reactors rests on the running costs being lower. This in turn depends on the price of uranium rising significantly.

Developments since 1982

## (i) Fossil Fuel Prices

7. The outlook for oil and gas prices has changed since the time of the last review. The high oil price between 1979 and 1985 encouraged exploration and new discoveries were made. It is now estimated that the world has enough to last another 45 years at current rates of consumption. In 1982, the estimate was less than 30 years. World oil reserves are also more widely spread. Forecast prices for oil and gas, and coal, are therefore lower.

## (ii) Uranium and the outlook for nuclear power

8. Lower fossil fuel prices, together with other factors such as the effect of the Chernobyl accident and the lowering of the forecasts for the demand of electricity, have led to a slackening of the pace of development of nuclear power. Forecasts of demand for uranium have therefore fallen since 1982. On the supply side, new deposits have been found, for example, in Canada. At current rates of consumption, there is enough uranium to fuel thermal reactors, at increasing cost, for at least 100 years.

## (iii) Fast Reactor Cost Reduction

9. The design and development work that has been undertaken since 1982 has led to significant reductions in the costs of the fast reactor system. The most recent study by the UK industry estimated that the fast reactor's generating cost (pence per kWh) would be 1.2 times higher than that of a PWR.



(iv) The European Collaboration

10. France, which has the technological lead, brought the world's first commercial-scale fast reactor, Superphenix, to full power at the end of 1986 but has since hit a severe technical problem with a leak of sodium from the fuel storage vessel. The reactor is not expected to restart until the Autumn at the earliest. The French electricity utility has put back plans for a second station by 5 years. The French development programme has been reduced although it remains much larger than the UK's.

11. Germany has been unable to commission its 300 MW prototype fast reactor, started in 1975, because the local licensing authority is controlled by anti-nuclear Social Democrats. A decision is not expected until after the local elections in 1989. Nuclear power in Germany has taken a severe knock because of the Transnuklear affair.

12. In Italy, the referendum of last Autumn forbade the electricity utility, ENEL, from participating in nuclear projects overseas (as it had done in Superphenix). This makes it difficult for Italy to take an equity stake in a European demonstration reactor.

(v) The EFRUG Initiative

13. Due to disagreement between the French and Germans about the siting of the first of the three demonstration reactors envisaged at the time of the MoU, the European Collaboration reached an impasse. In attempt to take things forward, the European Fast Reactor Utilities Group (EFRUG - of which CEGB is a member) has initiated work on a common European model - EFR, the European Fast Reactor. This will involve the design companies and the R&D organisations in a five to six year programme of work to produce a design acceptable to the utilities. This will take into account and develop the best features of current designs (CDFR in the UK, SPX 2 in France and SNR 2 in Germany).

14. The national design and R&D organisations will need to establish formal links if the opportunities offered by full collaborative working are to be taken. Agreements covering working arrangements and the transfer of intellectual property have been negotiated and are nearly ready for signature. Both the AEA and the National Nuclear Corporation have asked for Governmental approval for them to sign.

(vi) European Demonstration Reprocessing Plant (EDRP) Application

15. The AEA and BNFL's joint application for outline planning permission for EDRP at Dounreay was made to enable the UK to bid, within the Collaboration, for the reprocessing plant that would be necessary if the three demonstration reactors were to be built. This is now most unlikely to happen in the timescale envisaged at the time of the application.

(vii) Other countries

16. Japan, the USSR and the US continue to fund large fast reactor programmes. Japan in particular is spending about four times as much as the UK at present. It is building a prototype reactor which is due to be commissioned in 1992 and plans to build a commercial-scale reactor thereafter. Its long-term aim is to introduce fast reactors commercially by about 2020 - 2030.

Department of Energy  
June 1988

UKAEA PROPOSALS FOR TAKING FORWARD FAST REACTOR DEVELOPMENT  
IN EUROPE

The UKAEA believes that electricity utilities will require commercial fast reactors to be available by 2020, and possibly somewhat earlier as an option to replace the current series of nuclear power stations. (Some PWR stations in France will be 30 years old by 2010, as will some of our AGRs.)

2. On the assumption that it would take 10 years to design, obtain planning consent and then build a large station, the decision to order the first of a commercial series of stations would have to be taken around 2010. Allowing 5 years to assimilate the lessons of a Demonstration Station would require such a station to be commissioned in 2005 and ordered, therefore, in 1995. This is close to the currently envisaged timescale for the EFRUG initiative and the EFR.

3. The UKAEA recognises that much remains to be done within the European Collaboration to achieve the most efficient use of resources and the elimination of duplication in both the design and the R&D organisations. This has not been achieved to date because of the lack of a clear lead from the utilities, rivalries amongst the industrial parties and an unwillingness on the part of the R&D organisations to compromise their bargaining positions in the absence of firm agreements about the division of work.

4. The UKAEA proposal is aimed at:

- i. securing a commitment that EFR will be built in the timescale that the Authority thinks is required;
- ii. achieving a fully-integrated European programme with a unified management system for both the EFR project and the supporting R&D.

#### The European Fast Reactor (EFR)

5. EFR is estimated to cost about £2.5 billion. If the UK were to take a one-third stake (as would be envisaged if equity amongst the main R&D partners were to be maintained) the UK would have to contribute about £800 million. The UKAEA thinks that this would be found largely by industry (there would be a return in the form of electricity generated), but believes there is a case for the first of a kind costs of EFR, estimated at 20%, being met by Governments on the grounds that this would be the final establishment of a strategic option.

6. If, despite the promised return, UK industry was unwilling to provide £800 million, a lower figure of £500 million would give the UK a one-third share of the Nuclear Steam Supply System (NSSS) of EFR and maintain the UK's position in fast reactor technology, with full sharing of design and R&D information across the Collaboration. A figure lower than this might also be negotiated, but would adversely affect the UKAEA's and NNC's ability to obtain knowledge and expertise from the other major countries in the Collaboration, and the prospects for UK industry.

#### The European R&D Programme

7. The UKAEA envisage the R&D programmes of the members of the Collaboration being rationalised and the total size reduced to the extent that the annual rate of expenditure would fall from about £300 million at present to £150 million by 1995 and £100 million by 2000. (All expenditure figures are in 1988/9 prices.) The UK's share of this would be about £50 million p.a. in 1995 and £30 million in 2000. This would however depend upon a full rationalisation, including the closure of all but one of the prototype reactors - PFR, Phenix and the completed but not yet operational SNR-300.

8. The total cost of the UK R&D programme to 2005 is estimated by the UKAEA on this basis to be £700 million and £900 million if all three prototypes keep operating but the programme is otherwise rationalised. These costs do not include any further work on fuel reprocessing (the PFR fuel

reprocessing plant being assumed to close in 1989), nor do they include the costs of running Superphenix, which are assumed to remain with its owners (French, German and Italian utilities).

#### Funding the UK R&D Programme

9. The UKAEA argues that, since the R&D spend will be directed at the needs of the EFR project, the industrial companies and the ESI should take on an increasing share of the programme from 1990 onwards. (This would have to be negotiated by the UKAEA or Government but the agreed amounts would have to be added to the costs for industry of investing in EFR.)

10. The Department has assumed, for the purposes of estimating the effects on public expenditure in Annex III, Option 1, that industry will steadily take over the R&D funding leaving some E10 million p.a. coming from Government, essentially for safety work, by 2005.

Department of Energy  
June 1988

## ANNEX III

## FINANCIAL AND EMPLOYMENT IMPLICATIONS OF OPTIONS

	1988/89	89/90	90/91	91/92	92/93	93/94	Subsequent trends
<u>Department of Energy expenditure</u>							
	£m						
Option 1	77	96	105	92	87	87	Slowly falling
Option 2	77	68	62	59	56	52	Falling at first then stable
Option 3	77	60	62	58	60	60	Slowly falling
Option 4	77	57	56	57	53	50	Slowly falling
<u>Employment at Dounreay</u>							
Option 1	2000	1900	1800	1700	1600	1500	Steady for Several years
Option 2	2000	900	700	500	500	500	Slowly falling
Option 3	2000	2000	1950	1750	1700	1600	Steadily falling
Option 4	2000	1300	1150	1000	900	700	Steadily falling
<u>Employment elsewhere in the AEA</u>							
Option 1	2000	1900	1900	1800	1600	1400	Steadily falling
Options 2 - 4(*)	2000	400	400	400	400	400	Stable

(\*) Note: The precise phasing of the run-down will need to be discussed with the AEA.

Description of options

- Option 1 UKAEA proposal. Continuing full R&D programme, with industry contributions. No rationalisation of European prototypes.
- Option 2 Dounreay plants close 1.4.89; main R&D programme replaced by £10m p.a. "informed customer" programme.
- Option 3 PFR continues till present fuel stocks used up (1993/4); reprocessing continues for a further 3 years. Main R&D programme replaced by £10m p.a. "informed customer" programme.
- Option 4 PFR closes 1.4.89; reprocessing continues till 1.4.92. Main R&D programme replaced by £10m p.a. "informed customer" programme.

Notes

All numbers are approximate.  
 Expenditure is in money of the day: assuming 4% p. a. inflation.  
 For Option 1, expenditure figures assume £11m contribution from CEGB in 1989/90 and £10m per annum from UK industry from 1991/92 onwards.  
 Options 2 - 4 will involve considerable restructuring for the AEA, affecting other sites and programmes. The AEA have not hitherto been able to provide a full analysis of the effects. The expenditure figures above do not include the cost implications of this restructuring.

Department of Energy  
 June 1988



SECRETARY OF STATE FOR ENERGY  
THAMES HOUSE SOUTH  
MILLBANK LONDON SW1P 4QJ

01 211 6402

Nigel Wicks Esq CBE  
Principal Private Secretary  
10 Downing Street  
LONDON  
SW1A 2AA

2 June 1988

Dear Nigel,

*In Box* I enclose a paper and covering letter from my Secretary of State to the Prime Minister on the Fast Reactor.

It was agreed at the earlier meeting that if the Prime Minister was content with the paper it would be circulated to the Chancellor and Malcolm Rifkind prior to a meeting with the Prime Minister. Such a meeting will not, of course be possible until after 15 June when Mr Parkinson returns from his visit to the Far East. In view of the sensitivity of the subject we would not circulate the paper far in advance of the meeting and it would be for the eyes of Ministers only. The Secretary of State would be grateful if you would also not copy the attached note.

Yours sincerely,

*Stuart Brand*

STUART BRAND  
Private Secretary



ENERGY: phy

THE UNIVERSITY OF CHICAGO

PHYSICS DEPARTMENT

1964

PHYSICS DEPARTMENT



23/6



SECRETARY OF STATE FOR ENERGY  
THAMES HOUSE SOUTH  
MILLBANK LONDON SW1P 4QJ  
01 211 6402

*The Baron (Policy Unit)  
I find it difficult  
to fault the general  
 thrust of this analysis,  
 though there are  
 questionable bits.  
 What do you think?*

Nigel Wicks Esq  
Principal Private Secretary  
10 Downing Street  
LONDON  
SW1A 2AA

1 June 1988

N.L.W.  
2.6

*Dear Nigel,*

**PAPER BY ALLEN SYKES - SCOTTISH COAL INDUSTRY**

Thank you for your letter of 13 May.

Officials here have looked very carefully at Mr Sykes' paper and have prepared the attached briefing note in discussion with the Scottish Office.

In short, while we agree that further closures in the Scottish deep mine sector are likely, if not inevitable, his assessment of the likely market for coal in Scotland and in particular power station demand/supply appears over optimistic. This, in turn; seems likely to negate the central argument of his paper for a significant increase in Scottish opencast output to offset the loss of deepmined output which he considers uneconomic.

There are a number of other factors which he does not fully take into account. In particular, sour gas from the Miller field is likely to be burnt at Peterhead Power Station. This would feed the Scottish grid with the equivalent of some 4 million tonnes of coal per year and effectively eliminate Scottish power station coal demand, except for plant outages and sales through the interconnector. To be fair to Mr Sykes, this has so far received little publicity and its implications are not widely understood. Nevertheless it means that he has substantially over-estimated likely coal demand and the need for additional opencast resources. One further consequence is that his idea of an ex gratia payment to miners, funded by SSEB, to compensate for deep mine redundancies is unlikely to prove feasible; the SSEB are unlikely to be interested since they have good alternative fuels to home-produced coal. We also very much doubt that such a scheme could be introduced without creating a precedent.

There are a number of other significant variables likely to affect Scottish electricity demand/supply, in particular the rate of commissioning and decommissioning of nuclear stations. This is reflected in SSEB's desire to conclude short term coal supplies contracts rather than the longer term contracts Mr Sykes suggests.

Moreover, we do not agree that all the deep mines will necessarily prove unprofitable. The Castlebridge part of the Longannet Complex should be capable of producing coal at £30 per tonne; less if flexible working is adopted - the workforce have expressed an interest. At this price it may well be competitive with imports in the medium term.



In our view Longannet coal, existing opencast and licensed coal and imports, which the SSEB have already started, could meet Scottish coal demand for electricity generation in the early 1990's, which at around 3.5mt will be considerably lower than Mr Sykes estimates. The substantial expansion Mr Sykes suggests for opencast would therefore be unnecessary. We also believe that if it were linked with the complete closure of the deep mines, a substantial expansion would be difficult to achieve, at least without radical changes in the law. Local authorities are the planning bodies responsible for approving opencast sites and they may well in those circumstances be sympathetic to the deep mines.

Our most serious reservation, however, is that Mr Sykes argues for Government to intervene in the current SSEB/BCC negotiations with the aim of implementing his schemes. This runs completely counter to the Government's policy of allowing market forces to operate freely within the energy industries, and we would advise strongly against any intervention. The Government would, for instance, have to insist that British Coal accept our view on the future size and shape of the Scottish coal industry and the price it should offer the SSEB. Such behaviour would be inconsistent with Ministers' previous stance and statements, and it could cause considerable political difficulties if the Government were seen to be insisting on deep mine closures in Scotland. There is every reason to stick to the line we have taken so far; that these are matters for British Coal or SSEB managements.

For much the same reason we doubt that it would be profitable for Ministers, especially the Prime Minister, to become involved. Mr Spicer has already written to Mr Sykes (copy attached), stressing our view that his paper raises matters which are primarily for the industries to resolve and suggesting that he pursues any discussions with them direct. I attach a draft reply which follows the line taken by Mr Spicer and brings out some of the more practical issues which the industries will be seeking to address in their negotiations.

If Mr Sykes' ideas are raised in the House I would suggest that the Prime Minister sticks to the line that they are matters for British Coal and SSEB management.

I am copying this letter to David Crawley (Scottish Office), Jill Rutter (Chief Secretary's Office), and Greg Bourne (No 10 Policy Unit).

*Yours sincerely,*  
*Stuart Brand*

**STUART BRAND**  
Private Secretary



PARLIAMENTARY UNDER  
SECRETARY OF STATE

Allen Sykes Esq  
31 Charles II Street  
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LONDON  
SW17 4AG

DEPARTMENT OF ENERGY  
THAMES HOUSE SOUTH  
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1 June 1988

*Dear Mr Sykes*

**RESOLVING SCOTLAND'S ENERGY DILEMMA**

Thank you for your letter of 13 May enclosing a copy of your paper about resolving Scotland's energy dilemma. I found the paper most interesting and well argued.

As I am sure you appreciate, the suggestions you make for the future of the Scottish coalfield, and particularly those about commercial relations between the SSEB and the BCC, largely fall within the management responsibilities of those organisations and are not matters in which Government would intervene. Decisions about closures are, for example, a matter for British Coal.

At this stage it may be more profitable for you to discuss your ideas in detail directly with the SSEB and British Coal rather than with me, though I do always find our meetings very stimulating.

*Yours Sincerely,  
Chris Smith*

**PP MICHAEL SPICER**

(Approved by the Minister  
and signed in his absence)

## ANNEX A

## ANALYSIS OF "MAKING SCOTLAND A LOW COST POWER PRODUCER AND A MAJOR EXPORTER"

Mr Sykes' paper provides a plan for enabling the Scottish coalfield to provide low-cost coal to the SSEB (South of Scotland Electricity Board); for dealing with the consequential deep mine redundancies and for increasing the possibility for electricity export to England to provide a greater market for coal. We will first summarise Mr Sykes' arguments and then point out where our views differ from his.

Summary of Mr Sykes' Arguments

Mr Sykes argues that the cost of coal produced at Scottish deep mines is far too high ever to be attractive to the SSEB, since the SSEB has the option of importing coal. This has become plain during the present prolonged price negotiations between the SSEB and the BCC, of which he gives an account. The deep mines should therefore be closed and the SSEB should depend exclusively on Scottish opencast resources, which can produce at import competitive prices. More generous redundancy terms than at present (Mr Sykes estimates £42m) should be paid for by the SSEB as a premium or ex gratia payment for the switch to opencast. The scheme should be supported and administered by Government. In Mr Sykes' view his scheme would set no precedent for England and Wales.

Mr Sykes sees Scottish domestic coal demand as 4.5mt. In addition he sees a profitable new market for export sales of Scottish electricity via an interconnector system expanded from 1,400 MW to 4,400 MW. This would increase the market for opencast coal to 7.5mt. The Government should support and expedite British Coal's planning permission for the additional 4.5mtpa of opencast coal.

Analysis

## a) BCC/SSEB negotiations

Mr Sykes account of the SSEB/BCC negotiations is broadly correct in para 2. Those negotiations have not yet reached any conclusion; there seems to be some measure of agreement about the price for the current year but not on the duration of any agreement or the formula for future prices. The SSEB want a short agreement with sharply reducing prices, the BCC want a longer term arrangement with prices linked to the RPI. The present interim arrangement expires on 9 July.

b) Demand for Scottish coal

Mr Sykes is wrong in foreseeing a 4 mtpa home market for Scottish Coal; that demand will probably be met within about 3 years by burning sour gas at Peterhead power station, the cost of which is likely to be particularly attractive. This would make coal a marginal fuel used principally in the export market and reduce coal demand in the 1990s to around 3.5 mt. Because of the strong possibility of Peterhead gas the SSEB would not want to enter into a 10 year contract as Mr Sykes suggests.

c) The deep mines

We would generally agree with Mr Sykes' view of the Scottish deep mines with the exception of Longannet. The Castlebridge section of Longannet has the means to produce coal at an operating cost of £1.33 per GJ (or around £30 per tonne) following substantial investment (£67m). This is around the price for imported coal in the medium to long term according to Mr Sykes. This performance might well be improved by flexible working. Some 2 mt of deep mined capacity might therefore be retained; but this is very much a management decision for British Coal. We have had some indications that they may consider closure if the negotiations with the SSEHB do not result in agreement. Longannet, the present BCC opencast production and licensed production, and imports could meet demand from the SSEB, Northern Ireland Electricity and other Scottish coal users without the need for substantial opencast expansion.

d) Electricity Capacity and the Interconnector

We would generally disagree with Mr Sykes' view of the Scottish interconnector. The current firm capacity of the interconnector is 1 GW which is expected to fall to 0.85GW with the commissioning of Torness; not 1.4 GW as Mr Sykes states. We believe that the opportunities for economically justified exports are much more limited than those presented by Mr Sykes. A recent joint discussion note by the Department of Energy and IDS estimated that excess firm capacity for export is expected to be 1.5 GW in the mid 1990s, falling rapidly thereafter, and disappearing by 2005; and concluded that the optimal size of the interconnector would be 0.85 to 1.4 GW, compared with Mr Sykes estimate of 4.4 GW.

If sour gas is burnt at Peterhead then the majority of generation for export will be coal-fired. This could amount to around 3-4mtpa in the mid 1990s.

Mr Sykes is also optimistic in the assumption he seems to make that the interconnector could be reinforced by 1990. No increase in capacity is likely to be possible before 1993.

e) Opencast Coal

Mr Sykes' suggestion for expanding opencast by 4.5 mtpa may well be otiose because of Peterhead gas; but it is unlikely that Scottish local authorities would agree to such a substantial rise in production linked to the complete closure of deep mine capacity. Nor could the Government step outside its present quasi-judicial role in the planning appeals system (as Mr Sykes seem to suggest) without a change in the law.

f) Redundancies

The suggestion that the SSEB might make an ex gratia payment to the BCC to enable it to buy out existing deep mine jobs is ingenious. But it may well not be attractive to the SSEB because its demand for coal is likely to be less than Mr Sykes suggests. Nor do we see any reason the Government should become involved in administering the money rather than the matter being dealt with by the BCC and SSEB. Furthermore we doubt that the suggestion would fail to set a precedent for England and Wales.

JNDH25



I will wait to  
attend to reply a  
bit before this  
goes.

N. G. W

DRAFT LETTER TO:

Allen Sykes Esq  
31 Charles II Street  
St James's Square  
LONDON  
SW1Y 4AG

June 1988

*I am sorry but I have  
not replied before now  
but I know you will come to a satisfactory reply*

Thank you for your letter of 6 May enclosing your views on how  
Scotland might become a major exporter of power. *I was grateful*  
for your well argued and interesting views.

*They have point is, as  
I know*

I understand that *Michael Spicer* at the Department of Energy has *already*  
*also* studied your report, and *pointed out* that the issues raised  
in your paper are matters which are primarily for the managements  
of British Coal and the SSEB. I fully support *Michael's* view  
that the suggestions you make for the future of the Scottish  
coalfield and commercial relations between the SSEB and the BCC  
largely fall within the management responsibilities of those  
organisations and are not matters in which Government could  
intervene in the way you suggest. For example, decisions about  
closures - which are central to your plan - are a matter for  
British Coal, on which *Government is not in a position* to  
intervene.

*I know that  
any  
social  
dissemination  
of energy  
proposals.  
But the  
main  
reason  
why  
that*

*But the SSEB & BCC management will be reluctant  
what they will be go about*  
Nevertheless, there are *aspects of your proposals* which *Both* SSEB  
and BCC management may wish to take on board in their commercial  
negotiations on future coal supplies. *Moreover, they are best*  
placed to assess the implications of other factors likely to  
affect their operations, and the extent to which such proposals  
could be implemented. I *would* therefore *suggest* that it would be  
more *profitable* for you to discuss your ideas in detail with the  
SSEB and British Coal. They will be in a position to confirm  
whether your estimates of future supply and demand are realistic;  
and the prospects for greater interconnector trading and the need  
for an increase in opencast mining;

*will have seen in connection with few this last part  
that stated in 551 of the White Paper on the privatisation of  
the Scottish Electricity Authority*



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Pt 12

THE BRITISH MUSE

100, GREAT SMITH STREET

LONDON, W.C.2

ENGLAND

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