PREM 19/1215

MT

SECRET

PART 8

Confidential Filing

Energy Policy

Fast Reactor Policy

316

ENERGY

Part 1: May 1979

Part 8: October 1982

PREM 19/1215

Referred to	Date	Referred to	Date	Referred to	Date	Referred to	Date
~~7.10.82~~		~~31.8.83~~					
~~2.11.82~~		~~15.9.83~~					
~~4.11.82~~		~~23.9.83~~					
~~7.11.82~~		~~9.11.83~~					
~~25.11.82~~		~~23.12.83~~					
~~8.12.82~~		~~5.1.84~~					
~~5.1.83~~		~~12.1.84~~					
~~21.1.83~~		~~17/1/84~~					
~~25.1.83~~		~~26.1.84~~					
~~31.1.83~~		~~1.2.84~~					
~~2.2.83~~		~~6.2.84~~					
~~8.2.83~~		~~9.2.84~~					
~~7.3.83~~		~~14.2.84~~					
~~16.3.83~~		~~7/3/84~~					
~~28.3.83~~		~~17.5.84~~					
~~30.3.83~~		~~26.7.84~~					
April '83		~~20/9/84~~					
~~3.5.83~~		~~10.10.84~~					
~~20.5.83~~		27.11.84					
~~13.6.83~~							
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~~29.6.83~~							
~~20.7.83~~							
~~29.7.83~~							
		PART ENDS -					

5M 2/78 8362633 JET

PART 8. ends:-

CST to PM 30.11.84.

PART begins:-

FCS to PM (84/80). 6.12.84.

TO BE RETAINED AS TOP ENCLOSURE

Cabinet / Cabinet Committee Documents

Reference	Date
L(82) 15th Meeting, item 2	09/11/1982
L(82) 88	04/11/1982

The documents listed above, which were enclosed on this file, have been removed and destroyed. Such documents are the responsibility of the Cabinet Office. When released they are available in the appropriate **CAB** (CABINET OFFICE) CLASSES

Signed J. Gray Date 16/9/2013

PREM Records Team

Published Papers

The following published paper(s) enclosed on this file have been removed and destroyed. Copies may be found elsewhere in The National Archives.

Nuclear Waste pamphlet. Published by Information Services Branch, United Kingdom Atomic Energy Authority, January 1984.

Nuclear Facts pamphlet. Published by Information Services Branch, United Kingdom Atomic Energy Authority, November 1983.

New Films from the UK Atomic Energy Authority. Published by Information Services Branch, United Kingdom Atomic Energy Authority, undated

The facts about nuclear energy booklet. Published by Information Services Branch, United Kingdom Atomic Energy Authority on behalf of the Nuclear Power Information Group, February 1983.

House of Commons Paper 367. Thirty-second Report from the Committee of Public Accounts, Session 1983-84: Development of Nuclear Power. Published by HMSO.

Signed J. Gray Date 16/9/2013

PREM Records Team

003/107

CONFIDENTIAL

CANO

FROM: CHIEF SECRETARY
DATE: 30 November 1984

Await other responses

PRIME MINISTER

PROPOSED FAST REACTOR REPROCESSING PLANT AT DOUNREAY

I have seen Peter Walker's minute to you of 27 November about a proposed fast reactor reprocessing plant at Dounreay.

Since there appears to be an opportunity here to win business for the United Kingdom, I agree that we should give Government support internationally. But we should be careful not to generate pressure for greater UK public spending on the fast reactor than the programme already agreed.

I therefore welcome Peter Walker's assurance that this proposal would not add to the PSBR. Although British Nuclear Fuels plc is technically classified to the private sector, the Government guarantees its financing. The Treasury will therefore need to be satisfied that the project will not reduce the company's commercial viability.

I understand that the preliminary R & D costs of fast reactor fuel reprocessing can be contained within the overall programme (mostly vote-funded) already agreed. If BNFL win the project, which would be of long-term commercial benefit to them, there would be a good case for their taking over further R & D funding. We can reach firm decisions at the time but I suggest BNFL take it into account in their financial planning.

I am copying this minute to Peter Walker, Geoffrey Howe, Nigel Lawson, George Younger, Patrick Jenkin, Norman Fowler, Norman Tebbit, Tom King, Michael Jopling, Nicholas Ridley and Sir Robert Armstrong.

Paul Pegler

PETER REES

(approved by the Chief Secretary and signed in his absence)

Prime Minister (1)

Mr Walker argues that we should bid for this plant to be located at Dounreay. Colleagues support him. Agree?

Yes MT

DMB 11/12

PRIME MINISTER

PROPOSED FAST REACTOR REPROCESSING PLANT AT DOUNREAY

As you will know from your recent correspondence with Robert Maclennan MP, the AEA have written to me on behalf of the nuclear industry to propose that the UK should bid for the construction at Dounreay of a demonstration fast reactor fuel reprocessing plant to serve the needs of the European collaboration.

The intention is that the plant's estimated cost of £300m would be borne jointly by the collaborating nations. The UK share of perhaps 25% would be financed by BNFL and would therefore not add to the PSBR. It would be backed by advance contracts from the utilities.

I favour our nuclear industry bidding for the project since:

a) it would give the UK a strong position in an area where we already possess particular expertise. There is otherwise a risk that the French, already well ahead in fast reactor construction and fuel fabrication, will dominate the collaboration in all areas;

b) it would provide a continuing focus for Dounreay as we approach the time when the Prototype Fast Reactor will shut down and before the planning date for starting construction of a UK lead reactor of 1993, assuming its location proves to be Dounreay.

I have consulted George Younger, who welcomes the employment implications for the Caithness area and is content for the UK to bid for the plant. Naturally, however, as Planning Minister for Scotland, he has to reserve his overall judgement at this stage.

Our success in obtaining the project cannot of course be taken for granted. The timing depends on the decision on the next fast reactor - assumed to be Super Phenix II - which the French expect to be in 1986.

French industry would like the reprocessing plant to be at Marcoule and are likely to make much play of the uncertainty as to whether the UK planning process could deliver a consent for the Dounreay site in time.

On the home front, following events at Sellafield, we must expect opposition from the environmentalists, particularly since the bulk of the reprocessing will be for overseas, even though radioactive discharges could be kept well within Dounreay's existing authorisation limits. Attention is also likely to focus on the alleged danger of a further, though limited, increase in the transport of radioactive materials, including plutonium, to, from, and through the UK.

Finally, since George Younger considers that some sort of public local inquiry will probably be required, it would be essential to avoid getting bogged down in a very wide spread of issues on the Sizewell B model. In particular we would need to have previously confirmed our policy position that we are willing to see a further reprocessing plant constructed in the UK.

Nevertheless these difficulties should not be insuperable if the will is there, and the prize would be large. I therefore propose that the Authority should be authorised to try and get the project for the UK, with Government support at Ministerial level at the appropriate time. Given that the plant will depend on a decision to construct the next fast reactor which has not yet been taken, and the need to convince our partners of the credibility of the UK bid, this may well involve a planning application to the Highland Regional Council on a contingency basis.

Copies to go Geoffrey Howe, Nigel Lawson, George Younger, Patrick Jenkin, Norman Fowler, Norman Tebbit, Tom King, Michael Jopling, Nicholas Ridley and Sir Robert Armstrong.

Peter Walker

SECRETARY OF STATE FOR ENERGY

27 November 1984

ENERGY Agency
Fast Reactor
pt 8

File JR
cc D/N
Mr Alison

10 DOWNING STREET

THE PRIME MINISTER

21 November 1984

Dear Mr. Maclennan,

Thank you for your letter of 7 November about Dounreay.

I understand your interest in the possibility of the United Kingdom making a bid for Dounreay to be the location of the reprocessing plant required to serve the needs of the demonstration fast reactors which are expected to be built under the European collaboration. I know that Peter Walker is currently considering a letter from the Chairman of the Atomic Energy Authority, on behalf of the UK nuclear industry as a whole, about this.

I have copied your letter to him and have asked him to take account of the points you have made.

Yours sincerely

Margaret Thatcher

Robert Maclennan, Esq., MP.

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

AMZ

Tim Flesher Esq
Private Secretary to
The Prime Minister
10 Downing Street
LONDON SW1

19 November 1984

Dear Tim,

Thank you for your letter of 12 November, with which you enclose correspondence the Prime Minister had received from Robert Maclennan MP.

The background to Mr Maclennan's letter is a proposal put to my Secretary of State by the UK nuclear industry that a reprocessing plant to serve the future needs of the recently established European fast reactor collaboration should be constructed at Dounreay. The siting of the plant would however be a matter for decision of the European partners jointly, and we know that the French are stong competitors.

On nuclear policy grounds, my Secretary of State sees considerable advantage in the proposal but, as there is a strong Scottish dimension involved (in particular in relation to the handling of planning matters), he has consulted the Secretary of State for Scotland and is correctly considering his recent response before minuting the Prime Minister and other interested colleagues.

I attach a draft reply which, necessarily, is pretty non-committal.

Yours
John

J S NEILSON
Private Secretary

REPLY FOR THE PRIME MINISTER'S SIGNATURE

Robert Maclennan Esq MP
House of Commons
LONDON
SW1A OAA

Thank you for your letter of 7 November about Dounreay.

I understand your interest in the possibility of the UK making a bid for Dounreay to be the location of the reprocessing plant required to serve the needs of the demonstration fast reactors which are expected to be built under the European collaboration. I know that Peter Walker is currently considering a letter from the Chairman of the Atomic Energy Authority, on behalf of the UK nuclear industry as a whole, about this.

I have copied your letter to him and have asked him to take account of the points you have made.

Robert MACLENNAN MP

FILE 23/11 RD
Ack 12/11

10 DOWNING STREET

From the Private Secretary

12 November, 1984

I enclose a copy of a letter the Prime Minister has received from Robert Maclennan, MP.

I should be grateful if you could let me have a draft reply for the Prime Minister's signature by Friday, 23 November.

I am sending a copy of this letter and its enclosure to Colin Budd (Foreign and Commonwealth Office).

(Timothy Flesher)

J. Neilson, Esq.,
Department of Energy

Robert Maclennan, M.P.

HOUSE OF COMMONS
LONDON SW1A 0AA

cc: MB

7th November 1984. R9

Rt. Hon. Mrs. Margaret Thatcher, M.P.,
The Prime Minister,
10 Downing Street,
LONDON, S.W.1.

Dear Prime Minister,

I know that you have had a longstanding interest in the development of the fast breeder reactor in this country and that in September, 1979, you opened the fuel reprocessing plant at Dounreay in my constituency. I am writing to you at this time as an important stage has now been reached in the project following the conclusion of the European Collaborative Agreement on fast breeder reactor development and because the matter is of such importance to this country that it seems to me that it could well be suitable for consideration by heads of government in the European Council or bilaterally.

As I understand the position, the British Government has accepted that we shall not be the first country to build a Commercial Demonstration Fast Reactor under the Collaborative Agreement. Nonetheless, I understand that the nuclear industry and the Generating Boards are at one in believing that this country should bid for the location in Britain at Dounreay of the plant to reprocess all the spent fuel from fast breeders in the participating Member countries. It does seem clear that if we are to obtain a fair share in the work on fast reactors under the Programme this would provide the best opportunity to secure it.

Naturally, I am particularly concerned to ensure that a decision not to build a Commercial Development Fast Reactor in this country for some years does not result in a contraction in both the employment opportunities at Dounreay and in the loss of morale by British scientists and technologists engaged on the fast reactor programme.

I am very conscious that there is no part of the British Isles where planning permission for such an expansion of existing work (and the location of such a European facility at Dounreay would not alter the nature of the reprocessing work already successfully done there, only its scale) would be more easily obtained from the local authority which has strongly backed every nuclear project at Dounreay and is, I understand, keen to see this proposed development go ahead.

I noted that when the French President addressed the Houses of Parliament he spoke of the need for further technological co-operation in Europe. This scheme to locate a European fuel reprocessing plant in my constituency is one which would give effect to the French President's intentions and would seem to complement well the probable decision that the first Commercial Demonstration Fast Reactor should be located in France.

I am therefore writing to ask if you will throw your personal weight behind this project in whatever forum you feel is appropriate to secure it for Britain.

Yours sincerely,

Robert Maclennan.

This to be very revised

W.0743 10 October 1984

PRIME MINISTER

E(NI): REVIEW OF UK ATOMIC ENERGY AUTHORITY

In the 30-year existence of the UKAEA we have seen

(a) the UK slide from first rank to second rank position in civil atomic energy, especially in terms of the proportion of our energy needs generated by cheap nuclear power;

(b) the main customer for civil nuclear reactors (CEGB) forced to buy reactor types other than those it would have chosen on technical, operational and commercial grounds;

(c) negligible export of reactors designed or made in the UK;

(d) the consumption by UKAEA of more than £5bn (at current prices) of taxpayers' money.

2. During most of this period the UKAEA has, by virtue of the interest of its research and its employment conditions, creamed off a significant slice of the UK's R&D talent and created a substantial technological asset. Because of the failure of the civil nuclear programme and the small amount of technology transfer to non-nuclear activities, the contribution of this technological asset to the wealth-producing sector of the economy has been negligible.

3. This is a dismal record for which the UKAEA itself and the Department of Energy under successive Governments must be culpable. The present review of UKAEA was an opportunity to

take a fresh look at the situation and to create the conditions for the development of an internationally competitive nuclear power industry and the proper utilisation of the UKAEA's technology base.

4. Unfortunately the terms of reference of the review and the composition of the review Group ensured that the voice of status quo dominated (paragraph 5 of the Report) and the opportunity has, for the moment, been lost. Nevertheless the recommendations are small and tentative steps in the right direction and you may wish to consider whether the present review should be followed at an appropriate time by one which is more broadly-based and can tackle the deep-seated problems I refer to above.

5. I have the following comments on the specific recommendations of the Report:

(a) I support the view that long-term strategic R&D on new energy sources such as the fast reactor (6(i)) is in the national interest and must, at least initially, be sponsored by Government until commercial interests can take over on a risk basis;

(b) Government and its agencies such as NII have a safety and regulating responsibility (6(ii)-(iv)) which requires an R&D activity independent from the commercial sector of the industry. This covers reactor construction and operation, and waste storage and disposal. I agree with Treasury that this should be done on a specific project basis under a customer/contractor relationship provided the Departments concerned become informed customers and Government recognises that some of the necessary research is intrinsically long-term.

(c) I support the move to a customer/contractor relationship (8) but the Department of Energy's proposal to become an informed customer by engaging "2-3 nuclear experts" (9) is laughable. The result would either be the status quo or

a new form of cosy relationship between UKAEA and DEn. The Rothschild transfer of MRC funds to DHSS failed because DHSS did not take steps to become an informed customer and eventually this transfer had to be reversed. DEn could take advice from MoD on how to become an informed customer for R&D. My own view is that the Departmental experts will need to be backed by independent technical consultants perhaps drawn from an international arena. This might cost up to £1m pa but would be money well spent if it enabled DEn to choose the right R&D programmes.

(d) I am unconvinced by the arguments against privatisation (10,11) especially in the medium term but I accept the arguments against piecemeal privatisation (12). The UKAEA need not have monopoly status if international competition is allowed (as in MoD) and most of the other arguments are mechanics. The argument on 'special status' in the public eye is circular. The public will always see atomic energy in this way while Government accords it special status rather than bracketing it with other potential hazardous but private sector industries such as oil and chemicals.

(e) I support the Trading Fund proposal (14). It makes sense in its own right and is also an essential first step if eventual privatisation is envisaged. On technology transfer (18) I disagree that the prohibition of non-nuclear manufacturing is not a problem. Private sector contract R&D companies are increasingly using pilot manufacture and test marketing of new products and even minority equity holdings in joint ventures with manufacturing companies as means of better exploiting their innovations. The UKAEA will be uncompetitive if they are not allowed to act in a similar way. I suggest that the necessary legislative amendments are made at the same time as those required to set up the Trading Fund.

RBN

ROBIN B NICHOLSON
Chief Scientific Adviser

Cabinet Office
10 October 1984

Energy: Review of UKAEA March 84

BT with E(NI) papers
AT 10/10

W.0742 10 October 1984

MR TURNBULL, NO 10

E(NI) 15 October REVIEW OF UKAEA

Attached is a minute to the Prime Minister on the UKAEA Review. I am sending it today because I have to go to an EEC meeting from which I will only return on Friday afternoon by which time the Economic Secretariat will have wanted to prepare the handling brief for E(NI) and the Policy Unit its own brief for the Prime Minister.

This early dispatch means that I have not seen whatever cover paper the Secretary of State for Energy wishes to put before E(NI). If, on my return, this cover paper requires me to change my own minute to the Prime Minister, I shall ask if you will substitute a new minute for the one attached.

Perhaps you could let me know on Monday whether my attendance at E(NI) is required.

I am copying this minute and the attachment to Peter Gregson, Nick Owen and Richard Hatfield.

RBN

ROBIN B NICHOLSON
Chief Scientific Adviser

file
SL HADX
cc David Pascall

10 DOWNING STREET

From the Private Secretary

20 September 1984

REVIEW OF THE AEA

The Prime Minister has seen your Secretary of State's minute of 14 September covering the departmental review of the AEA. She endorses the general objective of putting the AEA on a more commercial footing with a greater proportion of its funding coming from the nuclear industry and less from the exchequer. She looks forward to receiving his proposals. She has noted that the report is rather discouraging about the prospect for privatising or hiving off parts of the AEA. She hopes, however, that the arguments will be fully considered before final decisions are taken.

She understands that, after your Secretary of State's bilateral with the Chief Secretary, a timetable has been agreed which will allow this year's public expenditure exercise to reflect the recommendations of the review.

I am copying this letter to John Gieve (Chief Secretary's Office), Elizabeth Hodkinson (Department of Education and Science), Richard Mottram (Ministry of Defence), John Graham (Scottish Office), John Ballard (Department of the Environment), Callum McCarthy (Department of Trade and Industry), and Richard Hatfield (Cabinet Office).

Andrew Turnbull

Michael Reidy, Esq.,
Department of Energy

10 DOWNING STREET

From the Private Secretary

Prime Minister (1)

The recommendations of Mr Walters review group on the AEA aim to make the organization more commercially minded while reducing its call on Exchequer funding. Treasury and Policy Unit are in favour

(i) Agree general thrust of the report?

Policy Unit wish to keep the idea of privatisation alive, at least for parts of AEA, although Treasury and D'En see little prospect

(ii) Agree they should be asked not to lose sight of it altogether?

Following Mr Walter's bilateral, agreement has been reached on timetable for considering report which will permit it to be taken into account in this years PES.

AT
12/9

MR TURNBULL

18 September 1984

REVIEW OF THE AEA

The main conclusions of the review are:

- The unique nature of nuclear power will require a continuing Government interest beyond the commercial interests of the nuclear industry. An independent AEA will continue to be required.

- The nuclear industry should fund a much greater share of the AEA's work.

- The Department of Energy's relationship with the authority should be on a customer/contractor footing.

- The authority should operate as a trading fund.

- The Board of the AEA should be restructured to exclude representatives from its major customers.

These recommendations should result in the transfer of a large percentage of funding from Energy to the nuclear industry. The Department will, however, remain a major customer for the authority's services amounting to about 40% or more of total expenditure in 1987/88.

Comment

We strongly support the need for the AEA to operate on a commercial basis and for its programmes to be funded by its clients. There is an urgent need to break down the current cosy relationships which exist in all sectors of the nuclear industry.

For these reasons we are still attracted by privatisation although the review rules out both total and partial privatisation as a realistic option at present.

We consider that there are subsections of the AEA which are profitable and which would benefit from privatisation. We are also not convinced that the difficulties of privatising the AEA as a whole are as real as the review implies. The opposing case needs to be properly heard.

If privatisation is eventually ruled out, a trading fund with a clear customer/client relationship is the best solution. But this concept needs to be rigorously developed. There are already indications in the review that the AEA and the Department of Energy would like to water down the main recommendations. If unchecked, this tendency could result in some changes at the margin but not the radical restructuring which is required.

We also need to encourage the AEA to offer their services to UK contractors. The only way we are going to establish a UK Westinghouse is to allow competition in the nuclear field amongst our engineering contracting companies.

Conclusions

We recommend that the Prime Minister should:

- welcome the review and Peter Walker's intentions to bring forward his proposals shortly;

- endorse the need to put the activities of the AEA on a commercial basis;

- welcome the principle of customer/contractor relationships and a trading fund but point out that the arguments against privatisation will need to be carefully considered before final decisions are taken.

DLP.

DAVID PASCALL

104/29

FROM: CHIEF SECRETARY
DATE: 18 September 1983

PRIME MINISTER

REVIEW OF THE AEA

Peter Walker sent me a copy of his minute to you of 17 September about the review of the Atomic Energy Authority.

2 In general, I endorse the conclusions of the report. As well as improving financial discipline, a more commercial approach by the AEA would make best use of their valuable assets and scientific expertise. It would also help towards privatisation of all or part of the Authority later.

3 As for the relation between the Report and public expenditure, I asked Peter Walker in my letter of 19 October 1983 that the review be completed before this year's PES. His minute to you of 2 March envisaged colleagues considering it before the summer break with the objective of establishing a long- term framework for public expenditure in this area. There was some delay in completing the Report but it was with me by early August. As far as I can see Peter is now suggesting that the public expenditure implications be left over until PES 1985.

4 Given the very difficult position we face over public expenditure this year, I cannot afford to miss the opportunity to reach at least a provisional view on a report recommending useful savings. But I do sympathise with the position of colleagues who have only just received the report. Accordingly I propose to proceed as follows:

(a) Peter and I should allow for a phased reduction in direct Department of Energy funding for nuclear R & D as proposed in the report when we discuss his Department's programme

(b) Peter and I should take into account the added costs that would fall to the CEGB when we seek to settle external finance for the electricity industry;

(c) For PES purposes I would assume that other Ministers whose Departments might be affected had reserved their positions on whether they might need to seek a programme increase.

5 I am copying this minute to Peter Walker, Keith Joseph, Michael Heseltine, George Younger, Patrick Jenkin, Norman Tebbit and to Sir Robert Armstrong.

J.A. Grieve

for PETER REES

[Approved by the Chief Secretary]

cc/10 (without report)

PRIME MINISTER

REVIEW OF THE AEA

I let you know on 2 March that I was going to put in hand a comprehensive review of the Atomic Energy Authority.

A review group was set up with Treasury and Authority representatives, and I enclose a copy of the report which has been submitted to me.

The report recommends substantial increases in the proportion of funding coming from the nuclear industry, and that the remaining work should be put onto more of a customer/contractor footing. It has also suggested that the Authority should be moved from a Grant-in-Aid to a Trading Fund basis.

Naturally if we agree to these proposals the result should be the adoption of a more commercial approach by the Authority. I think this will require a membership for the Authority's board which reflects this commercial approach and moves away from a structure which contains representatives from the Authority's major customers.

I am now studying this report and will discuss it with the main interested parties. Having done this I will then bring my proposals about the form of Government's response before colleagues. I would guess that on this timetable Ministerial decisions will be taken in November.

If we conclude that the report's proposals are broadly correct, they will obviously have an effect on the public expenditure survey. They would, for example, mean substantial reductions in nuclear R&D funding, but increased expenditure by the CEGB. I have received a letter from the Chief Secretary suggesting that we should agree to substantial reductions in nuclear R&D funding on account of the pending decisions on the review. I believe this would be a very bad way of doing business. What I suggest is that we should agree with the Treasury that the relevant public expenditure figures will be adjusted in accordance with the conclusions we come to on the report.

I am copying this minute for information to the Secretaries of State for Education and Science, Defence, Scotland, Environment and Trade & Industry, to the Chief Secretary and to Sir Robert Armstrong.

John Neilson

p.p. SECRETARY OF STATE FOR ENERGY

14 September 1984

(approved by the Secretary of State and signed in his absence)

Energy - review of AEA March '84

CONFIDENTIAL

Return to CF.

REVIEW OF THE UK ATOMIC ENERGY AUTHORITY

Report by a
Departmental Working Group

August 1984

Department of Energy

CONFIDENTIAL

REPORT OF THE WORKING GROUP TO REVIEW THE AEA

I. Terms of reference and Introduction

The Secretary of State set up the Working Group in January this year under the chairmanship of Mr I T Manley, with representation from the relevant Divisions of the Department and, with the agreement of the Chief Secretary and Sir Peter Hirsch, from the Treasury and the Atomic Energy Authority. The Group's terms of reference were:

"(i) to examine the main programmes of the AEA, with reference to the character, funding of and accountability for these programmes and their bearing on the role of the AEA;

(ii) to consider, in the light of this review and of other factors, whether changes are required in the role and accountability of the AEA, and in its relationship with Government;

and to make recommendations to the Secretary of State for Energy.

In conducting its enquiry, the Group is asked:

(a) to take full account of recent and current reviews of particular AEA programmes undertaken in Government or in the Authority;

(b) to pay particular attention to the implications of developing customer-contractor relationships in the programmes of the Authority for the role of the Authority;

(c) to take account of the Department's review of the present arrangements for allocating R & D resources across the whole field of the Department."

2. Two AEA representatives have been present throughout, and have provided much information and advice to the Working Group on AEA programmes and financial and other issues, and the AEA Board have commented on a summary of its preliminary conclusions. However, though the Group has taken the AEA comments into consideration in its further deliberations, its conclusions as set out here have not been put to the AEA Board, who therefore do not necessarily agree with them.

II. Summary of Conclusions and Recommendations

3. It is the Government's policy that the UK should have a significant nuclear power programme for the foreseeable future, and this had to be the Group's starting point. On this assumption a continuing research programme of some kind will be required. Our programmes analysis has confirmed that there is still a large amount of nuclear R & D to be done in the coming decades.

4. As to how this research should be done, the Authority has the advantage of already undertaking a wide range of work for a number of nuclear and non-nuclear customers, all of whom value the effective way it uses its highly qualified, multi-disciplined and motivated staff with their access to unique facilities. It is also clear that the unique nature of nuclear power and public perceptions of it will require a continuing Government interest in key programmes beyond the commercial interests of the nuclear industry.

5. The Group has concluded that an authoritative body of independent expertise not fundamentally different from the Authority in its present form will therefore continue to be required, and that it would be wrong, for instance, to "hand over" the Authority to the Generating Boards and BNFL.

6. We do however consider that there should be significant changes in the way in which the nuclear programmes are funded, and in the Authority's relationships with the rest of the nuclear industry, as summarised below:

   i) Fast reactor. We have not attempted to re-examine the basic strategic decisions which have only recently been taken, but the Generating Boards will be the owners and operators of the eventual UK lead reactor and subsequent reactors and should therefore assume greater responsibility for funding R &

D as the programme approaches that stage (paras 26-27).

ii) Thermal reactor. The Generating Boards are the beneficiaries and should therefore in principle pay for this research in its entirety. However the majority of the Group believe that it is right for the Authority to be able to undertake some work independently and that the best solution would be for this work to be wholly funded by the Generating Boards on a non-specific basis provided that arrangements can be agreed which ensure independence, NII access and continuity. The majority of the Group therefore recommend that further discussions should take place between the Department, the Authority, the Generating Boards and the NII with a view to securing this objective. The remainder of the Authority's thermal reactor research should be both financed and controlled by the Generating Boards (paras 28-35). The Treasury, on the other hand, consider that all funding in this area, as in others, should be on a specific project basis under a customer/contractor relationship;

iii) General safety. The Generating Boards and BNFL are primary beneficiaries, but there are some areas where the Government also has an interest and a responsibility, as does the NII. The majority of the Group consider that further discussion should take place between the Department, the Authority and the Generating Boards to determine the extent of the work which the Department should continue to fund (para 36). The Treasury considers that specific projects in this area should be funded on a customer/contractor basis. This would automatically disentangle the present

funding.

The cost of the Authority team responsible for its own safety policy and for inspecting the safety of all Authority reactors and other facilities should be treated as an overhead and charged out to the other programmes, including those funded by the Department (para 37).

iv) Radioactive waste and nuclear materials management. Departmental funding should continue for work which relates to the Authority's own waste from past vote funded programmes, although the nuclear industry should make a substantial contribution to the cost of WAGR decommissioning. It is also conceivable that, given the significance of radioactive waste issues for energy policy generally, the Secretary of State should from time to time fund some longer term research to be carried out independently of both the DoE and the nuclear industry (paras 39-42).

Some continued vote funding of other nuclear materials management R & D is justified in relation to the AEA's own operational requirements and perhaps also for other projects on an occasional and specific basis. However there are a range of beneficiaries other than the Department and the programme should be reviewed in detail to determine which elements are appropriate for continued Departmental funding and those which other beneficiaries should fund if they wish them to continue (para 43).

v) Underlying research. A programme should be

maintained, to retain intellectual vigour, underpin the other programmes, and maintain the organisation's ability to secure future business. The Authority is the best judge of its detailed content. All the Authority's customers have benefited from the programme and should as proxies for future customers contribute to its cost. Using the present programme size as the starting point we consider that its cost should be recovered from all customers as part of the overall costs of the Authority's activities. The approach to cost recovery would however need to vary between customers (paras 44-46).

vi) Fusion should be treated as a special case and is in any event the subject of a separate review (para 47).

vii) Other minor nuclear programmes. Some of the work quite properly falls to the Department to fund; other aspects appear to benefit the nuclear industry and its regulatory agencies. Each element should be reviewed in detail, as for other nuclear materials management (paras 48-49).

viii) Non-nuclear work (paras 50-51). We have sought the views of the DTI about the value of this research and the desirability of an external review. They have, however, expressed themselves well satisfied with the quality of work undertaken by the Authority for the Requirements Boards and have endorsed the Authority's present approach, as does the Group (para 52). We also consider that the Authority's recent proposals for private sector venture capital funding for the application of

selected research results should be encouraged (para 53). The wider question of constraints is dealt with below (paras 95-99).

7. The result of these recommendations, if fully implemented, would be to transfer substantial additional funding to the nuclear industry. There should also be significant reductions in the Department's planned PES allocations. The Department will however remain a very major customer for the Authority's services, to the tune of 40% or more of its total expenditure in 1987/88 (paras 54-58).

8. Customer/Contractor relationships (paras 59-68). The Group consider that there would be benefit in terms of a more disciplined approach by both parties, more meaningful monitoring and control and a desirable degree of commercial tension, in putting the Department's relationship with the Authority on to a customer/contractor footing, with each programme being the subject of a specific contract or contracts. Given the disparate nature of the programmes undertaken for the Department or to which it contributes, different contractual approaches will be required for different work areas with a varying degree of detail according to circumstances (paras 59-62). At one end of the spectrum, in the case of the fast reactor, the aim should be to secure the substance of a contract in terms of accountability through a jointly-agreed programme statement, the development of general and specific targets, cost details, and arrangements for improved financial and technical reporting and monitoring (para 63). At the other end of the spectrum, the small Safeguards programme should be put on a full contract basis at once (para 64).

9. In order to help it formulate and operate these various contracts the Department would need to engage perhaps 2-3 nuclear experts. The increased monitoring responsibilities might also require the strengthening of

AE Division in other ways (para 65).

10. Privatisation of the Authority (paras 69-81). A number of major considerations arise:

- the Authority's monopoly status in the core nuclear programmes, particularly the fast reactor, which means that there is no early prospect of competition and the operation of market forces;

- although the Authority's net assets have a book value of £154m, their sale value would probably be lower;

- the Authority has major continuing liabilities, for example in radioactive wastes and decommissioning;

- the Authority's statutory pension schemes, at present notionally funded. A cash transfer of £500m from the Exchequer might be required or, if the scheme continued, there would be a bringing forward of the date at which payments from the scheme exceeded contributions;

- the need for significant working capital;

- public concern over nuclear issues which might make it inappropriate to seek to launch this key element of the nuclear industry into the private sector at this time;

- security and AEA Constabulary implications.

11. The Group has concluded that, taken together, these factors imply that privatisation of the Authority as an entity, while possible in principle, is not in practice a

realistic option at present. Nevertheless, as the proportion of Departmentally funded work falls and the percentage of the Authority's work being undertaken on a commercial contract basis increases further, and as the fast reactor draws closer to fully commercial application, very different circumstances might emerge; prospects for privatisation as a longer term option should therefore be kept under review (paras 69-71).

12. The Group has also examined the feasibility of privatising individual establishments or the Harwell "business centres". The key issues are:

- the very highly integrated nature of the Authority's activities as a whole;

- the resultant weakening of both any privatised establishment and of the remainder of the Authority through the loss of staff and technical interchange and through the inefficient use and potential duplication of resources;

- the "business centres" appear to be viable only as an integral part of Harwell's overall work and organisation.

Taken together these make privatisation of single sites or business centres difficult to envisage and likely to lead to substantial diseconomies (paras 72-80).

13. Nevertheless our examination has not been exhaustive and, as with full privatisation, the situation may change over time. The need to keep the scope for partial privatisation under review should therefore be made a specific part of the remit of the Authority's management (para 81).

14. <u>The Authority as a Trading Fund</u> (paras 82-94). Possible eventual privatisation, and the extension of the

customer/contractor approach to the Authority's nuclear work for the Department, would be facilitated by putting the Authority on a Trading Fund basis. This would require all work to be accounted for on a fully commercial basis, impose additional discipline through the requirement to meet financial objectives, create financial flexibility between years, highlight major issues which need to be dealt with in commercial terms, and facilitate possible eventual privatisation. The absence of a competitive trading situation in certain areas, asset valuation, treatment of provisions and the setting of a realistic financial target, should not be insuperable problems (paras 82-87).

15. Within the Fund all contracts, including those for the Department, should be on a with profits basis as providing the maximum commercial incentive to increased efficiency (paras 88-90).

16. The move to a Trading Fund could be managed in such a way as to ensure the overall consequences are PSBR neutral, except for a small increase in own resources payments to Brussels. However overall public expenditure would technically increase and Ministers would need to consider how these issues should be handled (paras 91-93).

17. Putting the Authority on a Trading Fund basis would require an amendment to the 1954 Act, to enable the Fund to borrow as required (para 94).

18. Technology transfer and the full exploitation of the Authority's assets. The present financial and end year accounting constraints should be eased by setting up the Authority as a Trading Fund. We believe that the prohibition on non-nuclear manufacturing and the Authority's links with Civil Service pay and conditions are not major problems (paras 95-98).

19. We consider that a careful balance must continue to be struck between the extent of non-nuclear work and the core

11.

nuclear programmes, and that this requirement should be drawn specifically to the attention of the Authority's management (para 99).

20. Role and composition of the Board. The Group conclude that, in the new circumstances which would result from implementation of its recommendations, the Authority Board should not include senior executives from its major customers, the Department, the ESI, BNFL or NNC. Appointment of Members with recent experience of these bodies should , however, not be precluded. The new circumstances would also increase the importance of the contribution and role of the independent part-time Members (paras 100-107).

III. Background information on the Authority

21. The Authority was created out of the then Ministry of Supply by the provisions of the Atomic Energy Authority Act 1954, at a time of rapid expansion in nuclear activities. Its original objectives encompassed all aspects of nuclear energy in the UK, both civil and military, and at its peak in 1961 it employed over 40,000 people. A significant reduction took place in the 1960s, followed by the hiving off in 1971 of fuel production/reprocessing to BNFL and of radiochemicals to what is now Amersham International (reducing the strength at that time by a third), and two years later by the transfer of weapons research and production at Aldermaston to the MoD (reducing strength by a third again). On the other hand, the 1965 Science and Technology Act enabled the Authority, at the request of Government, to carry out non-nuclear R & D, which now accounts for about 8% of overall expenditure.

22. The Authority remains a very large R & D organisation with a total staff of some 14,000, operating at nine geographically dispersed locations ranging from Dounreay on the north coast of Scotland to Winfrith in Dorset - see Figure 1. Total gross expenditure currently runs at around £380m in cash terms, with nearly £200m coming from the Department's nuclear vote and the balance from the Department's non-nuclear work with the Authority and from contracts with the Generating Boards, BNFL, DoE, DTI, MoD and a variety of other customers, including some in the private sector - see Figure 2.

23. The proportion of the Authority's nuclear programmes funded by the Department has fallen in recent years, and the reduction is expected to total nearly 30% in real terms by 1987/88 as compared with 1981/82. Because some costs have shifted from the Department to the nuclear industry* the cut back in the Authority's total expenditure has been smaller - see Figure 3. Nevertheless, total staff numbers are on a declining trend

* As used in this Report the term comprises the Generating Boards, BNFL and NNC.

- see figure 4. Although compulsory redundancies have so far been avoided, the Authority is incurring substantial expenditure on early retirements (about £4.5m in 1984/85).

IV. Analysis of the programmes

24. As required by our terms of reference we start with an examination of the Authority's current activities, bearing in mind that it is Government policy that the UK should have a significant nuclear power programme for the foreseeable future and that on this assumption, a continuing research programme of some kind will be required. The principal research areas are:

i) the fast reactor;

ii) thermal reactors;

iii) general safety;

iv) radioactive waste and nuclear materials management;

v) underlying research;

vi) fusion;

vii) other minor nuclear programmes;

viii) a range of non-nuclear contract work.

25. Table 1 sets out the expected expenditure in each area during the currrent financial year, broken down between funding from the Department of Energy's nuclear vote and from contract customers. Each of the main programmes has been examined, with particular focus on whether the current balance between the Department's vote and other customer funding, and therefore control of the programmes, is right. Section ix) draws some general conclusions.

i) Fast Reactor

26. The programme was thoroughly reviewed in 1982 following a proposal from the Authority and the nuclear industry that

a definite decision should be taken to move towards the construction of a demonstration or "lead" fast reactor in the UK. The Government concluded that, although the strategic justification for the research and development programme remained valid, the time when series ordering of fast reactors would be required was further ahead than previously thought, and that Government funding should therefore be scaled down as soon as possible by about one-third to around £70m pa at September 1981 price levels, with international collaboration if practicable. It was subsequently agreed that the best prospect lay in co-operation with other European countries, and an inter-Governmental Memorandum of Understanding was signed in January 1984, subsequently backed by a series of inter-organisational agreements. The intention is that there should be an integrated European programme of 3 lead reactors, with construction of the UK reactor starting not before 1993, but the details remain to be worked out. Meanwhile the Dounreay facilities will continue to operate and act as a test bed for components, fast reactor fuel and the fuel cycle. Although the CEGB, BNFL and NNC are all involved in the collaboration, the Authority is its pivot and significant Government funding will continue for a lengthy period.

27. The Group has taken account of these basic strategic decisions, which imply vote funding in cash terms of £88.4m in 1987/88. However, the Generating Boards will be the owners and operators of the eventual UK lead reactor and subsequent reactors, and we consider that the Boards should assume greater responsibility for funding as the programme approaches that stage.

ii) Thermal reactor

28. The Authority's gross expenditure on AGR and PWR research in 1984/85 is expected to be about £46m, with a net cost to the vote of around £17m. Ministerial initiatives in the last two years, and subsequent discussions between the Department, the Boards and the Authority, have led to new

working arrangements. A major shift in the burden of funding to the Boards has already taken place and by 1987/88 the net vote contribution is expected to be down to about £13m cash.

29. The Generating Boards and the NII have confirmed the importance of these programmes. The AGR work is essential to make the best use of the UK's existing stock of AGRs and of those under construction, for example by improving the life and performance of plant and fuel, and allowing restrictions adopted for initial operation to be removed progressively as knowledge builds up. The PWR work produces information independently from the CEGB which assists the NII's assessment of the CEGB's safety case for Sizewell B. If a number of subsequent PWRs are constructed a continuing safety and general back-up programme will be required.

30. The Authority has argued that continuing vote funding is in the public interest. It believes that some work on thermal reactor safety issues should be undertaken independently of the Generating Boards as commercial operators of nuclear installations, and that there should be some forward-looking work on issues with a longer term horizon than commercial customers need have regard to. However the Group considers that the Generating Boards are the direct beneficiaries of the research and therefore in principle should pay for it. The rate at, and arrangements by which, responsibility for funding what they do not already fund should pass to the Boards would clearly need to be discussed with them. They would naturally wish to put the work on a formal customer/contractor footing and control it to a greater extent than now.

31. The difficulty comes in the extent to which the commercial interests of the Boards may cause them to be unwilling to fund areas of research in the safety field or outside it which appear to the Authority to be of long-term importance. The present PWR work, for instance, which is

now accepted as being fundamental support for the CEGB's case at Sizewell B, was originally initiated by the Authority despite CEGB opposition. The Government's continuing strategic interest in the UK nuclear programme, and the sensitivity of the safety issues, are relevant here.

32. Also relevant is the role of the NII. The UK regulatory regime places the onus for establishing and proving a nuclear safety case to the satisfaction of the NII on its proponents (ie the operators of the proposed installation), who are expected to sponsor any necessary supporting R & D. There are no written regulations governing the licensing process, which depends upon a continuing dialogue between the NII and the owner. Under this system the NII spend only limited sums on R & D or technical support (some £2m pa currently), which are designed principally to assist their understanding of safety cases put forward by the owner. NII would prefer not to have to initiate and direct large safety R & D programmes.

33. Some would also see a danger that a large programme might lead the NII to suggest design changes themselves, and individual inspectors to become advocates of particular design solutions. The success of the present regulatory approach is seen as depending in part on the existence of the Authority as an expert body undertaking safety R & D independently of the nuclear industry. The NII currently enjoy good relations and direct access to Authority staff, and are able to influence the scope and direction of its safety work and draw on its expertise and independence of view. It is important that this position should not be jeopardised.

34. The Group believe that it would therefore be right for the Authority to be able to undertake <u>some</u> work independently of the Generating Boards. Currently some £17m of work is being undertaken by the Authority on the vote, reducing to £13m in 1987/88. Detailed analysis would be required to

determine what proportion should continue to be undertaken on an independent basis. The work could be financed in one of a number of ways - by the Generating Boards on a non-specific basis and with guaranteed access by the NII to the results, by some expansion of NII funding (although this could only cover the safety work) by the Department with NII advice where relevant, or by some combination of these.

35. The Group consider that the best solution would be for this work to be wholly funded by the Generating Boards on a non-specific basis, provided that arrangements can be agreed which ensure independence, NII access and continuity. We therefore recommend that further discussions should take place between the Department, the Authority, the Generating Boards and the NII with a view to securing this objective. The remainder of the Authority's thermal reactor research should be both financed and controlled by the Generating Boards.

iii) General Safety

36. Research into general reactor safety and acceptability is expected to cost £5.3m in the current financial year and £5.6m cash in 1987/88, funded entirely from the vote. About £4m of the current programme is designed to provide generic understanding of issues relating to the safety of nuclear plant, covering such matters as accident conditions in the reactor core, and consequences of accidental releases of radioactive materials. The Group considers that the Generating Boards and BNFL are primary beneficiaries of this work. However, here too there are some areas - such as studies relevant to the possible effects on the UK of a French PWR accident - where the Government clearly has an interest and a responsibility, as does the NII. It would be necessary to disentangle these threads in further discussions between the Department, the Authority and the Generating Boards before coming to a final view about the extent of the work which the Department should continue to fund.

37. The programme also covers the cost of the Authority team responsible for its own safety policy and for inspecting the safety of all Authority reactors and other facilities (about £1m per annum). The Group consider that these costs should be treated as an overhead and charged out to the other programmes, including those which are funded by the Department.

38. The Treasury does not agree with the recommendations in paras 35 and 36 above. These represent a retreat from one of the Report's major themes - namely that projects should be funded on a specific basis by their potential beneficiaries under a customer/contractor relationship. More particularly:

(a) the recommendation in para 35 for non-specific funding is based on an assumption that specific funding by the potential beneficiaries would not produce the "right" level of activity in this area. The Treasury sees no basis for this assumption. There is nothing in the case-by-case approach involved in specific funding to suggest that worthwhile projects would not be funded. At the same time the approach does provide an important discipline on the parties concerned which is lacking with non-specific funding;

(b) the recommendation in para 36 is unclear. It is expressed in terms of the need to "disentangle" the threads of funding. The application of the customer/contractor principle to specific projects in this area would automatically disentangle the funding. It would leave projects to be funded by their potential beneficiaries while projects which attracted no backer would not be pursued;

(c) in both areas the Treasury considers that an appropriate safeguard would exist to protect the national interest. It would be open to the Department of Energy to be a customer for a specific project which it considered valuable but for which the AEA was unable to attract a customer from within the nuclear industry.

iv) Radioactive Waste and Nuclear Materials Management

39. Gross expenditure is expected to rise from £38m in 1984/85 to £48m in 1987/88 and net vote funding from £19.5m to £28.8m cash. It comprises, however, a number of distinct though inter-related component parts:

(a) the operational programmes, whose net cash cost is expected to rise to nearly £16m by 1987/88. This is expenditure, some of it on capital works, which is required for the safe handling, treatment, transport and storage of the Authority's own waste arisings from past vote funded programmes. As such it is both essential and, in the Group's view, a proper call on the Department's resources. The only area of doubt relates to the programme for decommissioning the Windscale AGR beyond normal safety requirements to a "green-field" site by 1993 as a demonstration project. The Authority is clearly liable for the decommissioning of its own reactors, but Generating Board contributions to the cost have been sought, as they will benefit from the knowledge and technical advances gained through the work. However, as a matter of policy, the Boards do not at present wish to participate, as decommissioning to a

"green-field" site for commercial reactors is not contemplated until some decades after station closure if at all. Nevertheless the Boards (and BNFL) will clearly derive benefit from the programme if it increases the public acceptability of nuclear power and the Group therefore consider that they should make a substantial contribution to its cost.

(b) R & D judged necessary by the nuclear industry and the Authority to support the safe conduct of their own waste management operations, and to meet regulatory requirements in a cost-effective manner. This work is expected to cost £15.3m by 1987/88 (£5.4m net) of which:

- some £8m will be on repayment terms for nuclear customers;

- £3.1m will be for NIREX, the body set up by the AEA, BNFL, CEGB and SSEB for the disposal of low and intermediate level radioactive wastes from the partner organisations and, with appropriate charges, from other organisations. Of this £1.9m will be repayment work and £1.2m operational expenditure;

- £4.2m will be in support of the Authority's operational programmes. The Authority will continue, on commercial terms, to make available results from this research which have wider application to the rest of the nuclear industry.

(c) R & D funded and directed by the DoE in

support of their policy and regulatory responsibilities based on the Government's response in 1977 to the Sixth Report of the Royal Commission on Environmental Pollution (the Flowers Report) and the 1982 White Paper on Radioactive Waste Management. DoE funding is currently running at £3½m pa, including contracts with BNFL which have been sub-contracted to the Authority. DoE will clearly continue to have a major interest in R & D in this area.

(d) other work which, in the Authority's view, is important to the long-term acceptability of nuclear power in the UK. This amounts at present to about £0.4m pa.

40. The analysis referred to in para 39(b) is complicated by differences of view between the DoE, the Authority and the Department about their respective roles following the Government's response to the Flowers Report. This gave DoE responsibility for nuclear waste management policy and for control of the waste management element in the total expenditure on nuclear R & D which the Authority is authorised to incur (Cmnd 6820 para 17). Whilst recognising that there is a grey area between operational work on the one hand and R & D on the other, DoE argue that they can only exercise such control if they have complete responsibility for research and development relating to the Authority's own wastes, for funding the Authority's contribution to NIREX R & D, and for commissioning longer term research.

41. By contrast the Department of Energy and the Group believe it is impracticable to draw a rigid line between operational work and R & D, and that since the Authority has responsibility for the safe operation of its own sites and the safe disposal of wastes final judgement on whether research to support these operations is necessary cannot

rest with DoE. The Secretary of State for Energy has ultimate responsibility for the Authority's discharge of its functions and must therefore be in a position to judge whether such R & D is required and to fund it if necessary. We also believe that mixing the DoE's regulatory role with sponsorship of R & D necessary to fulfil NIREX's obligations to meet regulations carries potential problems. Finally, the Group agree that, given the sensitivity of radioactive waste issues, it is conceivable that the Secretary of State for Energy might from time to time wish to fund some longer term research work to be carried out independently of both the DoE and the Generating Boards/BNFL. However, it considers that the work which the Authority currently believes should be in this category has not yet been sufficiently scrutinised for the Secretary of State to make a judgement on funding.

42. Discussions to resolve the Department's difference of view with the DoE continue, and the Group's conclusions in this area should therefore be regarded as subject to their outcome, which will be reported to Ministers separately.

e) Other nuclear materials management & & D

43. This is the other main component part of the programme, comprising R & D related to the handling of radioactive materials, their transport and reprocessing. It is expected to cost £12m gross (£8m net) in 1987/88. Some continuing vote funding is clearly justified, to cover work in support of the Authority's own operational requirements. Also political and public perceptions in this area - for example on the safety of irradiated fuel transport flasks - mean that the option of Departmental funding of specific projects on an occasional basis should be retained. However there are a range of beneficiaries of the programme other than the Department, and the Group is not convinced that the present balance of funding between the vote and other customers is right, or that it is appropriate for the Authority to continue to fund R & D assistance to UK equipment manufacturers through its

active handling programme. We consider that the programme should be reviewed in detail to determine which elements are appropriate for continued Departmental funding and those which other beneficiaries should fund if they wish them to continue.

v) Underlying Research

44. The programme is planned to run at a fairly constant level in real terms, with net vote funding of about £23m (cash) in 1987/88. The Group consider that any research organisation must undertake some underlying research independently of its contracted work in order to retain intellectual vigour, to underpin the other programmes, and to maintain its ability to secure future business. Otherwise it is unlikely to survive in the longer term. The Authority is no exception to this requirement.

45. However, by the same logic, the Group consider that all the Authority's customers, both nuclear and non-nuclear, have benefited from underlying research and should, as proxies for future customers, to a greater or lesser extent contribute to its cost, whereas at the moment it is virtually entirely vote funded. This does not mean that the programme should be controlled by the customers. While the present consultations with interested parties should continue, only the Authority itself can have a fully informed view of the most appropriate content of the programme. Regarding its total size, the 1971 Rothschild Report considered that about 10% of R & D expenditure should be in "seed corn" or "blue skies" research, although this was no more than a rough rule of thumb which few research organisations have in fact achieved. In developing the approach recommended below it is suggested that the present programme should be taken as the starting point, although its future size will largely depend on the resources the Authority have available to deploy on it. There should also be no increase in its scale without prior consultation with the Department who, as the biggest customer for other Authority programmes, will continue to

make the largest single contribution to its cost.

46. The Group recommend therefore that the guiding principle should be that the costs of the underlying research programme - at present about 10% of other research expenditure - should be recovered as part of the overall costs of the Authority's activities, and incorporated in charges to all customers be they the Department's programmes, other Departments, the nuclear industry or non-nuclear customers. The approach to cost recovery would however need to vary between customers:

i) for nuclear work Government Departments who, given the Authority's largely monopoly position, require a degree of transparency in their quotations, would have to accept that a cost element of about 10% as a contribution to underlying research was reasonable and in their long-term interests. There should be a smaller contributrion from non-nuclear work;

ii) the Department would use its good offices to overcome the likely reluctance of other parts of the public sector - principally the Generating Boards and BNFL - to adopting a similar approach;

iii) for its private sector work, or where the approach above is not accepted, the Authority should aim to secure on average a similar contribution for underlying research; the amount recovered on individual contracts would vary with what the market would bear.

vi) Fusion

47. The plasma physics and fusion programme is costing £35.5

gross and £17.1m net this financial year. The present financial provision is for £35.8 gross and £18.8m net in 1987/88, but the Department's Strategic Review of the UK fusion programme recommends some scaling down. The Review is being handled separately and is therefore not further discussed in this Report. Whatever the eventual outcome it is clear that the UK's treaty obligations in relation to the JET project, and the remoteness of the programme from commercial application, make it something of a special case.

vii) Other Minor Nuclear Programmes

48. The Authority undertake a number of other small nuclear programmes on the nuclear vote, together totalling £3.2m net in 1984/85, which have not been separately considered by the Group. They include:

- a radiological protection and measurement programme (expected to cost £2.6m net in 1984/85) comprising safeguards work in support of the non-proliferation objectives of the International Atomic Energy Agency, R & D on nuclear instrumentation, and radiological protection research;

- a small assessment programme (£0.6m in 1984/85) concerned mainly with internal Authority economic and environmental policy planning;

- operation of the Winfrith reactor (cash surplus £0.15m in 1984/85).

Additionally there is a modest capital programme (£0.15m in 1984/85) for the maintenance/refurbishment of Harwell's two materials testing reactors. These might require major refurbishment or replacement towards the end of the decade, involving substantial expenditure of the order of £20-£30m in total.

49. Some of this work quite properly falls to the Department to fund - eg the Safeguards programme, which is discussed in Section V as a candidate for a full customer/contractor relationship between the Department and the Authority. However, the nuclear industry and its regulatory agencies would appear to be beneficiaries of the radiological protection research programme, and the capital provisions for the two materials testing reactors can only be justified as support for the other programmes, which should be charged accordingly. The Group therefore suggest that each element should be reviewed in detail to determine where the Department should remain the customer and where other beneficiaries should fund if they wish the work to continue.

viii) Non-nuclear Work

50. Although not specifically referred to in the Group's terms of reference non-nuclear work has become, as mentioned in para 21, a significant part of the Authority's total activities. Receipts in 1984/85 are forecast to be £28.6m, giving a cash surplus of about £5m which is used to reduce the net vote funding. The figures break down as follows:

£3.1m	Oil and oil-related work for the Department.
£5.5m	Harwell's management fee for the supervision by the Energy Technology Support Unit (ETSU) and by the Marine Technology Support Unit (MaTSU) of the Department's contracts with industry, principally for offshore work, renewable energy, and energy efficiency research.
£0.4m	Other ETSU contracts.

	£7.1m	DTI industrial support through the Requirements Boards.
	£3.5m	Work for other Government Departments, particularly MoD.
	£9m	A large number of other contracts, mostly with the private sector.
Total	£28.6m	

51. The Authority's approach to non-nuclear repayment work was considered in detail by the Department in 1982. It is intended as a spin-off from the nuclear programmes, not as an independently-initiated activity. It enables the Authority to utilise the resources required for the nuclear programmes more effectively and economically, while at the same time making the Authority's expertise available to Government Departments and British industry. The costing arrangements are designed to ensure that the Authority does not subsidise the non-nuclear work from the nuclear vote.

52. In the context of the need for efficient technology transfer from the AEA to UK industry, the Group has sought the views of the DTI about the value of this research and the desirability of an external review. The DTI, as the Department principally concerned, have however expressed themselves well satisfied with the quality of work undertaken by the Authority for their Requirements Boards, and confirm that they regard the Authority as a public sector body which most effectively secures commercial exploitation of its work. They do not see the need for an external review. They endorse the Authority's policy of undertaking contract R & D work as the best means of achieving information and technology transfer to industry. So does the Group.

53. The Group has noted recent proposals by the Authority Board to try and obtain private sector venture capital

funding for the commercial exploitation of research results in selected cases. This seems likely to lead to a modest improvement in the Authority's record of technology transfer, and should therefore be encouraged. The wider question of constraints on the Authority's non-nuclear work and the most effective exploitation of its undoubted assets and commercial potential is dealt with later in the Report (paras 95-99).

ix) Conclusions from Programmes Analysis

54. A main theme of this analysis is that the nuclear industry, as the primary beneficiary of most of the Authority's work, should play a major part both in determining what R & D it requires and in paying for it under normal contractual arrangements. Scarce Government resources should be used strictly to support strategic and policy ends, not as a hidden subsidy for the nuclear industry. Similarly the willingness or otherwise of commercial customers to increase their funding can often be a decisive test of whether the work is likely to be worthwhile.

55. However a second major theme is that there remains an important range of nuclear R & D which Government should continue to support. First, projects which the Government wishes to see undertaken but which the industry considers do not satisfy its commercial requirements. This would include projects like the fast reactor where any benefits are very long term and uncertain. Second, projects which relate directly to Departmental responsibilities such as both DoE and Department of Energy concerns with waste management. Additionally there are areas such as thermal reactor and general safety where the Group believe (Treasury excepted) that the nuclear industry should fund, but on a non-specific basis.

56. These considerations, reinforced by the unique nature of nuclear power and the problems of public perceptions, seem to us to require an authoritative body of independent

expertise such as the Authority now represents.

57. Although major steps in transferring funding from the Department to the commercial customers have already been taken in recent years, application of these principles suggests that substantial additional funding might be so transferred. Full implementation of the Group's recommendations could result in savings in the Departmental vote of £26.5-£28.1m by 1987/88, and examination of the £16.1m of presently forecast Departmental expenditure recommended for further analysis should yield significant additional savings. There could also be additional savings beyond the end of the PES period as key programmes such as the fast reactor move further along the spectrum towards commercialisation and industry funding. On the other hand these figures make no provision for the Authority's share of BNFL's pre-1971 waste costs, which could amount to £2-3m per annum.

58. These changes would inevitably increase the influence of the nuclear industry over the content of the Authority's programmes. However they would not in themselves result in a reduction in the total volume of R & D (although this is a possible outcome), or undermine the requirement for a body like the Authority to do it. The Department will remain a very major customer for the Authority's services, to the tune of 40% or more of its total expenditure in 1987/88. Hence one key issue is what relationship between the Authority and the Department is most likely to make the Authority responsive to Government's requirements and give best value for money.

V. Customer/Contractor Relationships

59. The Authority is already a major contract R & D business. About 30% of its income comes from a range of informed customers whose relationship with the Authority is commercial and contractual. Our programmes analysis suggests that this proportion should be increased by a shift from Departmental funding to funding by the nuclear industry. The Department's relationship with the Authority, and the Authority's financial basis, should therefore be such as to facilitate this evolution.

60. With this in mind the Group has considered the extent to which it might be practicable and desirable to put the Department's work with the Authority on a formal contractual basis. The potential benefits are:

- a more disciplined approach by both parties, with work better defined and costed;

- more meaningful milestones for monitoring and control purposes;

- a desirable degree of commercial tension given that contracts and hence funding will run out and require re-negotiation on a regular basis.

61. The precise nature of such contracts would vary between different areas of work. All would set out such things as objectives, timescale, cost, resources and milestones. However the degree of detail would vary from area to area. For example specification of objectives would necessarily be less precise in the areas where a broadly based programme of research is required than at the other end of the spectrum for specific development of a component for a defined project. Continuing projects would usually move along this spectrum during their life, although by the end of the process the contracts might well be with the

nuclear industry rather than the Department. In the initial stages at least it would not be appropriate for most Department of Energy contracts to be legally framed, given the flexibility required and the unproductive effort which would be involved in their negotiation and drafting.

62. This approach would place a clear responsibility on the Department for the formulation of policy, for the overall formulation of a programme to implement that policy, for the choice of the AEA as contractors for the work and for monitoring its subsequent progress. The AEA would advise the Department, in particular on the detailed programme required to implement policy, and would remain responsible for its own performance as a contractor and for its general efficiency, effectiveness and economy. In essence, the programme formulation would be an iterative process between the Department and the Authority with other parties having an important input.

63. At one end of the spectrum the Group has given special attention to the nature of the relationship for the fast reactor programme, which currently and prospectively accounts for about half the nuclear R & D carried out on behalf of the Department and has major strategic and international significance. For some time to come, the Authority will have a major role in proposing the work to be done, negotiating with international collaborative partners, and making technical decisions. We believe that, while the Department would have ultimate policy and financial responsibility, it would need to prepare a jointly agreed programme statement on which the Authority would act, rather than a legally framed contract. This would give the <u>substance</u> of a contractual relationship in terms of accountability via the general and specific targets, cost details, and arrangements for financial and technical reporting and monitoring. An indication, based on present knowledge, of the type of statement which might result from an iterative discussion with the Authority is at Appendix 1. We would expect increasing precision, especially about cost and time targets, as the programme

nears commercialisation.

64. At the other end of the spectrum one example of work which might be put on a full contract basis at once is the small Safeguards programme in support of the non-proliferation objectives of the International Atomic Energy Agency in Vienna. Here the Department already has the necessary technical expertise and monitoring capacity in AE Division's Safeguards Office and the objectives relate specifically to the Department's own activities and direct responsibilities. An indication of the type of fully commercial contract which might be envisaged for this programme is at Appendix 2.

65. In order to help it operate this relationship and formulate the documents the Department would need to engage perhaps 2-3 nuclear experts. Their purpose would not be to second-guess the Authority technically, but rather to assist in the determination of meaningful programme targets and, by their ability to probe technical questions, to enhance the Department's informed customer capability. The increased monitoring responsibilities might also require the strengthening of the administrative resources and accounting expertise available to AE Division.

66. One additional source of advice on the Authority's activities would also be available to the Department. As announced earlier this year it has been decided that all the Department of Energy's vote funded R & D, both nuclear and non-nuclear, should be incorporated in a unified budget from 1985/86, and that the role of the Advisory Council on Research and Development for Fuel and Power (ACORD) should be expanded. Under these arrangements ACORD will in future review the Authority's programme annually, advising on its broad balance, the way it fits into the wider context of energy R & D as a whole, and its relationship to national energy policies.

67. Auditing of the Authority by the National Audit Office

(NAO) would also continue. Financial accountability under the new relationship would need to be settled with Treasury formally. New letters of appointment as Accounting Officer would be needed to make it clear what the Department's Permanent Under Secretary and the Authority Chairman would answer for to Parliament (eg the Public Accounts Committee). Broadly, the Department would answer on policy and overall programme specification, and the Authority on its technical advice and efficiency of programme execution. The balance would depend on the nature of the programme. For example, in the case of the fast reactor programme the Department would have to make it clear that the overall specification of the programme resulted from discussions with the Authority and the other interested parties, and that it could not take responsibility for technical detail. It would be important that the Department did not move further down the path towards more detailed technical control than the nature of the programme justified.

68. Subject to these important reservations the Group conclude that it would be both practicable and desirable for the Department's relationship with the Authority to move onto a customer/contractor footing, with each programme being the subject of a separate contract or contracts, but with a varying degree of detail and formality according to circumstances.

VI. Privatisation of the Authority in whole or in part

69. Government policy is to reduce the size of the public sector and to privatise wherever possible. The Group has therefore examined the possibility of privatising the Authority in whole or in part, particularly as its success in increasing the commercial component of its business and the recommended extension of customer/contractor relationships might anyway appear to point in this direction.

A. Full Privatisation

70. A number of major considerations arise:

a) Monopoly Implications. The programmes analysis suggests that a small number of large Departmental programmes will continue to make up the core of the Authority's work for some years to come, with the fast reactor predominant. A key factor is the continuing monopoly status of the Authority in these activities. There is no realistic prospect of, for instance, the fast reactor work being opened up to competition in the immediate years ahead and, accordingly, privatisation could not, in these areas, lead to increased efficiency by exposure to market forces.

b) Asset Values. The Authority's net assets have a book value of £154m, but their sale value would probably be lower. For example, potential purchasers might value stocks (eg of fissile materials) at disposal levels rather than replacement costs as in the AEA Accounts.

c) Liabilities. The Authority has substantial liabilities for radioactive waste treatment facilities to deal with wastes currently accumulating in storage, the costs of management of spent oxide fuel from AEA reactors, and the

future costs of decommissioning its nuclear facilities. Rough estimates are that these liabilities could amount to some £200-300m over the next 15-20 years, with a discounted present value of £140-210m. Annual expenditure could be of the order of £15-20m. Appropriate arrangements to cover these liabilities would be required before any transfer of responsibilities to the private sector could be contemplated.

d) Significant working capital (a rough estimate being £100-125m) would have to be injected by the purchaser or by Government, to cover the likely change in the timing of payments for Departmental work from monthly in advance to quarterly in arrears. (However, to the extent that a privatised Authority was being funded by Departmental contracts, this could be managed in a PSBR neutral manner).

e) Pensions. At present the Authority's statutory schemes are notionally funded, with the excess of contribution receipts over pension payments going to the Exchequer. After privatisation (which could include the AEA pension office) a new funded company scheme would probably be set up. If responsibility for the existing schemes (which would probably be closed to new entrants) were transferred to the new organisation, a cash transfer from the Exchequer of £500m in respect of existing liabilities for AEA staff would be required - and a further £500m if (as would be likely in such circumstances) the new organisation took over all the liabilities of the schemes, including staff from BNFL, and some staff from Aldermaston, Amersham International, NRPB and SERC. Alternatively the scheme could remain as a Government responsibility, with immediate Exchequer costs limited to transfer costs for those employees who wished to join the new company

fund and, in the longer term, some bringing forward of the date at which the pension payments from the scheme exceeded contributions.

f) Public Perceptions. Public concerns over nuclear issues suggest that now is not a good time to seek to privatise a key element of the nuclear industry, and that to do so might undermine wider policy objectives.

There might also be particular concerns in relation to the role of the AEA Constabulary, which has responsibility for both Authority and BNFL sites and is permitted to carry firearms to protect nuclear materials in store or in transit within the UK. Security aspects, for example in relation to a private sector body handling and generating classified material, would also require careful consideration.

71. The Group has concluded that, taken together, these factors mean that privatisation of the Authority as an entity, whilst possible in principle, is not a realisic option at this time. Nevertheless, as the proportion of Departmentally funded work falls and the percentage of the Authority's work being undertaken on a commercial contract basis increases further, and as the fast reactor draws closer to fully commercial application, very different circumstances might emerge. Prospects for privatisation as a longer term option should therefore be kept under review.

B. Partial Privatisation

72. The Group has also examined the feasibility of privatising individual establishments, or "business centres", particularly those engaged on non-nuclear work.

73. Individual Site Privatisation

The key issue is the nature of the Authority's work which requires it to organise its professional staff in terms of disciplines rather than on a programme or project basis, bringing together the various disciplines, expertise and facilities as required for individual projects. Each of the various component parts of a programme are handled at the establishment best equipped with the appropriate expertise and facilities. Would this highly-integrated approach and the interdependence of the Authority's establishments make partial privatisation of an individual location inefficient?

74. The Group has looked in most detail at Harwell as the most obvious candidate, given its high proportion of contract and non-nuclear work and favourable location. The nature of the Authority's work and the integrated approach are illustrated at Appendix 3 using an example from the fast reactor programme. The illustration highlights the key role of Harwell in the solution of the problem.

75. The illustration is also not untypical. Harwell covers 3 main areas of work. The nuclear power R & D embraces gas and water-cooled reactors, the fast reactor, safety and reliability, radioactive waste management and fusion. The underlying research programme underpins the totality of the nuclear programmes at Harwell and elsewhere. Harwell staff are thus very closely integrated with each of the main programmes efforts, and the site contains major facilities which are all employed on a variety of different vote funded and contract programmes. The non-nuclear work ensures the most cost-effective use of staff, expertise and facilities already required for the nuclear programme. It is interwoven with the nuclear work both at Harwell and elsewhere, with staff being employed for proportions of their time on various different programmes and using a range of laboratory and capital equipment.

76. To overcome, or at least limit, these problems, given the nature of the work and the integrated approach it demands,

would require a complex series of contracts between Harwell and the rest of the Authority in both the underlying research and applied areas. It is likely that Harwell would lose business, certainly with the rest of the Authority, putting at risk its present expertise and facilities and reducing its commercial attractiveness to potential customers. The opportunity for ready staff and technical interchange between establishments would be lost. In addition, measures would have to be taken to ensure retention of Harwell's key staff - its major asset.

77. Privatisation of Individual Business Centres. The Group has further considered whether privatisation of the Harwell "business centres", such as the Metals and Chemicals Technology Centre or the Non-Destructive Testing Centre, might be possible.

78. These Centres have been established to exploit particular areas of expertise or to serve a particular market by selling research services. However, whilst each Centre has a Manager, it does not have permanent resources. It must compete with other programmes for staff resources, equipment and services for each contract. Most contracts require an input from a range of scientific and engineering disciplines. The team will comprise some staff working full time and others part time whilst continuing to work on other programmes also. The staff mix and numbers working for the Centre will thus change as a contract progresses. The Centre will have first call on some capital equipment, experimental rigs and instruments, but will often also utilise those "owned" by other nuclear and non-nuclear projects. The Centres rely on Harwell's central engineering services for design, manufacture and engineering projects expertise. Appendix 4 gives an example of how a Harwell Business Centre draws on diverse inputs in undertaking work for its clients.

79. The Group has concluded that the very highly integrated nature of the Authority's activities as a whole, both between its nuclear and non-nuclear work and between

individual establishments, makes single site privatisation difficult to envisage and likely to lead to substantial diseconomies. The potential benefits of privatisation would be unlikely to outweigh the inevitable weakening of both the privatised establishment and the remainder of the Authority through the loss of staff and technical interchange and through the inefficient use and potential duplication of resources.

80. The Group has also concluded that the "business centres" as presently operated are viable and effective organisations only as an integral part of Harwell's overall work and organisation. They derive their expertise and strength only by drawing on the Authority's mainstream expertise. There must be doubt as to how long they would survive if hived off from the rest of the organisation.

81. However, in each case, and as with full privatisation, the situation may change over time. The Group has also not looked at the other sites in the same detail as Harwell, although it is clear that similar considerations apply. The assessment of the balance between the costs and benefits of privatisation turns largely on an assessment of the factors listed above which can only sensibly be done by AEA management. The need to keep under review the scope for partial privatisation should therefore be made a specific part of its remit.

VII. The Authority as a Trading Fund

82. Whilst not immediately practical, possible eventual privatisation would be facilitated by putting the Authority on a Trading Fund basis. This, and the Group's view that the customer/contractor approach should be extended to the Authority's nuclear work for the Department, has led us to consider other possible advantages of a Trading Fund. This would build on the existing situation in that the Authority already operate fully commercial accounts, and part of their work is already undertaken on a "trading basis".

83. The key features of Trading Funds are:

- a capital structure based on treating the value of assets at vesting day as a loan from Government. The Fund pays interest on the capital to the Exchequer;

- a profit and loss account and ability to carry surpluses/deficits forward from one year to the next;

- subject to an External Financing limit (EFL) and a limit on total indebtedness, the Fund can borrow as necessary from the National Loans Fund (NLF) to finance capital investment, existing debt or working capital;

- the responsible Minister sets financial objectives for the Fund with the agreement of the Treasury.

84. The principal advantages of making the Authority a Trading Fund are:

(a) it should have a positive effect on attitudes. At present some 30% of the

Authority's work is undertaken on a trading basis, rising to about half if all the Group's recommendations are implemented. A Trading Fund would require that all work be accounted for on a fully commercial basis;

(b) it would be the most appropriate financial vehicle for the extension of the customer/contractor regime to the Department's work;

(c) it would impose an additional discipline through the requirement to meet financial objectives;

(d) it would create financial flexibility between years. At present the Authority cannot carry over revenue surpluses/deficits, and has only limited powers of capital carryover;

(e) it would highlight, via the requirement for a capital structure and opening balance sheet, major issues such as the provision for long-term liabilities, and ensure that such issues are faced in commercial terms;

(f) it would facilitate possible eventual privatisation, as the Authority's major programmes move down the path to commercialisation.

85. The Group recognise that the benefits which might be expected to flow from a Trading Fund in the short term are circumscribed. Despite recommending an extension of the customer/contractor regime, the Group accept that some key programmes - particularly fast reactor and fusion research - would have to be handled on a contractual basis which would, at least initially be neither arm's length nor legally framed. Furthermore, in these areas the

Government would have effectively nowhere else to turn, so that there would not be a competitive trading situation. Nevertheless, to the extent that the programmes migrate over time towards full legal contracts, these constraints might be expected to diminish. Also, the Department's monitoring arrangements for these programmes would require "full disclosure" on the Authority's part and would be designed to encourage maximum efficiency.

86. There would additionally be many detailed issues to be settled before a Trading Fund could be established. For example, asset valuation, treatment of provisions, and the establishment of realistic financial objectives would all require careful study.

87. Nevertheless the Group conclude that the advantages of a Trading Fund are clearly greater than its limitations and that the Authority should therefore operate in future on this basis.

88. Once established as a Trading Fund the Authority would no longer receive Grant-in-Aid. Its income would come from contracts with commercial customers and from payments by the Department for its "contracts" placed with the Authority. A key point is whether Departmental "contracts" should contain a profit element. If they did not, it might encourage two distinct classes of Authority work, with priority attention being given to the profit-making areas at the expense of the Department's non-profit making programmes.

89. The Group therefore consider that a full Trading Fund in which all contracts, including those for the Department, would be on a with profits basis, so as to give a return on assets, is the right approach and would provide the maximum commercial incentive to increased efficiency.

90. The idea of the Authority making a profit out of the Department's nuclear vote might give some presentational difficulties. But since the Authority already make

profits on work done for other Government Departments, they should not be insurmountable.

91. The consequences of the change to a customer/contractor relationship between the Department and the Authority and the operation of the Authority as a Trading Fund would include the payment by the Department of a margin to the Authority and the payment of VAT on contracts. The Group consider that these transactions should be arranged to be PSBR neutral but it was noted that they would generate a small additional payment to European Community own resources. Preliminary calculations suggest that this would initially be of the order of £3m per annum net (after taking account of the rebate negotiated at Fontainebleau). The calculation of our contribution to own resources in any given year involves both the total VAT collected in that year, and the weighted average rate of VAT paid by final consumers in the UK two years previously. Customs and Excise are therefore being asked to investigate the likely effect on own resources of the additional VAT payments after the first two years.

92. PES savings would result from the other recommendations of the Group on future arrangements for non-departmental funding of work done by the Authority. The change to the customer/contractor relationship and the establishment of the Trading Fund would not increase the volume of the Department's nuclear programme but, through the payment of the margin and of VAT, would increase public expenditure. No consequential savings arise to offset this increase and it is normal practice for PES and Estimates to allow for the payment of VAT.

93. Ministers would therefore have to take a view when considering the Report as a whole on:

(a) how any net increase in liability to the EC should be funded;

(b) adjustment of the PES and Estimates

provision to accommodate the technical increase in public expenditure flowing from the switch to a customer/contractor relationship and the establishment of a Trading Fund.

94. Putting the Authority on a Trading Fund basis would require an amendment to the 1954 Atomic Energy Authority Act, not to establish the Fund itself but to enable it to borrow as required. However, provided that the intention to take legislative powers is clearly announced in the Parliamentary statement on Ministerial decisions arising from the Review, it might be possible to establish a Fund on an interim basis in such a way as to avoid any early requirement to borrow.

VIII. Technology Transfer and Full Exploitation of the Authority's Assets

95. The Authority's multi-disciplinary skills and facilities have been built up over the years largely at public expense as part of the UK's long-term strategy for the development of nuclear power as an electricity supply source. In this the transfer of technology is a continuing and major task of the Authority which should, however, not be affected by the Group's proposals.

96. The Group has considered ways in which technology and information transfer to industry in the Authority's non-nuclear work, including the application of nuclear techniques to non-nuclear areas, might be further encouraged. The activities in question fall into three basic categories: the sale of technical services, research contracts for customers, and development of specific products for commercial exploitation. As noted above (para 51), DTI endorse the policy of contract R & D for industry as the best means of achieving information and technology transfer, and have welcomed the Authority's proposals for private sector venture capital for comercial exploitation of selected innovation products.

97. The Group has considered particularly possible constraints on the realisation of potential. There are financial constraints on the Authority's freedom systematically to exploit the contract research market, where substantial initial outlays are involved. These would be eased somewhat if the Authority was on a Trading Fund basis, although the NLF does not provide risk capital. A Trading Fund would also overcome the present restrictions imposed by year end accounting. The prohibition on non-nuclear manufacturing causes some limited problems, but the Authority Board feels that some progress can be made without removing the legislative constraint. Furthermore the Group consider that removal of the constraint might lead the Authority into competition with its present customers and that it would not be in line with the

overall drive to transfer R & D results to industry, who are best placed to ensure commercial exploitation and manufacture. The Authority's links with civil service pay and conditions entail some inflexibility compared with some private sector organisations, but are not seen as a major constraint in most areas.

98. The Group conclude that the foregoing are not major constraints on realisation of the Authority's potential or on information and technology transfer to the nuclear and non-nuclear industries.

99. Nevertheless the Group is conscious of the need for a continuing careful balance between non-nuclear work and the core nuclear programmes. Accepting that non-nuclear and applied nuclear work is undertaken only as a result of firm contracts, and that to this extent the market decides the level of work undertaken, the Group nevertheless consider that it should not be an automatic response for the Authority to seek to offset a decline in nuclear work by an increase in non-nuclear work, although this may sometimes be necessary to maintain a viable team. Nor should it be presumed that all non-nuclear activities initiated within the Authority should continue to be undertaken in-house; the Authority's role here should be as initiator and innovator, with the ideas and activities being spun off to the private sector for full exploitation and development. Current policies with regard to concentration on contract R & D, and the proposed developments in respect of use of private sector venture capital, are judged to be in accord with these concepts, but the continuing need for a careful balance should specifically be drawn to the attention of the Authority's management.

IX. Role and Composition of the Board

100. The Group consider that the recommended changes in the role of the Authority and its relationships with the Department also have considerable implications for the role and composition of the Authority Board.

101. The 1954 Act requires that there shall be a Chairman and 7-15 other members of 'The Authority', appointed by the Secretary of State. (The Chairman and Members together are normally referred to as 'the Authority Board'). It further stipulates that 3 must have had wider experience of, and shown capacity in dealing with problems associated with atomic energy, one in administration and finance, and one in the organisation of workers.

102. The present composition of the Board is as below:

Sir Peter Hirsch	Chairman (non-executive). Has overall responsibility for the Authority and is concerned primarily with the Authority's scientific and technical programmes.
Mr A M Allen	Deputy Chairman and Chief Executive with responsibility for the day-to-day affairs of the Authority.
Dr T N Marsham) Dr L E J Roberts)	Full-time members, with executive responsibilities for the major management units and for all research programmes excluding

	fusion and general reactor safety research.
Part-time members:	
Mr C Allday	Chairman and Chief Executive, BNFL
Mr F E Bonner	Deputy Chairman, CEGB
Sir John Boyd	Former General Secretary, AUEW. Appointed as the member with experience in the organisation of workers
Mr John Bullock	Managing Partner UK, Deloitte Haskins and Sells
Sir Alan Cottrell	Master, Jesus College, Cambridge
Dr N L Franklin	Former Managing Director, NNC
Mr I T Manley	Deputy Secretary, Department of Energy
Mr R E J Roberts	Managing Director, G.K.N. Group.

103. The Secretary of State has recently announced that Sir Peter Hirsch is stepping down from the chairmanship at the end of September, although remaining on the Board as a part-time Member, and that Mr Allen will succeed him as Chairman for a one-year period.

104. The Board sees as its role the formulation of nuclear R & D programmes for submission to the Department, advice on nuclear issues of concern to the Government, and the management of the Authority's activities including the approved programmes. The presence on the Board of senior executives from the CEGB, BNFL, NNC and the Department has reflected the view that, despite differences of emphasis, the close relationship between the Authority and these component parts of the nuclear industry should be reflected at the highest level, and that these Members

have important contributions to make by virtue of their experience and expertise on the wider issues of policy before the Board, including the overall strategy for nuclear R & D.

105. If the Group's recommendations are accepted the Authority would become primarily a contract R & D organisation, financed on a commercial basis through a Trading Fund with financial objectives, although a number of its principal "contracts" would still be programmes carried out for the Department. It would remain a key source of advice on the content of those programmes and one of a number of sources of advice on nuclear issues generally. However, the executive and commercial role of the Board would assume a greater significance than it does now. It is difficult to see how in this changed situation senior executives from the Authority's key customers could continue to sit on the Board without potentially serious conflicts of interest and the inhibition of free discussion.

106. The Department would, of course, remain in a special relationship with the Authority as being not merely a major customer but also its sponsor or quasi shareholder. Membership of the Board has undoubtedly facilitated Departmental communications with the Authority in the past, as it has for the nuclear industry Members. However, alternative arrangements could be made without great difficulty.

107. The Group conclude that, in the new circumstances which would result from implementation of the Report's recommendations, the Authority Board should not include a member of the Department or senior executives of the electricity supply industry, BNFL or NNC. This should, however, not preclude the appointment of members with recent experience of these bodies who would not have the same conflicts of interest. The new circumstances would also increase the importance of the contribution and role of the independent part-time Members. It would be essential that they continue to bring to bear their wider

external experience on the executive and commercial challenges facing the Authority, especially in their areas of particular expertise, and to provide assistance and support to the full-time Members of the Board.

United Kingdom Atomic Energy Authority Establishments

FIGURE 1

FIGURE 2

Analysis of Funding by Customer

1984/85

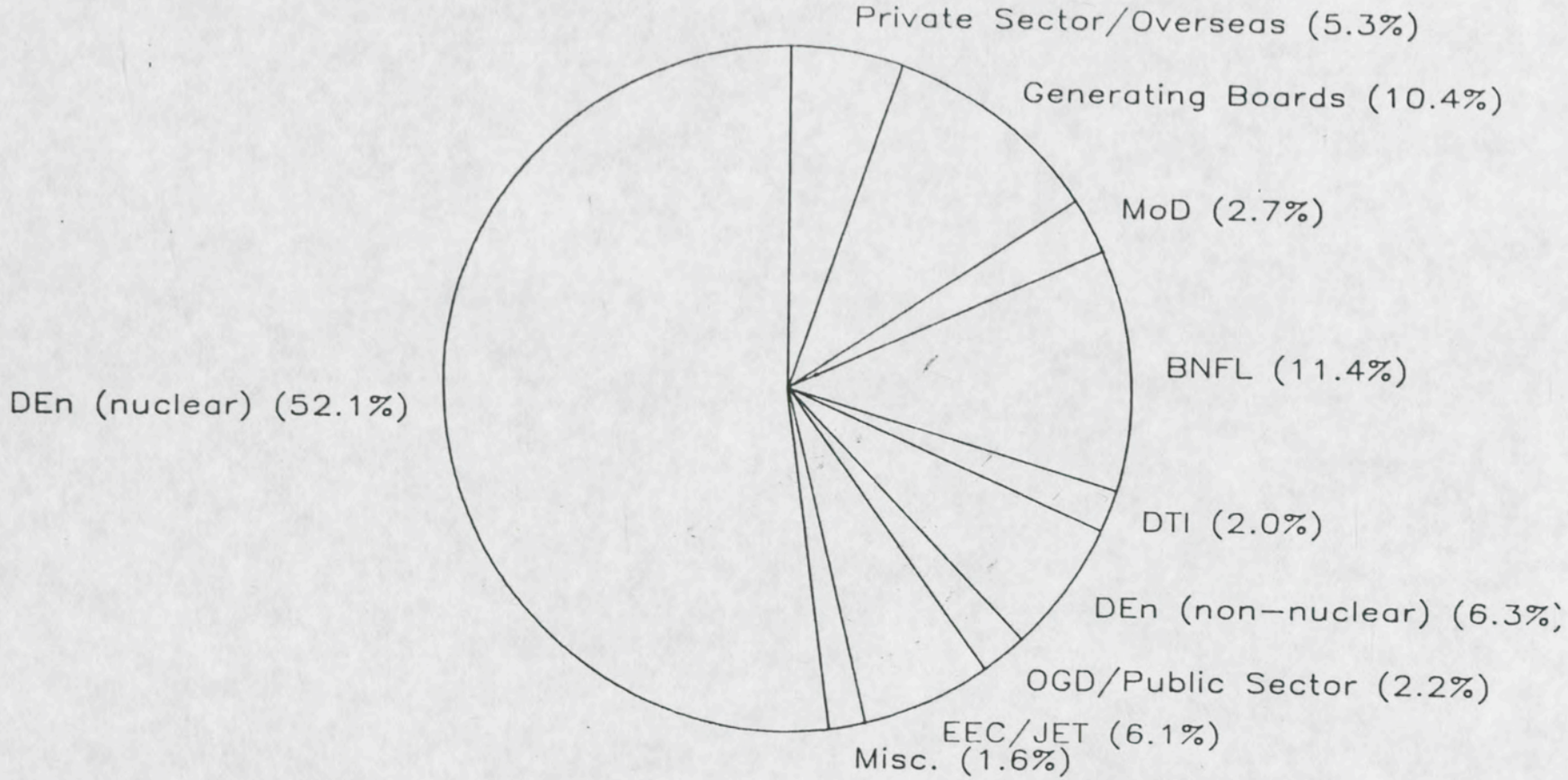
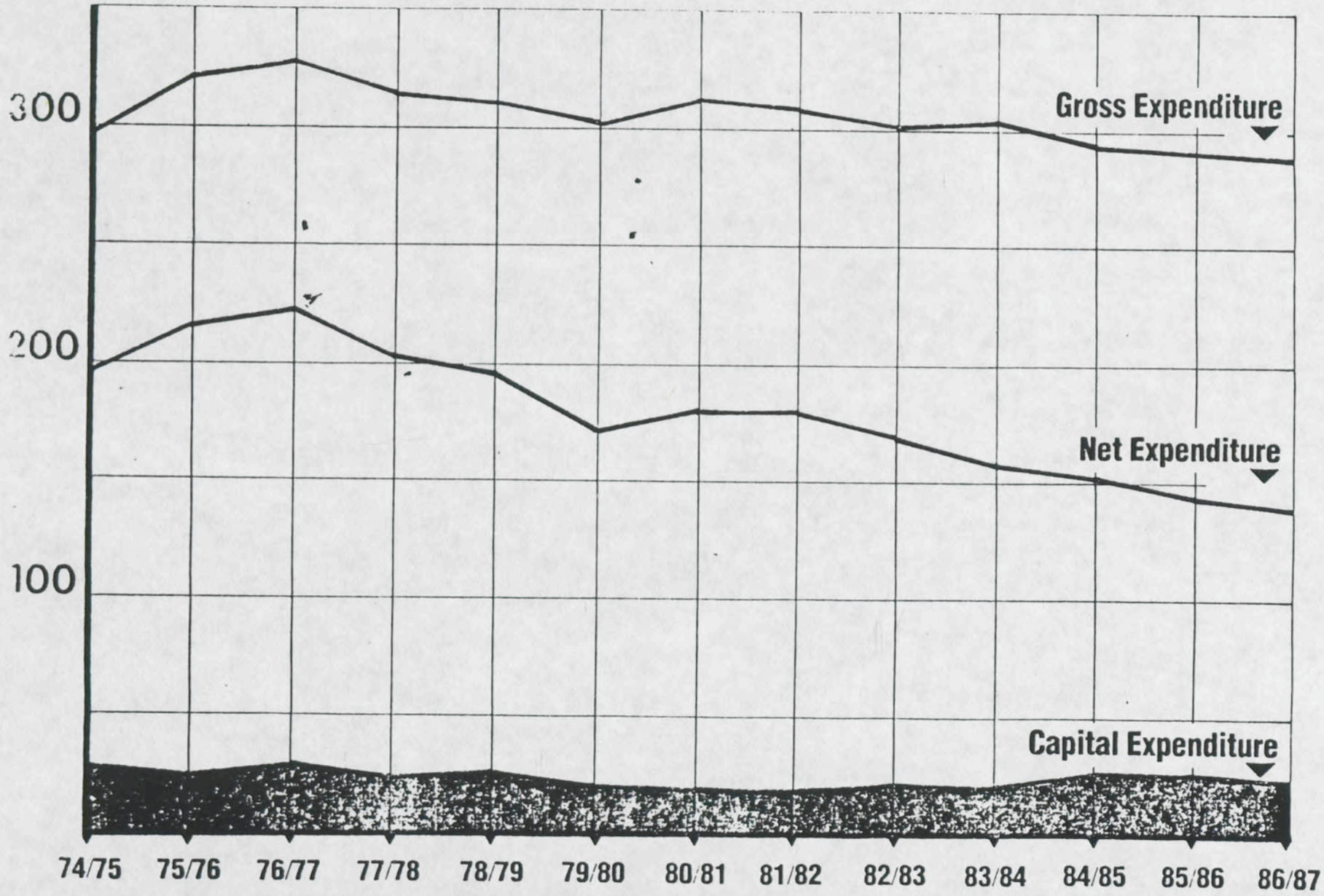


FIGURE 3

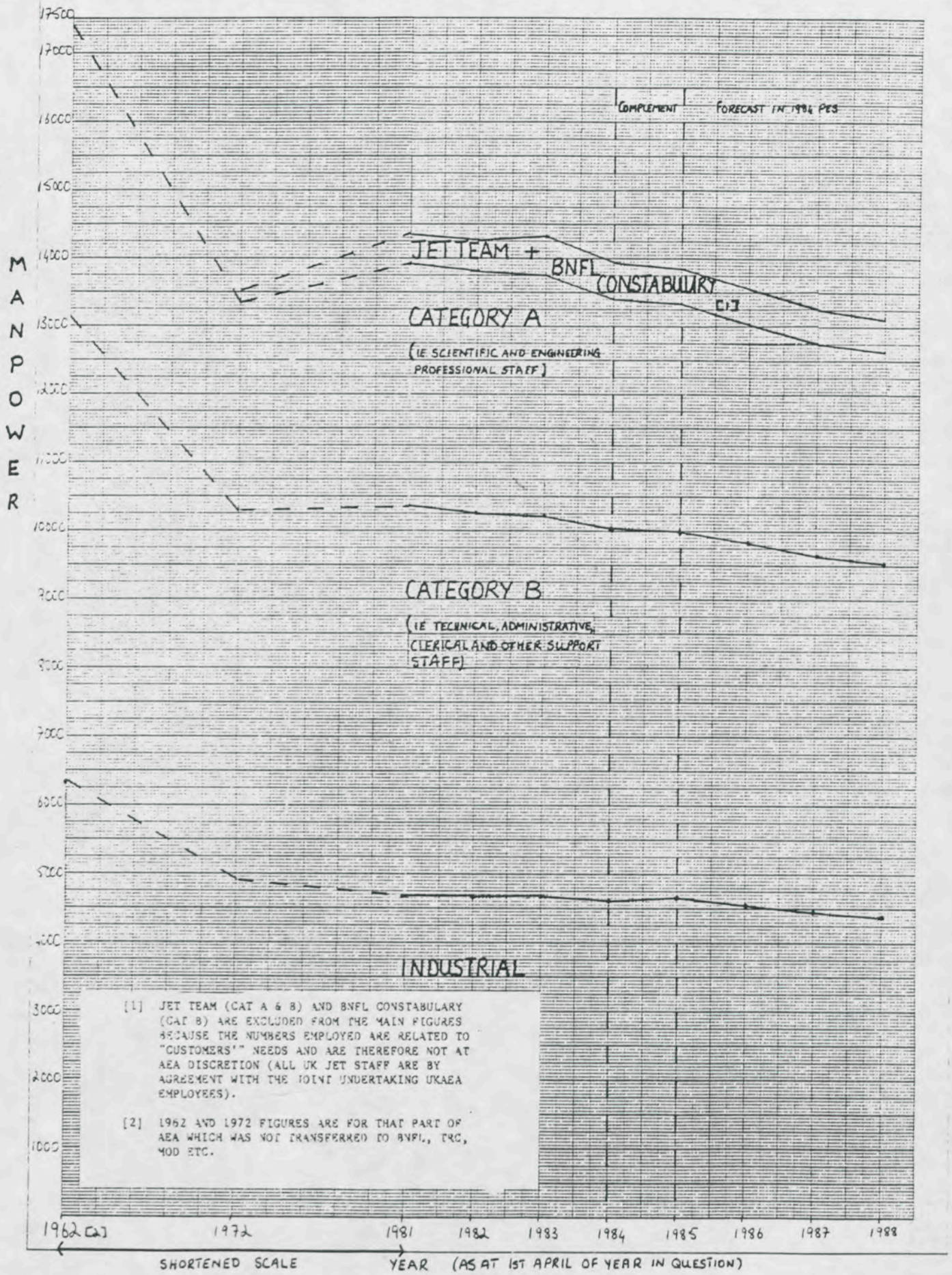
Trends of Expenditure (£m 1980/81 Prices)



Note:- All Figures exclude expenditure on the JET project

FIGURE 4

AUTHORITY MANPOWER 1962-1988



[1] JET TEAM (CAT A & B) AND BNFL CONSTABULARY (CAT B) ARE EXCLUDED FROM THE MAIN FIGURES BECAUSE THE NUMBERS EMPLOYED ARE RELATED TO "CUSTOMERS'" NEEDS AND ARE THEREFORE NOT AT AEA DISCRETION (ALL UK JET STAFF ARE BY AGREEMENT WITH THE JOINT UNDERTAKING UKAEA EMPLOYEES).

[2] 1962 AND 1972 FIGURES ARE FOR THAT PART OF AEA WHICH WAS NOT TRANSFERRED TO BNFL, TRC, MOD ETC.

TABLE 1

1984/85 Authority Programme Provisions

£m (cash)

	DEn Vote Funding	External Funding	Total Funding
Fast Reactor R&D	93.5	8.4	101.9
Thermal Reactor R&D	17.4	28.9	46.3
General Safety	5.3	-	5.3
Radioactive Waste and Nuclear Materials Management	19.5	18.5	38.0
Underlying Research	21.8	-	21.8
Fusion	17.1	18.4	35.5
Other minor Vote programmes(1)	3.2	17.3	20.5
Non-Nuclear R&D	NIL(2)	28.6	28.6
D/En contracts on renewable energy sources and energy conservation managed by ETSU	NIL	14.9	14.9
Other repayment work(3)	NIL(2)	35.0	35.0
Other Provisions	18.8(2)	10.4(4)	29.2
TOTAL	196.6	180.4	377.0

FAST REACTOR PROGRAMME

i) Overall objective

1. The overall objectives of the programme, as set out in the Authority's Corporate Plan, are:

- to retain for the UK the option of series ordering of fast reactors on a commercial scale at the time when it becomes likely to be an economically favourable strategy;

- to carry out with our European partners joint R & D programmes leading to improvements in design and costs of fast reactor power stations and associated fuel process plants and which support the demonstration plants to be built under the provisions of the collaborative agreements with Europe;

- to seek benefits for UK industry wherever possible.

ii) Basis for and context of Programme

2. The bases for the programme are:

a) the operation of the 240 MW prototype fast reactor at Dounreay, together with its associated reprocessing and research facilities, supported by work at other Authority sites, particularly Risley and Harwell;

b) the development work done at the Authority laboratories, in association with NNC design teams, and from now on in association with European partner organisations required to sustain one to three successively improved economic and safe full scale fast reactors.

3. The context of the programme is the inter-governmental Fast Reactor Memorandum of Understanding (MoU) signed on 10 January 1984, the three industry level MoUs on reactors, fuel fabrication and fuel reprocessing signed on 2 March 1984, and the discussions currently in progress in relation to specific agreements covering design, R & D and commercial aspects.

4. In order to handle the requirements of the international collaborative programme a joint organisation - the Fast Reactor Joint Co-ordinating Committee - has been set up to control UK fast reactor activities. This body meets regularly under Authority chairmanship with representatives from the AEA, NNC, BNFL and the Generating Boards. There are also [two] independent assessors, and the Department is entitled to attend as an observer.

iii) Specific Targets [to be expanded in discussion with Authority and with assistance of Department's nuclear experts]

5. (i) To achieve sustained operation of PFR at high power (240 MWe (gross) or higher) and a high availability (in excess of 50%) in time for the conceptual reactor design referred to in (ii) below, and to continue operation of the Dounreay fuel reprocessing plant:

(a) to provide (by 1989/90) improved confidence in the long-term operation of such plants;

(b) to provide data on performance, safety and reliability, essential for the design of large commercial-scale plant;

(c) to act as a test bed for new component development: and,

(d) to reduce to a minimum the amount of plutonium needed from other sources by enabling PFR to be operated on a closed fuel cycle.

(ii) To develop and validate within the international joint programmes a conceptual design for a commercial-scale lead reactor and a design for a joint reprocessing plant (by 1989/90):

(a) by the establishment of agreed design objectives leading to reduced cost and improved reliability;

(b) by carrying out a major reactor design and proving programme on key components in collaboration with the UK nuclear industry.

(iii) To provide research and development support with the UK making important contributions particularly in the international joint programmes on:

(a) engineering component development;

(b) high burn-up fuel development; and,

(c) fuel plant development.

(iv) To establish by 1989/90 criteria for the licensing in the UK of fast reactor stations by:

(a) contributing to the preliminary safety assessment of the current NNC conceptual design of a commercial demonstration station; and,

(b) collaborating with the international fast reactor community in both the improvement of the inherent safety characteristics of reactor designs, engineered safeguards and high-integrity components and the development of appropriate common safety standards.

iv) Costs

a) Total cost of Programme to completion

5. The programme is predicated on the planning assumption that construction of a UK lead fast reactor, to be paid for and operated by the CEGB, will start in 1993. The research programme will thereafter begin to be wound down. Any research required to support the commercial ordering of fast reactors will be the subject of a subsequent programme, to be paid for in full by the Generating Boards. The total expenditure in 1982/83 prices through to completion in 2001/2002 on this basis is estimated at £1.3 billion. The annual profile is at Annex 1. It is, however, understood that any revision to the date at which a lead reactor is started in the UK would also require a revision to these figures.

b) Allocation of voted funds to specific targets

A breakdown of the planned annual allocation of voted funds to the specific targets through to 1991/92 is set out at Annex 2.

c) PES forecasts

Forecast expenditure in cash terms for PES during the present settling down phase of the programme is at Annex 3.

v) Progress and uncertainties

An annual statement of progress towards targets is to be provided to the Department with the PES returns and will be discussed with them. However:

(a) The programme will be subject to change in the light of decisions made in discussions of European collaboration. It is as yet uncertain where or when the next reactor will be built. The split of R & D between the partners will not be agreed until the end of 1984.

(b) The structure of the programme will be subject to review in the light of technical developments for example, the performance of PFR and other Dounreay facilities.

AE 3

4 May 1984

FAST REACTOR DEVELOPMENT COSTS (NET)

£m	1982/83 Constant Prices
1984/85	£85
1985/86	80
1986/87	75
1987/88	75
1988/89	75
1989/90	75
1990/91	75
1991/92	75
1992/93	80
1993/94	85
1994/95	85
1995/96	80
1996/97	80
1997/98	75
1998/99	65
1999/2000	55
2000/01	45
2001/02	35
	1300

The table assumes that construction of a UK CDFR would start in 1993, but the figures do not include its cost. They also do not include design and component proving work by NNC in certain years which it is assumed will be funded by CEGB.

Fast Reactor Programme

Planned Allocation of AEA Net Vote Funds to Specific Targets

£m 1982/83 prices

	1985/86	1986/87	1987/88	1988/89	1989/90 - 1991/92
i) Operation of PFR and fuel reprocessing plants					
£m Net	35	31	30	31	31
ii) Design of lead reactor and joint reprocessing plant					
£m Net	3	3	4	4	4
iii) Research and Development support					
£m Net	37	36	36	35	35
iv) Safety					
£m Net	5	5	5	5	5
v) Total					
£m Net	80	75	75	75	75

Annex 3

£m (Cash)

	1984/85	1985/86	1986/87	1987/88
Net Vote	93.3	90.2	85.8	88.4
PFR Receipts	6.4	9.9	11.8	17.7
Gross AEA	99.9	100.2	97.7	106.1
Assured CEGB funding of design and component proving work	5.0	8.0	9.4	9.6
TOTAL	104.9	108.2	107.1	115.7

Possible Contract For Safeguards R & D

1. This paper sets out how a safeguards R & D programme in support of the International Atomic Energy Agency (and in line with UK policy) might be contracted for from the Authority by the Department of Energy. The note lays down the structure of the contract and also refers to some of the elements that might be required in the contract proposal.

2. Because of the close contact between AE Division and the IAEA, agreement on broad objectives for the programme should be fairly easy; similarly, the Department with assistance from BNFL and AEA should be able to judge the relative merits of particular routes to those objectives as proposed by the Authority. Indeed, the programme currently being pursued is the result of discussions in which AE Division has been closely involved.

PREAMBLE AND OBJECTIVES

3. The preamble would state the background of the programme. This is that in June 1980, the UK offered a three-year programme of R & D assistance to the IAEA in the field of safeguards, and the programme was agreed and formally accepted by the IAEA in July 1981. At the request of the IAEA, the core of the programme is centred round aspects of the nuclear power programme in which the UK has particular expertise, viz the Fast Reactor and its fuel cycle, and uranium enrichment by ultra-centrifuges. The UK support programme is one of ten offered to the IAEA by member nations and international agencies.

4. The proposal and the contract would then go on to give the broad aims and objectives of the programme which remain as agreed when the programme was established:

(a) To assist the IAEA in attainment of its safeguards goals in a cost-effective manner and to influence the formation of technical policy in that organisation.

(b) To enable the UK to meet its obligations under the Non-Proliferation Treaty and associated Agreements in as

cost-effective a manner as possible, both for existing facilities and those at the design stage.

5. There would be scope for some explanation of the context and justification of the programme along the following lines. Member states of the United Nations have decided that the IAEA should not be funded to conduct its own development work in the safeguards field. As a result, member states with major nuclear power programmes have made voluntary offers of support programmes. Although some of these have been in place for a number of years, the task of providing the range of equipment and techniques required by the IAEA is far from complete.

6. The UK support programme is a tangible expression of the Government's willingness to play their part in providing the means whereby the IAEA might attain their non-proliferation objectives. The withdrawal of UK support before the task is substantially complete would be an implicit statment that the UK alone among the nuclear powers no longer supported the non-proliferation objectives of the IAEA in a practical way. Within the UK the absence of a credible UK stance on non-proliferation could seriously undermine the public acceptance of nuclear power.

PROPOSED PROGRAMME

7. Reference would then be made to the programme content for the years covered by the contract under discussion. There would be likely to be an annex containing detail of the content, but both the main contract and the proposal could describe the broad work areas. These are as follows:-

A. Service Programme

8. Under this heading certain services are supplied to the IAEA. The exact details are subject to their request but one example is the provision of an annual two week training course to IAEA inspectors.

B. Generic Programmes

9. These address those elements of instruments and systems that are common to many systems or are fundamental to major safeguards topics such as destructive and non destructive analysis. For example, work on neutron interrogation is undertaken to analyse and to improve the performance of a number of instruments used for non-destructive analysis.

C. Enrichment Plant Safeguards

10. Under this heading, the aim is to develop techniques for the safeguarding of centrifuge enrichment plants. For example a system is being developed to detect by monitoring pipework the production of enriched uranium of enrichment in excess of that declared to the safeguards authorities.

D. Field Trials

11. Field trials cover the testing of instruments and systems developed in the UK and elsewhere. An example is the field trial of computer file interrogation packages for audit and safeguards purposes, which aims to streamline the work of inspectors and internal auditors and to reduce paperwork errors.

E. Plant Studies

12. These are a group of studies relating to practical problems in plant safeguarding. An example is work on K-edge absorptiometry in process plants, which aims to develop a system for the on-line analysis of plutonium in solution.

F. Exploratory and Short Projects

13. The definitions of these small projects is self-explanatory.

14. The proposal would need to justify why work was needed on a particular topic. For example the requirement for work on non-destructive analysis as part of the generic programme could be explained as follows.
Non-destructive analysis, while lacking the precision obtainable by destructive analysis, has great advantages in timeliness, convenience, and avoidance of sampling problems. When the programme began, non-destructive analysis using passive techniques, in which assay is achieved by measuring the natural gamma-ray and neutron emissions, seemed fairly well established, so work concentrated on active neutron interrogation. In this, a neutron source stimulated neutron production by the sample under interrogation. The main application has been to the determination of fissile material in wastes. Work is still needed to improve methods of correction for the effects of the matrix in which the fissile material is embedded. Experience over the past years has now exposed limitations in passive systems. A review of these is proposed and it seems likely that these too will require further development.

RESOURCES AND COMMITMENTS

15. A major element in both contract and proposal would be a statement of overall resources and commitments. A detailed annex might be required in the contract. The proposal would be for a three year programme totalling £1830K, the breakdown and phasing being as follows:-

	Cost £K*		
Project title	84/85	85/86	86/87
Service Programme	64	64	64
Generic Programmes	215	190	190
Enrichment Plant Safeguards	30	20	-
Field Trials and Plant Studies	160	150	150
Exploratory and Short Projects	20	20	20
New Projects yet to be defined		55	75
Management	66	66	66
Contingency	45	45	45
TOTAL	610	610	610

* The cost figures are estimated in 1984/85 money values at commercial rates

16. In support of the level of resources proposed in the UK it would be stated that these would be comparable with those from France, the Federal Republic of Germany, Canada, and Japan. A review conducted by the IAEA and national representatives in 1983 concluded that there was no significant overlap of activity between the programmes and little scope for the redistribution of tasks. The reduction in funding by Department of Energy of 20% in Autumn 1983 fortunately coincided with the completion of a number of tasks. A number of those remaining were about to enter a phase where a sharp rise in the rate of expenditure was required. By planned phasing of some of this it was possible to accommodate the programme within the reduced

budget without signalling to the IAEA that UK support was being reduced. It is unlikely, however, that further cuts in real funding could be sustained without political consequences. It is therefore proposed that the programme should continue at about the level agreed with the AEA for 1984/85.

17. Given the long term importance of international safeguards, it is likely that demand from the IAEA will continue. It is proposed to review the programme after 2 years with the probability of putting forward a case during the 3rd year for further work.

CUSTOMER INVOLVEMENT

(i) Customer monitoring

18. Since its inception, the programme has been managed within the normal AEA structure. Formal liaison with the IAEA is maintained by a "UK Support Programme Steering Committee" chaired by Dr. F. Brown, Department of Energy. UK policy matters and practical arrangements are at present agreed by an informal group, with representatives of the AEA, BNFL and DEn, which meets as required. Under a contract system, it would need to be stated in the contract that the day-to-day management of the project would rest with the AEA Project Manager and the formal liaison with IAEA would be through the Steering Committee chaired by DEn. It might be desirable to formalise the existing UK Group. The contract would also include a clause specifying the degree to which the contractor could change technical aims and resource allocations without reference back to the customer.

(ii) Periodic Technical Reporting Requirements

19. These would need to be specified in the proposal and the contract and would depend on the needs of the customer. The more detail required the greater the cost and staff requirements would be.

(iii) Intellectual Property Rights

20. The contract and proposal would cover appropriate provisions and it would be expected that ownership of the intellectual property would remain with the contractor (AEA). The Government as well as the AEA would have free use. Further/wider use including that by the IAEA would be subject to negotiation (although clearly IAEA must have access to the results).

FINANCE

(i) Financial Reports, Payments and Audit Rights

21. Relevant provisions would need to be included in the contract.

(ii) Nature of Charging

22. A cost plus system with limit of commitment would be appropriate. It is likely that charges would be on a fully commercial basis. The question of profit would be for discussion. VAT would also be added. A cost variation clause would also be required.

DURATION

23. The contract and proposal would need to cover the duration. The original programme agreed with IAEA was for three years and this would appear an appropriate period for any contract (c.f. also para. 17).

REVIEW AND NOTICE PROVISIONS

24. The contract and proposal would need to encompass (for both the Department's and the Authority protection) review and notice provisions (c.f. also para. 17).

WORKING GROUP TO REVIEW THE AEA

ILLUSTRATION OF THE INTEGRATED WORKING AND INTER-DEPENDENCE OF AUTHORITY ESTABLISHMENTS

To take an example from the fast reactor programme, the changes in dimensions of core components under fast neurtron irradiation, involving mechanisms not previously encountered, created a major problem. The solution was achieved by using the wide diversity of expertise and facilities in the Authority, closely co-ordinated under its project system. Salient among the many contributions were:

i) measurements by the Dounreay Fuel Technology Division of the deformation of fast reactor fuel pins (which are exposed to more extreme conditions than other fast reactor components) to guide the choice of the most deformation resistant alloys;

ii) the development by the Harwell Chemistry and Metallurgy Divisions of an accelerator technique by which several years of fast neutron irradiation damage could be simulated in a few days, providing both a better understanding of the deformation mechanisms and a rapid sorting technique for selecting new alloys for further investigation;

iii) the design by Risley Engineering Division and the National Nuclear Corporation fast reactor team of equipment by which the residual distortion of the core could be restrained and controlled;

iv) the production by the Harwell Theoretical Physics Division of a theoretical model of the core deformation and a related computer programme (CRAMP) which predicts the dimensional changes of individual components

and the consequential forces between them; and which in collaboration with the Risley Engineering Division and the Dounreay PER Operations team was developed into a fuel management system for the Prototype Fast Reactor, and in collaboration with NNC into a design tool for the Civil Fast Reactor core;

v) the development by the Acoustics Engineering Group at Risley of an ultrasonic under sodium viewing technique which, inter alia, allows any undue deformation of components beneath the surface of the molten sodium coolant to be monitored.

Inputs to the Harwell Business Centres

The Materials Engineering Centre is typical of Harwell Business Centres in the way it calls on varied resources from seven Harwell Scientific and Engineering Divisions. The attached histogram shows the proportion of time QSEs spend working on the project.

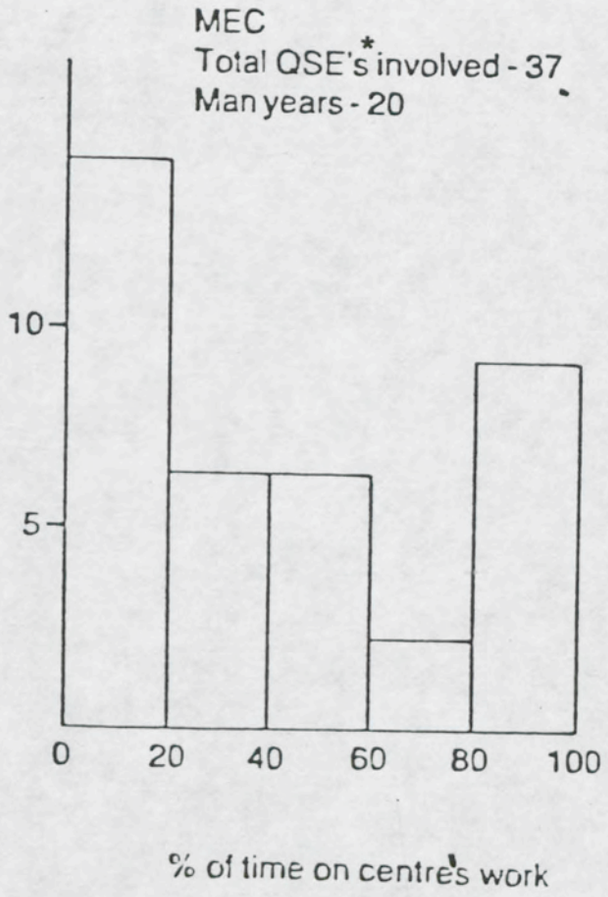
The Centre undertakes a wide ranging industrial programme with the emphasis on product and process development and the improved engineering use of materials. A typical current contract in which several Harwell Divisions are involved is a programme aimed at the development of advanced gas sensing devices. The programme is funded by a multi-client Working Party, whose objective is to develop new materials for semi-conductor devices for the detection of various gases. A parallel generic programme supported by the Department of Trade and Industry provides a fundamental understanding of the response mechanisms of semi-conductor sensors and information about the different ways in which these responses might best be exploited. Contributions to the programme are provided by:

- Chemistry Division, together with the Materials Development Division, who have been involved in the identification, preparation and screening of over 300 different materials for responses to a range of flammable gases. Within the generic programme, Chemistry Division have also developed sophisticated sol-gel methods of oxide preparation used to prepare a series of compounds which give better quality gas response data. Sol-gel techniques were developed for application on nuclear programmes.

- Theoretical Physics Division which has undertaken a statistical analysis of the responses of the most promising materials, resulting in the categorisation of responses into four main types. This allows predictions to be made of the reaction involved in the detection of most of the test gases. Within the generic programme it has also developed a theoretical structure against which the results of the materials screening programme may be evaluated.

- Materials Physics and Metallurgy Division, which has fully characterised materials offering useful gas responses using X-ray diffraction techniques. These techniques are applied in a wide range of nuclear and non-nuclear programmes.

The same materials are also being screened for response to some toxic gases and responses have been recorded in some instances at gas concentrations as low as 20 ppm (parts per million). A number of new materials have now shown promise for the detection of toxic gases and others appear useful as low temperature moisture monitors.



* Qualified Scientists and Engineers

SECRET

COPY NO 2 OF 11

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

Prime Minister

The Rt Hon Peter Rees QC MP
The Chief Secretary
HM Treasury
Whitehall
LONDON SW1

14 August 1984

Dear Chief Secretary

You will know that we are involved in a major energy efficiency campaign in which we anticipate that over the next five or six years we can reduce the energy costs of industry by up to £2 billion per annum.

I had planned a constant campaign over these years, but in discussing this matter with the Prime Minister I put to her the view that it was essential substantially to step up the campaign at the commencement of this winter.

There will of course be major benefits to our endurance at the power stations if we can persuade industry and the domestic user quickly to activate the range of things they are able to do profitably in order to reduce their energy costs. Every 1% reduction in electricity consumption secured and sustained through the winter is equivalent to a saving of 20,000 tons of coal a week.

The CBI have promised to assist in this, though obviously for their support to be effective the Government itself must take a positive lead.

I therefore propose to increase my advertising budget in this sphere, and spend something of the order of £3 million, primarily at the beginning of the winter. I anticipate that I will be able to find most of this money by making savings elsewhere within my total cash limit for Department expenditure in 1984/5. Given the contribution to endurance and what is at stake for public expenditure and the economy, I imagine you will see no difficulty about my using savings for this purpose. Should there be any risk of a small excess over the savings I make I will, of course, immediately write to you.

I am copying this letter to the Prime Minister, the Lord President, the Chancellor of the Exchequer and Robert Armstrong.

Yours sincerely

for PETER WALKER
Approved by the Secretary of State and signed in his absence

SECRET

File

MRS. GOODCHILD

The Prime Minister would like Sir Walter Marshall to be put on an invitation list in the near future. She would prefer it to be an occasion when the Secretary of State for Energy is also present, since Sir Walter Marshall is likely to try to nobble her on policy matters. Can you please look for a suitable opportunity.

E.E.R. BUTLER

17 May 1984

File

10 DOWNING STREET

From the Principal Private Secretary

SIR ROBERT ARMSTRONG

The Prime Minister has seen your minute of 15 May (A084/1467) about your conversation with Sir Walter Marshall.

The Prime Minister does not think that she can meet the Chairman of a nationalised industry on the basis proposed. She would always be glad to see Sir Walter Marshall and hopes to find an opportunity to invite him to 10 Downing Street in the near future, but she would prefer that conversations on policy affecting the electricity industry should take place with the Secretary of State for Energy present.

The Prime Minister would be grateful if you could explain her difficulty to Sir Walter Marshall and add that she nevertheless hopes to see him soon.

E. E. R. BUTLER

17 May 1984

CST 17/5.

Prime Minister

I really don't think I can. But here on the merits – and I MUST also come with the Secretary of State.

Particularly in connection with (2), you may like to be reminded of the note below.

I do not like your having to see the Head of a nationalised industry and concealing the fact from the Minister as suggested. Do you want to see him on this basis?

FERB 16.5

Ref. A084/1467

PRIME MINISTER

Sir Walter Marshall came to see me on Tuesday 15 May 1984. The purpose of his visit was to tell me about a certain number of things, on which he would very much like to report to you direct and know your views on a personal basis, without the Secretary of State for Energy being aware that he has done so.

2. The matters which he would like to raise are as follows:

(1) Though the Sizewell Inquiry has run much longer than expected, there is hope of a promising outcome. They have a good design with good safety, and they have held the capital costs. Sir Alan Cottrell has blessed the design. The United Kingdom industry is doing some very good work. Sir Walter Marshall is not proposing a PWR programme; but he has told the industry that (provided that all goes well at the Sizewell Inquiry) the CEGB will build Sizewell, and will go on to build other PWRs thereafter. He would like to be assured that you are content with that.

(2) Sir Walter Marshall is anxious to tell you about the reconstruction of the nuclear construction industry. He has now put together a consortium of companies for the nuclear steam supply system consisting of GEC, Babcock International, NEI and Westinghouse. He would like to have an opportunity of convincing you that this is the right way to proceed.

(3) He would like to tell you that he has found the CEGB to be a good organisation: all it needs is leadership. He does not think that there is much scope for privatising generation, though there may be scope for privatising area electricity boards.

(4) He would like to express his misgivings about the arrangements for policy and management of nuclear reprocessing and waste disposal - the "back end of the cycle". He does not have confidence in the Department of

the Environment's management of this, and wonders whether you would like him to propose that the CEGB should come in as a funding and co-ordinating agent. The CEGB has, in his view, a legitimate interest in the matter, since getting it wrong could put its nuclear power programme at risk.

(5) He would like to have a word about the fast reactor. They have now reached a satisfactory agreement with the French, but Dounreay is effectively on a care and maintenance basis. Sir Walter Marshall obviously feels that, if the Government wanted to be in a position to have a fast reactor - even a demonstration plant - working by the end of the century, more impetus would be needed. The CEGB could seek to involve itself; but you may be content to leave things as they are, on the basis that the fast reactor is not going to contribute significantly to electricity supply until well into the next century.

(6) There is also a delicate appointment question which Sir Walter Marshall would like to take your view on.

3. If you would like to see Sir Walter Marshall, perhaps I could discuss with Mr Butler how to bring this about in a way which ensures that the meeting remains strictly private.

RTA

ROBERT ARMSTRONG

15 May 1984

GR file? lo
NO C.F.
CRTA
D/N.

10 DOWNING STREET

From the Private Secretary

23 March, 1984.

The Prime Minister has asked me to thank you very much for your further letter of 21 March about the safety of nuclear installations.

The Prime Minister certainly does not underestimate the potential seriousness of these issues, and she agrees that it would be a good idea for you to discuss them further with Mr. Agnew at a convenient moment. No doubt you will keep the Secretary of State for Energy, as well as the Prime Minister, in touch.

David Barclay

The Lord Zuckerman, OM, KCB, FRS.

VR

Prime Minister (2)

To see

DMB 21/3

CABINET OFFICE
70 Whitehall, London SW1A 2AS Telephone 01-233 7240/7772

Z/0941

21st March 1984

Dear Prime Minister,

Thank you for your your very full reply to my letter of 9th February dealing with the overall safety of American nuclear power installations. I am aware, of course, that the pattern of responsibility for design and engineering of nuclear power stations in the UK is different from that in the US, and that we hold that our standard of engineering is probably higher on average than in the US.

It is also fair to note that -

(a) the total nuclear power generated in the US is an order of magnitude greater than in the UK;

(b) the average dose per man in the UK is also lower than that in the US;

and (c) the upward trend in the UK in the late 70's now seems to have been reversed.

But, without understanding the underlying causes, I still have a feeling - call it a hunch - that we should take very seriously the fact that the general trend in the US over the five years 78-82 inc. is upward. I know that you can rely on the Department of Energy keeping a watchful eye on the situation here, and I would never have drawn your attention or that of Peter Walker to the matter if the source of

/my

The Rt. Hon. Margaret Thatcher, MP
The Prime Minister

my information had not been Harold Agnew. If he is concerned about the long term trends then at least the US has something to worry about. And if anything were to go wrong with the West European nuclear power programme and budget, we would all have something to worry about. At John Peyton's party I suggested to you that at some convenient moment I might go over to see him and sniff around, and you seemed to think this was a good idea. I'll have a word with Robert Armstrong - to whom I'll copy this letter - to see what he thinks.

Yours ever,
Solly

S. ZUCKERMAN

MO/VC

c.c.
D/N
D/E
CO
FCO

10 DOWNING STREET

THE PRIME MINISTER

14 March 1984

Dear Sally,

Thank you for your letter of 9 February about civil nuclear power in the USA.

As described in the article from the 'International Herald Tribune' which you enclosed, the American nuclear industry has recently been experiencing considerable difficulties, including a string of cancellations of plants under construction. We must remember, however, that there are a large number of stations operating successfully. These of course receive little publicity!

There are a number of differences between the US and UK electricity generation schemes which make it unlikely, I believe, that the worst features of the American experience will be repeated here. The US is characterised for example, by a large number of small utilities, which vary widely in their experience of managing nuclear projects. Further the American financial system does not allow interest charges on plants under construction to be recouped from current consumers of electricity from existing plants. This hits small utilities particularly hard. In addition the regulatory system is cumbersome and legalistic by comparison with the approach of our Nuclear

/ Installations

to

Installations Inspectorate. And the availability of cheap coal in a number of regions of the USA gives nuclear power less attractive economics.

Nevertheless I think we in Government need to keep closely in touch with developments and I know that Peter Walker has this in mind.

You enclosed figures on radiation exposure at US commercial power reactors supplied by the American scientist Harold Agnew. These do indeed show an increase in the collective dose without much increase in generating capacity.

I am advised that there may be two main reasons for this. The first is post Three Mile Island backfitting operations at all stations.

The second is steam generator replacement and repair on PWRs, and repair work on feedwater and other stainless steel pipe works on Boiling Water Reactors. Although steam generator replacement work and repair work is continuing, experience is leading to better procedures and it is to be hoped that the overall statistics will improve.

I attach a table supplied by the CEGB giving equivalent data for British stations. These figures do not show similar trends to the American figures, probably because gas cooled reactors do not exhibit the same corrosion features as light water reactors (although the Magnox reactors have, of course, had other corrosion problems).

In the context of the CEGB's proposal to build a PWR at Sizewell B, the Nuclear Installations Inspectorate are carefully monitoring the CEGB's design changes intended to reduce the radiation exposure to workers. The matter is also being taken up during the examination of the safety case at the Inquiry.

/I hope that

I hope that these comments and the figures go some way to explain both the reasons for the US trend and its absence in the UK. Thank you very much for drawing the matter to my attention.

We spoke about this generally at Harold Macmillan's birthday lunch.

Yours ever

Margaret

The Lord Zuckerman, OM, KCB.

Foreign and Commonwealth Office

London SW1A 2AH

12 March 1984

GR

Draft with PM for sig. DMB 13/3

Dear David,

Thank you for letting us see the draft reply from the Prime Minister to Lord Zuckerman put forward by the Department of Energy. We have no objection to this draft.

I am copying this letter to John Neilson (Department of Energy).

Yours ever,

Peter Ricketts

(P F Ricketts)
Private Secretary

D Barclay Esq,
Private Secretary to the
Prime Minister,
10 Downing Street

JQ VC

10 DOWNING STREET

From the Private Secretary

6 March 1984

I enclose a copy of a letter to the Prime Minister from Lord Zuckerman about the civil nuclear industry in the United States.

The Department of Energy have kindly provided a draft reply for the Prime Minister's signature, a copy of which I also enclose. I should be grateful for any comments you may care to offer, by next Thursday 15 March, if possible please.

I am sending a copy of this letter to John Neilson (Department of Energy).

(David Barclay)

Roger Bone, Esq.,
Foreign and Commonwealth Office.

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

01 211 6402

GR

Pse type for PM's sig.

6/3

David Barclay Esq
Private Secretary to the
Prime Minister
10 Downing Street
LONDON
SW1

6 March 1984

Dear David

Thank you for your letter of 28 February asking for a revised draft reply for the Prime Minister to send to Lord Zuckerman's letter of 9 February.

A redraft is attached which draws more fully on the points made in my Secretary of State's minute of 24 February about differences between the US and UK nuclear scenes.

I hope that this is helpful.

Yours ever

John

J S NEILSON
Private Secretary

DRAFT

Thank you for your letter of 9 February about civil nuclear power in the USA.

As described in the article from the 'International Herald Tribune' which you enclosed, the American nuclear industry has recently been experiencing considerable difficulties, including a string of cancellations of plants under construction. We must remember, however, that there are a large number of stations operating successfully. These of course receive little publicity!

There are a number of differences between the US and UK electricity generation scenes which make it unlikely, I believe, that the worst features of the American experience will be repeated here. The US is characterised for example, by a large number of small utilities, some of which are inexperienced and less than competent in the management of nuclear projects. Further the American financial system does not allow interest charges on plants under construction to be recouped from current consumers of electricity from existing plants. This hits small utilities particularly hard. In addition the regulatory system is cumbersome and legalistic by comparison with the approach of our Nuclear Installations Inspectorate. And the availability of cheap coal in a number of regions of the USA gives nuclear power less attractive economics.

Nevertheless I think we in Government need to keep closely in touch with developments and I know that Peter Walker has this in mind.

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I am advised that there may be two main reasons for this. The first is post Three Mile Island backfitting operations at all stations.

The second is steam generator replacement and repair on PWRs, and repair work on feedwater and other stainless steel pipe works on Boiling Water Reactors. Although steam generator replacement work and repair work is continuing, experience is leading to better procedures and it is to be hoped that the overall statistics will improve.

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In the context of the CEGB's proposal to build a PWR at Sizewell B, the Nuclear Installations Inspectorate are carefully monitoring the CEGB's design changes intended to reduce the radiation exposure to workers. The matter is also being taken up during the examination of the safety case at the Inquiry.

I ~~trust~~ hope that these comments and the figures go some way to ~~satisfactorily~~ explain both the reasons for the US trend and its absence in the UK. Thank you very much for drawing the matter to my attention. ~~to the US figures.~~

	Electricity supplied (MW-yrs)	Average DNC (MW so)	No. of Stations	CEGB + non-CEGB Classified: Collective dose	CEGB + non-CEGB Classified: No. of Persons
74	2680.1	3446	8	1531	5139
75	2392.4	3459	8	1265	5114
76	2850.6	3568	9	1281	5398
77	2857.9	3862	9	1550	6622
78	3025.7	3932	9	1635	6856
79	2949.4	4230	9	1674	6732
80	2641.6	4385	9	1667	7629
81	2715.6	4467	9	1460	7939
82	3113.3	4476	9	1215	8208

	Man rem per MWyr	Man rem per MW so	Average collective dose per station	Average dose per person
74	0.571	0.444	191.4	0.30
75	0.529	0.366	158.1	0.24
76	0.449	0.359	142.3	0.23
77	0.542	0.401	172.2	0.23
78	0.540	0.416	181.7	0.23
79	0.568	0.396	186.0	0.24
80	0.631	0.380	185.2	0.22
81	0.538	0.327	162.2	0.18
82	0.390	0.271	135.0	0.15

1. All data refers to calendar years, therefore generation data may not tally with Annual Report figures which refer to financial years.

2. Refers only to CEGB Nuclear Power Stations

Lord Zuckerman

10 DOWNING STREET

From the Private Secretary

28 February 1984

The Prime Minister was grateful for your Secretary of State's minute of 24 February, with which was enclosed a draft reply to Lord Zuckerman's letter of 9 February.

The Prime Minister has questioned the argument in the third and fourth paragraphs of the draft that differences in safety procedures are sufficiently important to mean that US experience is unlikely to be repeated here. She feels that there are other more obvious differences between US and UK situations which justify the same conclusion.

I should be grateful if you could look again at this section of the draft reply, and let me have a revision as soon as possible.

DAVID BARCLAY

John Neilson, Esq.,
Department of Energy.

10 DOWNING STREET

THE PRIME MINISTER

Dear Sally,

Thank you for your letter of 9 February about civil nuclear power in the USA.

The American nuclear industry has certainly been experiencing considerable difficulties, although we must remember that there are a large number of stations operating successfully. These, of course, do not receive publicity!

The worst features of the US experience are, I believe, unlikely to be repeated here. Many of their problems arise, for example, from their highly legalistic safety regulation procedures which can lead to substantial building delays and associated requirements for considerable retrofitting to stations under construction. I don't think this is the most obvious difference

Nevertheless I think we in Government need to keep closely in touch with developments and I know that Peter Walker has this in hand.

You enclosed figures on radiation exposure at US commercial power reactors supplied by the American scientist, Harold Agnew. These do indeed show an increase in the collective dose without much increase in generating capacity.

/ I am advised

I am advised that there may be two main reasons for this. The first is post Three Mile Island backfitting operations at all stations. The second is steam generator replacement and repair on PWRs, and repair work on feedwater and other stainless steel pipe works on Boiling Water Reactors. Although steam generator replacement work and repair work is continuing, experience is leading to better procedures and it is to be hoped that the overall statistics will improve.

I attach a table supplied by the CEGB giving equivalent data for British stations. These figures do not show similar trends to the American figures, probably because gas cooled reactors do not exhibit the same corrosion features as light water reactors (although the Magnox reactors have, of course, had other corrosion problems).

In the context of the CEGB's proposal to build a PWR at Sizewell B, the Nuclear Installations Inspectorate are carefully monitoring the CEGB's design changes intended to reduce the radiation exposure to workers. The matter is also being taken up during the examination of the safety case at the Inquiry.

I hope that these comments and the figures go some way to explain both the reasons for the US trend and its absence in the UK. Thank you very much for drawing the matter to my attention.

Lord Zuckerman, OM, KCB.

Prime Minister (3)

Draft reply to Lord Zuckerman attached, for signature if you agree.

DRG 27/2

PRIME MINISTER

Your Private Secretary, in his letter of 10 February to mine, has asked for advice on a letter from Solly Zuckerman about the problems of civil nuclear power in the USA.

I have been keeping a careful eye on the American scene. In general the information I have received is in line with that contained in the International Herald Tribune article attached to Solly Zuckerman's letter. There have been numerous examples of delay and cost overruns in the construction of nuclear stations of which the recent plant cancellations are only the latest example. There are no new orders for nuclear power stations and none are expected in the near future.

Nuclear power in the USA is, however, by no means dead - there are about 70 plants currently in operation, none of which are known to have any outstanding technical problems.

Further I consider that there are a number of differences between the US and UK electricity generation scenes which make it highly unlikely that the American experience will be repeated here. The US is characterised by

(a) a large number of small utilities, some of which are inexperienced and less than competent in the management of nuclear projects;

(b) a financial system which does not allow interest charges on plants under construction to be recoupled from current consumers of electricity from existing plants. This hits small utilities particularly hard;

recouped? ?

(c) highly legalistic safety regulation procedures which can lead to substantial building delays and associated requirements for retrofitting to stations under construction;

(d) the availability of cheap coal in a number of regions which gives nuclear power less attractive economics.

Nevertheless there is a danger that the image of the UK industry may be tarnished in the public mind by the publicity given to recent events in the USA. I intend to take every opportunity to rebut such an association.

Solly Zuckerman also draws attention in his letter to figures on radiation exposure at US commercial power reactors, supplied by the American scientist Harold Agnew.

These figures do show an undoubted increase in collective dose without much increase in generating capacity. This appears to arise from post Three Mile Island backfitting operations at all stations and repair and replacement work at Pressurised Water Reactors and Boiling Water Reactors. Experience is leading to better procedures and it is hoped that the overall statistics should show an improvement in future.

Fortunately radiation exposure figures from the CEGB show that we are not experiencing a similar trend in England and Wales. It is likely that gas cooled reactors do not exhibit the same features as light water reactors where there can be corrosion in the circuits. (Of course Magnox reactors have suffered from different corrosion problems).

Our main concern must be the safety of workers at any future PWR built in this country. The Nuclear Installations Inspectorate are well aware of the problem and are monitoring closely the CEGB proposals for design improvements to reduce workers' radiation exposure at Sizewell B. The matter is also under consideration at the Inquiry.

I attach a draft reply for you to send to Solly Zuckerman. This has been prepared in consultation with the Nuclear Installations Inspectorate.

SECRETARY OF STATE FOR ENERGY
24 February 1984

	Electricity supplied (MW-yrs)	Average DNC (MW so)	No. of Stations	CEGB + non-CEGB Classified: Collective dose	CEGB + non-CEGB Classified: No. of Persons
74	2680.1	3446	8	1531	5139
75	2392.4	3459	8	1265	5114
76	2850.6	3568	9	1281	5398
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82	0.390	0.271	135.0	0.15

1. All data refers to calendar years, therefore generation data may not tally with Annual Report figures which refer to financial years.

2. Refers only to CEGB Nuclear Power Stations

DRAFT REPLY FOR PRIME MINISTER TO SEND TO:

Lord Zuckerman
Cabinet Office
LONDON SW1

Thank you for your letter of 9 February about civil nuclear power in the USA.

The American nuclear industry has certainly been experiencing considerable difficulties, although we must remember that there are a large number of stations operating successfully. These of course do not receive publicity!

The worst features of the US experience are, I believe, unlikely to be repeated here. Many of their problems arise, for example, from their highly legalistic safety regulation procedures which can lead to substantial building delays and associated requirements for considerable retrofitting to stations under construction.

Nevertheless I think we in Government need to keep closely in touch with developments and I know that Peter Walker has this in hand.

You enclosed figures on radiation exposure at US commercial power reactors supplied by the American scientist Harold Agnew. These do indeed show an increase in the collective dose without much increase in generating capacity.

I am advised that there may be two main reasons for this. The first is post Three Mile Island backfitting operations at all stations.

The second is steam generator replacement and repair on PWRs, and repair work on feedwater and other stainless steel pipe works on Boiling Water Reactors. Although steam generator replacement work and repair work is continuing, experience is leading to better procedures and it is to be hoped that the overall statistics will improve.

I attach a table supplied by the CEGB giving equivalent data for British stations. These figures do not show similar trends to the American figures, probably because gas cooled reactors do not exhibit the same corrosion features as light water reactors (although the Magnox reactors have, of course, had other corrosion problems).

In the context of the CEGB's proposal to build a PWR at Sizewell B, the Nuclear Installations Inspectorate are carefully monitoring the CEGB's design changes intended to reduce the radiation exposure to workers. The matter is also being taken up during the examination of the safety case at the Inquiry.

I hope that these ~~trust these~~ comments and the figures ~~satisfactorily~~ go some way to explain both the reasons for the US trend and its absence in the UK. Thank you very much for drawing the matter to my attention ~~to the US figures.~~

File

BRIEFING FOR PM's QUESTIONS

SIZEWELL 'B': ORDERING OF MATERIALS BY CEGB BEFORE CONSENT

Line to Take

The CEGB have decided to incur expenditure of £12 million at their own risk on forgings for the proposed Sizewell PWR. The CEGB's own commercial judgement is that the cost of delay outweighed the financial risk of consent not being given. The Board's decision in no way affects the outcome of the Inquiry, or the Government's views on the Board's application.

Background Note

The CEGB are making a statement at the Sizewell Inquiry on Tuesday, 7 February (copy attached) that they have decided to place orders for some £12 million worth of long lead materials for the proposed Sizewell B power station.

These materials, costing £12 million, are forgings (special steel sections) for the pressure vessel and for other main components of the reactor. If these materials are not ordered now, the construction of Sizewell B will be delayed by up to 16 months. The cost of the delay is estimated at up to £90 million in increased interest charges, disruption to engineering programmes and loss of benefit from lower generating costs.

The Secretary of State for Energy was consulted by CEGB on this decision. He accepted it on the basis that it was the Board's commercial judgement that the cost of delay outweighed the financial risk of consent not being given. The Secretary of State's view was endorsed by the PM and by the Chancellor.

An application for a Private Notice Question on this subject from the Hon Member for Berwick-upon-Tweed (Alan Beith) was disallowed on Monday 6 February.

Prime Minister

MR TURNBULL

14 February 1984

AT 15/2

ADVANCED GAS-COOLED REACTORS (AGRs)

Thanks on. mt

The current target dates for operation at full power of the three problem AGR stations are:

Heysham I	September 1984
Hartlepool	October 1984
Dungeness B	January 1985

However, it is by no means certain that the design problems which have plagued the commissioning phase of these stations have been resolved. Neither of the two reactors in the three stations has yet been run at full power. As a result there is not a high degree of confidence that the above target dates will be achieved.

The CEGB and NNC appear to be doing everything they can to overcome the problems and Peter Walker is taking a close personal interest in progress. Nevertheless, the continuing problems and delays are a strong indictment of our ability to implement a successful nuclear power programme.

The prospects are more encouraging for the two latest AGR projects at Torness and Heysham II. Construction of these stations is on schedule and on budget. Commissioning is expected to start in 1986 with full power operation in 1988.

Major design faults are not anticipated as the design is based on the successful Hinkley Point B and Hunterston B stations.

All of the AGR projects have been based on a principle of the NNC as contractor and the CEGB/Scottish Boards as client. The recent decision to set up a Project Management Board for Sizewell B gives the CEGB direct control over the project but through a structure which formally separates the project management role from that of the client.

This should give the best chance of ensuring that the Sizewell project, if sanctioned, is built to time and to cost.

Nevertheless, the whole basis of the contractor/client relationship for future projects will need to be reviewed in light of decisions on privatisation of the electricity supply industry.

DLP.

DAVID PASCALL

Lord Zuckerman

VC
24/2

10 DOWNING STREET

From the Private Secretary

10 February 1984

I enclose a copy of a letter to the Prime Minister from Lord Zuckerman about the US civil nuclear industry. I should be grateful if you could prepare, in consultation with the Department of the Environment, a draft reply for the Prime Minister's signature.

I am copying this letter to Alan Davis (DOE) and to Richard Hatfield (Cabinet Office). Could I please have the draft reply by Friday 24 February?

David Barclay

J.S. Neilson, Esq.,
Department of Energy.

VC

Acks 18/2

CABINET OFFICE
LONDON, S.W.1

Whitehall 5422
Z0940

9th February, 1984

The Rt Hon. Margaret Thatcher, MP
10 Downing Street,
London SW1

Prime Minister (2)
To see. We will give you a draft reply.
DMB 9/2

Dear Prime Minister,

I am sure that you are aware of the difficulties now facing, or even threatening, the US civil nuclear industry. The attached cutting from the International Herald Tribune tells the story, which has also been spelt out recently in the columns of Nature and the New Scientist. The reason why I am writing is that some weeks ago an old friend of mine, Harold Agnew by name, who until two years ago was Director of Los Alamos and who is now head of a company called G.A. Technologies, sent me out of the blue some figures which he had also submitted to Sir Frank Hayfield of the Nuclear Installation Inspectorate. These figures, copies of which I attach, indicate an increase in the levels of radiation exposure over the years from 1978 to 1982. It is obvious that they have gone up significantly without any real increase in gross electric generation. As I understand it, the figures for Man-Rems are nowhere near danger levels, and I would not have bothered at all about the matter had it not been for the fact that Harold Agnew, whom I have known for well over twenty years, is a committed nuclear man.

In his covering letter to me he said, "I don't believe your officials fully appreciate the down stream problem they are going to encounter. We're just beginning to realise it here. Maybe too late."

I have passed the tables both to the Department of Energy and to DoE. But I should feel easier in my mind if I knew you had them -- just in case there is something in the concern expressed to me by Agnew.

Yours ever,
Jock

c: Sir Robert Armstrong

1HT 31/1/84

New Problems Threaten U.S. Nuclear Industry

Tougher Government Licensing, Stagnant Power Demand Cited

By Milton Benjamin
Washington Post Service

WASHINGTON — The U.S. nuclear power industry is in trouble again, reeling under a barrage of blows to its perceived ability to build and operate the reactors that generate 12 percent of the country's electricity.

In the last two weeks, a nearly completed $3.3-billion plant in Illinois, Byron, was denied an operating license on safety grounds, the first time this has happened. A second nearly completed $1.7-billion plant in Ohio was deemed so flawed that its owners proposed converting it to a coal plant.

Two other plants in Indiana, Marble Hill, in which $2.5 billion had been invested, were abandoned in despair by a nearly bankrupt utility. A temporarily shut-down $1-billion nuclear plant in Alabama, Browns Ferry, laid off 400 workers because of "numerous violations" of government rules.

Beyond the cost to the utilities, their shareholders and eventually, in many cases, to their customers, the shakedown in the industry almost certainly will mean that many of the 48 nuclear power plants still under construction will not be completed.

With little increase in demand for power in the United States the past few years, partly because of the recession, utilities have no trouble meeting their customers' needs. But some experts say the combination of the cancellations and a resurgence in demand for electricity could make power shortages once again a feature of life for many Americans in the 1990s.

The nuclear industry's woes are good news for the Organization of Petroleum Exporting Countries. Many of the abandoned units would have replaced aging oil-fired plants that use almost half the amount of crude oil the United States imports daily.

Only a month ago, the U.S. nuclear industry optimistically was looking to its best year since the 1979 accident at Three Mile Island in Pennsylvania, the worst in civilian atomic power history.

Industry officials talked hopefully of 14 new power plants receiving licenses in 1984, equaling the single-year record, joining the 79 already in operation.

The shadow on the industry, government and industry sources agree, has been cast by a number of "problem plants," whose owners have found it difficult to adjust to the tougher licensing climate that has emerged since the Three Mile Island accident.

out Mr. Reagan's promise to help make it easier to build atomic power plants, found himself in the unexpected position in November 1981 of warning utilities that quality control at construction sites appeared to be a major problem.

"At that time, there were about a half-dozen plants that seemed to be steeped in these problems," Mr. Palladino said.

Mr. Palladino said it was "unfortunate" that plants like Zimmer, the $1.7-billion facility located outside Cincinnati that faces possible conversion into a coal-fired unit at a cost of additional hundreds of millions of dollars, got to a point where their builders felt they could not meet NRC requirements.

"Nevertheless, we felt that our requirements had to be met so these plants could be judged to be safe and the public health and safety would be protected," Mr. Palladino said.

As the problems at these plants festered and construction timetables began to be reckoned in terms of decades, the cost of the projects increased as much as tenfold, fueled by double-digit inflation and 20-percent prime interest rates.

The threat these multibillion-dollar overruns could pose to utilities, whose securities were once viewed by Wall Street as the safest of risks, was brought home with a crash when Washington Public Power Supply System partially defaulted on bonds issued for a program to build five reactors.

"It is increasingly evident that the industry itself is largely to blame for its dismal history and dark future," said Representative Edward J. Markey, a Massachusetts Democrat who is a leading critic of the nuclear industry. "I say, let nuclear power meet its maker in the marketplace."

But despite its current woes, industry officials insist nuclear power has a future and that, despite all the cost overruns, the atom still has an economic advantage over its archrival, coal, in most parts of the country.

"I think nuclear needs to be a part of our country's energy mix," Energy Secretary Donald P. Hodel said.

But not a single new atomic power plant has been ordered since 1978, and Mr. Gilinsky said he thinks the future of nuclear power will depend on whether the lull is used to straighten out the problems of the past.

"We're still cleaning up the problems of the past and we'd better get them sorted out before we think of going any further," Mr. Gilinsky said.

"To some extent, it's a matter of coincidence that all of these are hitting the headlines at once," said Victor Gilinsky, a member of the Nuclear Regulatory Commission. "But there are a lot of troubled projects, and a number of them presumably still will go under."

While more than 57 atomic power plants ordered before the Three Mile Island accident subsequently were canceled, a number of utilities, including many with little nuclear experience, continued forging ahead building reactors despite the blizzard of new regulations.

"I think our major problems are with the smaller utilities who didn't have an appreciation for what they are getting into and didn't develop within their organizations a spirit of getting the thing built properly," said the NRC chairman, Nunzio J. Palladino.

One reason for this, said Mr. Gilinsky, who was appointed to the commission in 1975 by President Gerald R. Ford and is the only remaining commissioner to predate the Reagan administration, was that "enforcement of rules during construction was very lax" before the Three Mile Island accident.

"Utilities were getting away with quite a lot and others thought they could get away with more," Mr. Gilinsky said. "Now, ironically with four Reagan appointees on the commission, the chickens have come home to roost."

Mr. Palladino, who was looked to by the nuclear industry to carry

010

cc DP

NBPM 9/2

Treasury Chambers, Parliament Street, SW1P 3AG

Rt Hon Peter Walker MBE MP
Secretary of State for Energy
Department of Energy
Thames House South
Millbank
LONDON
SW1P 4QJ

9 February 1984

Dear Secretary of State,

COMBINED HEAT AND POWER SCHEMES FOR DISTRICT HEATING

You copied your letter to Patrick Jenkin of ~~18~~ January to me. will request if required
I have to say that I am very sceptical about any further Government involvement in combined heat and power (CHP) schemes in inner cities at the present time. I hope we are agreed that the economics of such schemes, at least in England and Scotland, are so uncertain as to preclude public sector investment. And private sector involvement appears unlikely without a considerable degree of Government support, which could prove very costly in public expenditure terms. I could not go along with any action which encouraged the view that public funds would be available for the construction of such schemes.

This need not stand in the way of private sector proposals for CHP schemes. We have provided in the Energy Act a favourable framework for private generators of electricity. And I have no objection to your providing encouragement and advice to potential consortia if they think they can work up viable schemes. But I believe the initiative must now pass to private sector if we are to avoid repeated calls from the Energy Select Committee and elsewhere for Government action and funding.

It follows that I am not happy with the way you suggest proceeding, which seems to me to be a more positive approach to CHP schemes than is justified, and than would be prudent to take. I should prefer a more neutral response, pointing to the work that has been sponsored by Government and saying that we have now reached the stage where the lead has to fall to those interested in working up schemes. This is no more and no less than we are doing for other potential private electricity generators.

This approach should obviate the need for any more Government expenditure at all. But I can appreciate that this could leave you with presentational problems with the Select Committee and other commentators. If you consider that transitional support is essential to enable the Government to hand over the lead to the private sector, I would not stand in the way of your providing support of up to £0.5 million for the preparation of prospectuses. This is of course subject to your finding the sum for your existing PES and Estimates provision and to your announcement making clear:

(a) this is the full extent of Government financial involvement in such schemes, and that we will not help fund further stages;

(b) you were not "inviting" prospectuses. Rather, if groups wished to put together plans for financing and organising schemes, you would be prepared to provide limited financial assistance, but that it would be for the groups concerned to decide whether they wished to carry the plans forward.

You will of course need to clear your announcement with the Prime Minister, to whom I am sending a copy of this letter as well as to the copy recipients of your letter.

yours sincerely

PETER REES

pp (Copied by the Chief Secretary & signed in his absence)

cc DP
Could you try and establish X
AT 6/2

Prime Minister (2)

Not very informative. I will try and find out when full commissioning is now expected. The good news is that, so far, the second generation of AGR's, based on the best of the earlier designs, is on time.
AT 6/2

X/

PRIME MINISTER

DELAYS IN COMMISSIONING OF ADVANCED GAS-COOLED REACTORS (AGRs)

see AT to Energy 12/1

Following our discussion last month, I have now had a further report from the Central Electricity Generating Board on the reasons for, and consequences of, delay in bringing into commercial operation the Dungeness B, Heysham I and Hartlepool AGRs.

By the end of 1981, construction of the first AGR units at all three stations had been substantially completed and commissioning work begun. CEGB then expected commercial operation during summer 1982. In the event, the commissioning phase revealed progressively a number of weaknesses requiring modification, most notably to the boiler tube at Dungeness and the gas circulators at Hartlepool and Heysham. These problems have not only delayed commercial operation for many months, but have also prevented operation at full design load.

CEGB assess the impact of the latest delays as a reduction of output in 1984/85 of 3.8TWh, at a cost of some £90m.

I have informed the CEGB of my deep disappointment on these developments and the urgency of overcoming these technical problems. I have asked for regular reports to be made to me upon the progress they are making.

There is no doubt that we are suffering badly from the spreading of the resources of the nuclear industry over three separate designs, the failure to settle firmly on a design before construction and the unsatisfactory contractual and managerial arrangements.

I hope we will find that these problems do not re-occur on the two latest AGR projects, Torness and Heysham II. Our main objective must be to see that if Sizewell B proceeds the nasty mistakes from the past are not repeated there.

I am copying this minute to the Chancellor of the Exchequer.

SECRETARY OF STATE FOR ENERGY

6 February 1984

CONFIDENTIAL

cc NO

2

Treasury Chambers, Parliament Street, SW1P 3AG
01-233 3000

Prime Minister

PRIME MINISTER

To note

STRUCTURE OF THE NUCLEAR INDUSTRY

A 3/1

I have read Peter Walker's minute of 24 January about the arrangements for project management of Sizewell B.

2. I can well understand why the CEGB decided that they should take more direct control of this particular project. While I am content with this, we should not conclude it is necessarily the best or only way of building PWR stations in the longer-term. From the point of view of competition and privatisation, it would be inherently undesirable for CEGB to have a long-term monopoly over new nuclear power stations.

3. John Moore is still waiting to see Peter Walker's draft paper for E(A) on the future of the Electricity Supply Industry. But in our view there are no insuperable obstacles to a greater measure of competition and private ownership in the longer-term. Possibilities include:-

(a) transferring existing nuclear stations to private sector power groups early (along with the conventional stations). This would allow them to gain experience and confidence on nuclear power operation before new stations were needed;

(b) allowing private sector generation groups to use US or French private contractors for PWR stations if

they wish (albeit to strict UK safety standards). That would introduce a welcome degree of competition and the Government would be distanced from political problems that surround overseas purchasing by the public sector.

4. No doubt Peter Walker will have several options to put before E(A), but I thought it right to register the point now that the decision on Sizewell B need not and should not constrain our choices for the longer-term.

5. A copy of this minute goes to members of E(A) and to Sir Robert Armstrong.

Margaret O'Mara

N.L.
2 February 1984
(approved by the Chancellor and signed in his absence)

Energy: Policy A8.

✓CC NO

NBPM AT 2/2

SCOTTISH OFFICE
WHITEHALL, LONDON SW1A 2AU

CONFIDENTIAL

Prime Minister

STRUCTURE OF NUCLEAR INDUSTRY

I have seen Peter Walker's minute to you of 24 January and your Private Secretary's letter of 26 January outlining your response.

I am broadly content with Peter's conclusions on project management's arrangement for the PWR. I must re-emphasise however the great importance which I attach to the completion on time and to budget of the Torness AGR station. SSEB is fully committed to the successful achievement of the project and is, understandably, most concerned about anything which, by distracting the staff of NNC, could delay it. Major slippage at Torness would, in my view, be damaging not just to the Board but more generally to our nuclear power programme and to the nuclear construction industry as a whole.

I retain some misgivings about the effect of the proposed NNC reorganisation on the AGR programme; but I am much reassured by what is said about the attitudes to the AGR programme of Sir Walter Marshall and Mr Frank Gibb. I am glad that they understand that preparations for Sizewell must not deflect NNC from the important work which they have on hand at Torness and Heysham.

I am copying this minute to Peter Walker and to the other recipients of his minute.

G.Y.

G.Y.

1 February 1984

Energy Policy Pt 8

CONFIDENTIAL

bc. DP

JR

10 DOWNING STREET

From the Private Secretary

26 January 1984

STRUCTURE OF THE NUCLEAR INDUSTRY

The Prime Minister has seen your Secretary of State's minute of 24 January, setting out the steps he is taking on the structure of the nuclear industry. Subject to the views of colleagues, she is content with what is proposed.

I am copying this to the Private Secretaries to members of E(A) and to Richard Hatfield (Cabinet Office).

(ANDREW TURNBULL)

Michael Reidy, Esq.,
Department of Energy.

JR

010.

Prime Minister
Mr Walker mentioned his concerns to you recently
Content, subject to colleagues?
AT 25/1

PRIME MINISTER

STRUCTURE OF THE NUCLEAR INDUSTRY

You will wish to be aware of various developments affecting the structure of the nuclear industry. These are:

i) a proposal that the CEGB should take more direct control of the Sizewell B PWR project management arrangements via a Project Management Board, whose Chairman would be a CEGB Board member with staff seconded from both CEGB and the National Nuclear Corporation (NNC)

ii) the possibility of a Joint Venture Company, consisting of GEC, NEI and Babcock, with Westinghouse and NNC involvement, which would provide the station's crucial Nuclear Steam Supply Systems(NSSS).

I have discussed these ideas at length with the various interested parties, since they are crucial not merely to the success of the Sizewell project, assuming it goes ahead, but also to the future role of NNC, and to creating a stronger UK nuclear industry better able to compete in export markets.

As far as the Project Management Board is concerned, I have accepted that the CEGB/NNC proposals should be implemented. The present situation where NNC is supposedly acting as agent for the project but where the CEGB is pulling all the strings and duplicating much of its work, is not satisfactory, and has attracted criticism at the Sizewell Inquiry. I accept that the introduction of a new technology with which NNC has no previous experience makes an arms length relationship impractical. It is therefore better, and likely to lead to a greater degree of delegation, if CEGB has direct control but through a structure which formally separates the project management role from that of the client. Although some doubts have been expressed about these proposals by senior NNC staff, the Chairman of the CEGB and the Chairman and new Managing Director of the NNC are now agreed on what needs to be done. While there can be no guarantee that past rivalries will be fully buried,

I believe that determined efforts will be made to make the new arrangements a success, and that on that basis I should back them. Provided that they are successful I do not attach too much weight to the argument that the morale of NNC staff will be impaired and that work on the AGRs at Heysham and Torness will be adversely affected. At present these two projects are running to time and cost and morale is high. Furthermore, the Chairman of NNC has assured me that he is determined to maintain NNC's AGR capability and Walter Marshall, for his own reasons, shares that objective.

The proposals do not require any formal government decision, but the CEGB will now be putting them forward in evidence at the Sizewell Inquiry, and will be cross-examined on them in due course.

As far as the Joint Venture Company is concerned, the situation is different. Although it could have advantage in terms of maximising the benefits to the British economy of the new PWR technology, the participants have not yet got their act together in a convincing way and do not speak with one voice. Although I am far from being persuaded on this issue, I intend to hold further discussions with them, and will let you know the outcome.

I am copying to E(A) colleagues and to Sir Robert Armstrong.

SECRETARY OF STATE FOR ENERGY

24 January 1984

CONFIDENTIAL

File

19 January 1984

SIZEWELL

The Prime Minister has noted without comment your letter to me of 17 January, reporting the agreement reached between the Chancellor and the Secretary of State for Energy on advance ordering of forgings for Sizewell.

I am sending a copy of this letter to Michael Reidy (Department of Energy).

Andrew Turnbull

John Kerr, Esq.,
H.M. Treasury.

CONFIDENTIAL

3.20

CONFIDENTIAL

Prime Minister ②
To note outcome.
AT 18/1

Treasury Chambers, Parliament Street, SW1P 3AG
01-233 3000

17 January 1984

Andrew Turnbull Esq
10 Downing Street
LONDON SW1

MT

MT

Dear Andrew,

SIZEWELL

The Chancellor saw your letter of 12 January to Michael Reidy about the advance ordering of forgings for the Sizewell B PWR. He subsequently discussed the matter with Mr Walker and agreed that the ordering of these items could be left to the CEGB's commercial judgement, on the understanding that:

(a) the sum could be accommodated within the agreed EFLs and expenditure approvals;

(b) any expenditure in this financial year would be without prejudice to the ESI's offsetting the NCB's EFL overshoot by the £172m undershoot currently reported as available (this is a point still to be resolved between Departments);

(c) acceptance of advance ordering would not be taken as prejudging the Treasury's eventual view of the main decision on Sizewell;

(d) the Chancellor would wish to be consulted further if the total advance ordering commitment looked likely to exceed £20m. (20)

A copy of this letter goes to Michael Reidy.

Yours ever,

John Kerr.

J O KERR
Principal Private Secretary

ENERGY: Policy Pt 8

Typed by:- Rosemary
Shown to:- FERB

NOTE FOR THE RECORD

SIZEWELL

The Secretary of State for Energy called on the Prime Minister today to report on the way the case for Sizewell was developing. The Enquiry had been in progress for a year and had completed only its hearings on the economic case. It was now starting on the safety case and it was unlikely that these hearings would be completed before September. There would then be a further interval while Sir Frank Layfield wrote up his report.

The Secretary of State for Energy said that, ever since he had been Secretary of State for Trade and Industry when that post had responsibility for energy, he had been an enthusiast for PWR reactors. His public stance was unchanged, that provided adequate safety could be assured, the CEGB should be allowed to build a PWR station.

He said that he wished the Prime Minister to know that he was becoming increasingly concerned about this project. The original cost had been assessed at £1.2 billion and was now up to £1.6 billion. He was sure that in the process of construction this would rise still further. Sizewell could well be the only PWR being constructed and the consortium, faced with a once-off order, would want to make sure that the contract was profitable. He informed the Prime Minister that there were further delays in completing three of the first generation of AGR stations.

The Secretary of State for Energy said he had recently spoken individually to the participants in the consortium - CEGB, GEC, Babcock and NEI. He had been disturbed to discover that, even at this stage, their accounts of how the project should be managed were inconsistent. He felt this boded ill for the successful management of the project though he intended to have further talks with them.

/He

He felt it right to warn the Prime Minister that it was not impossible that the Government might wish to decided not to proceed with a PWR station. He emphasised, however, that he had mentioned none of this publicly nor even to his department. He would put together a private note for the Prime Minister.

Never received

AT

A. Turnbull

12 January, 1984

CONFIDENTIAL

FILE

B/C: MR. PASCALL, PER. UNIT

cc MASTER SET

10 DOWNING STREET

From the Private Secretary

12 January, 1984

SIZEWELL: ADVANCE ORDERING

Your Secretary of State came to see the Prime Minister today to discuss the case for advance ordering of components for Sizewell. He said that CEGB wished to order £12 million of forgings. If the orders were delayed until the public enquiry were completed, the costs would be greater - perhaps up to £30 million. In addition the whole project would be delayed imposing costs of a further £60 million.

He was worried that, if he authorised these orders, he could be accused of pre-judging his decision on the Sizewell Enquiry. In his view, however, the order could be justified as a reasonable commercial decision by CEGB. Although it was possible that most of the £12 million could eventually be wasted, this was not a large sum in relation to either the potential savings from making the orders or the £93 million that had already been spent on developing the Sizewell design. He was, therefore, disposed to authorise the expenditure.

The Prime Minister said that subject to the views of the Chancellor of the Exchequer, she too accepted the case for advance ordering.

I am sending a copy of this letter to John Kerr (HM Treasury).

(Andrew Turnbull)

Michael Reidy, Esq.,
Department of Energy

CONFIDENTIAL

10 DOWNING STREET

Prime Minister

Initially this meeting was requested to allow Mr Walker to take your mind on advance ordering of equipment for Sizewell. But he may widen the discussion to cover the way the enquiry is going and how the case for Sizewell is standing up.

The Electricity Council is due to meet on 16 January to consider the proposals for a 2% increase on domestic prices and a freeze, apart from the fuel price adjustment, on industrial prices.

You could impress on Mr Walker the need to get this settled and to use his influence to achieve this.

AT 11/1

MR TURNBULL

11 January 1984

SIZEWELL

Progress

The Sizewell Inquiry has now been going for one year. The hearings on the economic case have now been completed. The hearings on the safety and environmental case are likely to last until the Summer or early Autumn. The Inspector's Report could be delivered by the Spring of next year although these timings remain uncertain. If the project is approved, construction is expected to last six years.

We shall need to reconsider our general approach to public inquiries of this type when the present investigation is completed. In the meantime, the progress of the Sizewell Inquiry is entirely in the Inspector's hands.

Balance of Argument

It is difficult at this stage to predict the likely eventual outcome of the Inquiry.

The CEGB's economic case has stood up reasonably well during the first year of the Inquiry. The argument does not depend upon electricity demand justifying a new station but rather on the cost savings which would result from replacing some of the existing coal capacity with pressurised water reactors (PWRs).

The main doubts which have arisen are on the future trend in coal prices, where expectations of real growth have been revised downwards, and on the CEGB's ability to build the project to time and to budget. The latter point is important given the project's sensitivity to capital cost and the possibility that this could be increased by greater safety requirements.

The establishment of a successful nuclear power programme with a construction performance markedly better than has been

achieved so far is still likely to be our best chance of achieving internationally competitive electricity prices in the longer term. As the electricity supply industry progresses down the learning curve, the costs of any subsequent PWRs are likely to be more favourable than those forecast for Sizewell.

There is also the further important point that greater nuclear capacity will reduce our dependence upon coal-fired stations.

On the other hand, we shall need to consider whether we should continue to invest heavily in all energy industries, given the pressures on public expenditure.

Early Ordering

Peter Walker may raise the question of early ordering of equipment.

The CEGB wish to place an immediate £12 million order for reactor forgings for the Sizewell reactor. They argue that failure to do so would delay the total project by perhaps 12-18 months longer than necessary. They consider that a proper commercial assessment of the likely costs and benefits, including the possibility that Sizewell may not be approved, points to early ordering.

This is probably a sound commercial argument. The reactor forgings are a special case with long lead times. They represent less than about 1% of the total cost of Sizewell. It would be normal commercial practice to proceed even if the final sanction of the project is in doubt.

However, the decision would have political implications. Opponents of Sizewell will claim that the Government is pre-empting the outcome of the Inquiry. Although about £90 million has already been spent on design and development costs, this would be the first example of expenditure on hardware. As such it would be capitalised rather than written off to R&D.

On balance, we consider that the CEGB should be allowed to proceed provided that Peter Walker confirms that the urgency of ordering now is fully justified. It should also be clearly understood by the CEGB that this decision would not be a Government

endorsement for the project.

The decision should be presented as a matter for the CEGB's commercial judgement rather than a question for the Government. It should be clearly demonstrated by the CEGB that this is a special case which does not pre-empt the outcome of the Sizewell Inquiry.

We would not expect the Inspector to comment on the decision but the Prime Minister could discuss with Peter Walker whether a critical response is possible.

DLP.

DAVID PASCALL

FILE

RJ

cc: N.O.

10 DOWNING STREET

From the Private Secretary

5 January, 1984

FAST REACTOR COLLABORATION

The Prime Minister has seen your letter to me of 3 January and is content that your Secretary of State should undertake the signing of the Memorandum of Understanding in Paris on 10 January.

I am sending a copy of this letter to John Kerr (HM Treasury), Brian Fall (Foreign and Commonwealth Office), Callum McCarthy (Department of Trade and Industry), John Graham (Scottish Office) and Richard Hatfield (Cabinet Office).

(A. Turnbull)

M. Reidy, Esq.,
Department of Energy

RJ

CC NO

Prime Minister ①

Agree?

AT 3/1

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

01-211 6402

Yes
MT

Andrew Turnbull Esq
Private Secretary to the Prime Minister
10 Downing Street
London SW1

3 January 1984

Dear Andrew

FAST REACTOR COLLABORATION

Thank you for your letter of 23 December recording the Prime Minister's agreement to signature of the Memorandum of Understanding with the European Consortium.

The Consortium have now formally invited Mr Walker to the signature ceremony, which they propose should take place in Paris on 10 January. This date is acceptable to Mr Walker. He proposes to be accompanied by Charles Henderson, head of Atomic Energy division, and myself. I should be grateful for your confirmation that the Prime Minister is also content.

I am sending copies to the recipients of yours, and to Murdo Maclean (Chief Whips Office).

Yours sincerely
Michael Reidy

M F REIDY
Private Secretary

Energy Policy
Pt 8

CONFIDENTIAL

bc. N. Owen

10 DOWNING STREET

From the Private Secretary

23 December 1983

FAST REACTOR COLLABORATION

The Prime Minister has seen your Secretary of State's minute of 13 December on fast reactor collaboration. She is content that the Memorandum of Understanding should be signed, providing the agreement contains adequate withdrawal provisions and that these are fully understood by all the parties.

I am sending copies of this letter to the Private Secretaries to the Foreign and Commonwealth Secretary, the Chancellor of the Exchequer, the Secretaries of State for Trade and Industry and Scotland, and Sir Robert Armstrong.

(ANDREW TURNBULL)

Michael Reidy, Esq.,
Department of Energy.

MBM
AT 23/12

Treasury Chambers, Parliament Street, SW1P 3AG

Mike Reidy Esq
Private Secretary to
Rt Hon Peter Walker MBE MP
Secretary of State for Energy
Department of Energy
Thames House South
Millbank
LONDON
SW1P 4QJ

23 December 1983

Dear Mike

FAST FACTOR COLLABORATION

The Chief Secretary has seen with AT? your Secretary of State's minute to the Prime Minister of 13 December about the faster reactor. He did not have any comments on the draft announcement but asked me to record two points:

(a) The minute referred to Exchequer funding of some £70m a year at September 1981 prices. Under the formula agreed in the summer, the vote-funding will be somewhat less than that figure when there are contributions from any source of over £5m. For PES 83 it was assumed, for example, that vote-funding would be £68.5m in 1986-87 - the first year at the settled-down level.

(b) Now that the collaborative arrangements have been made, we hope it will be possible to agree with the UKAEA a more detailed series of specific tasks and objectives to ensure that full value for money is derived from this substantial programme.

A copy goes to the Private Secretaries to the Prime Minister, the Foreign and Commonwealth Secretary, the Secretary of State for Trade and Industry, and Secretary of State for Scotland, and Sir Robert Armstrong.

Yours sincerely

JSt. Gieve

JOHN GIEVE
Private Secretary

cc NO

(2)

Prime Minister

Mr Walker put the Government's view accurately to Mr Jones. The latter's response was not as forthcoming as it might have been.

To await developments

AT 20/12

CONFIDENTIAL

PRIME MINISTER

MT

I enclose the minutes of the meeting I had with Philip Jones, Chairman of the Electricity Council, together with a letter I have sent to him confirming the Cabinet's view. You will see that the Chairman expresses his desire to be constructive on this topic, but also expresses his very real anxieties about the reactions of some of the individual Boards. I will keep you informed when I hear further from them.

I am copying this to the Chancellor of the Exchequer.

SECRETARY OF STATE FOR ENERGY

20 December 1983

COPY

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

T P Jones Esq CB
Chairman
Electricity Council
30 Millbank
London SW1P 4RD

20 December 1983

ELECTRICITY PRICES IN 1984/85

Thank you for your letter of 21 November, the substance of which I reported to my colleagues at last week's meeting.

The Cabinet welcomed your Council's willingness to take steps to achieve the EFL of £740m for 1984/85, which we have set for the industry; and we appreciated the force of the arguments you advanced against implementing a general price increase of 3% from next April. The Cabinet nonetheless felt unable to accept the Council's view that there should be no general price increase from next April. It was thought that this would run too great a risk of leading to undesirably large price increases later on either in 1984/85 or in 1985/86.

I should therefore be grateful if the Council would reconsider its position on tariff adjustments for next year; and if you would put to the Council the possibility of their increasing domestic tariffs by 2% from next April, whilst restricting increases in prices charged to industrial consumers to those which would result from the operation of the fuel price adjustment. I hope that the Council would be able to agree to these modest price increases for next year.

You indicated in your letter that the Council would be ready to discuss with me the pricing principles which should be followed in the electricity supply industry, and a financial target for the period beyond 1984/85. We shall certainly want to have such a discussion in the new year, following the submission of the Council's review of plans.

In the meantime, I have to confirm that Treasury rules governing public expenditure do not permit a surplus over the EFL achieved in one year to be carried forward towards the achievement of EFL in the following year. The Government nonetheless recognise the significant contribution which the industry has made in past years, and expects to make this year, towards containing overall public expenditure.

PETER WALKER

SOS R 81A/83

NOTE OF THE SECRETARY OF STATE'S MEETING WITH MR PHILIP JONES, CHAIRMAN OF THE ELECTRICITY COUNCIL - MONDAY 19 DECEMBER 1983

Also Present: Mr R Orson - Member, Electricity Council

Lord Avon
PUS
Mr Manley
Mr Brown

The Secretary of State said he and his colleagues had now considered the Electricity Council's letter of 21 November. They appreciated the strength of the Council's arguments against a general electricity price increase of 3% from April 1984 and were agreed that industrial tariffs should not be increased, other than by operation of the price adjustment clause. However, it was their strongly considered view that domestic tariffs should be increased by 2% from April 1984.

In reaching this view they had taken careful account of the electricity industry's own expectations about the level of possible price increases that might be required in subsequent years. These expectations had changed significantly during the course of the debate, reflecting the real uncertainties faced by the industry in determining some of their key assumptions. A domestic price increase of 2% could provide a vital safeguard against such uncertainty; it should therefore substantially reduce any risk of disproportionately high price increases later on, either in 1984/85 or 1985/86.

The Secretary of State therefore strongly hoped that the Council would agree that a modest increase of this nature should be implemented.

Mr Jones said he was grateful the Government had considered the Council's arguments in depth. Although their estimates had changed they had endeavoured to keep the Department closely informed. He was in fact now more confident than ever before that even without a price increase the Council would meet their target of paying £740m to the Exchequer as required by the 1984-5 External Financing Limit. A domestic price rise of 2% - whilst more modest than the increase originally proposed by the Government - would therefore bring the industry surplus revenues which it did not need. This could cause particular difficulties for certain Area Boards such as the LEB and SEB, who faced the prospect of exceeding their individual financial targets and were liable to argue for rebates rather than price increases. The Council would also need to consider carefully whether consumers could claim the proposals showed undue discrimination, so putting the Council in possible breach of their Statutory obligations.

These were genuine anxieties and the Council would have to examine them carefully. Nevertheless, Mr Jones wished the Secretary of State to know they would do their utmost to reach a constructive conclusion. Their next meeting was scheduled for 16 January. It would not be practicable to convene an earlier gathering, but he was confident he would be able to respond to the Secretary of State directly afterwards.

The Secretary of State said he was grateful for these reactions. He would write to Mr Jones immediately to confirm the Government's proposals. He hoped to receive a positive response as quickly as possible.

M F Reidy

M F REIDY
PS/Secretary of State
Room 1237
Ext 6402

20 December 1983

cc Mr Turnbull - No. 10
PS/PUS
PS/PUSS (Lords)
Mr Manley
Mr Brown
Mr Morphet

Yes - provided that ARE withdrawal provisions in the agreement proper and that this is now understood put

CC NO
TP

Prime Minister ①

With assurances at X, agree Mr Walker may sign the Memorandum of understanding? (He hopes to do this around 9 Jan.

AT
21/12

Prime Minister

FAST REACTOR COLLABORATION

You will be glad to know that the negotiations following our decision to seek international collaboration with the Europeans on fast reactor R & D have now reached a satisfactory conclusion. I intend to sign the inter-governmental Memorandum of Understanding with my Ministerial counterparts from France, Germany and Italy as soon as a convenient date can be fixed. (The Belgians and the Dutch are happy with the text but because of other domestic political problems, will not be in a position to sign at once). If Parliament is sitting I will be answering a written parliamentary question about the MOU and issuing a press notice on the same day. A copy of the proposed answer is attached.

The terms of the MOU fully meet our requirements as envisaged in my minute of 8 July. They set the scene for a long-term collaboration for the further development of fast reactor technology and the associated fuel cycle up to the point of commercial ordering. This can be achieved with Exchequer funding reduced to some £70m a year in September 1981 prices. The MOU envisages a series of industry agreements covering the three broad fronts of R & D design, construction, and operation, and the related fuel cycle and provides for the possibility of joint funding of demonstration reactors. General agreements should be signed immediately after the MOU; and these in turn will lead to specific implementing agreements which will be negotiated by the industry bodies in the months to come.

X We have all been concerned that, despite our intention that the collaboration should be long-term, there should be clear withdrawal provisions in case the need arises. Although our partners have been reluctant to see such provisions in a non-binding MOU the final text is fully satisfactory and there will also, of course, be withdrawal provisions in the specific implementing agreements. There is no reason to suppose that we will be under pressure to drive the programme faster or further than we would otherwise wish.

I warned in July that any fast reactor collaboration, especially with a nuclear weapons state such as France, was bound to lead to some presentational problems in relation to non-proliferation. These have not disappeared, but the MOU lays stress on the peaceful purpose of the collaboration, and I do not anticipate major difficulties.

I am copying for information to the Foreign and Commonwealth Secretary, the Chancellor of the Exchequer, the Secretary of State for Trade and Industry, the Secretary of State for Scotland and Sir Robert Armstrong.

Secretary of State for Energy

13 December 1983

DRAFT WRITTEN PARLIAMENTARY ANSWER

Q. "To ask the Secretary of State if he will make a statement on international collaboration on fast reactors."

A. I have today signed a Memorandum of Understanding with my counterparts in France, the Federal Republic of Germany and Italy for the joint development of fast reactors.

The Memorandum extends existing European co-operation in the area of fast reactors between groupings led by Germany and France respectively. Belgium and the Netherlands already have agreements in place with Germany. They too have been involved in the discussions and have indicated their interest in signing in due course.

The Memorandum underlines the Government's commitment to fast reactor development and to the continuing role for Dounreay, as reaffirmed by my predecessor in his statement to the House on 29 November 1982. It follows the advice of the Chairman of the Atomic Energy Authority, Sir Peter Hirsch, in consultation with the nuclear industry that we should seek international collaboration with Europe. In this way we can carry forward fast reactor technology while minimising costs, so as to enable the commercial ordering of fast reactors in the earlier part of the next century, if this proves necessary.

The Memorandum is an expression of Governmental intent to establish long-term co-operation of fast reactor development, and sets out the key principles of this co-operation.

These include:

- the harmonisation of research and development efforts, the sharing of relevant information and know-how, and the promotion of industrial co-operation;

- appropriate implementing agreements drawn up by the industries in the respective countries;

- confirmation that activities will be directed to the peaceful development of nuclear energy;

- particular attention to fast reactor safety and an intention to establish, as far as possible, common safety criteria;

- interest in extending collaboration to other countries, in particular USA and Japan.

I am placing copies of the full text of the Memorandum in the libraries of both Houses.

The Memorandum is an umbrella under which the industry will be able progressively to set up its own general and specific implementing agreements covering particular aspects of collaboration. I hope to see these established on three broad fronts: research and development on fast reactors; their design, construction and operation; and the related fuel cycle. The programme allows the participant countries to pool their resources and maximise the benefits of their respective technical achievements and expertise whilst minimising duplication. It offers the prospect of achieving and demonstrating a thoroughly developed design of

reactor with great emphasis place on both safety and economic efficiency. The UK will thus be able to maintain its position at the forefront of fast reactor development while at the same time reducing the cost to the Exchequer. The programme will ensure that fast reactor technology will be in the best possible position to make a full contribution to our future energy supplies when the need comes.

RESTRICTED

cc AJC

DEPARTMENT OF ENERGY
THAMES HOUSE SOUTH
MILLBANK
LONDON SW1P 4QJ
Direct Line 01-211 3290
Switchboard 01-211 3000

THE MINISTER OF STATE

The Rt Hon Sir Geoffrey Howe QC MP
Secretary of State for
Foreign & Commonwealth Affairs
Foreign & Commonwealth Office
Downing Street
LONDON SW1

9 November 1983

Dear Geoffrey.

ENERGY COUNCIL

In Peter Walker's absence in China, I represented the UK at the Energy Council on 4 November.

For once, there seemed more disposition to move towards a compromise on outstanding items of Community business. On coking coal (a measure of concern only to the Germans), the Commission is to prepare a new proposal to provide support at an average of 3.6 ecu per tonne, up to a maximum of 10 m tonnes. Such a scheme would last for three years, with provision for support to tail off in the third year. On demonstration projects, a consensus began to emerge around 300 mecu for three years only, counting 1983 as the first year. However, the Dutch, French and Germans still believe this figure is too high - as do we, though for tactical reasons I let the French and Germans make the running here.

I could not say that discussion on solid fuels led to any closer agreement on the need to adopt measures to promote investment in economic production, nor to the need for mor Community help with the social costs of restructuring the industry. However, with my prompting, the Presidency helpfully linked progress on all four items (ie coking coal, demonstration projects, social costs of restructuring and investment in solid fuels), and are to convene a further Energy Council in December at which these four items are to be considered further. The Council adopted some further conclusions on solid fuels which recognise that solid fuels are an essential element in the Community's energy strategy, and which call upon the Commission to submit the necessary elements for a programme in order to make progress at the December meeting.

I made it quite clear that we could block progress on the outstanding items of Energy Council business if satisfactory progress on solid fuels was not reached at the December Council. That leaves all our options open until after the Athens Summit. Naturally, we shall need to consider urgently in the light of progress on future financing, and the possible role of new policies in that context, what our line should be at the December Energy Council.

Yours ever,

Alick

ALICK BUCHANAN-SMITH

RESTRICTED

PA

MR SCHOLAR

23 September 1983

PETROCHEMICALS

The recent correspondence between the Chancellor of the Exchequer and the Secretary of State for Trade and Industry on the recent report of the Working Group on Petrochemicals confirms that no immediate decisions by Government are required. Nevertheless it would be misleading to think that the underlying problems of the petrochemical sector have been resolved despite some recent improvements in trading results. It is likely that the UK companies will sooner or later have to undertake a further major rationalisation of capacity, probably involving significant redundancies.

It is possible that the Prime Minister will be approached directly by the companies and I would be grateful to be involved at an early stage if this happens. As a member of the Working Group, I am sure that any rationalisation decisions should be left to the commercial judgement of the companies. I do not consider that the case for Government support is sustainable on industrial and economic grounds nor do I think that the proposition can be justified on the basis that other European Governments are subsidising their loss-making industries. So long as there is no indication that overseas subsidies are likely to be reduced, there is no prospect that UK Government support would ensure a profitable UK petrochemicals sector. The main advantage of the proposal to approach the European Commission would be to clarify the prospects for the European industry.

DLP.

DAVID PASCALL

cc NO

DEPARTMENT OF TRADE AND INDUSTRY
1-19 VICTORIA STREET
LONDON SW1H 0ET
TELEPHONE DIRECT LINE 01-215 5422
SWITCHBOARD 01-215 7877

JF4297

Secretary of State for Trade and Industry

15 September 1983

CONFIDENTIAL
COMMERCIAL IN CONFIDENCE

(4)

Prime Minister

MCS 19/9

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

Dear Nigel,

WORKING GROUP ON PETROCHEMICALS
REPORT ON EUROPEAN SUBSIDIES

Thank you for your letter of 31 Auguest with which I fully agree. There has been a significant, though patchy, improvement in business conditions facing the petrochemicals industry, and there seems no likelihood in the short-term that the companies will again see a need to press for temporary operating subsidies. I was particularly encouraged to hear from Mr Garvin, Chairman of EXXON, earlier this week how generally satisfied he is with Esso's future prospects in the UK, including prospects for their petrochemicals business.

2 We do, of course, maintain regular contact at senior level with all the major UK petrochemical companies; and it is certainly our understanding that they would not, in present circumstances, favour a major UK démarche to the Commission on the subject of subsidies elsewhere in the Community. They fear that this might cause unwelcome ripples for certain sensitive negotiations now going on between the companies aimed at putting their own house in order. But their views on this might change, and they may certainly press for firmer action on the related Community issue of securing a more flexible attitude to company deals which, though helping to solve the overcapacity problem, appear to fall foul of established competition policy.

3 My officials will therefore be discussing both these issues further with the UK companies; and should we perceive a need to

/make ...

ENERGY: Policy Pt 8

CONFIDENTIAL
COMMERCIAL IN CONFIDENCE

make a démarche to the Commission, I will of course liaise with colleagues through the normal machinery. But so far as the Working Group is concerned, I think it has done a useful job and I agree that we can now consider its task to be completed.

4 This letter is copied to the recipients of yours.

Yours ever,
Cecil

4.4

CONFIDENTIAL
COMMERCIAL IN CONFIDENCE

Treasury Chambers, Parliament Street, SW1P 3AG
01-233 3000

31 August 1983

The Rt. Hon. Cecil Parkinson MP
Secretary of State for Trade and Industry

Dear Cecil

**WORKING GROUP ON PETROCHEMICALS:
REPORT ON EUROPEAN SUBSIDIES**

I understand you have seen a copy of the Working Group on Petrochemicals report on European subsidies. As noted in Patrick Jenkin's letter to Geoffrey Howe of 16 May, the decision by BP and ICI effectively to withdraw their requests for Government assistance has meant that it has not in fact proved necessary to undertake most of the further studies envisaged in Geoffrey's letter of 14 March.

I have read the Working Group's report with interest. It seems to me that the Group is right to dismiss any suggestion that we should embark immediately on a high profile approach designed to persuade the French and Italian Governments to stop subsidising their petrochemical industries. As the report recognises, such an initiative is not likely to be successful within any reasonable timescale.

On the other hand, I am inclined to agree that there may be advantages in your Department testing the UK industry's reactions to the possibility that the Government might approach the Commission at the appropriate time. Although I think it is right to assume that the Government itself should make the approach, it is clear that if it were to have any chance of success, it would need to be closely linked with an approach by the UK industry.

This is, of course, very much a matter for you, although if we were to approach the Commission, the timing would have to be carefully considered through the usual machinery.

I hope you will agree that we can now treat the Working Group's work as completed. I imagine that you would want to take the lead in future, should we need to consider the petrochemical industry's problems any further.

I am copying this letter to the Prime Minister, the Secretary of State for Foreign and Commonwealth Affairs, the Secretary of State for Energy, the Secretary of State for Scotland, the Secretary of State for Wales and Sir Robert Armstrong.

Yours
Nigel

NIGEL LAWSON

CONFIDENTIAL

MFJ

File

bc: Nick Owen

10 DOWNING STREET

From the Private Secretary

29 July 1983

Dear Julian,

Fast Reactor Policy

The Prime Minister has now studied your Secretary of State's minute of 8 July and the paper attached thereto, together with subsequent ministerial correspondence on this subject.

The Prime Minister agrees to your Secretary of State's proposals, as set out in paragraph 17 of the paper.

I am sending copies of this letter to Brian Fall (Foreign and Commonwealth Office), Margaret O'Mara (HM Treasury), Muir Russell (Scottish Office), John Gieve (Chief Secretary's Office), Robin Nicholson (CPRS) and Richard Hatfield (Cabinet Office).

Yours sincerely,

Michael Scholar

Julian West Esq
Department of Energy.

CONFIDENTIAL

288

10 DOWNING STREET

(1)

Prime Minister

Fast Reactor Policy

Before making up your mind you wanted advice from the Treasury (flag A) and Dr Nicholson (flag B).

Minutes, too, from the Foreign Secretary (flag C) and George Younger (flag D).

Agree the recommendations in para 17?

MCS 26/7

Yes

CONFIDENTIAL

FINO B

W.0463 20 July 1983

PRIME MINISTER

FAST REACTOR POLICY

I have seen a copy of the Secretary of State for Energy's minute to you of 8 July. - w/A MCS?

2. When fast reactor policy was discussed with you earlier, I pointed out that in my view the best way forward for the UK was through international collaboration in the R & D programme and I also indicated that the state of the technology, even on an international basis, made it far from certain that a design for an economically viable fast reactor had yet been conceived.

3. I think the Secretary of State's proposals meet both these points. Undoubtedly the best deal at the moment is with the Europeans but we are not locked in to the French technology and we will be able to use the ideas of others in the world, not least of course the UKAEA's.

4. The Fast Breeder reactor "project" set up as a result of the Versailles Working Group may well prove to be a useful forum for us to monitor world-wide developments in fast reactor technology. Certainly the Americans and Japanese will see it as their principal way of maintaining a link with the strengthened European group.

5. I am sending copies of this minute to the Foreign and Commonwealth Secretary, the Chancellor, the Secretaries of State for Energy and Scotland and Sir Robert Armstrong.

RBN

ROBIN B NICHOLSON
Chief Scientist

Cabinet Office
20 July 1983

D

Scne

SCOTTISH OFFICE
WHITEHALL, LONDON SW1A 2AU

3 PPs

J D West Esq
Private Secretary to the
Secretary of State for Energy
Thames House South
Millbank
LONDON SW1

19 July 1983

Dear John

FAST REACTOR POLICY

My Secretary of State has seen a copy of the minute of 8 July from the Secretary of State for Energy to the Prime Minister and the attached paper. Mr Younger is in complete agreement with Mr Walker's recommendation and agrees that we should proceed accordingly. He has asked to be given plenty of warning of any public statement on the subject.

I am copying this letter to the Private Secretaries to the Prime Minister, the Foreign and Commonwealth Secretary, the Chancellor of the Exchequer and Sir Robert Armstrong.

Yours

A MUIR RUSSELL
Private Secretary

Energy Policy, Pt 8

C

PM/83/50

PRIME MINISTER

Fast Reactor Policy

1. I believe that the proposals contained in the Note by the Secretary of State for Energy, which he sent to you under cover of his minute of 8 July, deserve our support. Collaboration with France and Germany on the terms proposed will give us full access to the biggest and most advanced programme of research and development in the world on this subject at reasonable cost. We shall certainly get more value for our money than we could by continuing our own programme in isolation and neither the United States nor Japan are currently able to offer programmes as advanced, or in the US case as financially secure, as the Franco/German programme. However, we should certainly not close the door to inclusion of either country in the collaboration at an appropriate time in the future.

Either?

2. Paragraph 13 of the Note raises an important point about the possibility of criticism from some quarters of involvement by our civil nuclear industry in the French nuclear programme, where the civil/military division is less clear cut than in the UK. However, I understand that officials have raised the problem with their French counterparts and are confident that suitable assurances can be obtained to cover the problems listed. Subject to satisfactory solution of this problem, I suggest we press ahead with negotiations of an understanding with the French and Germans based on a "settled down" UK programme on a funding level of £75 million a year.

3. I am

3. I am copying this minute to the Secretary of State for Energy, the Chancellor of the Exchequer, the Secretary of State for Scotland and Sir Robert Armstrong.

(GEOFFREY HOWE)

Foreign and Commonwealth Office
18 July 1983

ENERGY : Policy : Pol

cc NO

A

PRIME MINISTER

FAST REACTOR POLICY

with MCS. ? (TPM)

I have seen Peter Walker's minute to you of 8 July, recommending the way ahead on the fast reactor.

2. I accept that there are considerable attractions in co-operation with European partners in this field. It is important however, that we should not allow the process of collaboration to drive the programme faster and further than we would otherwise wish. Experience with Concorde illustrates this point. I therefore welcome Peter Walker's intention that we should not allow the Government-to-Government understandings to constrain our freedom of choice in future.

3. The Treasury would also want to examine any proposals for CEGB investment in a French fast reactor against the normal criteria for Nationalised Industry investment. Wile we do not object to a 'general agreement' between the electricity authorities, the French should not be led in any way to believe that the Government is committed to agree to such an investment. Indeed, it would be prudent for all the agreements with collaborative partners to contain clear provision for withdrawal if necessary (the lack of these have caused problems in the past on other collaborative projects).

4. I can confirm that I am content with the financial arrangements set out in Peter Walker's note, subject to the 'settled down' level of expenditure being reached by 1986-87 at the latest.

5. I am copying this minute to the Foreign and Commonwealth Secretary, the Chancellor, the Secretaries of State for Energy and Scotland and Sir Robert Armstrong.

PR

PETER REES
18 July 1983

ENERGY: Policy Pt 8.

11 JUL 1983

Further advice please also from Treasury

Prime Minister (1) cc NO

Agree, subject to colleagues' views, the recommendations in para 17?

Or would you like advice from Robin Nicholson?

MCS 8/7

PRIME MINISTER

FAST REACTOR POLICY

See MCS to Brian 2.8.83

It was agreed last autumn at a meeting under your Chairmanship that certain changes were necessary in our fast reactor policy. The Chairman of the Atomic Energy Authority was accordingly invited to consult with his colleagues in the nuclear industry and advise on a reduced programme costing around £70m per annum, along with the scope and benefits of international co-operation. This he has now done, and his principal recommendations, which I endorse, are in favour of collaboration with Europe - principally France and Germany, but also Italy, Belgium and Holland. An analysis of his proposals, along with my conclusions and recommendations, is set out in the attached paper, which I commend to you.

Consideration of this subject has been delayed by the Election campaign. Our prospective partners have been appreciative of the problem, but it is important that the policy decisions should now be taken fairly quickly, so that we can press ahead with the negotiations of the inter-governmental understanding which will be required. I hope that the views on the way ahead set out in my paper will command general acceptance.

I am copying this minute and its attachments to the Foreign and Commonwealth Secretary, the Chancellor of the Exchequer, the Secretary of State for Scotland and Sir Robert Armstrong.

Secretary of State for Energy

8 July 1983

FAST REACTOR POLICY

Note by the Secretary of State for Energy.

It was agreed last autumn that while our objective must still be to have access to fast reactor technology when we needed it, the timescale now looked less pressing, and we could afford to reduce the scale of the programme while minimising the impact on Dounreay. The programme should go ahead at a level of around £70m per annum. The Parliamentary statement which Nigel Lawson made after these decisions is at Annex A. I have now received from the Atomic Energy Authority the advice on a development programme and on international collaboration referred to in that statement.

Summary of Nuclear Industry Proposals

2. For planning purposes the industry - Atomic Energy Authority, Generating Boards, British Nuclear Fuels Limited and the mainly private sector National Nuclear Corporation - assumes that the UK should be able, if we wished, to begin construction of a commercial reactor in ten years time; but this is the earliest prospect, and the timescale could be modified in the light of events.

3. The programme would be based on international co-operation in order to reduce costs and minimise risks by sharing experience and avoiding duplication of R & D; and to bring forward the date for commercial viability by developing reactor and fuel plant designs with a maximum of common features through a co-ordinated construction programme. These objectives could best be served by co-operation with Europe (principally France and Germany but also Italy, Belgium and Holland) where we would be equal partners in a fully collaborative programme.

4. Within a collaborative framework the UK programme would concentrate on bringing the prototype fast reactor (PFR) at Dounreay back to full power and demonstrating system reliability; developing improved fuel and fuel cycle plant and designing and proving new components.

5. AEA funding would fall to £70m per annum at September 1981 money values, but with additional Generating Board contributions of £5-£10m per annum. BNFL and NNC are also willing to provide services worth £1½-£2m per annum. Thus the total programme would be around £80m per annum, with the additional funding reflecting the industry's wish to produce a viable programme for international collaboration.

6. Co-operation with Europe would not require a cash entry fee. However, it is proposed to offer a variety of services which would have a small marginal cost to the UK within the £70/80m, but a substantial value to the Europeans. These are described in Annex B. This offer would recognise the advanced state of construction of Super Phenix and make it easier for the French to justify UK access to its technology.

7. The industry recommends that we should conclude a Government-to-Government agreement on fast reactor collaboration with France and Germany while Sir Peter signs a Memorandum of Understanding (MOU) with the Heads of the Commissariat a l'Energie Atomique (CEA) and Interatom in Germany.

8. Meanwhile, the CEGB would continue parallel discussions with EdF leading to a similar MOU at the utility level. It would cover the possibility of cross-investment as part of fast reactor collaboration but would not in itself involve any financial commitment. A specific proposal, at present foreseen as a 16% CEGB investment

in Super Phenix 2, costing around £180m at 1 January 1982 prices, would come to my Department for approval in due course. Electricity corresponding to the CEGB share of the investment, some 240 MW, would be supplied via the cross channel cable from around 1994/95, assuming the earliest starting date of 1986/87. The CEGB believe that, because of lower nuclear construction costs in France, the cost of electricity would be comparable to that for the Sizewell B PWR, and would therefore meet the 5% required rate of return for nationalised industry investment.

Analysis

International Collaboration

9. The prospect of:-

- the integrated planning and construction of three lead reactors (France, UK and Germany);
- unrestricted access at relatively small cost to a programme twice the size of our own, and to the technology of the world's first commercial scale fast reactor (Super Phenix 1), which cost over £1000m;
- the burden of construction of the next large fast reactor falling predominantly on French rather than UK taxpayers with a UK lead reactor postponed well into the 1990s or beyond without a loss of momentum or reliance upon licensing,

is very attractive by comparison with the UK trying to go it alone.

10. I accept the industry's advice that the US and Japan cannot at present offer us an equally attractive prospect. Although large in money terms, the US programme is not well co-ordinated and its political and industrial backing is uncertain. As was apparent during recent discussions with the US Secretary of Energy, the

Administration is not of one mind on this issue and is not in a position to deliver Congress. It does not appear that we could be guaranteed full access to US fast reactor technology, and the prospect of satisfactory fuel cycle co-operation seems even more limited. The Japanese programme is too far behind for them to be serious partners at present.

11. I therefore favour co-operation with the Europeans, while leaving the door open for collaboration with the US and Japan. The French and Germans will, I believe, accept appropriate wording in the Government-to-Government agreement. On this basis, and with careful presentation, a UK decision to co-operate with the Europeans should not have any adverse impact on our wider relationships.

12. The prospects for co-operation contrast with the situation in 1979, when the French appeared to regard the UK as a junior partner, and demanded a substantial entry fee. The present Administration is clearly being driven towards cost-sharing options. If they went further and cancelled Super Phenix 2 the character of our co-operation might need re-examination, though the objectives would remain valid. It is more likely, given the large sums and prestige already sunk in fast reactor development, that they would put back Super Phenix 2 by 2/3 years. This would be positively to our advantage; it would give more time to integrate British designs into the project. The proposed parallel agreement between the CEGB and EdF could contribute to the French cost-sharing objective while remaining attractive economically to the CEGB.

13. We have to recognise that any collaborative venture, especially one with a nuclear weapons state, can lead to criticism that we are directly or indirectly assisting the creation in the partner country of material of potential military application. The French do not make the clear cut divisions we make between civil and military use. A provision in the agreement that all

parties see its purpose as purely peaceful will help. There are also a number of specific features (loan of plutonium, recprocessing of European fuel, irradiation facilities at PFR and investment in Super Phenix 2) which I would wish to see covered by appropriate peaceful use assurances or safeguard commitments from the French Government. But some problem of public presentation could remain.

UK Programme

14. The industry's proposals safeguard Dounreay and minimise redundancies. Staff cuts at Dounreay would be 140 out of 2320. For the whole AEA manpower on the fast reactor would be reduced 20%, or 800 out of a total AEA strength of 14,000.

Funding

15. The AEA programme yields PES savings of £6m, £19m and £25m over the next 3 years, and reduces the spend by 1986/87 to only half that proposed as recently as last autumn. It depends on securing electricity receipts of £15m a year from Dounreay. This will require an effort but the AEA believe it can be achieved.

16. The Treasury have discussed with my Department the possibility of securing further reductions by treating the industrial contributions as in aid of the Exchequer rather than in aid of the programme. The whole programme would be restricted to £70m a year and the Exchequer contribution would fall to about £60m instead of £70m. This would obviously remove all incentive to seek, or make, industrial contributions. But in addition it would mean further cuts in the R & D part of the programme, with a possibility of compulsory redundancies at Dounreay, since the industrial contributions are earmarked for design and component proving work.

I am however prepared - though with some reluctance because of the incentive effects - to accept the Chief Secretary's compromise proposal for a "settled down" programme of £75m per annum, inclusive of £5m from industry partners; with any additional contributions from whatever source going half to the programme and half to the Exchequer.

Conclusions

17. I recommend we proceed as follows:-

(i) agree a fast reactor programme at a settled down level of £75m per annum, subject to the arrangements about non-vote contributions described at the end of paragraph 16 above.

(ii) negotiate a government-to-government understanding with the French, Germans and, as necessary, other European partners. This agreement should however not constrain us legally, diplomatically or morally to build a fast reactor before we think it is needed; or to commit a higher level of resources to this area than we think right.

(iii) permit signature of a Memorandum of Understanding between the AEA and its French and German counterparts, and of a General Agreement between the CEGB and EdF on the lines explained earlier in this paper.

Secretary ofState for Energy
July 1983

Evidence: Policy
Ex 8

cc/NC

MBAM

MS 30/6

Treasury Chambers, Parliament Street, SW1P 3AG
01-233 3000

R Whalley Esq
Private Secretary to the Lord President
of the Council
68 Whitehall
LONDON
SW1

29 June 1983

Dear Bob,

PM's Box

The Lord President wrote to the Chancellor of the Exchequer on 27 June about the place of the Oil Taxation Bill in the legislative programme.

You now know, of course, that it has been announced that the Oil Taxation Bill should be introduced in the autumn, and we understand that the Lord President will be drawing attention to this commitment when putting the legislative programme to Cabinet.

I am copying this to the private secretaries of those to whom your letter was copied.

Yours sincerely,

Judith

JUDITH SIMPSON

Energy Policy, Pt 8

(2)

Prime Minister

MCS 28/6

PRIVY COUNCIL OFFICE
WHITEHALL, LONDON, SW1A 2AT

27 June 1983

Dear Nigel

OUTSTANDING OIL LEGISLATION

Your letter of 21 June suggested that, in order to avoid congestion in the legislative programme in autumn, the Oil Taxation Bill which you need should be introduced in July. John Biffen, in his letter of 22 June, has pointed out that to attempt to introduce this Bill, with its attendant Ways and Means Resolution, now would complicate the handling of the negotiations about the Finance Bill. In the circumstances, he would prefer to delay the tabling of the necessary Ways and Means Resolutions and the introduction of the Bill until after the Summer Adjournment.

I must say that I agree with his view and also with his suggestion that, if it would be helpful, a firm assurance of legislative action on oil taxation might be given in the course of the Second Reading debate on the Finance Bill. If you are content with this approach, I will suggest to QL Committee that an Oil Taxation Bill is included in the programme to be presented to Cabinet.

I am copying this letter to John Biffen, Peter Walker, John Wakeham and other members of L Committee and also to the Prime Minister and Sir Robert Armstrong.

Yours
Willie

The Rt Hon Nigel Lawson MP
Chancellor of the Exchequer

Energy, Policy, p+8

CONFIDENTIAL ENERGY

cc NO CL B1

Prime Minister (4)

The LPS wants to defer the oil legislation until after the Recess.

Prime Minister (4)

MCS 23

Privy Council Office
Whitehall
LONDON
SW1A 2AT

MCS 23/6

22 June 1983

Dear Willie,

attached

I have seen a copy of Nigel Lawson's letter to you of 21 June about further legislation on oil.

I fully understand the need for legislation to enact the commitments given at the time of the Budget and accept that time will have to be found for a Bill this Session. I do not believe, however, that the best course would be to table Ways and Means' Resolutions and to proceed to Second Reading of the Bill before the Summer Recess. In the first place I think this might serve only to complicate the handling of the Finance Bill. I have already explained to Peter Rees the difficulties we face in seeking to deliver the Finance Bill before the summer and would wish to avoid any action which might undermine our objective. Moreover, I understand that the drafting of an Oil Taxation Bill is unlikely to be complete before the end of July and to rush the Bill's introduction would mean additional difficulties in Committee in the autumn.

Since I understand that enactment of an Oil Taxation Bill is not required until the end of the year, I would prefer to delay the tabling of the necessary Ways and Means' Resolutions and the introduction of the Bill until after the Summer Recess. If Nigel believes that it would be helpful, I see no objection to a firm assurance of legislative action on oil taxation being given in the course of the Second Reading Debate on the Finance Bill.

I am copying this letter to Nigel Lawson, Peter Walker, John Wakeham, and other members of L Committee and also to the Prime Minister and Sir Robert Armstrong.

Yours

John Biffen

JOHN BIFFEN

The Rt Hon Viscount Whitelaw CH MC
Lord President of the Council
68 Whitehall
LONDON SW1A 2AT

CONFIDENTIAL

ENERGY: Policy Pt 8

010

Prime Minister cc No 10 (2)

The Chancellor wants an oil bill to pick up the oil parts of the Finance Bill lost by the election.

MCS 22/6

Treasury Chambers, Parliament Street, SW1P 3AG
01-233 3000

21 June 1983

The Rt Hon Viscount Whitelaw CH MC
Lord President of the Council
Privy Council Office
Whitehall
LONDON SW1A 2AT

Dear Lord President,

MT

OUTSTANDING OIL LEGISLATION

Nicholas Ridley mentioned at Legislation Committee this morning the need for early legislation to deal with important oil taxation measures which were announced in Geoffrey Howe's Budget Speech and included in the original 1983 Finance Bill, but which could not be included in the pre-Election Finance Act 1983 or our short summer Finance Bill.

The measures concerned are designed to give valuable additional petroleum revenue tax relief for expenditure in the North Sea on shared assets such as pipelines, as well as bringing various receipts - such as pipeline tariffs - into charge. It is important for the next phase of North Sea development that sensible sharing arrangements should be encouraged, and not impeded, by the tax system. The proposals were originally set out in a consultative document published in May 1982, and are to take effect from 1 July 1982. The industry are anxious to know where they stand, and there is a real risk that desirable developments currently under discussion could be delayed or even jeopardised if uncertainty were allowed to continue. So I think it is highly desirable to legislate this year, and I know that Peter Walker agrees. The industry are keenly awaiting an announcement of our intentions and I would like to include one in my speech during the Queen's Speech debates.

I fully understand your concern about the weight of new business to be introduced in the autumn, and the risk of over-loading then. I gather that, in a discussion with the Whips following L, the suggestion was made that, to reduce autumn congestion, the Oil Taxation Bill might be introduced in July (hung on a PRT resolution which could be tabled very quickly with other resolutions required for the summer Finance Bill), and that one might aim to complete Second Reading before the recess. This would be a tight timetable for publication, since there is still a good deal of drafting to be completed, and it would

/inevitably mean

inevitably mean rather more tidying up at Committee Stage by Government amendments than would be necessary if publication of the Bill (following the publication of revised draft clauses in late July) were deferred to the early autumn. But if you and John Biffen, and the Whips, were to feel that it would significantly ease the autumn problems, I would certainly be prepared to follow this route rather than going for a Bill to be first introduced in the autumn.

I understand that arrangements for tabling the resolutions, and issuing an accompanying Press Release, would have to be finalised tomorrow afternoon. So I should be most grateful if you could confirm that you have no objection to this course, and if John Biffen and John Wakeham could let me know that they too would be content with it, as soon as possible.

I am copying this to Peter Walker, John Biffen, John Wakeham and other colleagues on L, and also to the Prime Minister and Sir Robert Armstrong.

Yours sincerely,

DTL Kew

MT NIGEL LAWSON

(Approved by the Chancellor)

21 JUN 1983

JUN 1983

cc NO

(2)

Prime Minister

MCS 14/6

Treasury Chambers, Parliament Street, SWIP 3AG
01-233 3000

PRIME MINISTER

GULF VISIT: MAY 1983

As Secretary of State for Energy, I visited Kuwait, Saudi Arabia and Abu Dhabi between 1 and 5 May. This trip was planned originally for last September but was postponed twice for the convenience of my opposite numbers and then held up by the difficulties over Palestinian representation on the Arab League delegation's visit to London. These delays were fortuitous as, in the event, the visit took place immediately after the recent turmoil in the oil market and enabled me to build on the series of informal bilateral contacts which took place during that period.

2. The state of the oil market was inevitably the major topic of discussion. The other main issues to emerge were the oil slick, the Gulf countries' plans to develop and export their gas, and the prospects for nuclear power generation in the region. I also used any opportunities which arose to press our defence procurement interests.

The Oil Market

3. Appreciation of the UK's contribution, earlier this year, in helping to restore stability to the world oil market was reflected in the cordiality with which I was received. I found a wide consensus that the worst was over, that OPEC's London agreement was holding up unexpectedly well and that, although the market remained fragile, the $29 marker was likely to hold - perhaps even to the end of 1985.

We can expect the OPEC production quota to rise from 17.5 mbpd this year to 19 mbpd next, which will ease the revenue problems of a number of its members, particularly Nigeria and Venezuela. Indeed, there may be pressure for such an increase from the fourth quarter of 1983. All three countries I visited are clear that this would be undesirable and the Kuwaitis at least are prepared to contemplate a price increase of 50c a barrel if necessary to avoid it. The Saudis seemed reasonably content with their role as 'swing' producers while Dr Otaiba of the UAE confirmed that so far OPEC's Monitoring Committee had not found any cheating in relation to the London Agreement.

4. By common consent, the Nigerians are seen as the weakest link in the OPEC chain (and the Libyans as the least predictable). It is because North Sea oil competes directly with Nigerian that OPEC regards our position as so important. Accordingly, I was closely questioned about our production plans for this year and next. I explained that although crude oil production had been running at nearly 2.3 mbpd in the first quarter of 1983, over the year as a whole it was likely to be broadly similar to last year's level of 2.1 mbpd. There would be a slight increase in 1984 and 1985, after which the level of production in the North Sea would begin to decline.

5. However, the Kuwaitis went further in that Shaikh Ali Khalifa argued (as agreed in advance, I suspect, with Yamani) for more formal relations between OPEC and non-OPEC producers in the interests of 'stability'. I am in no doubt that the intention behind this proposal was to press us into production controls to parallel OPEC's. I therefore made it clear that we thought informal bilateral contacts were most productive and that we could not contemplate any production controls in the period ahead.

Community Oil Tax

6. Yamani had heard that the European Community was considering an import tax on oil and he went out of his way to underline his opposition to the idea which he said (somewhat improbably) was certain to provoke OPEC into imposing a matching export tax. I explained that excise duties on oil had been examined in the context of the Community's search for new sources of revenue but that they had not found favour. Yamani expressed relief, adding that it was important to allow falling oil prices to stimulate demand. This is, of course, an essential part of OPEC's current strategy for survival.

Gulf Refinery Capacity

7. I took the opportunity of my visit to explore the Gulf States' intentions over the build up of local refinery capacity. (As you know, there is surplus capacity worldwide at present and the oil companies have been closing plant in the UK and elsewhere in Europe). The Assistant Secretary General of OAPEC, Abdul Aziz al Wattari, admitted that there was pressure for ever increasing local refinery capacity but said that he did not see it coming to pass. In his view, local demand for oil products was growing faster than anywhere else in the world and, on current plans, there would be no net product exports from the Gulf by 1990. However, the Saudis expect to be exporting 2 mbpd of products by that date and the Kuwaitis already have ½ mbpd of export capacity which they hope to increase slightly by meeting their internal demand from gas instead of oil.

8. The Kuwaiti national oil company, KPC, is continuing its aggressive pursuit of overseas acquisitions. It hopes to increase its oil production from the North Sea (and elsewhere) and remains keen on distributing oil products in the UK. Negotiations for the purchase of the Gulf oil company's UK downstream interests, including their share in the joint Texaco/Gulf 'cracker' at Milford Haven are continuing but KPC are concerned that they might have to close Gulf's

associated refinery a year or two after acquisition. I told Ali Khalifa that we would not welcome such a closure.

The Oil Slick

9. There was great uncertainty about all aspects of this problem. Estimates of the leakage varied from 2,000 to 7,000 barrels a day and information on the size, location and movement of the slick was sparse and contradictory. Little or no oil had come ashore and there need not be major problems provided that the leakage could be stopped fairly soon. The Iraqis are being blamed for having prevented this so far.

10. The general expectation seemed to be that most of the oil would either evaporate or come ashore on the largely uninhabited Iranian coastline. Although concern on the Arabian shore increased as one moves south, I did not get the impression of any real urgency about anti-pollution measures. Indeed, despite the message you received through Ian Lloyd on 30 April, the President of the Saudi Ports Authority failed to take the opportunity of meeting me. Nevertheless, I advertised the UK's abilities and willingness to help as widely as possible. More recent press reports suggest that more oil is hitting the Saudi coast than the few tar balls which I was shown in Dhahran.

Gas

11. In my view, confirmed by Otaiba when I put it to him, most of the Gulf States are in no hurry to develop their gas reserves for export - the Kuwaitis have stopped exploration for gas, the Saudis are maintaining only a token effort, and countries like the UAE and Qatar, with large reserves already proven, are reluctant to see it sold to their neighbours. The Quataris, whose oil reserves are closest to exhaustion are likely to be the first to export gas but even they have missed the boat to some extent by seeking terms which

the oil companies find much too onerous in today's market. The other countries, whose oil reserves will last for very many years to come, think of their gas as a potential competitor with their oil at present but a source of revenue once the oil begins to run out. Otaiba told me with some pride that Abu Dhabi had secured the world's highest prices for its existing gas exports, adding that if everyone in the Gulf had been as tough, the oil market would be stronger than it is today. Ali Khalifa questioned me closely on the extent to which we saw a need for new sources of gas to meet European requirements.

Nuclear Power

12. Ali Khalifa is exploring the idea of building a low temperature reactor in Kuwait to help acclimatise the region to the idea of civil nuclear power. He thinks that a low temperature reactor would be more acceptable politically than, say, a PWR but is concerned that no-one (ie the Israelis) should be able to say that Kuwait is acquiring stocks of nuclear fuel for other purposes. Nor does he wish to be reliant on a single source, in this case France, for the technology and so would like to combine Swedish expertise with our fuel cycle capabilities and Kuwaiti engineering as a counterweight. He has already discussed these ideas with the AEA and I encouraged him to talk further as well as to BNFL and my Department.

13. Abu Dhabi also has nuclear power in mind for electricity supply and desalination and Otaiba said that a decision in principle to proceed might be taken by 1985. He would like to send a technical delegation to the UK. He also suggested that Qatar and the Saudi Eastern Province might be interested in the project.

Conclusion

14. The trip, though brief, was a useful development of the informal contacts with my opposite numbers that served us well

during the oil market difficulties in the first quarter of the year. The Gulf States attribute to us an important role in stabilising oil prices and therefore have a clear interest in good and close bilateral relations on oil matters at least for the time being.

15. When I called on the Amir of Kuwait, I expressed disappointment that he would be unable to pay a State Visit to Britain this year. He replied that he would very much like to consider a visit in future when circumstances in the Gulf were less difficult. He also asked me to pass on to you his warm personal regards.

16. I am copying this minute to my successor as Secretary of State for Energy, and to the Secretaries of State for Foreign and Commonwealth Affairs, Defence, Industry and Trade, and to Sir Robert Armstrong.

N.

(Nigel Lawson)
13 June 1983

Energy Policy

(4)

Prime Minister

To be aware of Sir J King's (Babcock's) view.

The Energy letters are attached.

MCS 26/5

✓cc NO

NEW ST. ANDREWS HOUSE
ST. JAMES CENTRE
EDINBURGH EH1 3SX

Michael Scholar Esq
Private Secretary
10 Downing Street
LONDON SW1

20 May 1983

MS

Dear Mr Scholar

I have seen a copy of Julian West's letter to you of 13 May about CEGB procurement. My Secretary of State has a very keen interest in the placing of contracts for Sizewell B PWR because of the possible effect on Babcock Power Ltd, a company operating in Renfrew near Glasgow. He has written to the Secretary of State for Energy on this subject and I attach a copy of his letter for your information. In addition to my Secretary of State's visit to Babcock the Secretary of State for Industry visited the company on 13 May and was made fully aware of the problems by Sir John King, Chairman of Babcock International Ltd.

The basic problem, as seen by Sir John, is that he does not believe that the desired transfer of knowledge and technology will be achieved if the orders for the primary circuit and the pressure vessel itself are placed directly with Westinghouse and with Framatome through Westinghouse; that would only happen if Framatome were sub-contractor to a British company which could insist on access to the manufacturing process. As far as the steam generators are concerned Sir John considers that there should be no question of the order being placed abroad because the UK "heavy" boiler-makers, such as Babcock, could produce these if given a reasonably early start by CEGB. Babcock are prepared to put in the necessary investment if they could secure the order.

I realise that this is a matter for CEGB and the Department of Energy but would stress the importance of these orders coming to Britain and hope that CEGB could be made aware of the consequences feared by Sir John King if the orders are placed abroad. I am copying this letter to Julian West and to Jonathan Spencer.

Joyce M. Clemie
for A MUIR RUSSELL
Private Secretary

cc NO

2

Prime Minister

Lord McAlpine wrote to you (flag A) about CEGB placing design orders overseas.

This letter and another at flag B give the story.

MCS 13/5

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

M C Scholar Esq
Private Secretary to the Prime Minister
10 Downing Street
London SW1

13 May 1983

Please also see Nick Owen's minute at flag C.

Dear Michael,

Thank you for your letter of 3 May about CEGB procurement. The only CEGB power station at the design stage is the Sizewell 'B' PWR.

The proposed design uses the Westinghouse reactor and the design of the station as a whole follows closely that of the Standardised Nuclear Unit Power Plant Station developed in the USA by Westinghouse and Bechtel. The National Nuclear Corporation have a licence agreement with Westinghouse and they are advised by Bechtel, who have a small team of engineers located in NNC offices. However, Bechtel have no formal responsibilities for the design.

My Secretary of State's minute of 28 January reported that the CEGB would shortly need to begin placing contracts for design work. It also said he would see to it that the Government's wish to minimise the import content of the project was fully satisfied, consistent with sensible cost control, securing the transfer of technology from Westinghouse to British companies, and fair play among suppliers. The Department and the CEGB are continuing discussions on contract strategy, and Sir Walter Marshall has devoted a great deal of personal attention to this. The Prime Minister may be interested to see the attached brochure published last month by the Board and distributed to British industry, setting out the contractual opportunities. The Board expect that the total import content of the station will be less than 10% by value.

There are however two major contracts which the CEGB have decided they must place with overseas suppliers. The first concerns the "primary circuit" of the reactor which includes the pressure vessel and the reactor itself, together with the steam generators, pressuriser, and main coolant pumps. The CEGB have decided to place the main contract for this package with a single contractor. They are negotiating with Westinghouse. The Board have told Westinghouse that they wish to maximise the share of British manufacturers through sub-contracts provided that appropriate cost, delivery and quality requirements can be assured. But the CEGB badly needs to deal with one single

contractor on whom it can place the responsibility for co-ordination. Past experience of power station construction argues for this, and the novelty in the UK of the PWR reinforces it. Sir Walter considers that Westinghouse are well qualified to do this and to co-ordinate the contribution of UK manufacturers in a field that is new to many of them.

Second, the CEGB have decided that the contract for the pressure vessel itself should be placed through Westinghouse with Framatome. Because of the safety requirement and controversy about the integrity of the vessel, they see it as sensible to procure it from a manufacturer highly experienced in this field. Most of the other parts of the primary circuit will be open to tender from British manufacturers through Westinghouse.

No specific announcements have yet been made about the placing of contracts for Sizewell 'B' except for the turbine generators, the design contract for which has been awarded to GEC. That was made public in February. The next step is likely to be the issue of invitations to British and foreign suppliers to bid for parts of the primary circuit. We are in touch with the CEGB about this, and Mr Lawson has asked them to consult him before any further announcements are made about the award of design, manufacturing or construction contracts.

I am sending copies of this letter to Jonathan Spencer and Muir Russel.

Yours ever,

JULIAN WEST
Private Secretary

Sizewell B pwr

contract strategy

Published by:
Generation Development and Construction Division
Central Electricity Generating Board
in co-operation with
National Nuclear Corporation Limited

SIZEWELL 'B' PWR CONTRACT STRATEGY

Introduction

The Central Electricity Generating Board (CEGB) is seeking to build a 1200MW pressurised water reactor (PWR) nuclear power station in Suffolk, to be known as Sizewell B.

The CEGB's application for the consent of the Secretary of State for Energy for Sizewell 'B' is currently subject to a Public Inquiry at Snape. The Inquiry is expected to last some months and the Inspector's report will then be reviewed by the Secretary of State and Parliament.

The CEGB currently expects to be ready to start preliminary work on site in July 1984 with the first permanent concrete being placed in April 1985, but the necessary consents and site licence from the Nuclear Installation Inspectorate (NII) must, of course, be given first. The target construction programme leads to commercial operation in 1991.

It is the policy of the CEGB to 'buy British' where possible, subject to availability, satisfactory price and delivery times. It is accordingly the intention of the CEGB to give all sections of British industry the maximum opportunity to participate to the full in the Sizewell 'B' project, subject to any overriding commercial or other obligations.

This brochure has, therefore, been prepared to explain to British industry the Contract Strategy which will apply to the project. It identifies in the attached schedule the packages of work (comprising plant, works and services) for which enquiries will be issued and for which contracts will be placed given the necessary consents and licences mentioned above.

The CEGB hopes that a significant part of the work for the Sizewell 'B' project will benefit companies in the East Anglian area. It should be noted that the contracts detailed in the schedule will lead to a large number of sub-contracts, and, in addition, a wide range of goods and services necessary to support a large industrial project will be required.

The Pressurised Water Reactor

In support of its case at the Public Inquiry, the CEGB has published a considerable volume of documentation. This covers both description and detail of the design of the proposed plant and the CEGB's case for building Sizewell 'B'. Details of those documents of most interest to potential suppliers, together with details of availability, are listed in the 'General Information' section of this brochure. Particular attention is drawn to 'A Technical Outline of Sizewell 'B' – The British Pressurised Water Reactor'.

The Sizewell 'B' Project

The National Nuclear Corporation (NNC) is designing and engineering the Sizewell 'B' power station for the CEGB.

If the CEGB is successful in obtaining the consents and licences necessary to build the station, then contracts for plant and construction will be placed and managed by NNC as agent for the CEGB.

Requirements from Contractors

Potential contractors will need to demonstrate to the CEGB and NNC that:

- they are technically competent and have the necessary resources to undertake the contracts
- they are able to meet the Quality Assurance standards and procedures appropriate to the plant in question
- they are able to take responsibility for detailed design work in accordance with the overall system requirements laid down by CEGB and NNC
- they are competitive, taking price and all other commercial and technical factors into account
- they are able to meet the contract programme. Contracts will contain incentives for timely completion including a "Key Date Procedure"
- they are able to accept the degree of commercial risk that is commensurate with their contractual responsibilities. Contracts will generally be let on the basis of design, supply, erection and setting to work with lump sum firm prices or schedule of rates, subject only to adjustment for escalation of prices as determined by nationally published indices
- they are able to back up their contractual obligations with appropriate system performance guarantees
- they can demonstrate that they have the appropriate financial standing to undertake the requirements set out above.

Enquiries for some contracts will need to be issued at an early stage and design contracts placed before construction of Sizewell 'B' can be sanctioned. These contracts will include an option covering supply of hardware, or supply and erection as appropriate, which will be exercised following receipt of the necessary consents and licences to build the station.

The early placing of the design contracts will provide the information necessary for the development of the overall design of the station and will, if necessary, also provide for technical back-up support to the Public Inquiry.

Many items of plant such as tanks, valves, pumps, etc. will be purchased directly from suppliers for free issue to other contractors for erection.

The CEGB also requires that a Management Group will be established as outlined below in "Construction Management". The Group will ensure that the site is well controlled and disciplined which will contribute to high productivity.

Construction Management

A problem in the past on construction sites, including power stations, has been a multiplicity of sub-contractors operating different policies towards their personnel especially with regard to earnings incentive schemes.

A major step towards resolution of this and other industrial relations problems should follow from the comparatively recent introduction of the National Agreement for the Engineering Construction Industry, which has among other objectives the harmonisation of incentive payments and a common code of industrial discipline. It also provides for the establishment of Project Joint Councils comprising representatives of the unions and contractors under independent chairmanship.

In addition, the CEGB has introduced successfully at Drax and Heysham II measures to improve site organisation and efficiency. These include management groups made up of representatives of all of the major contractors employed on the site, with a representative of the CEGB to be present at meetings as independent chairman and observer.
The measures also include contractual arrangements which provide incentives for the achievement of timely completion.

Opportunities for UK Contractors

The opportunities for UK contractors are considered to be extensive. The total capital cost of Sizewell 'B' power station is estimated to be £1,147 m at March 1982 price basis, and some £550 m of this cost is represented by contracts for plant, works and services for which UK contractors will be invited to bid.

Every effort will be made to utilise the design, manufacturing and erection skills of UK suppliers.

The imported content which is estimated to be worth approximately £100 m relates to certain specialised items of plant for which there is at present no established UK capability. For these items it is considered prudent, for the first UK civil PWR, to use experienced international manufacturers. In particular, the contract for the Primary Circuit will be placed with an established supplier. Nevertheless, it is anticipated that UK manufacturers will be given the opportunity to participate in the Primary Circuit contract, thus allowing them access to this technology. This will enable UK manufacturers to increase the proportion of UK supply in any further UK PWR Power Station projects, and to compete in export markets.

The balance of the estimated capital cost of the station consists of NNC and CEGB engineering costs and other costs not directly related to contracts for plant, works and services.

Contractors' Response

A schedule of the major contract packages for the Sizewell 'B' project is included at the end of this brochure. Any manufacturers who consider that they have the capability to meet the requirements described above should, as a first step, register their name and interest with Director of PWR, National Nuclear Corporation Limited, Cambridge Road, Whetstone, Leicester.

The decision to proceed with the project – which is, of course, dependent on receipt of the necessary consents and licences – will be followed by a phased release of contracts.

Applications from manufacturers who wish to be considered as potential contractors will be progressed relative to programme. Applications from manufacturers who wish to undertake work on a sub-contract basis will be forwarded by NNC to potential contractors.

As stated above, the CEGB hopes that suppliers in the East Anglian area will benefit from the project. A directory of local contractors for goods and services will be compiled for the use of NNC, CEGB and main contractors on the Sizewell site. Arrangements for this will be made locally before the work on site commences.

The schedule overleaf sets out the Contract Packages and dates for the issue of enquiries. Whilst every effort will be made to keep to the strategy, timings and packages set out, it may be necessary to make alterations should circumstances change.

Sizewell 'B' Power Station
Major Contract Packages

Contract Package	Type of Contract	Issue Enquiry	Enquiry Number	Scope of Work
(a) CIVIL WORKS				
Main Civil Works	Unit Rate/ Remeasure/Lump Sum for Site Management and Preliminaries	3rd Qtr. 1983	1C-28004	Construction of the reactor, auxiliary control, diesel, turbine, secondary diesel and control radwaste, ancillary buildings and outdoor structures. Construction includes foundation, superstructure, walls, roofs, embedded mechanical and electrical material post tensioning and architectural treatment. Also included are foundation bases for tanks together with on-shore trenches and tunnels for services and CW culverts from the terminal points of the CW pumphouse and surge chamber buried services and special doors.
Preliminary Works	Unit Rate/ Remeasure/Lump Sum for Site Management and Preliminaries	3rd Qtr. 1983	1C-28001	Includes open-excavation for power block including dewatering system. Also provision of fill, site roads, car parks, temporary site fencing and supply and erection of site offices, refurbishment of existing offices and prepared areas, including temporary water, fire fighting, electrical supply, site foul drainage systems, permanent reservoirs and mass fill and blinding concrete, hard-standings for sub-contractors' areas, refurbishment of sewage works, demolition temporary compressor house. May also include series of site orientated contracts covering provision of items such as canteen facilities, cleaning and maintenance, and site security.
New Access Road	Unit Rate/ Remeasure/Lump Sum for Site Management and Preliminaries	3rd Qtr. 1983	1C-28002	Includes construction of access road from Lovers Lane to NW corner of site including all necessary fill, piling, sub-base preparation and surfacing, and making allowance for local crossings and drains, adjacent landscaping and peripheral facilities.
Circulating Water System Civil Works	Unit Rate/ Remeasure/Lump Sum for Site Management and Preliminaries	2nd Qtr. 1984	1C-28003	Includes construction of circulating water pumphouse off-shore tunnels and structures, on-shore tunnels up to and including the surge chamber, beach docking facility, hypochlorite building, excavation and dewatering, CW pump concrete volutes. Construction includes foundation, superstructure, walls, roofs, embedded mechanical and electrical material and architectural treatment.
Containment Liner	Lump Sum subject to Escalation	3rd Qtr. 1983	1C-28151	Includes limited design, supply and erection of carbon steel plating complete with carbon steel stiffeners/ties, together with any temporary stiffening and equipment required for construction of containment liner, comprising: keyhole, sumps and penetrations, baseplate, barrel plating, dome plating, cylindrical cavity liner, equipment latch and personnel airlocks embedments and containment spray piping attachment to the dome liner.
Liner Anchorage Testing	Lump Sum	1st Qtr. 1983	1C-28152	Includes liner anchorage testing.
Reactor Refuelling Cavity and Fuel Pond Liners	Lump Sum subject to Escalation	4th Qtr. 1983	1C-28171	Includes limited design, supply and erection of stainless steel plating complete with carbon steel stiffeners/ties and leak chase channels together with any temporary stiffening required for construction of liners for refuelling cavity and fuel pond.
Administration Building and 132/400kV Substation Civil Work	Unit Rate/ Remeasure/Lump Sum for Site Management and Preliminaries	4th Qtr. 1985	1C-28006	Includes construction of the administration welfare building and 132/400kV substations access bridge, associated cable tunnel trenches and support steelwork, gatehouse and permanent car parks, and security fencing. Construction includes foundation, superstructure, walls, roofs, embedded mechanical and electrical material and architectural treatment.
Lifts	Lump Sum subject to Escalation (Prime Cost Sum, Civil)	2nd Qtr. 1984	1C-28007	Includes design, supply erection and commissioning of the lifts. It is anticipated that there will be 7 lifts throughout the station.
Off-Site Hostel	Lump Sum subject to Escalation	Forecast to follow	1C-28009	Includes design, supply and erection of the off-site hostel.
Site Finishing and Landscaping	Lump Sum subject to Escalation	3rd Qtr. 1989	1C-28010	Removal of temporary construction facilities final site grading and landscaping.
Civil Testing (Services Type Contract)	Unit rate	1st Qtr. 1984	1C-28005	Includes concrete and material testing.
Consulting Architectural Services	Reimbursable Consultancy Agreement	Contract Placed	–	Includes services to meet overall architectural requirements of CEGB internal architects and external executive architects.
Quantity Surveyor Services	Reimbursable Consultancy Agreement	Contract Placed	–	All civil quantity surveying services excluding cabling.
(b) MECHANICAL				
Primary Circuit	Lump Sum subject to Escalation	4th Qtr. 1982	1M-28700	Includes design, supply, erection and setting to work of all equipment in the primary circuit (reactor steam generators, pressuriser, reactor coolant pumps, loop pipe works, supports and restraints protection system and instrumentation). It is anticipated that some components and the erection will be sub-contracted to UK suppliers.
Turbine Generators	Lump Sum subject to Escalation	Design Contract placed	1M-28800	Includes design, supply and erection of turbines, generators, moisture separator reheaters, condensers, structural steel support frames, feedwater pumps and heaters and piping connecting these components.
Steam Generator Feed Water Pumps and Strainers	Lump Sum subject to Escalation	4th Qtr. 1983	1M-28011	Includes design, supply and erection of steam generator feed water pumps and strainers.
High Integrity Pipework and Safety Related Plant	Various	Letter of Intent 1st Qtr. 1983	1M-28350	Includes design, supply and erection of high integrity pipework and erection of safety related plant.
Conventional Mechanical Plant and Piping	Unit Rate/ Remeasure/Lump Sum for Site Management and Preliminaries	4th Qtr. 1984	1M-28353	Includes design, supply and erection of all functional mechanical plant and pipework.
Radwaste Building, Mechanical Plant and Piping	Lump Sum subject to Escalation	1st Qtr. 1984	1M-28352	Turnkey effort against functional specifications using the contractors involved in the main plant works.
HVAC (Safety)	Lump Sum subject to Escalation with some unit rates	1st Qtr. 1985	1M-28600	Includes limited design, complete supply and erection of all safety related HVAC duct work hangers and equipment. This excludes HVAC in the Administration Building and other non-safety classified buildings.
HVAC (non-safety)	Lump Sum subject to Escalation with some unit rates	1st Qtr. 1985	1M-28680	Includes design and supply of all non-safety related HVAC duct work, hangers, miscellaneous equipment and erection of HVAC duct work and equipment. This excludes HVAC in the administration building.
CW Pumps, Valves and Discharge Piping	Lump Sum subject to Escalation	3rd Qtr. 1983	1M-28008	Includes design, supply and erection of CW pumps, auxiliary CW pumps, valves and discharge piping.
Fuel Handling Equipment	Lump Sum subject to Escalation	2nd Qtr. 1985	1M-28716	Includes limited design, supply and erection of pond fuel handling machine, elevator, fuel transfer system, fuel storage racks, transfer gates handling equipment, and head assembly and erection only of refuelling machine.
ASME III Class 2 Centrifugal Pumps	Lump Sum subject to Escalation	2nd Qtr. 1983	1M-28908	Includes design, supply and erection of centrifugal charging pumps, high head safety injection pumps, and containment spray IRHR pumps.
Reactor Building Polar Crane and Fuel Building Crane	Lump Sum subject to Escalation	1st Qtr. 1984	1M-28063	Includes design, supply and erection of the reactor building polar crane and fuel building crane.

Contract Package	Type of Contract	Issue Enquiry	Enquiry Number	Scope of Work
Shop Fabricated Tanks	Lump Sum subject to Escalation	1st Qtr. 1984	1M-28101	Includes design, supply and erection of the shop fabricated tanks.
Site Erected Steel Tanks	Lump Sum subject to Escalation	3rd Qtr. 1984	1M-28109	Inludes design, supply and erection of large outdoor tanks.
Condensate Polishing and Water Treatment Plant and Piping	Lump Sum subject to Escalation	1st Qtr. 1984	1M-28111	Includes design, supply and erection of condensate polishing and water treatment plant and piping.
Decontamination System Plant Package	Lump Sum subject to Escalation	1st Qtr. 1986	1M-28137	Includes design, supply and erection of the decontamination system plant package.
Reserve Ultimate Heat Sink	Lump Sum subject to Escalation	2nd Qtr. 1983	1M-28015	Includes design, supply and erection of reserve ultimate heat sink and platforms.
Auxiliary Boiler Plant and Piping	Lump Sum subject to Escalation	1st Qtr. 1984	1M-28017	Includes design, supply and erection of the auxiliary boiler plant and piping, reaerator and reboiler.
Emergency Diesels	Lump Sum subject to Escalation	1st Qtr. 1984	1M-28018	Includes design, supply and erection of emergency diesel system.
CW Screening Plant	Lump Sum subject to Escalation	4th Qtr. 1983	1M-28020	Includes design, supply and erection of CW screening plant.
Turbine Building Cranes	Lump Sum subject to Escalation	1st Qtr. 1984	1M-28060	Includes design, supply, erection and testing of the turbine hall cranes.
Miscellaneous Cranes	Lump Sum subject to Escalation	4th Qtr. 1985	1M-28061	Includes limited design, supply and erection of mechanical annex crane, diesel building cranes, CW pumphouse cranes decontamination shop crane, secondary diesel and control building cranes as well as miscellaneous hoists and jib cranes.
Sealing of Openings (Fire and Air stops)	Lump Sum subject to Escalation (Prime Cost Sum Civil)	2nd Qtr. 1988	1M-28663	Includes design, supply and erection of sealing material to close penetrations through concrete, masonry, and concrete floor slabs. Penetrations include HVAC, piping, electrical, instrumentation and structural steel throughout the plant.
Fire Protection System	Lump Sum subject to Escalation	2nd Qtr. 1985	1M-28649	Includes design, supply and erection of mechanical fire protection equipment throughout the station.

(c) ELECTRICAL

Electric Power Cabling and Supporting Steelwork	Unit Rate/ Remeasure/Lump Sum for Site Management and Preliminaries	2nd Qtr. 1985	1E-28410	Includes design, supply and erection of cable supporting steelwork, cable traywork and conduit cables and terminations for power, control and instrumentation circuit terminations, as well as supply and erection of lighting, heating and small power equipment throughout the plant.
Low Voltage Switchgear	Lump Sum subject to Escalation	3rd Qtr. 1984	1E-28018	Includes design, supply and erection of motor control centres, DC circuit breakers, fusegear and contactor control gear, local control centres, 415 circuit breakers, fusegear and contactor control gear, valve actuator load centres and uninterruptable power supply load centres.
11kV Switchgear	Lump Sum subject to Escalation	4th Qtr. 1984	1E-28009	Includes design, supply and erection of 11kV switchgear.
3.3kV Switchgear	Lump Sum subject to Escalation	4th Qtr. 1984	1E-28190	Includes design, supply and erection of 3.3kV switchgear.
Generator Voltage Switch Disconnector	Lump Sum subject to Escalation	2nd Qtr. 1985	1E-28140	Includes design, supply and erection of generator voltage switch disconnector.
Generator Transformers	Lump Sum subject to Escalation	1st Qtr. 1985	1E-28001	Includes design, supply erection and commissioning of 2 432kV/23.5kV 800 MVA generator transformers.
Unit Transformers	Lump Sum subject to Escalation	3rd Qtr. 1984	1E-28002	Includes design, supply, erection and commissioning of 2 23.5kV/11.8kV 52 MVA unit transformers.
Main Connections	Lump Sum subject to Escalation	2nd Qtr. 1985	1E-28005	Includes design, supply and erection of 23kV main for use with 660MW turbo generators complete with earthing switches and earthing transformers.
Batteries and Chargers	Lump Sum subject to Escalation	3rd Qtr. 1985	1E-28050	Includes design, supply and erection of 4 48V 400 AH batteries and chargers, 4 110V 110 AH batteries and chargers, 2 110V 1500 AH batteries and chargers, 4 110V 1800 AH batteries and chargers, 2 250V 1500 AH batteries and chargers.
Auxiliary Transformers (ONAN) Services Transformers (AN)	Lump Sum subject to Escalation	1st Qtr. 1985	1E-28074	Includes design, supply, erection and commissioning of 4 11.8kV/3.3kVA 10MVA unit and station auxiliary transformers and 23 3.3kV/415V 0.5-2MVA type AN miscellaneous transformers.
Fault Level Indication Equipment	Lump Sum subject to Escalation	1st Qtr. 1984	1E-28230	Includes design, supply, and erection of fault level indication equipment.
Uninterruptable Power Supply Equipment	Lump Sum subject to Escalation	4th Qtr. 1984	1E-28270	Includes design, supply, and erection of static and rotating UPS equipment.
Tele-Communications Equipment	Lump Sum	1st Qtr. 1986	1E-28470	Includes the design, supply and erection of the direct wire telephone system, staff location system, station audible warning system, miscellaneous telecoms, intercom and loud speaking system, radio and telephone jack system.
Station Transformers	Lump Sum subject to Escalation	2nd Qtr. 1984	1E-28003	Includes design, supply, erection and commissioning of 2 132kV/11.8kV 60 MVA station transformers.
Metering Equipment	Lump Sum	2nd Qtr. 1985	1E-28550	Includes design, supply and erection of metering equipment including summation, metering and logging equipment and also station clocks.

(d) CONTROL & INSTRUMENTATION

Process and Control Instrumentation and Installation	Lump Sum subject to Escalation	2nd Qtr. 1985	1J-28110	Scope definition to follow.
Plant Computer	Lump Sum subject to Escalation	2nd Qtr. 1984	1J-28106	Includes design, supply, erection and commissioning of plant computer.
Sequence Control and Condition Monitoring System	Lump Sum subject to Escalation	2nd Qtr. 1984	1J-28115	Includes design, supply, and erection of sequence control and condition monitoring system.
Station Control System	Lump Sum subject to Escalation	2nd Qtr. 1984	1J-28116	Includes design, supply, and erection of the station control system.
Control Desk and Panels	Lump Sum subject to Escalation	4th Qtr. 1983	1J-28200	Includes design, supply, and erection of the control desk and panels.
Fire Protection Instrumentation and Control	Lump Sum subject to Escalation	4th Qtr. 1985	1J-28205	Includes design, supply, and erection of fire protection instrumentation and control.
Sampling Systems and Equipment	Lump Sum subject to Escalation	1st Qtr. 1986	1J-28350	Includes design, supply, and erection of the sampling systems and equipment.
Gas Monitoring System	Lump Sum subject to Escalation	4th Qtr. 1985	1J-28359	Includes design, supply, and erection of the gas monitoring system.
Radiation Monitoring System	Lump Sum subject to Escalation	1st Qtr. 1985	1J-28361	Includes design, supply and erection of the radiation monitoring system.
Seismic Instruments	Lump Sum subject to Escalation	1st Qtr. 1986	1J-28707	Includes design, supply, and erection of seismic instruments and vibration monitoring equipment.
Secondary Protection System	Lump Sum subject to Escalation	1st Qtr. 1985	1J-28768	Includes design, supply and erection of the Secondary Protection System.

Contract Package	Type of Contract	Issue Enquiry	Enquiry Number	Scope of Work
Facia Alarm System	Lump Sum subject to Escalation	4th Qtr. 1983	1J-28108	Includes design, supply, and erection of the facia alarm system.
Plant Security System	Lump sum subject to Escalation	1st Qtr. 1986	1J-28113	Includes design, supply and erection of a permanent plant security system including sensors, closed circuit television, fence alarms and access control.
(e) MISCELLANEOUS				
Acid clean and Flushing	To be decided	2nd Qtr. 1987	–	To be decided.
Heavy rigging	To be decided	1st Qtr. 1986	–	To be decided.
Site Services	To be decided	To be decided	(see 1C-28001)	To be decided – extra work which may be included under preliminary works.
Free Issue Equipment including specialised safety related equipment such as Electrical Penetrations, Accumulators, Auxiliary Feedwater Pumps and the Main Steam and Feedwater Isolation Valves	Supply only	See Scope of Work	–	These supply items will be purchased under separate "supply only" contracts, and free-issued to contractors who will erect them together with their own plant. A more definitive list including the forecast dates for issuing each enquiry will be available during the 3rd Qtr. 1983.
Painting	To be decided	3rd Qtr. 1987	1A-28042	To be decided.

General Information

PWR Publications and Films

TITLE	AVAILABLE FROM:
CEGB Statement of Case* Pre-Construction Safety Report* Reference Design*	*Generally inspection copies only available at CEGB & NNC
Sizewell 'B' PWR Nuclear Power Station (summary of Statement of Case)	Dept. of Information and Public Affairs, CEGB 15 Newgate Street, London EC1A 7AU
A Technical Outline of Sizewell 'B' – The British Pressurised Water Reactor	Dept. of Information and Public Affairs, CEGB 15 Newgate Street, London EC1A 7AU
Sizewell – proposed site for Britain's first PWR Power Station	Dept. of Information and Public Affairs, CEGB 15 Newgate Street, London EC1A 7AU
The Case for Sizewell 'B' Nuclear Power Station	Dept. of Information and Public Affairs, CEGB 15 Newgate Street, London EC1A 7AU
Opportunity at Sizewell (Film, or Video and booklet)	Dept. of Information and Public Affairs, CEGB 15 Newgate Street, London EC1A 7AU
Sizewell 'B' PWR Contract Strategy	Dept. of Information and Public Affairs, CEGB 15 Newgate Street, London EC1A 7AU

Addresses

C.E.G.B.:
Generation Development and Construction Division
Barnett Way
Barnwood
Gloucester
Tel: Gloucester (0452) 652222
Telex: 43501

N.N.C.:
National Nuclear Corporation Ltd.
Cambridge Road
Whetstone
Leicester
Tel: Leicester (0533) 863411
Telex: 34335

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

CONFIDENTIAL

M C Scholar Esq
Private Secretary to
the Prime Minister
10 Downing Street
London
SW1

13 May 1983

Dear Michael,

Further to my letter of today about CEGB procurement, in reply to yours of 3 May, my Secretary of State thought that the Prime Minister might like to see Sir Walter's paper on the subject to which Mr Lawson referred in his minute of 28 January.

I enclose a copy.

Yours ever,

J D WEST
Private Secretary

Recd 9/2/83

+1C

cc PS/PUSS (Common)
PS/PUS
Mr Manley
Mr Morpleet
Mr Henderson

CENTRAL ELECTRICITY GENERATING BOARD

Sudbury House, 15 Newgate Street, London EC1A 7AU. Telephone 01-248 1202

From the Chairman
Sir Walter Marshall, CBE, FRS

9 February 1983

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

CEGB SECRET

Dear Secretary of State,

I understand from your officials you would like to have a paper from me concerning procurement policy for the Sizewell PWR. It is hard to know where to begin and where to end on this subject. The attached paper concerns all those matters which I think will be of interest to you.

I think you will also be interested in hearing about the meeting we had with a number of Trade Unions on 13 January. This meeting was held at their request and the people present are listed on the attached sheet. They opened the meeting by saying that they had heard disquieting rumours which led them to believe that we might not be giving enough emphasis to getting UK manufacture for the PWR project. They went on to explain that they fully accepted that the pressure vessel needed to be imported but they felt strongly that as much as possible of the remainder of the PWR should be manufactured in the UK. They had got the impression from potential contractors that the UK had the capability to do everything else immediately. We explained to them that it was our intention to get the maximum possible UK manufacture. We told them something of the procurement policy outlined in the attached paper though, of course, not in as much detail. We explained that we were going to Westinghouse on a single tender action for the primary circuit because that maximised our chance of getting UK manufacture within the primary circuit while nevertheless retaining Westinghouse guarantees. We described to them by some examples, how we would set about making the procurement decisions and we established that, overall, they were content that we were proceeding in the best way possible.

The only difficult area of discussion concerned the manufacture of the steam generators and, in the exchange of views which ensued between us, it became evident that all the Trade Unionists had been subjected to heavy lobbying from Babcocks. During that lobbying process it appeared

Cont'd/.....

that Babcocks had inadvertently given the impression that they, Babcocks, were equipped to manufacture the entire steam generator without further capital investment, immediately. That, of course, is not correct and as soon as the Union people had understood that it would take time and a learning process to get the steam generator manufacture transferred from the USA to the UK, they expressed themselves content. I think they may have come to the conclusion that they had been lobbied ostensibly to get UK rather than US manufacture but actually to get a preferred position for Babcocks ahead of NEI. That conclusion may, of course, be correct.

At the end of the meeting Frank Chapple, John Lyons and Gavin Laird agreed that their fears had been put to rest. I undertook to meet with them again if we ran into snags when implementing the procurement policy which I had outlined to them. They then promised that if I did run into snags they would use their best endeavours as responsible Trade Unionists to help resolve difficulties. They stressed to me that they had no axe to grind in the choice between one company and another within the UK - that was not their concern. I replied that I did not expect the British companies themselves to take such a relaxed view and we therefore felt an obligation to proceed step by step in this matter so that all the decisions we reached could be properly defended thus preserving the integrity of the CEGB and avoiding embarrassment to the Government.

Yours sincerely

Walter Marshall

W Marshalll

List of Trade Unionists who attended meeting with Sir Walter Marshall

Thursday 13 January 1983

Name	Union
F J Howell	TGWU
W Gannon	EEPTU
F Franks	EEPTU
J Lyons	EPEA
F Chapple	EEPTU
K Cure	AEUW
G Laird	AEUW
K J Reid	TGWU
S Lynch	GMWU
J W Edmonds	GMWU
Rita Stephens	APEX
J Brankin	NALGO
D Prentice	NALGO

Procurement Policy for the Sizewell PWR

Introduction

This paper sets out the procurement policy we propose to follow for this project. It attempts to identify the difficult or controversial decisions that will arise and highlights the nature of the lobbying that companies will undertake, particularly when they are disappointed in their hopes.

Our broad intent is easily described. Other than for major components of the nuclear steam supply system it is the intention of the CEGB on Sizewell 'B' to maximise UK produced components, materials and plant, and to encourage the main UK contractors to ensure that their sub-contracts are also placed with UK suppliers. For the PWR stations subsequent to Sizewell 'B', it is our intent to arrange for increased UK manufacture of the major nuclear steam supply system components, whilst ensuring that in so doing it does not put either programme or quality at risk. Given this intent, this paper can concentrate heavily on the procurement of the specialised NSSS components.

For the implementation of this intent, the first point to make is that the CEGB will make all the major decisions on procurement but will do so only on the recommendations of NNC. Throughout the paper, therefore, we should assume that NNC and the CEGB stand together in justifying their decisions.

The second point to make is that Mr Howell, when he was the Secretary of State for Energy, gave evidence to the Select Committee concerning the import content of the first PWR. The relevant part of his statement reads as follows -

> 41. The NNC consider that the import bill for the first PWR could be around £42 million. For subsequent PWRs the import bill could be progressively reduced to a point where components were completely manufactured in the UK and only materials of a specialised nature, costing around £10 million, were imported. The extent to which this minimum level of imports was achieved in practice would depend upon the annual ordering rate in the UK and the international supply position for PWR components. But in any event these import costs would be only a small proportion - around 5 per cent or less - of the total cost of a station.

42. The decision to order a PWR would help our existing trade in PWR components and could in time also enable our nuclear industry to participate in the world market for PWRs.

That statement, with the figures updated for inflation since January 1980, remains valid. Roughly speaking the figure of £42 million quoted in January 1980 corresponds to, say, £55 million in January 1983 and would comprise of a pressure vessel, four steam generators, the reactor internals, the primary pumps and the pressuriser. The figure of £10 million, roughly speaking, corresponds to the cost of the pressure vessel and other specialist components. The costs quoted by Mr Howell were based on a budgetary Westinghouse quotation: the sterling price will increase due to the fall in sterling against the dollar.

The main part of this paper sets out the procurement issues in the sequence that they are likley to arise in the public arena. The paper attempts to identify in advance the nature of the complaints and criticisms which will undoubtedly arise. Obviously we may anticipate that when the competition has been between a number of British firms the disappointed companies will argue that they were unfairly treated one way or another. In the rare case when the competition has been between British and foreign companies, if the latter gets the contracts the complaint will be that we have not properly looked to the national interest and our need to achieve the transfer of technology and manufacturing knowhow to the UK. By proceeding carefully and meticulously it ought to be possible to deal with arguments of that kind. A more difficult class of argument will concern the implications of any decision on Sizewell on procurement for future PWRs. A British company winning a contract for Sizewell will be anxious to use that contract to negotiate or at least claim that they should be given a preferred position in that particular area of work for PWRs in the future. The disappointed companies will, of course, be anxious to argue the exact reverse. Several examples of this will occur in what follows.

The Pressure Vessel

The first procurement decision to be made concerns the pressure vessel. This is such a difficult task and it carries such heavy implications for the safety of the reactor that we are obliged to go to an established, high quality pressure vessel fabricator for this item. The value of the

contract would be about £7 million for the pressure vessel of our exacting quality. There is no reasonable prospect that a pressure vessel of this kind and quality could be manufactured in the UK within the foreseeable future. We have, therefore, said publicly that for the indefinite future we expect to import the pressure vessels. There are a number of pressure vessel manufacturers in the world that, in principle, could supply us but, in a joint exercise carried out by NNC and the CEGB, the shortlist was narrowed rapidly to just two: Combustion Engineering in the USA and Framatome in France. Sometime ago we announced that we had chosen Framatome and a senior engineer of that company is now preparing to give evidence to the Sizewell Public Inquiry about the quality of Framatome's manufacturing plant and about the ways Framatome will meet our exacting requirements.

No British company has made a serious criticism of this decision. The only British company which could conceivably manufacture a pressure vessel would be Babcocks using their works at Renfrew, but they would need to invest capital equipment to gain the capability for this manufacture and it is not common sense for them to do that. It is difficult, exacting and specialised work because there is only one pressure vessel per reactor and therefore it does not actually have a high work content.

For these reasons, providing the performance of Framatome in the event is entirely satisfactory, we would expect to continue to import the pressure vessel from them in the future and we do not expect serious criticism from British industry for such a policy. Simultaneously we will suggest to the French that if we continue to buy pressure vessels from them, they should undertake to buy an equivalent amount of goods from the UK for their nuclear programme. For example, we will press that they should continue to take some of the large diameter, high integrity pipework from Cameron Iron Works as they do at the moment.

Turbo-Generator

Before deciding to use 2 x 600 MW machines at Sizewell 'B' the Board carefully considered the options, which were:

Competitive tender NEI and GEC for turbo-alternators of -

2 x 600 MW, or

1 x 1200 MW single shaft.

It was wellknown that for a 1200 MW machine NEI would quote a slow speed machine (1500 rpm), GEC a high speed machine (3000 rpm). Both would be prototype machines and would need to be supported as part of the capital cost of Sizewell 'B' with a complete range of spares. In the event of a problem arising with the prototype 1200 MW machine, the PWR would be shut down until the problem was resolved and new components manufactured and fitted. Because both manufacturers' machines would be prototype, the Board would not want two prototype machines with their attendant spares and possible teething troubles. Therefore, the decision on Sizewell 'B' would, in all probability, determine the future supplier of machines for all PWRs.

For the 2 x 600 MW machines, both manufacturers would use standard proven 6-flow LPs and alternators, and in the event of the failure of one turbo-alternator the PWR could stay in service at more than half load whilst the faulted machine was repaired using spares held for other 660 MW machines on our system.

The purpose of Sizewell 'B' is to prove PWR technology, not a new prototype 1200 MW single shaft machine. It was therefore decided to minimise the risk and install proven turbo-alternators. (The 4-flow v 6-flow argument does not arise: because of the PWR steam conditions both manufacturers would quote 6-flow LP machines.)

The decision on the turbine generator will be taken at the CEGB Board Meeting early in February and will become public soon after that. We have deliberately made the decision that the PWR will have two 600 MW turbo-alternators since, in addition to the above reasons, it permits a straightforward competitive battle between GEC and NEI (Parsons). The two companies submitted competitive bids nearly a year ago.

Both companies' tenders were qualified making it necessary for the CEGB and NNC to make subjective price assessments of the qualification to bring the tenders to a common basis; the incidence of spend curves were different and, against the background of discussion which had been held with manufacturers on the question of international plant cost comparisons, the prices were considered high. It was therefore decided to hold a joint meeting with both manufacturers and to request them to re-price their tenders, removing all qualifications, to quote on the basis of a common incidence of expenditure curve (mean of their proposed incidence curve) and to look again at the level

of pricing, thus leaving the assessed output as the only judgement to be made by the Board. This judgement will be based on the measured output of machines and machine components already in operation on our system and information available on UK manufacturers plant overseas.

Both companies appear to have cut their prices to the bone, both have clearly taken a decision that this order is vital to them and both understand that it is an extremely keen competitive situation. The company which wins the contract will complain that they have been maneouvred by the CEGB into a position where they will see little, if any, profit. The disappointed company will argue that in some way or another it has been unfairly treated in the tendering process. The successful company will go on to argue that it is only common sense that they should be given the turbine generator order for the second, third, fourth PWRs. The disappointed company will, of course, argue the exact reverse and will argue not only that for PWR 2 they should have a fair chance to win the contract, but that it would be "fair and in the national interest" that the law of "Buggin's turn" should apply and they should get the next contract on a negotiated basis. They might even argue that a decision for a second PWR should be made now so that each turbine generator company can be given an order.

The Primary Circuit

The primary circuit consists of the pressure vessel, four steam generators, the pressuriser, the reactor internals, four main coolant pumps and the large diameter, high quality pipework which connects all these together.

After careful consideration we have decided that the contract for the primary circuit should be given to Westinghouse by negotiation. We have felt it unwise to break up this primary circuit into its component parts and place separate contracts for each part. We have found it essential that an established PWR vendor company should take responsibility for this the central part of the PWR. We have considered and rejected the possibility of going to Framatome for the primary circuit and we have considered but rejected competitive bids between Westinghouse and Framatome for this work. The major reason for going to Westinghouse by single tender action is the following.

We feel obliged to use the Sizewell PWR as a method of technology and manufacturing transfer into the UK. Westinghouse has successfully transferred technology and manufacturing knowhow into a number of countries and has made a firm commitment to bring that about in the UK. Also the NNC/Westinghouse Licence includes detailed manufacturing information in addition to access to technology. We do not think that the French would have the same motivation and determination to help British industry. In effect, we have made the judgement that since Westinghouse is our chosen licensor, they are our chosen instrument for accomplishing technology and manufacturing transfer and that they had best be given the primary circuit responsibility and, within that responsibility, we should look for as high a UK participation as possible.

The contract for the primary circuit will be given to Westinghouse subject to the following conditions.

1. The Westinghouse price must be related to US and world levels. It is up to Westinghouse to satisfy us that their prices are fair and reasonable and it is agreed that Bechtel can be used to give advice on this matter.

2. Westinghouse will guarantee the delivery dates, key interim dates and the steam production from the primary circuit.

3. Westinghouse must then sub-contract back as much work as possible to an approved list of British manufacturers which NNC would work out with them component by component.

4. Similarly the erection contract must be sub-contracted to a UK manufacturer/contractor.

5. It is accepted that the requirement to sub-contract back to British manufacturers will increase costs. Westinghouse will therefore be asked to quote their basic price and British manufacturers will then be invited to tender and a view will be taken on whether the expected premia over the basic price are acceptable.

By proceeding in this way, we hope that the various parts of the primary circuit will fall into one of two categories. Those where the British price is a modest mark-up on the American price (we expect this to happen where the British company is equipped to produce the component without

significant capital expenditure or new workshop facilities or quality controlled procedures). In that case we would justify the modest mark-up as part of the cost of "technology and manufacturing transfer" on a one-off basis.

In other situations, most likely involving significant capital expenditure to create the manufacturing capability in the first place, we would expect the UK premium to be very large. We would then make the decision that UK manufacturing was not justified for Sizewell but might be justified for a tranche of PWRs to be ordered at a later date when the setting up costs could be spread across a number of stations. The outcome of this approach is likely to be along the following lines.

The pressuriser can be built in the UK for Sizewell and for subsequent PWRs with only a modest mark-up. The likely winner of that contract is Babcock. The large diameter, high quality pipework can be produced in the UK with no mark-up at all. The contract will be won by Cameron Iron Works. The pressure vessel will be manufactured overseas both for Sizewell and for later PWRs. The reactor internals will be manufactured by Westinghouse for Sizewell but possibly in the UK for all subsequent PWRs. There will be a bitter competitive battle between GEC and Babcocks for this work. Virtually all manufacture outside the primary circuit will come from the UK for Sizewell and for subsequent PWRs. For the primary pumps the electric motors will come from the UK for Sizewell and for subsequent PWRs. The pump casing and impellers will come from abroad for Sizewell and be manufactured under licence in the UK subsequently. It is our present judgement that in all we have mentioned so far, there will not be genuine controversy between manufacturers overseas and manufacturers at home - though naturally we do not expect explicit praise either. There will, of course, be bitter controversy between the successful and disappointed British firms and in all cases the disappointed firms will try to claim that either Westinghouse, NNC or the CEGB, or all three, were prejudiced against them.

All this leaves one important and significant area of controversy which may well dominate the lobbying of Government by manufacturers and the unions concerned. It concerns the manufacture of the four steam generators for Sizewell and the four steam generators for every subsequent PWR. Because there are four steam generators per reactor the contract to manufacture them is a "plum". It will be much sought after by several boiler makers and perhaps by GEC. Very roughly speaking, the contract for the steam generators will be analogous to the contract for the AGR boilers. In the latter case political lobbying by the two boiler making companies led to a degree of

work sharing by the two. It is unclear how the lobbying on the steam generators will go but it is clear that it will be intense.

The reason why the steam generators become controversial is both because they involve a substantial chunk of money and because they sit uneasily between the extreme specialisation of the pressure vessel and conventional but high quality engineering of the remainder of the PWR. Because of the public discussion the steam generators are likely to have, it is necessary to discuss the manufacturing process for them in some detail. The steam generators fall naturally into an area of British Heavy Industry which is short of work.

The shell of the steam generator is manufactured by welding together forgings made of a special steel of special quality. The only sources of such forgings at the present moment in time are the Japanese Steel Company and Framatome. Curiously enough a likely competitor in the future will be the River Don Works at Sheffield but it is unclear when and if they can provide forgings of the requisite quality. Certainly we will seek to get them from an established manufacturer for the Sizewell reactor. Welding together of the forgings is a high precision task comparable to the welding together of the pressure vessel. We will wish to have that done abroad and the Babcock company, and possibly other British companies, will claim they are capable of doing that task. They will argue that that task is entirely similar to the manufacture of pressure vessels for our nuclear submarines but our decision on this matter must be heavily influenced by the fact that this process has great significance for the safety clearance of the reactor. We therefore have a strong preference to go abroad for this manufacturing step for Sizewell. For future PWRs we will have to make a difficult policy decision between continuing to go abroad or upgrading a chosen British engineering capability which would then become a monopoly supplier to us.

Forgings for the tube plate will probably come from abroad. The tube plate then has to be drilled. It is possible that this could be done at GEC for Sizewell. Certainly the UK will have the capability to do it for later PWRs. The U tubes for the steam generator have to be manufactured probably abroad for Sizewell and in the UK for subsequent PWRs and the tube assembly then has to be done. The tube assembly will probably be done by

Westinghouse for Sizewell and by a chosen UK manufacturer for subsequent PWRs. The top of the steam generator where the steam and water is first separated might be manufactured by Westinghouse or might be manufactured in the UK for the Sizewell station but surely must be manufactured in the UK for subsequent stations.

Putting all this complicated story together, it will be seen that there is not a simple statement along the lines that steam generators will be manufactured either in the USA or the UK. They are likely to be manufactured right from the beginning partially in the USA and partially in the UK with an increasing UK content as we go from one PWR to the next. The detailed timing of this transfer of manufacturing knowhow from Westinghouse to the UK can only be determined by detailed negotiations over the next year. The nature of this process is, I believe, well understood by industrial companies. They are likely to present the controversy in terms of the speed that this transfer of technology and manufacturing takes place. The underlying argument is not really about the speed of the transfer but about the choice of manufacturer to be the NNC/Westinghouse sub-licensee.

By the terms of their licence, Westinghouse are obliged to educate our chosen licensee into the manufacturing technology for steam generators. They stand ready to do that and any British company we choose for that task is likely to be acceptable to Westinghouse. However, Westinghouse will quite reasonably refuse to put their effort into educating several British companies for this task. The various British companies will therefore lobby for a decision which best suits their particular situation.

The Babcock company has clearly and correctly analysed that it is, at the moment, the front runner to be the UK manufacturer of steam generators. They want that agreed now. They want it agreed for Sizewell. They know that they themselves cannot manufacture much of the steam generator for Sizewell but if they can get us to agree now that they are the NNC/ Westinghouse licensee, they can start learning the technology and prepare to manufacture sizeable parts of the steam generator starting with the second PWR. In the meantime they will be able to do what they can for Sizewell itself.

Other companies with ambitions to manufacture steam generators will, of course, make the exact reverse argument. They will argue that for Sizewell the task should be left for Westinghouse, that no commitment should be made to any company at this moment in time but the commitment should be made after giving them a fair chance to bid for the business for PWR 2 and subsequent reactors.

It is not possible for us to see our way through this particular jungle at this particular moment in time. A happy outcome might well be an agreement with Babcock that they were in a special position for steam generators with a compensating amount of manufacturing work on the remainder of the station going to other heavy engineering companies. However, it is premature to assume that we can negotiate ourselves into that position through the difficulties that lie ahead.

Pipework

The efficient design, manufacture and erection of pipework is a crucial step in keeping PWR construction to time and cost. The way we set about that is therefore vital for the success of the project. We cannot simply copy the pipework layout of SNUPPS because our design is more complex than SNUPPS. Therefore, although we have a good start for the pipework, a great deal of new work must be done. The lead position on that must be taken by the central design team at Whetstone and one possible way of proceeding is to do all the design inhouse and then go to British manufacturers for competitive bids for the supply and erection of that pipework. This last approach has been advocated to us by Bechtel but we have turned our face against it because it involves recruiting pipework specialists to the Whetstone team when that expertise already exists in our UK pipework companies. We have therefore decided to work in partnership with three pipework companies to complete the design, get a smooth transfer to the manufacturing operation and a continuity of information flowing into the erection step. The three pipework companies, Babcock, Aiton and PED Ltd, have agreed to pool their effort into a joint venture, send designers to Whetstone and work closely with us on this important task. The necessary corollary of this approach is that they undertake this work as a result of a negotiated contract, not a competitive contract. They, of course, are delighted to get this opportunity. It puts them in a strong and unique position to undertake this pipework of future PWRs in this country and to quote for pipework design and supply on export work.

These three companies will be full of praise for the long-sighted view of the CEGB in proceeding in this way in full acknowledgement of the national interest. Their potential competitors, NEI, William Press, Davy McKee, GEC and Foster Wheeler, will be equally forthright in their condemnation of this procedure which has given them no opportunity to bid for work that they think they might undertake and which has frozen them out of the business for the indefinite future. We will reply that we cannot have a free-for-all in the important area of pipework supply and we have simply done our best.

Sizewell Followed by a Programme of PWRs

The success of the French PWR programme can largely be traced to the standardised approach to tranches of reactors, the rationalisation of industry and the establishment of first class facilities for manufacture of standardised major components. The intention of the Board is, through NNC, to establish a safe reliable design of PWR for Sizewell 'B' and then to replicate that design for a tranche of PWRs. For this policy to be successful it will require in many areas using the same manufacturer or the same design of component for follow-on plants to Sizewell 'B'. The Board will therefore encourage manufacturers with a common expectation to form joint ventures to undertake areas of work similar to the arrangement being made for pipework design, fabrication and erection.

In conclusion I must re-emphasise a point I made at the beginning of this paper. The concerns expressed in public about the various procurement decisions are equally likely to be dictated by thoughts of the future than by the immediate Sizewell project. British industry generally is expecting Sizewell to be followed by a modest programme of PWRs and have seen that as the major prize for which Sizewell is the overture.

W Marshall

31.1.83

C

MR SCHOLAR

13 May 1983

CEGB PROCUREMENT

I think that the CEGB have provided convincing arguments for placing two Sizewell B contracts overseas

- the co-ordinating contract for the 'primary circuit' with Westinghouse and the pressure vessel with Framatome.

Assuming that the CEGB survives the Sizewell Enquiry, it will need to demonstrate over the next 10-15 years that PWRs are safe and economic. CEGB cannot afford the additional risk entailed by commissioning an inexperienced British Contractor for the pressure vessel itself. Nor can it afford the risk of the financially disastrous over-runs which have beset the construction of all nuclear power stations in Britain.

Westinghouse's co-ordinating expertise seems essential, especially in view of the novelty of the engineering problems which the PWR poses for CEGB. In 1981 the CEGB was severely criticised, quite rightly, by the Monopolies and Mergers Commission for its methods of investment appraisal, which unduly favoured the nuclear option by overlooking the exceptional over-runs on nuclear projects in this country. This criticism will be made much of at the Enquiry, because the over-runs have a disastrous effect on the economics of the exceptionally capital-intensive nuclear plants. The PWR case rests heavily on its superior economics, since we have no need of additional generating capacity for a decade or more. CEGB cannot therefore afford to dispense with Westinghouse's managerial expertise.

BASCOM.

pp NICHOLAS OWEN

file

CONFIDENTIAL

10 DOWNING STREET

From the Private Secretary

3 May 1983

Dear Julian,

The Prime Minister has been told that CEGB are placing design orders with Bechtel and Westinghouse, notwithstanding that their British competitors in the consulting engineering design profession have all the necessary technical knowledge.

The Prime Minister has asked whether this is true, and whether it relates to Sizewell.

Yours sincerely,

Michael Scholar

Julian West Esq
Department of Energy.

CONFIDENTIAL

A

From
Lord McAlpine of Moffat
Telephone: 01-837 3377

40, Bernard Street,
London, WC1N 1LG

~~19th~~ 25th April 1983

My dear Prime Minister

I am enclosing some facts and figures following our conversation at Lady Airey's Cocktail Party. These show the quite remarkable value of work carried out by the Consulting Engineering Design Profession overseas.

I apologise for the delay in letting you have this information but my office was closed for 10 days over Easter.

Please ask [illegible] why [illegible] Energy [illegible]

I believe that this invisible export is so impressive and of such significance that I am distressed at the C.E.G.B. placing design orders with Bechtel and Westinghouse when British Consultants have the know-how needed.

I am continuing my research on how to get more British materials incorporated into the Sizewell contract. Both Sir John King and Ian MacGregor will be of considerable help to me in this and I feel it is of sufficient importance to merit delaying Sizewell if necessary.

All good wishes
Yours ever
Bob

The Rt Hon Margaret Thatcher, MP,
10 Downing Street
London SW1

SIR ROBERT McALPINE & SONS, LTD.
AND ASSOCIATED COMPANIES

MEMORANDUM

FROM **HEAD OFFICE** *Our Ref.* RBW/AMMcD *CONTRACT*

TO Lord Edwin *Your Ref.* *Date* 18th April, 1983

SUBJECT BRITISH CONSULTANTS WORKING ABROAD

The ACE Report "Overseas Work Entrusted to Members during 1982" is summarised on the attached sheet.

A breakdown you might find helpful is given below:

	Value of Work in hand during 1982	Number of Projects in Report Stage in 1982
Nuclear Power Stations	£248 million	-
Thermal Power Stations	£4,745 million	31
Hydro Electric Works	£2,689 million	26
Transmission of Power	£2,035 million	24
Electrical & Mechanical Services	£3,027 million	14
	£12,744 million	95

It is interesting to note that 60% of this work by value is in the hands of 3 Consulting firms:

Kennedy & Donkin	£2,625m
Merz & McLellan	£3,348m
Preece, Cardew & Rider	£1,720m

The ACE membership covers about 1100 companies and some additional work overseas will be carried out by non-members.

R. B. Woodd

R. B. Woodd

VALUE OF OVERSEAS WORK ENTRUSTED TO A.C.E. MEMBERS DURING 1982

VALUE OF PROJECTS GIVEN IN £ million	MAJOR WORKS ABROAD			
	No. of Projects	Total Value	Work * Completed in 1982	Work still in hand
1. Nuclear Power Stations	16	248	35	213
2. Thermal Power Stations	100	4745	116	4629
3. Hydro Electric Works	49	2689	268	2421
4. Transmission of Power	137	2035	104	1931
5. Electrical & Mechanical Services	414	3027	366	2661
6. Chemical, Petroleum & Gas Plants	30	2104	233	1871
7. Structural Industrial	337	4499	648	3851
8. Structural Commercial	753	8727	682	8045
9. Railways	64	5155	168	4987
10. Roads, Bridges & Tunnels	456	9993	943	9050
11. Desalination	24	1071	430	641
12. Water Supply	344	5325	487	4838
13. Drainage Sewerage & Refuse Disposal	268	5765	273	5492
14. Irrigation	79	1660	124	1536
15. Harbours, docks and sea defences	274	5728	1297	4431
16. Airports	62	2123	19	2104
17. Land planning & development	130	2094	433	1661
18. Miscellaneous	65	1149	21	1128
Total Work in all Categories	3602	68137	6647	61490
Totals carried out by individual Consulting Firms:				
Merz & McLellan	125	3388	171	3217
Preece, Cardew & Rider	124	2178	63	2115
Kennedy & Donkin	116	3799	206	3593
Totals	265	9365	440	8925

AR 14/4. LATE.
Energy

The attached guidance notes on presentation of nuclear power policy are for the personal use of all Ministers, who should associate them with the earlier notes in this series.

THE GOVERNMENT'S POLICY FOR NUCLEAR POWER

Public perceptions For many years, there was no great public concern about the safety aspect of nuclear power. More recently, however, there has been an increase in public awareness and, to an extent, in public concern.

The Electricity Council monitors the trend in public opinion on nuclear power, using NOP Random Surveys. Since October 1979, these have shown a falling number of people agreeing that nuclear power has a very good safety record, and a growing minority disagreeing. The November 1982 figures were 46% agreeing and 25% disagreeing.

Opinion has changed more markedly over the period on the question of need. The proportion agreeing that nuclear power is needed to "keep our factories, houses and transport running" has fallen from 65% in October 1979 to 45% in November 1982. The proportions feeling that nuclear power is not needed has increased from 17% to 30% over this period. Since May 1981, there has been a higher proportion against than for building more nuclear power stations. In November 1982, the result was 35% in favour of building more; 40% against.

The people working in the industry have a strong understanding that nuclear power is safe. Those living close to existing nuclear stations, and to Sellafield (formerly known as Windscale) and the prototype fast reactor at Dounreay, tend to be supporters. Other people tend to be against the idea of a nuclear station being built close to their homes. This feeling would very probably be extended to any other industrial development.

The environmentalist groups consistently stress the allegedly adverse impact of nuclear power on the environment, and in particular claim that the technology is unsafe. The present NUM President is strongly opposed to nuclear power, because it is seen as unwelcome competition. The unions representing workers in the electricity supply industry are staunch advocates of nuclear power, and the TUC made it clear in its August 1981 Review of Energy Policy that it too favours the development of nuclear power.

The important points to stress are:

- Nuclear power offers a safe, clean, secure and economic source of electricity.

- The new nuclear power stations coming on stream in the next decade will replace old, inefficient plant. This will mean electricity prices in the future below what they would otherwise have been. Economic and secure electricity supplies are important for jobs, particularly in the electricity-intensive industries.

- Coal presently meets around 80% of fuel needs for electricity. There will be obvious benefits from reducing the degree of dependence, not least because competition between fuels puts downward pressure on their prices.

- Britain used to generate a higher proportion of its electricity from nuclear power than any other country. It has now slipped to eighth among the OECD countries. At present, nuclear power meets 12% of our electricity needs, although this will rise to 20% when the three advanced gas cooled reactors (AGRs) nearing completion are commissioned. France, Sweden, Finland, Belgium and Switzerland already generate more than 20% of their electricity needs in nuclear power plants.

- The French figure is 39%, and this is set to increase very rapidly in future years. This is a major reason why French industry enjoys, as the recent CBI study* showed, the cheapest electricity in Europe.

  * 'European Industrial Energy Prices', Confederation of British Industry, October 1982

- The safety record of nuclear power in the UK has been excellent. Workers in the industry are among the staunchest advocates of nuclear power. The Health and Safety Executive have published a major study on the literature on comparative safety of generating plant worldwide. It concluded: "suitably sited, constructed and maintained, nuclear systems of the type reviewed involve no more, and probably less, risk than oil- or coal-burning systems, taking account in each case of the whole fuel cycle". (HSE Research Paper 11, December 1980). The UK safety regulatory system is one of the most effective in the world.

- No large-scale method of electricity generation leaves the environment unaffected. For example, solid waste from oil and coal-fired plants contains poisonous materials which could, over time, contaminate water supplies and crops grown on land fill sites. Emissions into the atmosphere contain radioactive elements and other potential carcinogens. Sulphur dioxide, which can be removed only at considerable expense, contributes to the problem known as acid rain. All fossil fuel combustion generates carbon dioxide, which has been slowly increasing its concentration in the atmosphere. The climatic effects of this are unknown, but it could conceivably bestow problems on future generations. All these effects are carefully monitored, and where possible, kept under control. Nevertheless, the small risks to health involved have to be considered alongside the question of the environmental impact of nuclear power. At least one 'environmentalist' has concluded: "I believe that the environmental lobby, of which I count myself a member, should stop putting on funny masks (to symbolise opposition to nuclear power) and posturing in front of television cameras, and start to address the long-term, fundamental problems". (Nigel Sitwell, 'The Spectator', 26 February 1983).

The UK Record. Lord Rutherford, working in Cambridge in 1919, was the first person in history to split the atom. This work opened up for the first time the possibility that the energy stored in the atomic nucleus could be used as a source of power. It was fitting therefore that, in 1956, Britain's Calder Hall reactor should be the first in the world to generate electricity from nuclear fuel, and feed it into a national grid. The Magnox reactors, developed from the Calder Hall design, provided and still provide a reliable source of base load electricity. Their safety record has been excellent, over twenty years of commercial operation. Magnox was not originally expected to be a cheap alternative to oil and coal. It was rather seen as an entree into nuclear technology, and a source of fuel diversity. Nevertheless, as it turns out, the costs from the Magnox stations, over their lifetimes (if, as expected, they operate for thirty years) will be comparable with that from coal-fired stations built at around the same time.

The Magnox reactors burn natural uranium. The next generation Advanced Gas Cooled Reactors (AGR) developed in Britain use uranium enriched in the isotope Ur 235. Together with our Dutch and German partners in URENCO, we have achieved a significant technological lead in enrichment technology. URENCO has developed the world's first commercial gas centrifuge plant for uranium enrichment. The CEGB has one AGR in operation, Hinkley Point B, and this will, over its lifetime, produce cheaper electricity than the comparable coal-fired plant, Drax. The other AGRs nearing completion will also prove worthwhile additions to the system, with the exception of Dungeness B. This last project has been seriously undermined by difficulties in its construction.

Spent fuel from commercial reactors can be reprocessed to recover unburnt uranium 235 and the by-product plutonium. These are very valuable materials which will, at some time in the future, fuel the new generation of fast reactors (see p6). Britain has long experience in reprocessing technology, and British Nuclear Fuels Ltd, at Sellafield, is a world leader in both reprocessing and fuel fabrication. About 60 per cent of the spent fuel reprocessed in the Western world has been reprocessed here in Britain.

The Government's Policy

Britain's nuclear power programme has received bipartisan support in Parliament, ever since 1946 when Mr Attlee took the initial decision to develop civil nuclear power. In 1976 Mr Benn, then Energy Secretary commissioned a thorough review of thermal reactor systems by the National Nuclear Corporation. On the basis of that review, in January 1978, he announced his decision to authorise the electricity supply industries to order two new Advanced Gas Cooled Reactors. Latest estimates show that these will produce cheaper electricity over their lifetimes than could have been expected from comparable coal-fired plant.

At the same time, Mr Benn announced that, having regard to the importance of nuclear power, the UK should not be dependent upon an exclusive commitment to any one reactor system. He said: "We must develop the option of adopting the PWR (pressurised water reactor) system in the early 1980s". (Hansard, 25 January 1978, col 1392).

Conservatives supported this statement at the time, and have accepted it as a basis for policy in Government. Work has continued on the adaptation of an American PWR design to meet British needs and safety requirements. The main conclusion of a review by the NII on the generic safety issues relating to pressurised water reactors was that there was no fundamental reason for regarding safety as an obstacle to the selection of a PWR for commercial electricity generation in the UK. Our nuclear powered submarines, with over twenty years of totally safe operation, are powered by this type of reactor. Thus, PWR technology is not new to Britain.

The Government sees an important and necessary role for nuclear power in the years ahead, as older generating plant is retired. Nuclear power stations have the potential to provide electricity economically provided they are built to time and cost.

A public inquiry into the CEGB's application to build a PWR at Sizewell in Suffolk is under way, and the main public hearing, which is being held close to the proposed site, opened on 11 January 1983. The inquiry will look into

all aspects of the CEGB's proposed new power station. As well as the normal planning considerations, the safety and the economics of the proposed development will be considered in depth. The Government's general policy for a growing nuclear component in no way pre-empts this particular decision. All proposals to build new stations are considered on their individual merits.

For the future, the Government has re-affirmed its commitment to the development of the fast reactor. It seems likely that reactors of this type will be needed in the early part of the next century. This type of reactor will be able to burn depleted uranium and plutonium recovered from spent fuel from the present commercial reactors, and can create out of it energy equivalent to our present economically recoverable coal reserves. This is of major significance for our future energy supplies.

Britain is among the world leaders in fact reactor technology, and a substantial development programme is concentrated at Dounreay in the North of Scotland.

Safety The nuclear power industry is, by comparison with other energy industries and with most of the chemical and petrochemical industries, safe for both its workers and the public. Successive Governments have ensured that safety considerations have been paramount.

The most serious accident which has occurred in a nuclear plant in Britain was in 1957. This occurred not in a civil plant, but in a reactor at Windscale used to produce plutonium for defence purposes. Within 38 hours, the reactor was cold and under control, but a good deal of radioactive iodine was released. There is no physical evidence that the health of anyone in the UK was adversely affected by the accident. There have been reports in the press recently of the results of a theoretical estimate of its possible ill-effects. Every year, tragically, 120,000 people die from

cancer. Natural background radiation is held responsible for a small proportion of these, of which 15 to 25 per year are deaths from thyroid cancer. The recent analysis of the Windscale accident put an upper limit of 0.33 additional deaths per year due to the accident. There has however been no actual increase detected in the incidence of thyroid cancer in the North West.

The accident stimulated an exhaustive review of the safety arrangements in the UK. The Nuclear Installations Inspectorate (NII) was established as an independent licencing body, and the principle was firmly established that the operator of any nuclear installation in the UK has the absolute responsibility to ensure its safety. This system has served the country very well indeed. Britain's safety record at nuclear installations is second to none. It is noteworthy that the changes proposed by the Kemeney Commission, which was set up in the US after the accident at Three Mile Island, would make the US regulatory sytem much more like the system we have had in Britain for the last twenty two years.

The questions on safety have to be addressed at various levels:

- How likely is a major accident? - It is unlikely in the extreme. 281 nuclear reactors operate in 24 countries; the technology has been in use for almost twenty years; yet a major accident resulting in any significant hazard to public health has never happened. Nuclear power plants are designed with safety in depth, and are very closely regulated indeed. The accident at Three Mile Island, which was a serious financial disaster, did not pose a significant threat to the people living in the vicinity.

- What if a major accident happened? - First, a reactor core cannot explode like an atomic bomb. However, the worst possible accident that can be imagined at a nuclear plant would be very serious. The same is true of very many other large installations. The

point is that the worst possible accidents are precisely the ones which the designers and regulators are so careful to avoid. Throughout history, the great disasters have been natural - plague, floods, earthquake. Apart from wars, hydro dam failures are the only man-made disasters which have caused well over a thousand deaths in a single incident.

- What about the less spectacular risk of radiation escaping from nuclear power plants during normal operation? This is easily measurable and demonstrably insignificant. The environment in which we live is permeated by radiation; a small amount is added by burning nuclear fuel. It has been estimated that the present level of radiation from the nuclear programme is as dangerous to the individual as the smoking of two cigarettes in his or her lifetime.

The Department of the Environment and the Ministry of Agriculture, Fisheries and Food both monitor the effects of pollutants, including those from the nuclear power programme, in the environment. Both are independent of the sponsoring Department of the nuclear industry.

Waste Management. 96 per cent of spent fuel from nuclear reactors is unburnt uranium or plutonium, which is reusable. The remaining waste, although highly radioactive, is produced in very small quantities. One of the virtues of nuclear fuel is that a small volume produces a large amount of energy. Coal and oil, on the other hand, have to be burned in large quantities, and produce large amounts of solid and gaseous waste, some of which is potentially hazardous.

The safe storage of highly active waste from nuclear fuel is essential. At present, it is stored at Sellafield, in solution form, in high integrity stainless steel tanks. A process for turning this waste into glass has been developed on an industrial scale by BNFL's partners in France, and work of this kind will soon start at Sellafield. The waste will then be glassified

within stainless steel containers, and stored at Sellafield until much of its activity has decayed. This will take about 50 years, after which the well-sealed containers will be permanently stored.

Nuclear Energy and Nuclear Weapons

The civil nuclear power industry worldwide has always been alert to the possibility that plutonium extracted from spent fuel or highly enriched uranium could be be used by countries to develop atomic weapons. There are, of course, much easier and cheaper ways in which a country intent upon making nuclear weapons could proceed. Nevertheless, a comprehensive system of international agreements and inspections minimises the risk that the legitimate rights of countries to civil nuclear power do not lead to their developing nuclear weapons.

The prime instrument of control is the Non-Proliferation Treaty. States party to the NPT have undertaken not to provide nuclear materials or equipment to a non-nuclear weapons state unless they are covered by safeguards monitored by the International Atomic Energy Agency. Most other countries not party to the NPT have all their nuclear facilities under IAEA safeguards. There are only four non-nuclear weapons states which are not party to the NPT and where certain nuclear facilities are not under IAEA safeguards. These are India, Pakistan, Israel and South Africa. The safeguards system is designed to verify member states compliance with their stated commitments and to account for all the nuclear materials handled by their civil nuclear programmes so that misuse would be detected at an early stage.

Secondly, the principal exporters of nuclear materials and technology, including the UK, belong to the Nuclear Suppliers Group, and observe agreed guidelines for the transfer of sensitive nuclear items and technology. These are specifically designed to reduce the risk of misuse.

As a country which already has nuclear weapons, we need not submit to IAEA safeguards, but have chosen to do so. The Government has recently reaffirmed that no plutonium recovered from our civil nuclear programme has ever been used for military purposes and that there are no plans to do so in the future.

Common misconceptions

If a nuclear station ever "goes seriously wrong" there could be terrible consequences for thousands of people	There has never been a nuclear emergency at any nuclear station in the UK. All have well rehearsed emergency plans should such an emergency ever be declared. It is precisely because the potential risks from a nuclear accident are serious that the industry is required to spend tens of millions of pounds on the safety system built into the plant. If the Government really believed that accidents might happen on the scale even approaching the maximum theoretical release of radioactivity, then it would never have agreed to the construction of nuclear power stations in this country.
Progress on renewable sources of energy is hampered by concentration on nuclear power	No significant contribution can be expected from the renewable sources of energy at least before the year 2000. Nonetheless, the Government is active in its promotion of R&D in this area.

Conservation could eliminate the need for more nuclear power

Conservation is very important, particularly in reducing the energy used in space heating. However, electricity is relatively little used in this application. In any case, measures such as loft insulation have relatively little impact on the peak demand for electricity, and this is the factor which determines the amount of generating capacity needed. Thus more home insulation, while very sensible in cutting heating bills, does not mean we need to have less generating capacity.

The ordering and building of nuclear power stations is grinding to a halt worldwide. In the US, some are closing down.

The building of power plants has been affected by the worldwide recession. However, the situation has been exaggerated by opponents of nuclear power.

In West Germany a five year gap in building nuclear power stations ended last year and work on two new stations began. In all, nine plants are under construction and 13 more are planned. Of these 22, 17 are PWRs.

In Switzerland a 5th nuclear plant (BWR) is planned, and this will mean that 35% of their electricity will be generated in nuclear plant by 1990.

France is pressing ahead with an extensive programme. 27 PWR's are presently under construction.

Italy has recently announced plans to start building three new nuclear power stations in less than two years.

Recession and higher interest rates combined with delays in the licensing process have led, in the US, to cancellations of generating plants under construction. However, some 20 stations presently under construction are expected to come onstream by the end of 1984 and a further 40 are in an advanced stage of construction. Coal-fired capacity has not been hit so hard as nuclear due to lower initial capital costs, simpler licencing and the availability of cheap opencast coal close to potential power station sites.

Britain's 12% of electricity met by nuclear power compares with 15% in Germany, 15½% in Japan, 26% in Belgium, 29% in Switzerland, 34% in Finland, 37% in Sweden and 39% in France.

The Three Mile Island accident demonstrates that the PWR is intrinsically unsafe.

Not a single injury resulted from this accident. The Presidential Inquiry into the accident by the Kemeney Commission concluded that

the small release of radiation had negligible impact on the health of individuals.

Meltdown (as portrayed in the fanciful film, 'The China Syndrome') did not occur. Even if it had, the Commission concluded that there was a high probability that the resulting radiation would have been contained by the reactor building.

The PWR is not inherently unsafe; it is the most common nuclear generating technology in use in the world today. The Commission's main conclusion about the accident at Three Mile Island was that faults in the system of licensing and regulating US nuclear plant were largely responsible for the seriousness of the accident. The changes suggested would bring the US system into line with that in the UK.

The NII will be determined to ensure that the events which occurred at Three Mile Island could not be reproduced in a British PWR. The Electrical Power Engineers Association, which represents the engineers, managers and scientific staff who plan and run the electricity supply industry, has concluded that the PWR "cannot be opposed on the grounds of its safety implications for the staff who will be involved in its commissioning and operating" (Guardian, 5 January 1982).

The disposal of highly active nuclear waste poses a threat to future generations

Nuclear waste will be glassified inside high-integrity capsules, and stored in safety for about 50 years, until its activity is substantially reduced.

These capsules will then be disposed of, in stable geological formations underground or possibly under the ocean. The chances of their reaching the surface and being assimilated by humans will be effectively zero.

The transport of nuclear waste is a hazard to the public

Nuclear fuel is transported in steel flasks up to 12 inches thick. Arrangements for moving spent fuel in the UK are in accordance with internationally agreed safety standards.

Transportation flasks are subjected to simulated accidents to test resistance to fire and impact. They have been proved safe.

More fuel has been moved by the two UK Generating Boards than by all the rest of the world's commercial organisations put together. Just over 12½ thousand tonnes of irradiated fuel have been moved from CEGB power stations to Sellafield since 1962 without incident.

Terrorists could steal plutonium from the civil nuclear fuel cycle to release in a public place or to use for weapons production

Plutonium is a very dangerous material if inhaled as fine dust. The most stringent security measures are enforced to ensure that plutonium is not stolen, even in minute quantities. If terrorists wish to poison large numbers of people, there are many easier ways of doing so with less danger to themselves.

It seems highly unlikely that terrorists could make weapons from plutonium from civil nuclear power stations. It is more likely that they could buy such weapons from irreponsible governments. A moratorium on nuclear power generation would not in any way change the nature of the terrorist threat.

A uranium based society will inevitably lead to a restriction of civil liberties

Objectors to reprocessing at the Windscale Inquiry in 1977 said that civil liberties would be eroded by the security measures necessary to protect plutonium from saboteurs. Nothing that has occurred in the six years since then shows any evidence of such a trend. If there were such a trend employees in the industry would be the first to object, but the Unions concerned have made no complaints about the security measures enforced.

3.65 TPM

CONFIDENTIAL
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VCC NO 2

Prime Minister

MCS 31/3

Treasury Chambers, Parliament Street, SW1P 3AG
01-233 3000

30 March 1983

The Rt. Hon. Patrick Jenkin MP
Secretary of State for Industry

Dear Patrick

PETROCHEMICALS: THE BASIS FOR FURTHER STUDY

Thank you for your letter of 23 March. I have one or two comments.

First, timing. I understand our officials are following up John Sparrow's suggestion that we should examine as a matter of urgency possible initiatives within the Community. This work can go ahead separately from the other work outlined in my letter to you of 14 March. I understand that the Working Group on Petrochemicals is already working up a report which they hope to submit to us shortly after the Easter break.

I very much agree with you that officials should aim to report further by end May. But I recognise that this is a tight timetable and may overshoot; it is important that we have a fully satisfactory basis for taking decisions.

Second, and of considerable relevance to the timing point, I should emphasise that I attach great importance to the use of outside consultants in obtaining an independent view on the medium term prospects for the industry. It is crucial to get as good an evaluation of this aspect as possible. I know that our officials are already in close touch about the consultants' terms of reference, and I hope this will be pressed forward as quickly as possible.

Finally, I note that you will be seeing senior directors of both ICI and BP Chemicals shortly. As the Prime Minister has pointed out, it is essential that we should not raise expectations that Government assistance will be forthcoming. When emphasising that the IDU studies of the companies' bids for subsidies will be on an entirely without commitment basis, it might also help to stress that recent movements in exchange rates, and the improvement in the economic situation generally, are highly relevant factors.

Copies of this letter go to the other recipients of yours.

GEOFFREY HOWE

Energy Policy Pt 8

DSG

cc. Mr. Owen

10 DOWNING STREET

From the Private Secretary

28 March 1983

Dear Jonathan,

PETROCHEMICALS: THE BASIS FOR FURTHER STUDY

The Prime Minister has seen a copy of your Secretary of State's letter of 23 March to the Chancellor of the Exchequer about the UK petrochemical sector.

The Prime Minister has commented that the Government has so far avoided operating subsidies. To introduce any such subsidy now would be hard to defend, following the closure of much industrial capacity during the recession. The Prime Minister enquires how it could be right for the Government to support petrochemical operations if the companies themselves, with all their resources and expertise, are no longer prepared to do so. She has also expressed the hope that, in the Government's dealings with the companies, no expectations should be raised that Government assistance will be forthcoming.

I am sending copies of this letter to Margaret O'Mara (HM Treasury), Brian Fall (Foreign and Commonwealth Office), Muir Russell (Scottish Office), Adam Peat (Welsh Office), Julian West (Department of Energy), John Rhodes (Department of Trade), Gerry Spence (CPRS) and Richard Hatfield (Cabinet Office).

Yours sincerely,

Michael Scholar

Jonathan Spencer, Esq.,
Department of Industry.

Prime Minister

Please see Patrick Jenkin's letter (attached).

Agree I write as at X?

MCS 25/3

MR SCHOLAR

Yes - very rigorously. MT

cc Mr Mount
Mr Walters O/R

PROBLEMS OF THE UK PETROCHEMICALS SECTOR

This is an industrial problem which has been germinating for some time. ICI may need to make some painful decisions at Wilton and elsewhere by the end of the year. They claim to need £50-75 million for three years to avoid these closures, which might involve 18,000 jobs. There is a possibility that the forthright (social democratic) Chairman, Mr Harvey-Jones, would be happy to pin the blame for closures on the Government's refusal to assist.

The case for a subsidy, far from being "not proven", has not been made convincingly at all:

- losses have probably already peaked and in any case are bound to be much less in 1983/4 due to the sterling depreciation

- the total closure scenario is probably exaggerated; a preliminary assessment by officials suggests that there is a 50% chance of two thirds of the jobs disappearing.

There are wider policy consideration, too. The credibility of the Government's message to industry over the last four years, that companies themselves are responsible for their own survival, would be damaged by an offer of an operating subsidy, particularly of this magnitude. The Government has not, as far as I am aware rescued any companies, or capacity, in the private sector, despite the closure of a lot of capacity during the recession. However compelling the arguments for rescuing Wilton may be - and I can see that they are - they would undo the effects of the Government's perseverance with the stand-on-your-own-feet argument.

There remains much to be established: the effect of sterling depreciation, the technical options available to ICI and BP, the extent of French and Italian subsidies to their petrochemical sectors, and more important, whether these subsidies are actually responsible for ICI's problems. Above all, it is necessary to establish whether or not ICI and BP actually have viable long-term futures in petrochemicals.

There is a distinct danger that the DoI will raise ICI's expectations unduly. The reference in Mr Jenkin's minute to not keeping the companies "in suspense for another two or three months while the further study is completed" is not reassuring. The Prime Minister may wish to register her interest in this subject to the Chancellor, making three points:

(i) Operating subsidies have been avoided so far in our industrial policy; it will be difficult to defend them now, following the closure of a lot of industrial capacity during the recession;

(ii) Enquire why it should be right for the Government to support petrochemical operations if the companies themselves, with all the resources and expertise available to them, are no longer prepared to do so?

(iii) Express concern that in his conversations with the companies, Mr Jenkins should avoid raising expectations of Government assistance.

NICHOLAS OWEN

25.3.83

CONFIDENTIAL
COMMERCIAL IN CONFIDENCE

Prime Minister

MCS 23/3

DEPARTMENT OF INDUSTRY
ASHDOWN HOUSE
123 VICTORIA STREET
LONDON SW1E 6RB
TELEPHONE DIRECT LINE 01-212 3301
SWITCHBOARD 01-212 7676

JF 3064
Secretary of State for Industry

23 March 1983

The Rt Hon Sir Geoffrey Howe QC MP
Chancellor of the Exchequer
HM Treasury
Parliament Street
LONDON
SW1P 3AG

Dear Geoffrey,

PETROCHEMICALS : THE BASIS FOR FURTHER STUDY

Thank you for your letter of 14 March. I agree broadly with the programme for further study which you outlined, and I understand that our officials have already met to decide how best this might be undertaken. It will be a matter of building upon existing information with the assistance of the companies concerned, the IDU and, where appropriate, outside consultants. There is a lot of ground to cover, and your proposed deadline of end-June might therefore seem altogether right. However, ICI have made clear that crucial commercial decisions about plant closures may well need to be taken in the third quarter of the year; and since it may take us some time to assess all the evidence once presented, I suggest that officials should seek to complete their report no later than the end of May.

2 I share your view that there is merit in John Sparrow's suggestion that we might usefully exert pressure within the Community. However, it would, I believe, be wise to defer any major new initiatives of this kind until officials can provide further information on the extent of subsidies now operating in other member countries - and that, of course, is an important element in their terms of reference. Nonetheless, in the meantime, we in the Department will continue to take every opportunity, as we have in the recent past, to express our concern to, and to exchange views with, our European counterparts about the severe difficulties facing the petrochemical industry. It is, for example, something I intend

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COMMERCIAL IN CONFIDENCE

mentioning en passant to Commissioner Andriessen when I meet him later this week to discuss state aids to the steel industry.

3 Finally, I should just mention that I am arranging to meet, as a matter or urgency, senior directors of both BP Chemicals and ICI. This is clearly necessary since we cannot keep them in suspense for another two or three months while the further study is completed; and it will also be essential to secure their full co-operation at Board level to the provision of further data required for that study.

4 I am copying this letter to the Prime Minister, Foreign Secretary, Secretaries of State for Scotland and Wales, Secretary of State for Energy, Secretary of State for Trade, Sir Robert Armstrong and Mr Sparrow (CPRS).

Yours ever

Patrick

CONFIDENTIAL
COMMERCIAL IN CONFIDENCE

Prime Minister

To note.

MCS 17/3

Treasury Chambers, Parliament Street, SW1P 3AG
01-233 3000

PRIME MINISTER

PROBLEMS OF THE UK PETROCHEMICALS SECTOR

You will no doubt be aware that UK petrochemical producers have been making large losses. In ICI's case, for example, they made a trading loss of £139 million in 1982 in their petrochemical business as against Group profits of £366 million. ICI and BP have recently told the Department of Industry that they must have assistance if they are to stay in this business.

2. In the case of ICI they are seeking £50-75 million in 1983 and similar amounts in 1984 and 1985. They say that, if this assistance is not forthcoming, the cash drain on their other businesses will be unacceptable, and they will be forced to withdraw gradually from all petrochemical operations in the United Kingdom, closing all their plants on Teeside and most downstream operations elsewhere.

3. In the case of BP, who have requested a sum of approximately £50 million spread equally over the next three years, the position is less clear. Following losses of nearly £200 million in both 1981 and 1982, BP expect that these losses will be significantly reduced between 1983 and 1985. However, the Chairman of BP Chemicals has written to Patrick Jenkin making it clear that the future of the cracker at Baglan Bay is very much at risk.

4. A preliminary assessment by officials of ICI's and BP's subsidy bids has been done, but does not provide an adequate basis for decisions. The case for subsidies is so far not proven, and more work needs to be done. My letter of 14 March to Patrick Jenkin sets out the basis

/on which

on which further studies might proceed. As you will have seen, we are urgently considering a suggestion by John Sparrow that we should bring pressure to bear on the Commission and the French and Italian Governments to eliminate unfair subsidies, as soon as the necessary evidence can be collected.

5. We must make every effort to ensure that there are no unintended leaks about the work which is now in progress in this area. (If we go ahead with our approach to the Commission, it may well be that we shall want to engage in some unattributable background briefing.) Nevertheless, because of the political sensitivity of the issues under discussion and the risk that there could be an unintended leak, I think you should be aware of these developments. Unless Patrick Jenkin suggests otherwise, I do not think there is any need for collective Ministerial discussion at this stage.

6. I am copying this minute to the Secretary of State for Industry, the Foreign Secretary, the Secretary of State for Trade, the Secretaries of State for Scotland and Wales, the Secretary of State for Energy, Sir Robert Armstrong and John Sparrow.

(G.H.)
16 March 1983

Energy Policy
PLA

Prime Minister

(2) cc JV
ENERGY

Three cheers (or not quite yet)!

We will wait patiently.

MT

MLS 8/3

Prime Minister

ADVANCED GAS COOLED REACTORS (AGRs)

You have frequently expressed an interest in the lamentable progress of Dungeness B. You may like to know that it now seems at long last to be moving towards completion. Consent to raise power was given by the Nuclear Installations Inspectorate just before Christmas and, following commissioning tests, the Board now report that they are hoping to commence limited generation from the first unit at the end of this month. They do not plan at present to make any announcement. In view of past experience of unforeseen technical difficulties arising at the last minute, this seems prudent.

Power generation from the other two long-delayed AGRs - Heysham I and Hartlepool - is currently expected to begin in July.

If all goes well the existing CEGB nuclear capacity should be increased by up to 50% this winter.

I am copying this minute to the Chancellor of the Exchequer, the Secretaries of State for Scotland and Industry, Sir Robert Armstrong and Mr Sparrow.

M

Secretary of State for Energy

7th March 1983

Energy Policy Pt 8.

DEPARTMENT OF ENERGY
THAMES HOUSE SOUTH
MILLBANK
LONDON SW1P 4QJ
Direct Line 01 211 3390
Switchboard 01 211 3000

PARLIAMENTARY UNDER
SECRETARY OF STATE

Dr Gerard Vaughan MP
Minister of State for
Consumer Affairs
Department of Trade
1 Victoria Street
London SW1H OET

8 February 1983

Dear Gerry,

We spoke about the possibility of providing for a statutory Electricity Consumers' Council (ECC) in the Energy Bill. I confirm that we are prepared to do this and, after considerable thought, suggest the following solution.

We would propose putting the ECC on broadly the same statutory basis as the existing Area Consultative Councils and its opposite number in gas. But on the question of access to both the Electricity Council and CEGB we propose giving the ECC the same rights to information on the industry's plans and arrangements and tariffs (ie Electricity Council's and CEGB's) as the other NICCs but that these rights should operate through the Electricity Council.

This is the most logical and practical arrangement. The Electricity Council is the Secretary of State's main policy advisor on matters affecting the industry and the CEGB already has a statutory obligation to consult the Electricity Council on its Bulk Supply Tariff in which the ECC have a particular interest.

I hope that you will be content with this proposal. Time is very short as we particularly wish to have tabled the necessary clauses in time for the Committee Stage. I have, therefore, asked my officials to contact yours with a view to finalising instructions to Counsel as urgently as possible.

Copies of this go to members of E(NI) and John Biffen.

Yours ever,
Nicholas

The Earl of Avon

Energy

SCOTTISH OFFICE
WHITEHALL, LONDON SW1A 2AU

Prime Minister (2)

Mr Younger doesn't know that the order is to go to GEC.

MCS 4/2

COMMERCIAL - IN CONFIDENCE

PRIME MINISTER

2 February 1983

SIZEWELL PROCUREMENT POLICY

I have seen a copy of the Secretary of State for Energy's minute of 28 January.

I agree that in general decisions in this area are for CEGB and the NNC. Concern has, however, already been expressed to me by Babcock Power that in addition to the reactor pressure vessel some other key components which they could supply for Sizewell may be purchased overseas. If Walter Marshall's promised paper shows that there is substance in these fears, I hope the Secretary of State for Energy will agree that we should discuss the issue before CEGB takes any final decision.

I am copying this minute to the Chancellor of the Exchequer, the Secretaries of State for Energy, Industry and Employment, Sir Robert Armstrong and Mr Sparrow.

G.Y.

G.Y.

Energy, policy, pt 8

Energy

10 DOWNING STREET

From the Principal Private Secretary

31 January 1983

PERSONAL AND CONFIDENTIAL

Dear Julian,

SIZEWELL PROCUREMENT POLICY

The Prime Minister was grateful to the Secretary of State for Energy for his minutes of 28 January about the Sizewell procurement policy.

Yours ever,

Robin Butler

Julian West Esq.,
Department of Energy.

PERSONAL AND CONFIDENTIAL

Prime Minister
You are seeing Lord Weinstock on 1st February, the day before the announcement.
TERB
28.1.

PRIME MINISTER

SIZEWELL PROCUREMENT POLICY

Further to my other minute today on this subject, you should know that Walter Marshall has told me in strictest confidence that the order will in fact go to GEC.

I am copying this minute to the Secretary of State for Industry.

M.

SECRETARY OF STATE FOR ENERGY
28 January 1983

PRIME MINISTER

SIZEWELL PROCUREMENT POLICY

Although the public inquiry into the Sizewell PWR began only on 11 January, the CEGB will shortly have to begin placing contracts for design work (they do not intend to spend any money on manufacture until all necessary consents have been obtained). I have therefore asked Walter Marshall for a paper on procurement policy which I expect from him soon. I intend to ensure that the Government's legitimate concerns on minimising the project's import content consistent with sensible cost control, on technology transfer from Westinghouse to British companies, and fair play among suppliers are fully satisfied.

Meanwhile, however, the CEGB must place the contract for Sizewell's turbine generators and expect to make an announcement after their Board meeting on 2 February. The value of the contract to completion will be substantial.

The bidding has been between GEC and NEI and, whichever way the order goes, the loser will certainly campaign strongly for the decision to be reviewed by Government. We must also expect to be lobbied in due course by other companies over various orders. Walter Marshall is confident that he will be able fully to justify his choices and I am sure that we must back his judgement, holding fast to the line that Sizewell procurement decisons are a matter for the CEGB and NNC, not for the Government.

I am copying this minute to the Chancellor of the Exchequer, the Secretaries of State for Scotland, Industry and Employment, Sir Robert Armstrong and Mr Sparrow.

N.

Secretary of State for Energy
28th January 1983

S/S Energy

211 3932 Energy

Consulted BI.
Told Mr Morris office
OK if MOD & FCO agree. PM not contactable
MLS 25/1

LETTER TO THE GUARDIAN

David Lowrie (Guardian 24 January 1983) goes to considerable lengths to try to demonstrate a link between CEGB's nuclear power stations and nuclear weapons. As the Minister responsible for nuclear energy in this country, I can assure him that there is none. No plutonium produced in any of the CEGB's nuclear power stations has ever been used for military purposes, and there are no plans to use it thus in the future. Further, no plutonium from our civil nuclear programme has ever been exported for weapons purposes either to the United States or anywhere else.

Governments worldwide have long been alert to the possibility that civil nuclear materials could be misused for military purposes. That is why there is a comprehensive and very effective system of international safeguard agreements to minimise the risks. However the development of a civil nuclear power programme is by no means the cheapest and most efficient route for a country intent upon developing nuclear weapons to take. An end to civil nuclear power in Britain would not change the nature of the proliferation threat by one iota. Thus to allege linkage of the two issues is wholly without foundation.

JOHN MOORE

ERC

cc JV

2 MARSHAM STREET
LONDON SW1P 3EB
01-212 3434

My ref: K/PSO/10226/83

Your ref:

25th January 1983

Dear Nigel

Thank you for your letter of 11 January about Sir Frank Layfield's request for the appointment of Counsel to assist him at the Sizewell Inquiry.

I understand that, as reported in the Press on 19 January, you have in fact now appointed Mr Henry Brooke QC for this purpose. As you acknowledge, this does set something of a precedent for subsequent inquiries, but I agree that it would not have been feasible, to reject Sir Frank's request for such an appointment in this case.

I am copying this letter to the recipients of yours and also to David Howell.

Yours

TOM KING

The Rt Hon Nigel Lawson MP

Energy Policy Pt 8

Energy dc JV

DEPARTMENT OF ENERGY
THAMES HOUSE SOUTH
MILLBANK
LONDON SW1P 4QJ

Direct Line 01-211 3390
Switchboard 01-211 3000

NBPM

Mes 24/1

PARLIAMENTARY UNDER
SECRETARY OF STATE

Dr Gerard Vaughan MP
Minister of State
for Consumer Affairs
Department of Trade
1 Victoria Street
London
SW1

21st January 1983

Dear Gerry,

Thank you for your letter of 13 January. There is little that I can add to what David Mellor said in his letter of ~~15~~ January. attached

Certainly I shall be glad to have a word with you about handling. My office will be in touch with yours.

I am copying this letter as before.

Yours

Nick

THE EARL OF AVON

re Energy Bill

Energy

Policy

CONFIDENTIAL

From the
Minister of State
for Consumer Affairs

DEPARTMENT OF TRADE
1 VICTORIA STREET
LONDON SW1H 0ET

TELEPHONE DIRECT LINE 01 215 5662
SWITCHBOARD 01 215 7877

Lord Avon
Parliamentary Under Secretary
of State
Department of Energy
Thames House South
Millbank
LONDON
SW1P 4QJ

13 January 1983

Dear Avon

I received a reply from David Mellor on 5 January about my proposal that the Electricity Consumers' Council be given statutory status in the Energy Bill.

You will not be surprised to learn that I am rather concerned as well as disappointed by David's decision to block this proposal. Frankly, the argument now that we should not use the Energy Bill as the vehicle for a change which we had all agreed was desirable seems to me rather extraordinary and disconcerting.

The additional clauses required would be essentially straightforward in principle. There are certain points of detail which need to be clarified, but we are already working on these. With your co-operation I would have thought that the necessary text could be worked up fairly easily and without too much trouble. Certainly I assume, in the light of David's other recent letter (to which I will be replying separately) about amendments you wish to introduce on the certification of electricity meters, that the constraints you mention on timing and on the structure of the Bill are not so tight as to make it impracticable to do what the ECC propose.

If I may add a personal note I have gone out of my way to co-operate recently over the consumer aspects on the Water Bill and the British Telecom Bill so that it seems reasonable to have some assistance which would ease my task, in return. I am in the difficulty that the Consumer movement had hoped for a more substantial paper on consumer reform than they got from me, and they had also hoped for pricing legislation which I have had to turn down in the immediate future so that all in all this move would be welcome.

V3975

CONFIDENTIAL

Furthermore, I would have thought it most unlikely that the limited proposal to give the ECC statutory status would open the door to any significant Parliamentary discussion of the structure of the electricity supply industry. That, surely, would be a remarkable case of the tail wagging the dog.

I am not clear, either, what reasons could be given in the House for rejecting the proposal - particularly when we have only just recently announced, in the NICC reform paper published before Christmas, that we support it in principle and would take the first opportunity available to do so.

It would be helpful if we could have a word about this before deciding how to handle it in the House.

I am copying this letter to the recipients of yours.

Yours

Gerard Vaughan

Energy:

Policy

A

cc JV

Mr Moore
Mr Mans
Mr Manley
Mr Claydon
Mr Henderson
Mr Monck
Mr Priddle
Mr Bretherton
Mr Lines
Miss Caines
Mr Westmorland
Mr Pash

01-211 6402

The Rt Hon Tom King MP
Secretary of State for the
Environment
2 Marsham Street
London SW1

11th January 1983

Dear Tom

As you know, the main hearing of the public inquiry into CEGB's application to build a Pressurised Water Reactor at Sizewell in Suffolk opened today. The Inspector, Sir Frank Layfield QC, has recently decided that the thorough examination of the many complex technical issues involved is too great a task for himself and his assessors, without the assistance of Counsel to help with the necessary cross-examination of witnesses.

I appreciate that to meet Sir Frank's request could well increase pressure for an Inspector's Counsel at subsequent inquiries. But in all the circumstances I do not believe that refusal would be consistent with the Government's commitment to a full and fair inquiry, nor do I believe it would be a politically tenable position. Accordingly, I am writing to let you know that I propose to accede to Sir Frank's request.

Copies of this go to the Prime Minister, Geoffrey Howe, Peter Walker, George Younger, Nicholas Edwards, John Biffen, Arthur Cockfield, Sir Michael Havers and Sir Robert Armstrong.

Yours ever
Nigel

NIGEL LAWSON

Energy Policy Pt 8

cc JV

DEPARTMENT OF ENERGY
THAMES HOUSE SOUTH
MILLBANK
LONDON SW1P 4QJ

Direct Line 01-211 3390
Switchboard 01-211 3000

PARLIAMENTARY UNDER
SECRETARY OF STATE

CONFIDENTIAL

Dr Vaughan MP
Minister of State for Consumer
Affairs
Department of Trade
1 Victoria Street
London
SW1H OET

JT
WI

5 January 1983

Dear Geoffrey,

Attached 6/1
requested 10/1
twice

Thank you for your letter of 24 November suggesting that we go along with proposals by the Electricity Consumers' Council (ECC) to secure statutory status by sponsoring new clauses to the Energy Bill.

I have given very careful thought to this suggestion. I recognise that the ECC has done good work, and that in due course it should be given statutory existence. It would however be far from straightforward to use the present Energy Bill as a vehicle for doing this.

As you will know, the structure of the electricity supply industry, which the ECC mirrors, is complex and gives rise to difficult relationships. Before long, Nigel Lawson expects to put forward to colleagues his ideas for structural change in the Industry. Past history shows that any proposal for structural change is bound to be controversial and opponents of the present Bill are already suggesting that it is a precursor of wider measures. All this is going to take careful handling. The ECC proposal brings the question of industry's structure immediately into debate, and complicates the Bill more than we would wish. It is worth recalling that the ECC grew out of the Plowden Committee's report some six years ago. This recommended a unified structure for the Industry which required a new consultative framework which the ECC was designed to provide. We announced in 1980 that we did not intend to proceed with statutory unification of the Industry. I am in no doubt that it would be preferable for Ministers to reach decisions on the future shape of the Industry before the ECC is brought formally into existence.

I recognise, of course, that this will be unwelcome news for Michael Barnes, who has also raised the point with me. I was able to tell him when I saw him on another matter before Christmas that, whilst the question was still under consideration, I was not sure whether it would prove practicable for the Government to accept his proposed amendments. He is expecting to see me again before long, and I propose with your agreement to let him know that, having considered the matter most carefully, the Government have decided not to legislate the ECC into existence

in advance of the more general NICC legislation. I would say that we did not think that his proposals found an easy place in the framework of the present Bill (which indeed gives no role to a consumer representation in the private generation provisions); and that we also saw timing difficulties.

Copies of this go to recipients of your letter.

Yours ever,
David

DAVID MELLOR

010 3.44

CONFIDENTIAL

CC JV

2

Prime Minister

Much of this is pretty speculative - but worth reading through.

MCS 9/12

Treasury Chambers, Parliament Street, SW1P 3AG
01-233 3000

8 December 1982

Michael Scholar Esq.
10 Downing Street
LONDON
SW1

Dear Michael,

At his meeting with the Prime Minister on 2 December, the Chancellor offered to provide a note by officials on the short-term prospects for the oil market and the possible implications, for the UK and the world economy, of a fall in the oil price.

The Chancellor has now asked me to send you the attached note. Like the JIC assessment circulated on 26 November, it emphasises the uncertainty of the short term outlook, given doubts about OPEC's intentions. It has not been seen in other Departments, though it takes into account recent discussions with eg. the Department of Energy.

Yours ever,

J O KERR
Principal Private Secretary

OIL PRICES

In recent weeks considerable speculation has arisen that the world price of oil may fall in the near future. This note examines the prospects for such a fall and considers the possible effects on the UK economy.

2. Since 1979 oil consumption in the non Communist world has fallen sharply. At the same time there has been a rise in non-OPEC supplies (including net exports from Communist countries) and a sharp reduction in stocks. Consequently OPEC, as the world's residual supplier of oil, has seen its output fall from over 29 million barrels per day (mbpd) to about 19 mbpd this year.

3. This sharp drop in the demand for its oil has put severe pressure on OPEC. Last March it seemed likely that the world oil price might fall sharply, but the OPEC countries succeeded in stabilising the market by agreeing to limit their combined production to 17½ mbpd.

4. This agreement is now looking increasingly fragile. A number of OPEC countries - Venezuela, Nigeria, Libya, Iran - have been offering discounts which have enabled them to increase their production above their agreed quota. The official world price of crude oil of $34 per barrel (for Saudi Arabian light crude - the marker crude) is observed only by the Saudis and their Gulf allies; prices charged by the rest of OPEC are several dollars per barrel lower. More of the burden of restraining production therefore has fallen on the Saudis and they have responded by threatening to reduce the marker price if the rest of OPEC does not toe the line.

5. The increased bickering and cheating on quotas within OPEC has lead to speculation that a fall in the world oil price may be imminent. Given the large excess of potential supply over current (and likely prospective) demand then, if OPEC loses control of the oil

price, the latter could fall very sharply indeed. Spot market prices of crude oil have fallen by several dollers per barrel in recent weeks.

6. It is now reported that OPEC are scheduled to meet in Vienna on December 19, though Ministers may convene a little ahead of that date. It is impossible to predict what the outcome of that meeting will be. Both parties in OPEC will probably indulge in verbal sabre rattling in the run up to the meeting. While any public statement by OPEC countries during that period will need to be taken with a pinch of salt, they are likely to unsettle not only the oil market, but possibly other commodity and financial markets as well.

7. Our belief is that the Saudis will do their utmost to preserve the $34 per barrel marker but there are clear indications that they are finding the current situation increasingly intolerable. Fear of what may happen once the price begins to fall may well cause the other OPEC countries to move back into line. However, if the other OPEC countries are prepared to do nothing to raise the prices and/or to adhere more closely to their quotas, the Saudis may feel obliged to cut the marker price.

8. How much the Saudis may cut the price is also very uncertain. A cut of $2 per barrel might do a good deal to prevent future erosion of their output but would not compel the other OPEC countries to react immediately. A larger cut of, say $4 per barrel, would present a much sterner warning of Saudi determination but would carry a much greater risk of retaliation. A series of leapfrogging price cuts could easily reduce the world oil price to $20-25 per barrel.

9. Our guess would be that it will not fall anything like this far at least in the short erm. Fear of a bout of competitive price cutting which could leave all the OPEC countries worse off should lead them to act with caution and restraint. The risk of an early cut of several dollers per barrel is rather more substantial.

THE PRICE OF NORTH SEA OIL

10. At present the price of North Sea oil is very competitive with the price of other comparable crudes. In fact it is effectively about $3 per barrel lower than the price of marker crude. A cut of several dollars per barrel in the price of marker crude might have little or no direct effect on the North Sea price. Beyond this point the North Sea price would fall pari passu with that of the marker. The effect of falls in prices of other OPEC crudes will vary with crude oil concerned, but we would share in any general erosion of oil prices which followed a cut in the marker price.

EFFECT ON THE WORLD ECONOMY

11. The exact impact on the world economy will depend on a number of factors including the response of Governments' monetary and fiscal policies. Given unchanged financial policies a sustained reduction in oil prices will lower world inflation and increase world output. If oil prices fall as far as $25 per barrel (from the present average OPEC price of $32 per barrel) output might be about 1 per cent higher and inflation 1 per cent lower by the second year after the fall.

12. A sharp reduction in oil prices would have repercussions on the financial position of developing countries. Most countries would be assisted by a fall as their oil import bill is reduced and as the resulting increase in OECD activity boosts their exports. However, some countries would be in markedly worse shape.

13. Nigeria is already facing a large cutback in imports next year as nearly all of its export earnings come from oil. A further drop in revenues would make the necessary reduction in imports around 40%. Three quarters of Mexico's export revenues are accounted for by oil

exports and so an oil price fall would considerably worsen an already precarious position. Other countries in difficulty would include Algeria, Indonesia, Venezuela, Ecuador and Libya. Saudi Arabia would be forced to run even larger current account deficits for the next couple of years and the Soviet Union's trade balance would also worsen.

THE IMPACT ON THE UK ECONOMY

14. The UK ~~will~~ would be affected both directly by the fall in world and North Sea oil prices and indirectly via the impact on the world economy. As in the rest of the world the impact will depend on the stance of economic policy. The behaviour of the exchange rate will also be crucial.

15. Analysis in the Treasury suggests that, other things being equal, a 10 per cent drop in the oil price (equivalent to $3 to $4 per barrel,) might be associated with a fall in the effective exchange rate of the order of 1½ per cent in the medium term. But this depends very much on the state of expectations about future oil price movements, and the extent to which the movement in question has already been discounted. The short term impact will also depend on the market situation at the time. And both short and longer term effects can easily be overlaid by other factors. For example, in February/March this year the BNOC $4 a barrel cut announced on March 2 seems to have had a smaller impact on the exchange rate than might have been expected, even allowing for some discounting in adv~~ance; but it~~ may have been overlaid by other factors. More recently market sensitivity may have been greater: a ½ per cent fall in the exchange rate on the morning of 6th December seems in part to have reflected an increased expectation that the forthcoming OPEC meeting could result in lower oil prices.

16. Assuming that the sterling effective exchange rate reacts in the way the Treasury analysis suggests then an early fall of around 10 per cent in the average world and North Sea oil price ~~would reduce~~ is

It would increase the PSBR perhaps by around £½ billion in 1983-84 and something approaching £1 billion in 1984-85. It would worsen the current account of the balance of payments by something like £1 billion in 1983 but somewhat less in later years (if the improvement in competitiveness following the fall in the exchange rate was maintained). The level of output might increase by about half of one per cent by 1985. The rate of inflation over the next year or so would be reduced but may increase thereafter.

17. If the Saudis were to hold their price at $34 a barrel, but if all other oil prices (including the North Sea price) were to fall the impact on the world and UK economies would not be that different. This is because Saudi Arabia accounts for only about a third of OPEC output and a sixth of world output.

18. A fall in North Sea prices alone will tend to reduce UK domestic prices and boost output - but by less than in the case where all oil prices are lower; the impact on the PSBR will tend to be greater because there is less of an offset to lower North Sea revenues from other taxes. However, such a fall could only be small or temporary or both.

Energy Policy

file

cc Mr Ingham
Mr Vandeker

10 DOWNING STREET

From the Private Secretary

25 November 1982

(answered on 29/11)

Dear Julian,

Fast Reactor Policy

The Prime Minister has approved your Secretary of State's plans for announcing, by means of a Written Answer, within the next few days the Government's new fast reactor policy, on the lines of the draft text attached to your Secretary of State's minute of 23 November.

I am sending copies of this letter to John Kerr (HM Treasury), Brian Fall (Foreign and Commonwealth Office), Muir Russell (Scottish Office), Richard Hatfield (Cabinet Office) and to Dr. Nicholson (CPRS).

Yours sincerely,

Michael Scholar

Julian West Esq
Department of Energy.

CONFIDENTIAL

010

c/cSU

From the
Minister of State
for Consumer Affairs

DEPARTMENT OF TRADE
1 VICTORIA STREET
LONDON SW1H 0ET

TELEPHONE DIRECT LINE 01 215 5662
SWITCHBOARD 01 215 7877

David Mellor Esq MP

24 November 1982

Dear M. Mellor

Michael Barnes, the Chairman of the Electricity Consumers' Council, told me the other day that he hoped to persuade a sympathetic MP to table new clauses for the Energy Bill at present before Parliament, giving his Council a statutory basis.

The ECC, which was constituted in 1977 by Ministerial minute, is the only Nationalised Industry Consumer Council which has no statutory authority at present. This has caused problems in the Council's relations both with the electricity supply industry and with the (statutorily based) Area Electricity Consultative Councils. In announcing a strategy for NICC reform, on which I shall be circulating proposals to colleagues shortly, I make clear that we will legislate when opportunity permits to put the ECC on a statutory footing. At official level Departments are agreed that this would make sense. It would not be controversial.

In the circumstances we could not, I think, object to the new clauses if they are introduced. I understand that your legal advisers, and Parliamentary Counsel, take the view that they would be within the scope of the Bill as defined in its long title. Nor could we plausibly argue for their withdrawal on the grounds that we shall ourselves be legislating to the same effect at a later stage: it is an open secret that there is virtually no prospect of NICC legislation in the lifetime of this Parliament.

My own feeling therefore is that we should be prepared to go along with what the ECC propose, provided the details of the new provision can be satisfactorily sorted out. There is not much time for that. The best course in the circumstances might be for our officials, in consultation with Parliamentary Counsel, to work with the ECC staff at getting the new clauses into an acceptabe shape before they are introduced.

I enclose a draft of what we understand the ECC have in mind. In substance this seems to us on the right general lines, subject to

amendment on a number of detailed points about which our officials can be in touch.

The only specific point I need mention at this stage touches the nature of the Council's statutory right to be consulted by the electricity supply industry. I think this should put the ECC in essentially the same legal position vis-a-vis its industry as the Area Electricity Consultative Councils and the National Gas Consultative Council are in already. It should not, in other words, anticipate the wider rationalisation of the NICCs' legal rights and obligations which I am considering in the context of NICC reform generally.

I am copying this letter to members of E(NI) and to John Biffen.

Yours sincerely

Peter Walker

pp Gerard Vaughan

[APPROVED BY THE MINISTER AND

POSSIBLE AMENDMENT TO ENERGY BILL - PARLIAMENTARY SESSION 1982/3

FIRST DRAFT

1. - (1) There shall be a consumers' council for England and Wales (in this section referred to as "the Council") to be known as the Electricity Consumers' Council.

(2) The Council shall consist of a chairman appointed by the Secretary of State, and not more than thirty other members including

(a) chairmen of Consultative Councils established under section 7 of the Electricity Act 1947 for the areas of Area Boards; and

(b) such other persons as the Secretary of State may appoint after consultation with such bodies as he thinks fit.

(3) It shall be the duty of the Council to consider any matter affecting the interests of consumers of electricity in England and Wales generally or of any class or description of such consumers (and, in particular, any matter relating to the supply of electricity, including the variation of tariffs, or to the supply of electrical goods and fittings or the provision of other services and facilities) which -

(a) is the subject of a representation made to them by one of the Consultative Councils mentioned in subsection (2) (a); or

(b) appears to the Council to be a matter to which consideration ought to be given apart from any such representation.

(4) Where it appears to the Council that action ought to be taken concerning any matter considered by them under subsection (3), it shall be their duty to make representations to the Electricity Council or to the Central Electricity Generating Board with respect to that matter.

(5) Where any matter of a kind mentioned in subsection (3) is referred to the Council -

(a) by the Electricity Council or by the Central Electricity Generating Board; or

(b) by the Secretary of State,

it shall be their duty to consider that matter and to report on it to the Electricity Council or to the Central Electricity Generating Board or the Secretary of State as the case may be.

(6) It shall be the duty of the Council to consider any plans, arrangements or proposals of which they are informed under section 2(1); and the Council may make representations to the Electricity Council or to the Central Electricity Generating Board with respect to them.

(7) The Council may, after consultation with the Electricity Council or the Central Electricity Generating Board make representations to the Secretary of State on any matter which have been considered by them under this section, other than matters involving individual consumers (as distinct from consumers in general or any particular class of consumer).

2. - (1) It shall be the duty of the Electricity Council and the Central Electricity Generating Board to inform the Electricity Consumers' Council of their general plans and arrangements for performing their respective functions, in relation to the supply of electricity and in particular of any proposal to vary a tariff and to the supply of electrical goods or fittings or the provision of other services and facilities.

(2) It shall be the duty of the Electricity Council and the Central Electricity Generating Board to consider any representations made to them by the Electricity Consumers' Council under section 1(4) or (6).

ENERGY. SCJU

NBPM

MCS 24/11

W.0723

24 November 1982

PRIME MINISTER

FAST REACTOR POLICY

I have been involved in the preparation of the announcement on Fast Reactor Policy which the Secretary of State for Energy has now sent you.

I believe that the announcement closely follows our discussion on 1 November and I am content with it.

Copies go to Secretary of State for Energy, the Chancellor of the Exchequer, the Foreign Secretary, the Secretary of State for Scotland and Sir Robert Armstrong.

RBN

ROBIN B NICHOLSON
Chief Scientist

EKJV

(1)

2 Mr's

c/BI

Prime Minister

Mr Younger, Leon Brittan and Dr Nicholson are content with this much improved version.

Agree the written answer?

MCS 24/11

CONFIDENTIAL

PRIME MINISTER

FAST REACTOR POLICY

When colleagues discussed this subject on 1 November it was agreed that I should announce our new policy soon, by means of a written answer.

I attach my proposed text which, as requested, I have drawn up in consultation with the Chancellor, the Secretary of State for Scotland and Dr Nicholson. My officials have also consulted the Foreign and Commonwealth Office.

I would like to make the announcement within the next few days, and would be grateful for your agreement.

Copies go to the Chancellor of the Exchequer, the Foreign Secretary, the Secretary of State for Scotland, Sir Robert Armstrong and Dr Nicholson.

Approved by the Secretary of State for Energy
and signed in his absence.

23rd November 1982

FAST REACTOR POLICY - DRAFT ANNOUNCEMENT

1. The Government has now completed its review of the Fast Reactor.

2. The Fast Reactor is of major strategic significance for the UK's and the world's future energy supplies. It is 50 times as efficient a user of uranium as thermal reactors, such as the Advanced Gas-cooled Reactor and Pressurised Water Reactor, and can create out of the spent fuel and depleted uranium which has so far arisen from our thermal programme fuel equivalent to our economically recoverable coal reserves.

3. The UK is among the world's leaders in the development of this technology. Through the successful programme of research and development undertaken by the Atomic Energy Authority, which centres on the operation of the prototype Fast Reactor and associated fuel cycle at Dounreay, we have demonstrated the feasibility and potential of this technology. We have also collaborated with other major countries who have programmes in this field.

4. We are in an excellent position to carry the programme forward and to prepare for the introduction of commercial fast reactors when these are needed to augment our thermal reactor programme.

5. The Government have therefore decided to continue with a substantial development programme for the fast reactor based on Dounreay and I have asked the Chairman of the Atomic Energy Authority, Sir Peter Hirsch, in consultation with the generating boards, British Nuclear Fuels Ltd and the National Nuclear Corporation to draw up a future development programme which makes the best use of our resources and experience.

6. In common with most other leading fast reactor nations, we now believe that the series ordering phase will begin in the earlier part of the next century, and thus on a longer timescale than we have previously envisaged. We shall therefore have more time in which to develop further the technology and before undertaking the construction of a first full scale reactor in the UK: and the development programme will be geared to this timescale.

7. The Government and the Atomic Energy Authority have been having exploratory discussions with other countries to establish whether a satisfactory basis for international co-operation can be worked out. The Government wishes to see these discussions continue, and has asked the Atomic Energy Authority, in preparing advice about the future programme, to take account of the potential for collaborating with other countries as a means of securing the maximum benefits from this vital development programme.

cc Press

Department of Energy

Thames House South
Millbank London SW1P 4QJ
Telegrams Energy London SW1

Telephone Direct Line 01-211 7106
Switchboard 01-211 3000

Ch refu

Willie Rickett Esq
Private Secretary to the
Prime Minister
10 Downing Street
London SW1

Your reference

Our reference

Date 22 November 1982

Dear Willie.

BRITOIL PRIVATISATION

I attach a draft of the statement my Secretary of State proposes to make in the House this afternoon. I would be grateful for any comments by 2.00 pm.

I am copying this to Nick Huxtable (Lord President's Office), Murdo Maclean (Commons Chief Whip's Office) Michael Pownall (Lord Chief Whip's Office), Bernard Ingham (No 10), Richard Hatfield (Cabinet Office) Margaret O'Mara (Treasury), Martin Donnelly (Treasury) and Roger Bone (Foreign and Commonwealth Office).

Yours.

G L DAVEY
Parliamentary Clerk

Mr Speaker, I wish to make a statement on the outcome of the offer of shares in Britoil.

The lists opened and closed at 10.00 am last Friday.

Valid applications were received in respect of just under 70 million shares. They have been accepted in full at the minimum tender price of 215 pence per share. The balance of the underwritten portion of the Offer for Sale, some 185 million shares, will be taken up at the same price by the underwriters and sub-underwriters, who comprise some 500 pension funds, life offices and other investing institutions, who will hold the shares on behalf of their members, policy holders and shareholders.

Ninety-nine per cent of all applications came from small investors and employees. There were a little over 35,000 applications for 2000 shares or less, 90 per cent of them being striking price applications. These will all be eligible for the small shareholder bonus on the terms and conditions set out in the prospectus.

Under the special arrangements made by the Government for employees of Britoil, ninety-two per cent of eligible employees will hold a total of some half million shares between them. I will circulate a more detailed breakdown of the applications in the Official Report. // Dealings in Britoil shares will open tomorrow.

Following the sale, the Government will be left with approximately 49 per cent of the share capital of Britoil.

The total share issue will raise a gross sum of £548 million. In addition Britoil will shortly repay, with interest, a debenture of £88 million. Total gross proceeds will be approximately £640 million.

The latest estimate of the costs to be borne by my Department since preparations began in January up to the end of the current financial year is £11½ million, exclusive of VAT. This sum includes expenses incurred in connection with the scheme transferring assets to Britoil, as well as costs of the sale itself. Parliamentary approval to expenditure in connection with the main expenses of the Britoil sale will be sought in a Winter Supplementary Estimate. Pending that approval, the necessary expenditure will be met by repayable advances from the Contingencies Fund.

In all, the total net proceeds from the disposal of Britoil are estimated to be in excess of £625 million.

Mr Speaker, Britoil has now been successfully privatised on eminently fair terms for the taxpayer.

I am sure all sides of the House will want to wish this important new British company every success in the years ahead.

010

Prime Minister (2)

Energy

MCS 4/11

PRIME MINISTER

Following our meeting on Monday on the fast reactor, I am writing to confirm the position on uranium stocks.

The United Kingdom currently has stocks of uranium for civil use of some 11,000 tonnes. This is equivalent to approximately six years forward consumption.

The addition of further supplies already under contract, principally from Canada, will enable us to meet expected reactor consumption for at least ten years.

For the medium term the Electricity Boards' procurement organisation plans to minimise the risk of disruption to further uranium supplies by diversifying the sources of supply. By the mid 1990s uranium is expected to come from about ten sources in possibly four or five countries.

NL.

Secretary of State for Energy

4th November 1982

SUBJECT

CONFIDENTIAL

File

Energy RM

bc. J. Vereker.
cc. Party US d/S (FCO)
CPRS HMT
CO D/Eng.
SO

10 DOWNING STREET

From the Private Secretary

2 November 1982

cc master

Dear Julian,

The Prime Minister held a meeting about fast reactor policy on Monday 1 November. Your Secretary of State, the Chancellor of the Exchequer, the Secretary of State for Scotland, Mr. Rifkind (Parliamentary Under-Secretary of State, FCO) and Dr. Nicholson of the CPRS were also present.

Your Secretary of State said that the AEA had told him that £70m. per annum was the minimum they could recommend for a restructured programme. The private sector NNC had indicated that they believed that as little as £50m. per annum could suffice. His judgment was that it should be possible to devise a research and development programme suited to the new situation which would settle at around £60m. per annum in the late 1980s. This would give the UK the option of joining any international collaboration as a credible partner or achieving an independent CDFR on a longer time scale. In discussion it was noted that there were great uncertainties, about the price and availability of uranium, the projections for energy demand, and the prospects for collaboration. Complete reliance on licencing from other countries would be unwise. The energy potential for the fast reactor gave it a major strategical importance; the energy which it could release from depleted uranium and spent fuel from the thermal programme was equivalent to the UK's coal reserves. There would have to be a substantial programme, but the time scale was clearly going to be longer than had earlier been envisaged. A decision to cut the existing programme too heavily would damage our negotiating position with potential collaborators. It was noted that, on your Secretary of State's proposal, there would be 200 (and not 300 as had been suggested) redundancies, the bulk of which would be voluntary. The present discussion was mirrored in all the countries which were potential collaborators with us. All our potential partners - except perhaps, at first, the French - would be considering an extension of the time scale of the programme: the fact was that the whole programme had been shifted back by about ten years by the changed circumstances

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referred to in your Secretary of State's minute. There was a case for asking the AEA to explore what collaborative arrangements could be achieved on the basis of a range of expenditure - say from £50m a year upwards. On the other hand, it would not be possible to defer a decision until a collaborative partner had been found, so an expenditure decision needed to be taken, and soon, in order to prevent damaging uncertainty arising at Dounreay.

The Prime Minister said that the development programme should go ahead at a level of around £70m per annum. The precise shape of the programme would need to be explored with the AEA. Your Secretary of State should soon announce, by Written Answer, this decision. The draft statement attached to your Secretary of State's minute of 27 October was insufficiently positive. It needed substantial revision, and she would be grateful if your Secretary of State would let her have a revised draft, drawn up in consultation with the Chancellor of the Exchequer and the Secretary of State for Scotland and Dr Nicholson.

I am sending a copy of this letter to the Private Secretaries to the Chancellor of the Exchequer, the Secretary of State for Scotland, the Parliamentary Under-Secretary of State, Foreign and Commonwealth Office and to Sir Robert Armstrong and Dr Nicholson.

M. C. SCHOLAR

Julian West, Esq.,
Department of Energy

Energy CKJU

PRIME MINISTER

FAST REACTOR POLICY

My Paper, E(82)67, set out fully the considerations and analyses which led me to the conclusions and recommendations recorded in paragraph 20. This supplementary note identifies for discussion the key propositions of E(82)67.

(i) The energy potential of the fast reactor gives it major strategic importance: the energy which it could release from depleted uranium and spent fuel which has already arisen from our thermal programme is equivalent to our economically workable coal reserves.

(ii) The fast reactor is not yet economically viable. Recognising the great uncertainties it seems unlikely to be competitive with thermal reactors before 2015, and could be very much later.

(iii) This is a much longer timescale than had earlier been envisaged.

(iv) Nonetheless the fast reactor is likely to be needed in due course, and it would be prudent to plan on that assumption. Accordingly our objective should be to have access to the necessary technology, when required.

(v) Complete reliance on licensing from other countries is unwise. It would throw away the advantages we can derive from the technology we have already established.

(vi) The next major step in establishing the commercial viability of the fast reactor is construction of a CDFR (which could cost some £2000m at current prices). But the longer timescale now envisaged means that there is less urgency to proceed to this stage.

(vii) To date, the UK's development programme has been geared to building a UK CDFR in the late 80s. The longer time available before commercial operation is likely to be required allows us

to restructure the current R&D programme so as (a) to develop further the design concept and improve the economics of a CDFR (and hence of a CFR) before detailed design starts, (b) to improve the cost-effectiveness of our programme, preferably by international collaboration with partners whose national programmes face a similar difficulty to our own. The result will be a reduction in our R&D spend and postponment of any public expenditure commitment to CDFR and associated hardware.

(viii) Co-operation with other countries would enable the costs and risks associated with both the R&D programme and the CDFR stage to be pooled.

While the AEA have told me that £70m per annum is the minimum they could recommend for a restructured programme, the private sector NNC believes that as little as £50m p.a could suffice. My judgement is that it should be possible to devise an R&D programme suited to the new situation which would settle at around £60m in the late 80s. This should give us the option of joining in international collaboration as a credible partner or getting to an independent CDFR on a longer timescale.

The final figure which we settle on must depend on careful examination by the AEA of a programme to meet the new situation, the size of any contributions by the rest of the industry and the scope for international collaboration.

In comparison with a national programme on the present timescale, public expenditure savings would come from:

(i) taking more time to tackle development problems

(ii) specialising in certain aspects (eg the fuel cycle)

(iii) sharing costs through international collaboration

(iv) contributions by the generating boards, NNC and BNFL.

Presentation of our decision is going to be very important both for morale at Dounreay and our negotiating posture with foreign countries. I believe we should make an announcement without delay; the present uncertainty is damaging.

Attached at Annex A is a possible text which emphasises the importance which we attach to the development of the fast reactor; draws attention to the less pressing timescale (both in relation to the R&D programme and the timing of a CDFR): and makes positive reference to our continuing interest in international collaboration.

I am copying this minute to the Chancellor of the Exchequer, the Secretary of State for Scotland, the Minister of State, Foreign and Commonwealth Office, Sir Robert Armstrong and Dr Nicholson.

Secretary of State for Energy
27 October 1982

ANNEX A

FAST REACTOR POLICY

The Government has now completed its review of the Fast Reactor.

There can be no doubt that the Fast Reactor is of major strategic significance for the UK's and the world's future energy supplies. It is 50 times as efficient a user of uranium as thermal reactors, such as the Advanced Gascooled Reactor and Pressurised Water Reactor, and can create out of the spent fuel and depleted uranium which has so far arisen from our thermal programme energy equivalent to our economically recoverable coal reserves. The Government therefore believes we should continue to prepare for the time when fast reactors are needed.

But while the work of the Atomic Energy Authority on fast reactor research and development at Dounreay has established the technical feasibility of the fast reactor, it is not at present competitive with thermal reactors in cost terms. Moreover, the slower growth of thermal reactor building programmes in many countries has depressed uranium prices, so that the need to proceed to commercial application of fast reactor technology, via construction of a Commercial Demonstration Fast Reactor, is less immediate than it was.

The Government has therefore asked the Chairman of the Atomic Energy Authority, Sir Peter Hirsch, in consultation with the generating boards, British Nuclear Fuels Ltd and the National Nuclear Corporation to structure a future R&D programme based on the Prototype Fast Reactor and fuel plants at Dounreay which makes the best use of the more extended timescale that is now appropriate. Any proposal for a commercial scale reactor would of course be subject to a full public inquiry.

This revised assessment of the timescale for commercialisation of the fast reactor is shared by most other leading fast reactor nations. We have been having exploratory discussions with other countries to establish whether a satisfactory basis for international co-operation can be worked out.

The Government wishes to see these discussions continue, and has asked the Atomic Energy Authority to take account, in their advice about the future programme, of the potential for collaborating with other countries as a means of securing the maximum benefits from our continuing R&D programme.

PART 7 ends:-

E (82) 21st Concs Item 2 14/10/82

PART 8 begins:-

S/S Energy to PM + att 27/10/82

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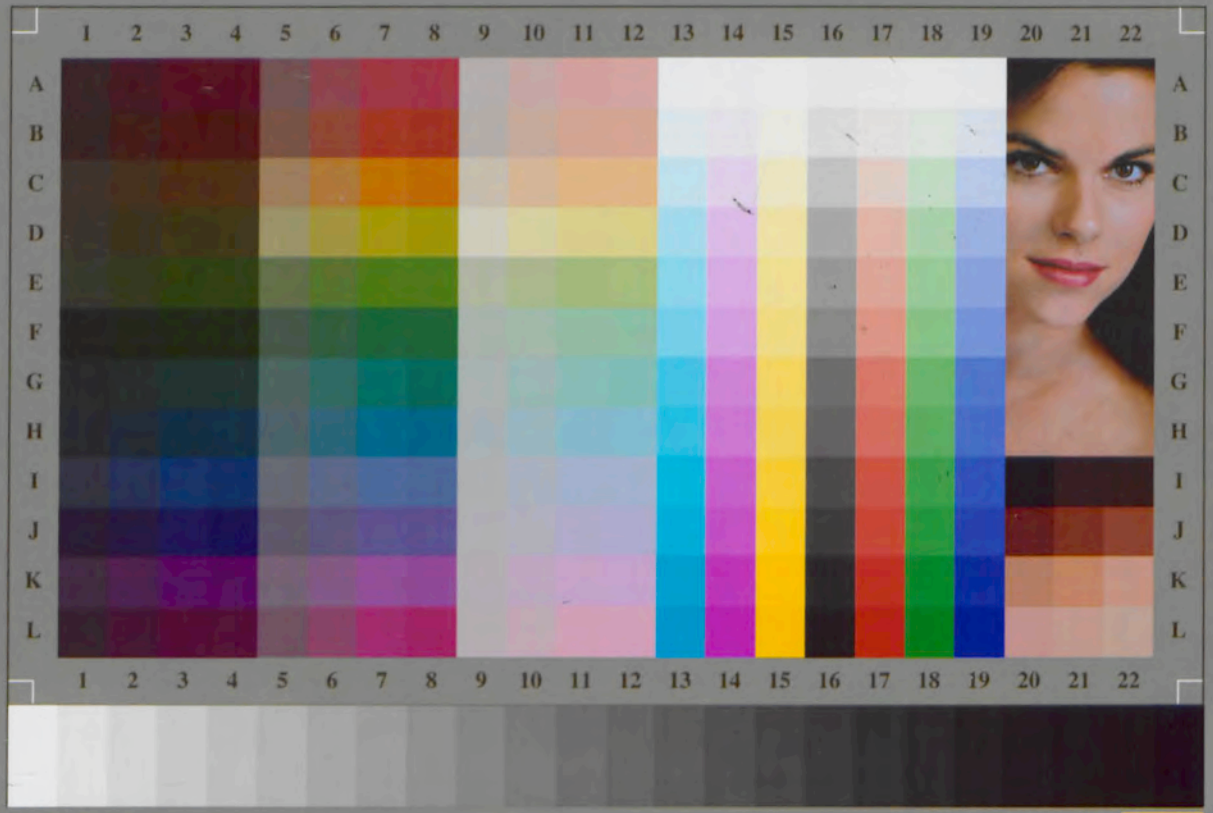

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