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CABINET

MINISTERIAL COMMITTEE ON ECONOMIC STRATEGY

FAST REACTOR POLICY

Note by the Secretary of State for Energy

1 In E(80)60 I discussed fast reactor policy. To secure what I see as our strategic objective of putting the UK into a position to build and introduce commercial fast reactors in due course, we must ensure that, in one way or another, we have access to proven technology, for both the fast reactor itself and its fuel cycle. We should aim to achieve this in a manner which, while making good use of our experience, minimises costs and risks and avoids unnecessary controversy.

2 There is more than one route to this end, and, if we are not to risk the waste of money and resources, we should equip ourselves to exercise a fully informed choice as soon as possible. In the absence of a clear decision about the way forward, the United Kingdom Atomic Energy Authority (AEA) and the National Nuclear Corporation (NNC) are continuing to direct their work towards the construction of a large UK-designed commercial demonstration fast reactor (CDFR). With the priority that we have rightly given to re-establishing our thermal reactor programme and the successful introduction of the PWR, construction of a CDFR could not now be started before 1985, when it would be nearly a decade behind France's Super Phenix and have evolved in isolation from the main European effort. I do not believe a country such as the UK can afford to try to develop its own fast reactor technology independently of other countries. AEA and NNC are thus working towards an option which is both too risky and too costly. We must settle the way we wish to go forward so that their expenditure and effort can be re-directed to serve a more coherent strategy.

Collaboration with the French

3 In my view, we should aim to be part of an international partnership for the further development of the fast reactor. Since our discussion of E(80)60 on 1 July (E(80)23rd meeting) I have, as agreed, met M. Giraud, the French Industry Minister and am clear from this that contacts with the Germans that the door is open for us to associate ourselves with the European fast reactor collaboration if we wish - see Annex A.

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4 Whilst no deadline was suggested in my discussions with Giraud, French willingness to negotiate our entry into the European partnership cannot be relied on indefinitely, and it is now more than a year since talks were opened at the industrial level. At the moment we have still much of value to contribute in a European collaboration, particularly on the fuel cycle. But as the French programme continues to advance, without an input from us, their interest in what we can offer is bound to decline and, if we delay too long, we may find that collaboration is no longer open to us on any satisfactory terms.

5 Collaboration with the Europeans, apart from its political benefits, has a number of advantages in terms of securing our policy objectives:-

(a) It avoids the high risks associated with pursuing an independent line;

(b) it allows us to keep our options open as to when we build a commercial fast reactor;

(c) it takes advantage of the French experience in ironing out the initial learning problems of the Super Phenix programme;

(d) it should reduce the cost of constructing the first commercial sized UK fast reactor, when the time comes to build one; and enable us meanwhile to deploy the resources we devote to continuing R and D to better effect and to achieve some economies in our effort;

(e) it does not expose us to the risks and uncertainties of re-entry into the field that we might face if we relied on a long-term foreign licensing route, and chose to run down our R and D meanwhile;

(f) it complements other collaboration with the Europeans on nuclear matters (eg on reprocessing and enrichment).

Collaboration with the US

6 The new US Administration seems likely to be keen to develop the US nuclear programme and to have a more positive attitude than the Carter Administration to the development of the fast reactor. There is considerable interest in the US, especially among the utilities and in the nuclear industry, in the possibility of collaborating with the UK in developing the fast reactor. (Annex A). Such collaboration might offer similar advantages to those from collaboration with Europe, and we must fully explore the possibilities with the new Administration. However, it will inevitably be some time, probably well into next year, before the nature of the new Administration's fast reactor programme is clear, and before we have any real indication of whether they want to collaborate with us. We cannot rule out the possibility that they will eventually prefer to deal with Europe as a whole or to aim for a wider partnership including Japan.

7 Thus the election result in the US has given us a potential alternative to European collaboration, which could strengthen our negotiating position in Europe. But I believe it would be bad tactics to hold off further discussions with the Europeans while we await developments in the US. This could damage our prospects in Europe

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and risk our being isolated by a possible European initiative with the Americans. Moreover, further discussions with Europe can be in such a form as not to preclude development of a US alternative in due course if this appears likely to be more fruitful.

The Next Steps

8 For all the reasons I have set out in previous paragraphs, we ought not therefore to let go by default the present opportunity of establishing whether a deal with the French and Germans to join the European collaboration is possible on terms which would suit us. We can establish the terms that are ultimately on offer only by entering into serious negotiation. This does not mean committing ourselves now to the construction of a full scale reactor - indeed no decision on the building of a reactor can or should be taken before 1984/85. But we do need to be able to say that the UK intends to be associated with the continuing development of fast reactor technology, and to negotiate in good faith on the basis that we intend concluding a deal if terms can be negotiated which are acceptable to us.

9 I therefore propose that my Department should now initiate negotiations with the French and Germans on the basis of:-

(a) HMG's express intention to be associated with continuing development of fast reactor technology; and

(b) willingness in principle to negotiate in good faith, and to enter into a collaborative deal if the terms are right.

10 The objectives would be as set out in paragraph 28 of the paper attached to E(80)60. (Reproduced at Annex B). In particular, there would be no commitment by the UK to build a CDFR at any particular time; we would question the line taken by M. Giraud on cross-licensing and common design (Annex A paragraph 4); and improvements in the terms would be sought to safeguard our industrial interests, to reduce or compound the down payment that the French are seeking, to ensure that negotiations are held in parallel on the fuel cycle where our position is strongest, and to provide for the UK to have a proper say in licensing to third countries. The negotiations would be ad referendum and I would report back to colleagues on their outcome.

Public Statement

11 The question of publicity on fast reactor policy was discussed at the Committee's meeting on 1 July 1980 (E(80)23rd). It would clearly be desirable to make a full statement if and when negotiations with the Europeans reach a successful conclusion. Meanwhile our response to any questions that arise should be that discussions are taking place as part of our continuing exploration of the scope for international collaboration on the fast reactor; that no decision has been taken to build a CDFR in the UK at any particular time; and should recall our undertaking that any such decision would in any case be subject to a public inquiry.

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Recommendations

12 Accordingly I invite my colleagues to agree that:-

(i) we should recognise the strategic objective of being associated with continuing development of fast reactor technology; and now move towards an early decision on the best means to secure this objective.

(ii) accordingly, my Department should enter into substantive negotiations with the French and Germans on collaboration on the lines set out in paragraph 8 above. We would need to be able to say that, in principle we are willing to reach agreement provided that the terms are right. However, there would be no commitment to build a CDFR in the UK at any particular time and the options of collaborating with the US or of deciding to run down our fast reactor effort would remain open while the negotiations took place;

(iii) we should continue to review the prospects for collaboration with the US so that that option can be set against any deal that might be possible with the Europeans and

(iv) the AEA and NNC should be asked to review their R and D effort in the light of the above bearing in mind the high priority that we attach to progress with the PWR over the next few years.

Department of Energy
11 December 1980

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ANNEX A

DISCUSSIONS WITH THE FRENCH, GERMANS AND US

It is clear from my discussions with M. Giraud that the French are receptive to a deal with us. For instance, M. Giraud told me that they felt isolated in pressing ahead with their programme and recognised that they would be less isolated if we joined them especially given our undoubted lead on fuel cycle technology.

There was also no suggestion that a public commitment to construction of a fast reactor was an essential element of any deal. M. Giraud said in passing that if in the event we did not build one there would be some kind of penalty but I believe this was a reference to the structure of the royalty arrangements which it has always been envisaged would reflect the number of fast reactors in a partner's programme

In subsequent informal contacts the French have made it clear that they understand the difficulty for HMG of paying an entry fee of £50m, and are looking for ways of easing the problem. This again indicates a positive interest in securing an agreement with us.

M. Giraud said that in his view any deal would have to be based on cross-licensing rather than joining the French/German organisation arena as such. Our objective in negotiation must be to achieve the closest possible integration between the two groups efforts, and we should not necessarily accept that the French will be unmoveable on this point; but our industry believes that cross-licensing arrangements can meet our needs satisfactorily. M. Giraud also considered that while there was clear advantage in the two countries keeping as close together as possible on design, the French were only likely to modify their Super Phenix design to utilise genuine British improvements. If this does in fact prove to be the French position it would not present problems, since one of the advantages we see in collaboration would be to take advantage of the French lead on fast reactor development, using their work on Super Phenix and later stations as the starting point for our own fast reactor design, although modifying it to reflect British expertise and experience where there was a really good case for doing so.

The Germans too in recent weeks have emphasised again their wish to see a collaborative deal with the UK and their willingness to do what they can to solve outstanding problems with the French, including the entry fee.

Overall, therefore, discussions since E Committee considered proposals have tended to confirm that the French and Germans are seriously interested in collaboration with us on the fast reactor and that a deal should be possible if the Government want it.

Discussions with the US

Governor Reagan is known to support nuclear power and fast reactor development. Dr Marshall, the Deputy Chairman of the UKAEA has been keeping open his industrial level contacts with the Americans, and in discussion with the Electric Power Research Institute (EPRI) he has been able to obtain confirmation of the American utilities' enthusiasm for collaboration with the UK.

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8 We understand from our Washington Embassy that Reagan's Advisory Group have recommended that an immediate start should be made on the construction of the Clinch River reactor, comparable in scale to our existing Prototype Fast Reactor, and that afterwards authority should be sought for a full scale (1300MWe) prototype to be built in the US as an international project. We also understand that Reagan has agreed in principle to a fast reactor construction project, though without taking any decisions on its nature. Congress who have hitherto tended to support fast reactor development may also have views on how it should be conducted.

9 The strength of US industry and its ability to develop components of the type that will be required if fast reactors are to be successfully introduced on a commercial scale argue in favour of a collaboration with the US. This ability could usefully complement our own experience so far in developing the fast reactor.

10 However, we cannot be sure that the US Government will want to collaborate with the UK. The US has its own uranium reserves and so has the option of delaying the fast reactor longer than we or the French can afford to do. On the other hand, assuming that they do go ahead, we could end up as a minor and unequal partner in a determined American effort, or worse, we might be isolated by a Franco/US agreement.

NEGOTIATING OBJECTIVES

Paragraph 28 of paper attached to E(80)60

I propose therefore that we should now seek to negotiate acceptable arrangements with the French and Germans. The proposals which the UKAEA have put forward to me will provide a basis for negotiation. But we need to set clear negotiating objectives and to obtain clarification and improvement in the terms on offer.

(a) The long-term aim of collaborative arrangements should be a design of fast reactor which can be built reliably, meet our safety standards and produce electricity at an acceptable cost.

(b) one of our major objectives in talking to the French should be closer integration, with joint designs and a jointly agreed programme in which our fast reactor should fit into a European series. Collaboration which simply continued our line of development and only absorbed French experience at the margin would be nearly as risky as an independent effort.

(c) we should use collaboration as a means of cutting down significantly on costs, for instance by coordinating investment in fuel cycle facilities and by cutting out duplication in research and development programmes.

(d) we should seek to safeguard our industrial interests by formal agreements between manufacturers on the availability of component design and manufacturing know-how at an acceptable price.

(e) we should seek to reduce the downpayment of £50 million for which France are asking for access to their design information or, if we fail, we should at least ensure that what we obtain for the money is very clearly defined and that payments are only made in return for specific benefits provided by our partners as and when they occur. And there should be royalty arrangements which fairly reflect our contribution to the collaborative arrangements.

(f) we should negotiate parallel arrangements on the fast reactor fuel cycle, ensuring that our expertise in this area is fully reflected in the terms we obtain.

(g) we should ensure that we have a proper say in the licensing of technology to third countries.

(h) we should preserve our freedom of decision on the timing of construction of our fast reactor, a major consideration given the priority of our thermal reactor strategy and the present weakness of our nuclear industry.

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