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Prime Minister

This is the Cabinet Office brief.
The Policy Unit note is at
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Prime MinisterSellafield discharges

DUB
23/7

1. This is a handling brief for your meeting tomorrow. The principal issues are which option to select for the future level of radioactive discharges from the British Nuclear Fuels (BNFL) plant at Sellafield and what, if anything, to do about the quality of BNFL management at Sellafield. The considerations and options are set out in the note by officials attached to the Secretary of State for the Environment's minute of 20 July. Dr Nicholson's advice is in his minute of 20 July. A supplementary issue is the content and timing of an announcement. The meeting might also consider the suggestion that the Secretary of State for the Environment made in earlier correspondence that there should be some measure of positive discrimination in Government policies in favour of the Sellafield area, and the Secretary of State for Energy's proposal (his minute of 17 July) to follow up the Black Report on the incidence of cancer in west Cumbria with a national study of the incidence of leukaemia.

BACKGROUND

2. There is concern about the level of radioactive discharges from Sellafield. Sir Douglas Black's recent report (to be published today) does not establish any definite connection between the discharges and the incidence of cancer in the locality. But he does recommend, inter alia, that the discharges should be reviewed critically in relation to those from plants in other countries, with special attention to alpha discharges. There is also strong pressure from the Irish and the Scandinavians.



? 3. Alpha activity, currently at the level of 380 curies, is relatively powerful, long-lived and accumulates on the sea-bed. Beta/gamma activity, currently 60,000 curies, has a shorter life and disperses in the sea. Action already in hand (costing £130 million) will reduce the discharges to 200 curies of alpha and 20,000 curies of beta/gamma activity in 1986, rising slightly in the 1990s. For comparison current discharges at the French reprocessing plant at Cap de la Hague are 14 curies of alpha and 30,000 curies of beta/gamma activity. The expressed French intention is to keep their discharges to current levels in the face of an increased throughput of fuel.

4. The main source of the Sellafield discharges is the reprocessing of spent Magnox fuel which is likely, though not certain, to have been phased out by 2005. By that date the emissions should be about 5 curies of alpha and 2,000 curies of beta/gamma.

5. The Government and BNFL are committed to substantial reduction of discharges below the levels already expected in 1986. The International Commission on Radiological Protection (ICRP) has recommended that doses received by members of the public most at risk (which relate only indirectly to discharges) should be as low as reasonably achievable, taking economic and social factors into account. The 1986 discharges would produce doses of 17% of the upper limit which has been set by the ICRP. The UK's Radioactive Waste Management Advisory Committee (RWMAC) think doses should not exceed 10%, regardless of cost, and would expect application of the "as low as reasonably practicable criterion" to achieve a figure substantially below that. The Black Report recommends that "there should be a



critical review of the necessity for discharges of alpha as well as beta/gamma emitted in discharges from BNFL Sellafield site to be significantly in excess of those from similar plant in other countries". On dosage the French objective at La Hague is 1% of ICRP - in more favourable geographic conditions.

MAIN ISSUES

Radioactive discharges

6. The note by officials identifies 4 options for reducing discharges. The Secretary of State for the Environment favours a fifth option (a combination of 2 of the basic ones). They are:-

Option 1

Emissions - By 1992 17 curies of alpha; 8,000 curies of beta/gamma, ie doses of about 3% of the ICRP limit.

Cost £280 million (1984 prices), £235 million (net present cost)

Increased cost of magnox power - 0.07 pence per kilowatt hour (p/KWh)

Option 2 - the same plan, but accelerated to achieve the same discharges in 1989.

not achievable. Cost £290 million (1984 prices), £245 million (net present cost)

Increased cost of magnox power - 0.07 p/KWh

Risk - delay to existing programme of emission reduction, and other investment.

Option 3 - Cap de la Hague method (ie removal of beta/gamma activity from all discharges)



Emissions By 1992 - 15 curies of alpha; 3,500 curies of beta/gamma, ie doses of about 2% of ICRP limit (But only 150 alpha and 10,000 beta/gamma by 1989)

Cost £525 million (1984 prices); £345 million (net present cost)

Increased cost of magnox power - 0.15 p/KWh

Option 2/3 Secretary of State for the Environment's preference. As option 3 but with earlier action as option 2 to reduce alpha discharges.

Emissions 1989 discharges - as option 2; 1992 discharges - as option 3

Cost £565 million (1984 prices); £375 million (net present cost)

Option 4 - Different process evaporating virtually all effluents and solidifying the resulting concentrate. Effective from 1995

Emissions - 1995 5 curies of alpha; 500 curies of beta/gamma ie doses of under 1% of ICRP

Cost - £2,510 million (1984 prices); £1,470 million (net present cost)

Increased cost of magnox power - 0.86 p/KWh

With all the options the costed benefit of lives saved is relatively small. The real benefit is to public confidence and a continuing nuclear power programme.

7. Option 4 is very expensive, and would increase the cost of magnox power ^{prohibitively} (64%). No-one favours it. Of the other options:-



Option 1 is favoured by BNFL and the Nuclear Installations Inspectorate. The others would all endanger their current investment programmes.

Option 2 is favoured by Dr Nicholson. The accelerated timescale would respond to public concern. BNFL would be willing to see if the Option 1 timescale could be accelerated towards Option 2. Any damage to other aspects of their safety investment programme would have to be assessed and judged acceptable.

Option 3 is favoured by the Radiochemical Inspectorate as "reasonably practical" and therefore what should be done. The technology involved is in use at La Hague, and it would provide an essential element of insurance against incidents and unforeseen circumstances.

Option 2/3 is favoured by the Secretary of State for the Environment because it combines the advantages of option 3 with accelerated treatment of alpha discharges.

BNFL management at Sellafield

8. Past events at Sellafield have raised concern about the quality of BNFL management. The DOE paper says simply that steps have been taken to improve the quality of management. Dr Nicholson fears this will not go far enough. He suggests that the Secretary of State for Energy should strengthen the non-Executive Director membership of the Board and, through them, assure himself that the quality of management is brought up to the standard of best private sector practice.

Announcement

9. The Black Report is being published today. It does not establish



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a link between Sellafield discharges and the local incidence of cancer. To follow it very quickly with a statement about the discharges might be thought to mean that the Government did see such a link. For this reason the Secretary of State for Energy argues against an early statement (his letter of 20 July). Depending on the decision over options it may well be that further discussions should in any case take place with BNFL before an announcement.

Wider Government action

10. In the earlier correspondence the Secretary of State for the Environment argued the case for a "Sellafield dimension" to other Government policies. This would not be an overt link but the Government demonstrating "clearly through its actions that we understand the pressures on this part of West Cumbria which derive from being the home of the largest plant of its kind in Europe". Apart from the Secretary of State for Energy, you and other ministers participating in the correspondence were not attracted to this approach, and the Secretary of State for the Environment has not returned to it. You might like to confirm that dealing with the plant and its discharges is the first priority.

National Leukaemia Study

11. The Secretary of State for Energy suggested to H Committee, when it was discussing the Black Report last week, that one strand of the Government response might usefully be to mount a national study of the incidence of leukaemia. This would usefully put the position at Sellafield (and around nuclear power stations) into a national perspective. H Committee felt that the arguments were evenly balanced. Some members felt that such a study would only cause concern about other areas (including Sizewell), to no good effect



since there were no useful explanatory hypotheses to test. Others thought that the identity of locations of high incidence of leukaemia would become known anyway; that there were enough grounds for a study; and that it would help to put Sellafield in a less prominent perspective. There is a current study going on at Oxford whose results might also be relevant. It seems clear that more work should be done on the pros and cons of a national study before any decision is reached.

HANDLING

12. After the Secretary of State for the Environment has introduced his minute and the officials' paper, the meeting should first discuss the options for reducing discharges. The Secretary of State for Energy will have views on what BNFL can achieve and the effect of the options on the price of nuclear power, and nuclear power policy more generally. The Chief Secretary, Treasury will also have views on cost. Most other ministers will have views on the acceptability of the options, perhaps especially the Lord President, the Scottish and Northern Irish ministers, the Foreign Office minister (the international context), the Secretary of State for Social Services, the Minister of Agriculture and the Secretary of State for Employment.

13. On the management of BNFL, the Secretaries of State for Energy and the Environment and the Chief Secretary, Treasury will have views. Dr Nicholson has just visited the plant.

14. On the timing of an announcement, the Energy and Environment Secretaries, the Social Services Secretary (especially in relation to Black) and the Lord President should be asked to contribute.

15. On wider Government policies, the Secretary of State for the Environment might be asked for his current views. If he still favours



wider action most other ministers will want to contribute.

16. On the national leukaemia study, the Secretary of State for Energy should explain what he has in mind, and the Social Services Secretary to comment. The two of them might then be asked to consult further.

CONCLUSIONS

17. You will wish the meeting to reach conclusions on -

- (a) Future discharges - the preferred option. The real choice seems to lie between Option 2 and Option 2/3. In either case there should almost certainly be further discussions with BNFL about costs and timing;
- (b) whether further action should be taken to strengthen BNFL management generally and at Sellafield in particular;
- (c) when any announcement should be made. On practical grounds, and in relation to Black, there is a good case for the autumn;
- (d) whether wider Government action in the Sellafield area should be further considered. Probably not, but if so you may want to ask the Environment and Energy Secretaries to consider and report further.
- (e) whether there should be a national leukaemia study. The Energy and Social Services Secretaries should consider further.

C J S BREARLEY

23 July 1984