

CONFIDENTIAL

Ref. A01872

PRIME MINISTER

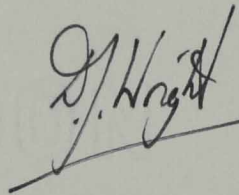
---

AGRs and the Government's Nuclear Policy

✓  
At the end of the E discussion on AGRs and the Government's nuclear policy on 24th March (E(80) 11th Meeting, Item 3) you said that you would arrange for the Ministers directly concerned to meet again under your chairmanship to go into the issues more closely. A meeting for this purpose, to which the Secretaries of State for Industry, Scotland and Energy and the Chief Secretary, Treasury have been invited, is now to take place at 12.30 pm on Thursday, 3rd April.

2. After the E discussion you also asked officials of the Departments concerned to bring together additional information which would illuminate the main questions at issue. This has been done. The main material is in the Annexes to the attached document which brings together the salient points.

3. I am copying this minute and enclosure to the four Ministers who will be present at your meeting on Thursday.



(Robert Armstrong)

(approved by Sir Robert Armstrong  
and signed in his absence).

2nd April, 1980

CONFIDENTIAL

## HEYSHAM AND TORNESS

Note by Officials

Introduction

At the end of the E discussion on 24 March about advanced gas-cooled reactors (AGRs) and the Government's nuclear policy, the Prime Minister indicated that Ministers would require further information before coming to a decision - and that as an aid to decision-taking she would hold an informal meeting with the Ministers immediately concerned. Officials were asked to provide further information as a basis for discussion in the small Ministerial group. This present report, which seeks to bring together the information immediately available, has been prepared by officials from the Department of Energy, the Treasury, the Department of Industry, the Scottish Office and the CPRS under Cabinet Office chairmanship.

2. The central question before Ministers is whether to confirm earlier decisions to allow AGR orders for Heysham and Torness to be carried through, or whether these stations should be deferred or cancelled. Secondary questions raised in the Ministerial discussion concerned certain design aspects of the AGR decision and the quite separate question of whether the Drax B coal-fired power station, at present under construction, might be cancelled.

The Heysham and Torness orders

3. A decision whether to confirm or overturn the present decisions to build AGRs at Heysham and Torness rests on the answers to 3 questions:-

a) What is the financial and economic case for the two stations?

b) Would cancellation or deferment have unacceptable implications for the construction of future nuclear power stations, whether AGRs or PWRs?



a uniform series of investment tests which, if followed, will permit the correct allocation of resources throughout the economy. It would nevertheless be possible, in present circumstances of public expenditure stringency, to argue that the national economic objectives point to rationing the availability of capital to heavy investment projects of this kind. This would however be a major new policy stance with implications extending well beyond the electricity industry. We are clear that likely future demand for electricity in England and Wales could be met without building further stations for the next 3 years and in Scotland for perhaps 6 years. But the justification for the investment is not a matter of overall generating capacity; new stations could generate electricity more cheaply. It is relevant that some 8 Gigawatts of the existing 56 Gigawatts installed capacity in England and Wales is oil-fired and 6 Gigawatts of the 14 Gigawatts under construction is also oil-fired, and this with fuel that is costly and relatively scarce. Cancellation of Heysham and Torness would also mean that the nuclear contribution to our energy supplies would be declining in the late 1980s as Magnox stations are taken out of service, and so the strategic advantage of introducing nuclear capacity to diversify fuels for electricity generation would be eroded.

#### 7. Torness

In principle, parallel arguments apply in the case of Torness. There is, however, a difference in the methodology used by the SSEB in conducting its investment appraisals, in that the Board uses what they term a discounted differential cost method, which they consider more suitable for the size and composition of their supply system. Further details about this methodology are given in Annex 4.

8. Investment approval for Torness was originally given in 1978. At that time demand forecasts suggested that the station would be needed to meet demand in Scotland in the mid-1980s. Since then new economic and demand forecasts have become available, most recently during March, which suggest that the station will not actually be essential to meet demand until 1993/94. Nevertheless the same cost saving arguments that apply to Heysham ought, prima facie, also to apply to Torness since the

stations are similar, and the costs of providing fuel for alternative stations are if anything higher in Scotland. Officials are urgently seeking from the SSEB information on a comparable footing to that in Annex 3 for Heysham. They will circulate a note to Ministers as soon as this is available, but meanwhile they have no reason to expect a different conclusion in the Scottish case.

#### 8. NUCLEAR CONSTRUCTION CAPABILITY

The last order for a nuclear power station prior to Heysham II and Torness was placed in 1970. That order - for Heysham I - was the last of the series of orders for AGRs placed between 1966 and 1970. Two of the five stations in that programme have been completed and the other three are nearing completion. The main new nuclear programme announced by the Secretary of State for Energy envisaged orders over a ten year period beginning in 1982. But that programme cannot include PWR stations until the safety assessment being undertaken by the Nuclear Inspectorate is completed probably in 1982, and there will then need to be a major public inquiry. (The timescale for the whole approval process is discussed in Annex 1 below). Our assessment is that it is unrealistic to assume that an order for a PWR could be placed before the middle of 1983 and slippage beyond this is by no means impossible. In the meantime the only nuclear stations which are available to be ordered in the United Kingdom are the AGRs.

9. We examine in Annex 6 whether the nuclear construction industry would be severely damaged by such a hiatus whether brought about by cancellations or deferments. The Departments concerned believe that, though cancellation or substantial deferment would not necessarily destroy our ability to build such stations in the long term, many firms would leave the industry and would be reluctant to re-enter it until the status of the PWRs was confirmed. Deferment would severely damage the confidence of the firms concerned, lead to a dispersal of design talent, and add substantially to the costs and the time necessary to resume any future programme of AGRs. We do not yet have the capacity to construct a PWR but we have in this case the ability to obtain licences from abroad, though the loss of confidence would also delay our ability to manufacture PWR components in the UK.

10. Similar arguments would also apply if only one of the two stations were deferred or cancelled. The nuclear industry's present programme relies on there being sufficient work for two stations. If only one station were ordered, then the risks of damage to the AGR-manufacturing industry, as described in the preceding paragraph, would substantially remain. Even if this did not happen, then the costs of the remaining stations would certainly be higher, perhaps by 15 per cent.

#### 11. THE PLANT INDUSTRY

Annex 6 also considers the impact on the makers of the non-nuclear parts of electricity generating stations of the cancellation or deferment of the present AGRs. The firms concerned spread far beyond the turbine generator manufacturers and boiler-makers and embrace a wide spectrum of British industry. There is no doubt that in present economic circumstances and given the projected completion within the next 2 years of almost all the power stations at present under construction, the cancellation or deferment of Heysham II or Torness would have widespread repercussions.

12. We have considered whether a programme of refurbishment of existing plant might be an alternative source of work for the industry. A major programme of refurbishment of older power stations would by definition not assist the specialist and nuclear-orientated firms. Further, much of it is not of a kind which needs to be carried out in manufacturers' works, so that little design and shop floor work would result for the turbine generator and boiler manufacturers. Clearly, any such programme would have little application to newer, more efficient stations where long outages would be necessary. These would imply a reduction in the efficiency of the system as a whole, and a consequent increase in generating costs.

## 13. CONCLUSION ON HEYSHAM AND TORNESS

The CPRS paper (E(80)30) recommended that the two AGRs at Heysham II and Torness should go ahead as planned. Officials of the Departments concerned do not consider that the additional information presented in the report casts doubt on that conclusion. The key fact is that the PWR option is not currently available to us; is most unlikely to be available before 1983; and on the worst hypothesis may never be available. Against this background there is a strong argument for maintaining the AGR technology at least until the PWR uncertainties are resolved. The financial appraisals, (subject to confirmation in the case of Torness by the further official work), and subject to the inevitable uncertainty inherent in any investment with such a long lead time, suggest that the Government's normal investment criteria will be satisfied if the stations are allowed to proceed. The need to pay cancellation costs if work were stopped, and the amount of expenditure already committed, would in any case remove any prospect of saving money by cancellation in 1980/81.

## 14. SAFETY

At the meeting of E on 24 March concern was expressed that the formulation used by the Chief Inspector of Nuclear Installation in his letters of 13 and 19 March could be misunderstood by opponents of <sup>nuclear</sup> power if quoted out of context. We have sought to clarify this position and the formulation at Annex 8 has been agreed with the Chief Inspector. The Chief Inspector has agreed that the question is not whether the current design of AGRs is safe but whether it could be made even safer; it would be helpful for that to be clarified in further discussion as proposed in the Annex.

## 15. DRAX B

Annex 9 discusses the implications of cancelling the Drax B coal-fired power station. The cost of nugatory expenditure, including cancellation charges, of up to £250m, and the link between this investment and that of the National Coal Board in the Selby coalfield, suggests to us that this option is not a realistic one.

## 16. TIMING

Quite apart from political pressures for an early announcement, and given the uncertainties already created, it is clear that this matter needs to be decided one way or the other in the next few weeks.

LIST OF ANNEXES

1. Operational timetable for construction of nuclear stations
2. Heysham II and the CEBG's capacity requirements
3. Costs and economics of Heysham  

---
4. Costs and economics of Torness  

---
5. Past experience in nuclear construction
6. Implications for the power plant and nuclear industries
7. The National Nuclear Corporation
8. Possible design changes in AGRs
9. Completion of Drax and oil-fired stations under construction in England, Wales and Scotland