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MISC 57(83) Series

CABINET

OFFICIAL GROUP ON COAL

MINUTES OF MEETINGS

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1st	18.2.83	1 2	1. POWER STATION ENDURANCE IN THE LONG TERM 2. INDUSTRIAL COAL STOCKS
2nd	11.3.83	3, 5 4	1. PROLONGING POWER STATION ENDURANCE 2. THE INDUSTRIAL EFFECTS OF A MINERS' STRIKE AND SCOPE FOR INCREASING INDUSTRIAL ENDURANCE
3rd	13.4.83	6	DRAFT REPORT TO MINISTERS

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SECRET

CABINET

OFFICIAL GROUP ON COAL

MINUTES OF MEETINGS

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1. THE EFFECT OF CESSATION OF COAL SUPPLIES TO INDUSTRY, AND THE DESIRABILITY OF MEASURES TO IMPROVE INDUSTRY'S ENDURANCE	13.4.85	1
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OFFICIAL GROUP ON COAL

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2	17.2.85	INDUSTRIAL COAL STOCKS Note by the Secretaries
3	8.3.85	POWER STATION ENDURANCE IN SCOTLAND IN THE LONGER TERM Note by the Scottish Office
4	9.3.85	THE EFFECT OF CESSATION OF COAL SUPPLIES TO INDUSTRY, AND THE DESIRABILITY OF MEASURES TO IMPROVE INDUSTRY'S ENDURANCE Paper by the Department of Industry
5	9.3.85	PROLONGING POWER STATION ENDURANCE Note by the Secretaries
6	29.3.85	POWER STATION ENDURANCE IN THE LONGER TERM Note by the Secretaries
7	22.4.85	ANCILLARY MATERIALS: DRAFT REPORT TO MINISTERS Note by the Secretaries
8	4.5.85	COAL-BURNING INDUSTRY: DRAFT REPORT TO MINISTERS Note by the Secretaries
9	11.5.85	ANCILLARY MATERIALS Note by the Secretaries
10	12.5.85	INCREASING INDUSTRIAL ENDURANCE OF A MINERS STRIKE Note by the Secretaries
11	7.7.85	POWER STATION ENDURANCE IN THE MEDIUM TERM Note by the Secretaries

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2	17.8.83	INDUSTRIAL COAL STOCKS
3	18.8.83	POWER STATION ENDURANCE IN THE MEDIUM TERM
4	19.8.83	THE EFFECT OF INCREASE IN COAL RESERVES ON INVESTMENT AND THE REQUIREMENT TO INCREASE INVESTMENT IN RESERVES
5	20.8.83	REPORT BY THE DEPARTMENT OF MINES ON INVESTMENT IN COAL RESERVES
6	21.8.83	REPORT BY THE DEPARTMENT OF MINES ON INVESTMENT IN COAL RESERVES
7	22.8.83	REPORT BY THE DEPARTMENT OF MINES ON INVESTMENT IN COAL RESERVES
8	23.8.83	REPORT BY THE DEPARTMENT OF MINES ON INVESTMENT IN COAL RESERVES
9	24.8.83	REPORT BY THE DEPARTMENT OF MINES ON INVESTMENT IN COAL RESERVES
10	25.8.83	REPORT BY THE DEPARTMENT OF MINES ON INVESTMENT IN COAL RESERVES
11	26.8.83	REPORT BY THE DEPARTMENT OF MINES ON INVESTMENT IN COAL RESERVES

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Serial No	Date	Brief Description
12	21.7.83	POWER STATION ENDURANCE IN THE MEDIUM TERM Note by the Secretaries
13	26.8.83	INDUSTRIAL COAL STOCKS Note by the Secretaries

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MISC 57(85) 1st Meeting

COPY NO 20

CABINET

OFFICIAL GROUP ON COAL

MINUTES of a Meeting held in
Conference Room D, Cabinet Office on
FRIDAY 18 FEBRUARY 1985 at 10.30 am

PRESENT

Mr P L Gregson
Cabinet Office
(In the Chair)

Mr J M M Vereker
Prime Minister's Office

Mr N Wicks
Treasury

Mr B Miller
Ministry of Defence

Mr G Murray
Scottish Office

Mr B D Winkett
Department of Industry

Mr G D Miles
Department of Transport

Mr I Manley
Department of Energy

Mr D H Metz
Department of Energy

Mr D B Smith
Department of Employment

Mr C Beauman
Central Policy Review Staff

SECRETARIAT

Brigadier J A J Budd
Mr W Moyes

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1. POWER STATION ENDURANCE IN THE LONGER TERM

The Group discussed a Paper prepared by the Department of Energy on power station endurance in the longer term, circulated under cover of MISC 57(85) 1.

The following were the main points made in discussion -

a. It was difficult to judge in the abstract for how long the miners might remain on strike. That would depend on the issue in question. It seemed likely that closures could be achieved in the peripheral coal fields without risking a national strike, provided that proposals for closures were not simultaneously to be advanced in the central coal fields; this was also the National Coal Board's (NCB) judgement. Even if closures were to lead to serious industrial action in Kent, Scotland and South Wales, this would not necessarily develop into a national strike. However, if closure proposals were widespread, the risk of a national strike arose. This would be likely to encompass issues of a political character as well as closures. If there were no scope for the NCB and the National Union of Mineworkers (NUM) to reach a compromise, a strike might well last for at least 3 months and probably very much longer: in the post-war period the duration of national strikes had increased sharply.

b. If the strikers were aware that the point would come when the endurance of the NCB and the Government would be exhausted, this would present a target for them to aim at, which would sustain their morale and extend their endurance. The Group's first objective should therefore be to discover whether measures could be devised which would extend power station endurance almost indefinitely. It was argued on the one hand that although in principle it might be possible to devise indefinite power station endurance, in practice other factors, such as the impact on industry and on the general public, would be likely to lead to strong pressure for the strike to be ended well before power station endurance became a critical constraint. It therefore seemed unlikely that power station endurance significantly longer than the

present 6 months would prove worthwhile. The recent strike in the water industry demonstrated this; although its effects were very limited, the public was apparently not prepared for it to be allowed to run indefinitely. However, in the case of a miners' strike the situation would be different in that there would be little chance that the public would be directly affected by it so long as power supplies were maintained; that might well colour the attitude of the general public to a lengthy strike.

c. Converting the 12 largest coal-fired power stations to dual firing with oil might enable normal electricity supplies to be maintained during the summer once coal stocks had been exhausted. Serious logistic problems would have to be overcome; and since maximum oilburn was not the normal pattern of power station operation, there was a risk that the trades unions in the electricity supply industry might refuse to co-operate. But if these problems could be successfully overcome power station endurance might well extend for up to a year. Account would also have to be taken of various developments which were in prospect: by 1985-86 several nuclear power stations would have come into full operation and some further oil-fired power stations would also have been completed: the interconnector with the French electricity grid ought also to be in operation. The Group's report to Ministers should quantify the impact of these developments on endurance.

THE CHAIRMAN, summing up this part of the discussion, said that the identification of whether power station endurance could be prolonged virtually indefinitely or whether a significant increase in endurance short of that could be achieved, were central to the Group's analysis. The Department of Energy should therefore prepare a paper for a further meeting of the Group on the scope for achieving indefinite power station endurance by, say, 1986 and the likely order of costs involved in doing so. The starting assumption should be that electricity supply cuts would not be an acceptable option; but, if necessary, the assessment should consider the impact on power station endurance of modest power cuts introduced only after a miners' strike had lasted for some time. The Scottish Office should prepare a similar assessment in respect of the Scottish power stations on the

assumption that it would be desirable, if possible, for the option to be available of using the interconnector between the English and Scottish electricity grids to the maximum extent throughout a miners' strike. In the first instance Departments should not consult the Electricity Boards in preparing these assessments; were that to prove necessary, Ministerial authority would first have to be sought.

The Group -

1. Invited the Department of Energy and the Scottish Office to prepare assessments of the scope for increasing power station endurance indefinitely along the lines indicated by the Chairman in his summing up of this part of the discussion.

In further discussion of MISC 57(83) 1 the following were the main points made -

d. Increasing power station coal stocks by a further 2-3 million tonnes would not involve the acquisition of new land. However, the unit costs of doing so would be higher than previously because of the increasing difficulty of handling the coal stocks at the power stations. It was difficult to judge whether a further increase in coal stocks might prove possible; it seemed reasonable to speculate that in England and Wales an extra 3-4 million tonnes might well be accommodated at the power stations, although this could be confirmed only by experience. In some power stations the limit of coal stocking capacity would eventually be reached. But many of the large coal-fired power stations were in rural areas and could in principle acquire land to increase their coal stocking capacity substantially. However, the more abnormal work involved the greater were the risks of sympathetic industrial action by power station workers in support of the miners.

e. The closure of a few small oil-fired power stations was in prospect, although this would not significantly reduce total available oil-fired capacity; the Department of Energy would clarify precisely what capacity was involved in the proposed closures.

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e. The closure of a few small oil-fired power stations was in prospect, although this would not significantly reduce total available oil-fired capacity; the Department of Energy would clarify precisely what capacity was involved in the proposed closures.

The question arose whether the costs involved in delaying closure of these power stations might be justified by the increase in endurance thereby generated. However, these stations could not be mothballed; if they were to contribute to endurance they would have to be kept in operation, which the Central Electricity Generating Board (CEGB) would be most reluctant to do.

f. The assessment of endurance assumed that by November 1983 stocks of lighting-up oil at the power stations would be nominally equivalent to 20 weeks normal usage but that in practice it would be possible to increase this to 26 weeks. Work would need to begin almost immediately if stocks of all ancillary materials at the power stations were to be increased by the autumn of 1984 to the level necessary for 26 weeks normal usage. However, such a step was unlikely to prove necessary, since the CEGB had formally committed itself to achieving a full 26 weeks endurance by November 1983 without further increasing storage capacity for ancillary materials. Before doing so they had investigated very thoroughly unorthodox means by which the replenishment of ancillary materials might be achieved during a lengthy miners' strike, and were confident that this would prove possible. However the willingness of power station workers to co-operate in this and the question whether they might "black" materials delivered in this way would require careful consideration.

g. The NUM's formal opposition to nuclear power might well lead them to place greater emphasis than in the past on seeking to close down nuclear power stations during a miners' strike; and doing so would boost the morale of the strikers. Ministers might, therefore, conclude that increasing stocks of carbon dioxide at the power stations to 26 weeks would be worth serious consideration, despite the costs involved. However, doing so could draw unwelcome attention to the potential vulnerability of the nuclear stations, since the Electricity Boards estimated that the work required to increase the stocking capacity might take some 18 months in total. The Electricity Boards would expect a grant for the costs involved; this would require specific

Parliamentary authority which would draw attention to the measures being taken; it was unlikely that the true purpose of the proposed increase in storage capacity could be concealed. The risks involved in proposing an increase in storage capacity would therefore require close consideration. If replenishment of carbon dioxide were to be successfully prevented at the Scottish nuclear power station and these had to close down, the interconnector with the English electricity grid could not be operated at maximum capacity for more than ten weeks.

h. Dual firing with gas was not a practical option, because the gas supply system was inflexible and any sudden increase in demand for gas for the power stations could be met only at the expense of other gas consumers. Oil dual firing therefore seemed the best option, although the capital costs involved were substantial and difficult logistical problems would have to be overcome. Delivery of oil to the power stations by pipeline seemed likely to be the only safe approach; other methods would be too vulnerable to picketing. The costs of pipeline delivery would require further examination. Heavy fuel oil would require heated pipelines. It would be possible to deliver lighter grades of oil through the Government pipeline network; the costs of connecting sufficient extra power station capacity to that network would be relatively modest. However, consideration would be required of whether it would be possible during a miners' strike for the power stations to have first priority for the use of the pipeline network for a sustained period; whether the pipeline would provide sufficient capacity; whether operating the pipeline in this way was likely to give rise to industrial relations problems; and where the balance of advantage was likely to lie as between the extra expenditure involved in operating power stations on lighter grades of oil and the capital costs involved in constructing heated pipelines for heavy fuel oil.

THE CHAIRMAN, summing up the discussion, said that the Group had identified a number of areas where further work was required. The Department of Energy should prepare papers for the Group on whether the replenishment of ancillary materials at the power stations by unorthodox means was likely to give rise to industrial relations problems in the electricity supply industry;

on the handling of any decision to increase storage capacity for carbon dioxide at nuclear stations; and, in consultation with the Ministry of Defence, the practical problems involved in the delivery of oil to the power stations, if Ministers were to authorise a substantial programme of dual firing. The Department of Energy should also clarify how many small oil-fired power stations were likely to be closed in the next few years and how this would effect total oil-fired power station capacity.

The Group -

2. Invited the Department of Energy -

- i. to prepare notes on ancillary materials, carbon dioxide and the delivery of oil to the power stations as indicated by the Chairman in his summing up of the discussion.
- ii. to investigate how many oil-fired power stations were likely to be closed within the next few years and how this would affect total oil-fired power station capacity; and to report.

2. INDUSTRIAL COAL STOCKS

The Group discussed a Note by the Department of Energy, circulated under cover of MISC 57(83) 2, on the present level of industrial stocks of coal and coke and the measures that might be taken to persuade coal-burning industry to increase its stocks.

The following were the main points made in discussion -

- a. The Group would need to attempt to assess the relative importance of coal-burning industry to the economy and therefore how important it was to prolong its endurance of a miners' strike. The main industrial consumer of coal was the iron and steel industry, which already held relatively high stocks of coal and coke and could probably import sufficient to meet its requirements for a lengthy period. Even if this were not to prove possible the temporary closure of the iron and steel industry was unlikely to prove a critical constraint. A three month strike in the British Steel Corporation (BSC) had been endured without great difficulty; stocks of steel held by stockholders were relatively high; and most steel users could probably succeed in importing sufficient to meet their requirements throughout the duration of a miners' strike. However, the wider effects of the temporary closure of coal-burning industry would also need to be taken into account. Markets would be lost and unemployment would be increased. Although the relationships involved were complex, the Group's report ought to attempt an analysis of the consequences of the temporary closure of coal-burning industry.
- b. The case for offering discounts to industry to increase their coal stocks was not clear cut. The two main objections to doing so were: first, doing so might well seriously distort the market for coal and might eventually lead the National Coal Board's industrial customers to demand lower coal prices generally and not just in relation to extra stocks bought as a result of a special scheme. In principle coal-burning industry could be offered extra coal stocks on the same

basis as the Electricity Boards, namely that they paid for the extra coal only when it was used. But the administrative complications of such a scheme were likely to rule it out in practice. Second, the Government could be open to criticism if it were to encourage industry to increase its coal stocks by relatively small amounts without making clear that in its judgement a miners' strike was likely to last for substantially longer than the endurance offered by industrial coal stocks. On the other hand, industry might nonetheless welcome the extra endurance provided by even a small increase in its coal stocks.

c. The impact on endurance of amending the boiler conversion scheme to encourage larger coal stocking facilities was likely to be too small to be worthwhile.

d. Measures to encourage coal merchants to increase their stocks significantly were unlikely to affect endurance, since coal depots were bound to be picketed during a miners' strike.

e. It was not clear that increasing the production of coke for stocks would significantly help the BSC. This was a question which the Department of Industry might usefully explore with the Corporation.

THE CHAIRMAN, summing up the discussion, said that the Department of Industry should prepare an assessment of the importance of coal-burning industry for the economy and therefore of the need significantly to increase its endurance of a miners' strike. In the light of that assessment the Group would wish to consider further the various proposals for encouraging coal-burning industry to increase its coal stocks discussed in the note attached to MISC 57(83) 2. The Department of Industry should also explore very discreetly with the British Steel Corporation whether there might be advantages to them in accelerating the production of coke for stocks.

The Group -

Invited the Department of Industry

- i. to prepare an assessment of the importance of increasing coal-burning industry's endurance of a miners' strike as indicated by the Chairman in his *summing up* of the discussion;
- ii. to explore very discreetly with the British Steel Corporation whether there might be advantages for it in increasing the production of coke for stock.

Cabinet Office

21 February 1985

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MISC 57(83) 2nd Meeting

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CABINET

OFFICIAL GROUP ON COAL

MINUTES of a Meeting held in
Conference Room A, Cabinet Office on
FRIDAY 11 MARCH 1985 at 10.00 am

PRESENT

Mr P L Gregson
Cabinet Office
(In the Chair)

Mr J M M Vereker
Prime Minister's Office
(Item 1)

Mr N Wicks
Treasury

Mr G H Phillips
Home Office
(Item 1)

Mr B Miller
Ministry of Defence

Mr D Harrison
Scottish Office

Mr G Murray
Scottish Office

Mr J Leeming
Department of Industry

Mr G D Miles
Department of Transport

Mr P Carter
Department of Energy

Mr D H Metz
Department of Energy

Mr C Beauman
Central Policy
Review Staff

SECRETARIAT

Brigadier J A J Budd
Mr W Moyes

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1. PROLONGING POWER STATION ENDURANCE

The Group discussed Notes by the Scottish Office (MISC 57(83) 5) and by the Secretaries (MISC 57(83) 5), covering a paper by the Department of Energy, on prolonging power station endurance.

The following were the main points made in discussion -

a. The higher the level of power station coal stocks the greater was the risk that the trade unions in the power supply and oil industries might respond sympathetically to a request from the National Union of Mineworkers (NUM) not to co-operate with abnormally high levels of oil imports or power station oilburn. This risk would probably be heightened if Ministers were to implement a substantial programme of dual-firing, since during a miners' strike oil would then be burnt in power stations which were normally coal-fired and which were generally situated in or close to coal fields. There was little chance that the work involved in a programme of dual-firing, or the objectives underlying such a programme, could be concealed; and it would not be possible to confine conversion only to power stations situated away from the coal fields. It was difficult to assess how serious were the risks involved, but this was clearly an area of vulnerability which ought to be drawn to the attention of Ministers.

b. The Central Electricity Generating Board (CEGB) normally withdrew individual power stations from service for periods of up to 2 months during the summer for maintenance. There was also a statutory requirement that nuclear power stations should be withdrawn periodically for inspection. The CEGB's aim was to have the maximum generating capacity available by each October and to maintain this throughout the winter. The Department of Energy's paper attached to MISC 57(83) 5 assumed that winter levels of plant availability could be sustained throughout a miners' strike. It was not clear, however, that this would prove to be the case if a strike were to last for very much longer than 6 months. This was an aspect requiring discussion with the CEGB.

c. There was no obvious reason why the interconnector with the French electricity grid should not be used for a prolonged period on a one-way basis given the good will of the French authorities. However, this was a matter which would have to be explored in detail with the CEBG.

d. There were no technical reasons why the interconnector with the Scottish electricity grid should not be operated on a one-way basis throughout a miners' strike. Nor was this likely to be ruled out on industrial relations grounds. However, doing so would require the conversion to dual-firing of the Longannet power station at a cost of £80-100 million. It might well be more economic to increase the extent of dual-firing in the CEBG system, if Ministers were to decide in favour of this, and to dispense with the Scottish interconnector during a miners' strike. On the other hand, the conversion of Longannet might be preferable because of the relative ease of importing oil into it.

e. It had been established that the use of the Government pipeline network during a miners' strike need not be ruled out on grounds of national security; but consultations with the commercial users of the pipeline would be required to determine the consequences of doing so for them. It would take perhaps a year to arrange for sufficient power stations to be connected to the pipeline network. However, further consideration suggested that it might be possible to pipe heavy fuel oil over much greater distances than had previously been considered feasible. Consultations would be required with the CEBG before this could be finally confirmed. If this were to prove possible it would be preferable to install pipelines connecting relevant power stations to oil refineries or terminals rather than to rely on the strategic pipeline network, the capacity of which was very limited.

f. It was difficult to forecast the likely level of nuclear-generated electricity over the next decade. It was probable that the advanced gas cooled reactors (AGRs) would begin generating power this year. However, if it were to prove impossible to retain Magnox stations beyond their planned 25 year lives, which was not yet certain the withdrawal of these stations would begin in 1987 and would reach a peak in 1990-91. On

the assumption of a 25 year life for the Magnox stations, the proportion of nuclear-generated electricity in the CEBG system would increase from the present level of 5.1 gW to 7.4 gW in 1986, assuming that the AGRs at Dungeness, Hartlepool and Heysham were by then fully operational; thereafter it would fluctuate around 7.0 gW until the early 1990s. In Scotland, where there was only one Magnox station, the introduction of the AGR at Torness between 1987 and 1989 would significantly increase the preparation of nuclear-generated electricity; by 1989 nuclear capacity would meet about half of winter peak demand. In the light of this, the Group's report would clearly need to look beyond the mid-1980s in considering the likely level of power station endurance and the options for extending this. The actual lifetime of the Magnox stations would clearly be critical to the assessment of the likely level of nuclear-generated electricity during that period; some experts thought that a 30 year life would be quite feasible.

g. It would take about 5 years to convert a power station to dual firing, irrespective of its location. A large-scale programme of conversion would, however, take considerably longer in total, since only a limited number of coal-fired power stations could be withdrawn from operation for conversion at any one time. The costs of conversion to dual-firing discussed in the note attached to MISC 57(83) 5 did not take account of the increased operating costs which would be involved in the withdrawal of coal-fired stations. These might well be substantial. They ought, therefore, to be taken into account.

h. The CEBG planned to close down 2000mW of oil-fired generating capacity before 1987. There was no commercial justification for keeping this in operation or for mothballing it. However, consideration should be given to whether it might be cheaper to moth ball this plant than to provide 2000mW of dual-fired capacity to replace it. Its retention might also have advantages in terms of industrial relations. The South of Scotland Electricity Board (SSEB) saw no technical difficulties in keeping in a state of readiness those oil-fired power stations which were not normally utilised. The economic case for doing so as an alternative to increasing dual-fired capacity, had not been evaluated, although this seemed likely to be the cheaper option. There might, however, be

industrial relations difficulties. There could be no question of manning the stations concerned on a permanent basis. If the stations were to be brought on stream, staff would have to be transferred from the coal-fired stations which were being replaced. It was not clear that this would prove possible in practice, although it was relevant that the CEGB's plans assumed that staff would be willing to be transferred between power stations during a miners' strike. This was a matter on which the SSEB would have to be consulted. But if the transfer of staff were to prove possible, the Scottish electricity system could probably endure a miners' strike for an indefinite period.

i. The Group's report would have to include some assessment of the sensitivity of forecast power station endurance to projected growth in electricity demand.

j. It was argued that it ought to be possible for the CEGB to arrange for sufficient coal imports to the coastal power stations during a miners' strike and therefore for it to be unnecessary for these stations to be converted to dual-firing. On the other hand coal imports would be particularly provocative and the NUM would make every effort to stop all movement of coal, including imports, during a miners' strike. In practice some coal imports might well prove possible, but this could not be relied on and should not, therefore, be taken into account in assessing likely power station endurance. It was on balance less likely that oil imports would be disrupted, despite the fact that the extra quantities involved would be large and their purpose impossible to conceal. The greater danger with oil supplies was that the volumes required might not be immediately available depending on the state of the market.

k. If all the various uncertainties were to be resolved favourably, a lower level of dual-firing than that discussed in MISC 57(83) 5 might well prove sufficient. In these circumstances the preferable strategy might be to burn lighting-up oil at the power stations rather than heavy fuel oil. Some conversion work would still be required for this to be possible, but supplying lighting-up oil would provide a more plausible justification for the installation of pipelines. Burning

lighting-up oil would extend endurance by only a relatively modest amount. Nonetheless, consideration should be given to whether this approach might offer an intermediate option between endurance of, say, 12 months based on increasing power station coal stocks and indefinite endurance based on dual-firing and involving substantial capital expenditure.

1. There would be 20 weeks stocks of ancillary material at the power stations by November 1983 and the CEGB was confident that these could be made to last for up to 26 weeks during a strike. There was no possibility of providing power stations with indefinite supplies of ancillary materials, since many of these could not be safely stocked for lengthy periods or manufactured at the power stations. The Electricity Boards would therefore have to continue to rely on being able to increase stocks of these materials by unorthodox means of delivery during a miners' strike. They were confident that this would be possible.

THE CHAIRMAN, summing up the discussion, said that the paper attached to MISC 57(83) 5 had been of considerable help to the Group in identifying some of the options for increasing power station endurance in the medium and long term. The Department of Energy should consider further the likely level of nuclear-generated electricity during the period from the mid-1980s to the early 1990s. It should also consider, in consultation with the Scottish Office, whether it might be more economical to mothball oil-fired plants earmarked for closure than to convert other plants to dual-firing. The Secretariat would now prepare the draft of a report to Ministers. In considering that draft the Group would wish to examine whether it was possible to identify an intermediate option between power station endurance of 12 months, based on increasing power station coal stocks at a relatively modest cost, and indefinite endurance, based on conversion to dual-firing and involving substantial capital cost. Ministers might conclude that there were no significant advantages in such an option, but it was nonetheless important that they should be aware if such an option existed.

The Electricity Boards would clearly have to be consulted at some stage. The Department of Energy and the Scottish Office should consider further whether it would be preferable to delay consulting them until after the Group had had the opportunity to consider a first draft of its report to Ministers. If they were to conclude that early consultation was preferable, they would clearly wish to seek authority from their respective Secretaries of State. Finally, it had been assumed that Ministers would be able to consider simultaneously the Group's report and the separate work which was in hand on future policy towards the coal industry. However, if the latter were to take longer than had been expected, it would probably be necessary to seek early decisions from Ministers on some aspects of the Group's report.

The Group -

1. Took note, with approval, of the Chairman's summing up of their discussion.
2. Invited the Department of Energy -
 - i. to consider further the likely level of nuclear-generated electricity in the period between the mid-1980s and the early 1990s; and to report;
 - ii. in consultation with the Scottish Office, to consider whether it might be more economical to mothball oil-fired generating capacity earmarked for closure than to convert other capacity to dual-firing.
3. Instructed the Secretariat to prepare the draft of a report to Ministers.

2. THE INDUSTRIAL EFFECTS OF A MINERS' STRIKE AND THE SCOPE FOR INCREASING INDUSTRIAL ENDURANCE

The Group discussed a Memorandum by the Department of Industry (MISC 57(83) 4) on the industrial and economic effects of a miners' strike and the measures that might be taken to increase the endurance of coal-burning industry.

The following were the main points made in discussion -

- a. The most serious problems identified in MISC 57(83) 4 were the impact of a miners' strike on the cement industry and the effect of this on the construction industry. The question therefore arose whether it might be possible to arrange for coal imports during a miners' strike to certain parts of the cement industry so as to maintain a sufficient level of production. The cement processing plant at Northfleet was one of the largest in the world and could handle coal imports; other cement plants might also be able to do so. Urgent consideration should therefore be given to whether this approach would be feasible and worthwhile. The National Coal Board (NCB) might also be invited to consider how those cement plants, where the importation of coal would not be possible, might be encouraged to maintain higher coal stocks than normal.
- b. In theory the industrial and economic effects discussed in MISC 57(83) 4 should be manifest quite quickly once the endurance of coal-burning industry was exhausted. However, in practice the full effects of a miners' strike would probably take much longer than this to build up. Coal-burning industries would find ways to make their stocks last longer; and other industries would similarly adjust their patterns of operation so as to maximise their endurance. Nonetheless, industrial endurance would not nearly match that of the power stations. But it was best left to individual industries to decide whether to take contingency measures to protect themselves from the effects of a miners' strike and, if so, what these should be. It was now well known that power station coal stocks were high and that electricity supplies could be maintained for a very long period in the event of a miners' strike. This might encourage industries to give higher priority to

contingency planning than had previously been the case. On the other hand, industry might judge that the current level of power station coal stocks reduced the chances of a miners' strike occurring and also therefore the need to take special contingency measures.

THE CHAIRMAN, summing up the discussion, said that the Group was grateful to the Department of Industry for the helpful analysis contained in MISC 57(83) 4. Although the immediate industrial and economic effects of a miners' strike would undoubtedly be serious, the paper demonstrated that with perhaps the exception of the cement industry the industrial effects could probably be coped with for a very considerable period. The Department of Industry should explore with the Department of the Environment the scope for improving the endurance of the cement industry during a miners' strike by importing coal as indicated in discussion. MISC 57(83) 4 suggested some measures that the NCB might take to improve the endurance of coal-burning industry. Although the effects of these were relatively modest, they nonetheless seemed worthwhile pursuing both to demonstrate the Government's desire to take such steps as it could to minimise the impact of a miners' strike on industry and also in the event of a strike to provide industry with a few extra weeks in which to adjust their patterns of operation or arrange for alternative sources of supply. An early decision would be required from Ministers if these measures were to be put in hand in the spring as the NCB wish to do. There was, however, no case for a more ambitious programme to increase industry's coal stocks and stocking capacity; and no grounds for seeking to influence the judgement of those industries which would be most severely affected by a miners' strike about the need for making advanced preparation to endure it. The Treasury and the Department of Energy were in correspondence about the financing of the various measures to extend industrial endurance discussed in MISC 57(83) 4. He hoped that this aspect could be resolved quickly. The Secretariat would prepare a passage for inclusion in the Group's report to Ministers on the industrial and economic effects of a miners' strike and the measures that might be taken to alleviate this, drawing on the material in MISC 57(83) 4 and the further work which had been identified in discussion.

The Group -

1. Took note, with approval, of the Chairman's summing up of their discussion.
2. Invited the Department of Industry to consult the Department of the Environment about the scope for coal imports to cement processing plants during a miners' strike; and to report.
3. Instructed the Secretariat to prepare a passage for inclusion in the Group's report to Ministers as indicated by the Chairman in his summing up of the discussion.

Cabinet Office

14 March 1983

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MISC 57(83) 3rd Meeting

COPY NO 21

CABINET

OFFICIAL GROUP ON COAL

MINUTES of a Meeting held in
Conference Room D, Cabinet Office on
WEDNESDAY 13 APRIL 1983 at 3.00 pm

PRESENT

Mr P L Gregson
Cabinet Office
(In the Chair)

Mr T Burgner
Treasury

Mr G Murray
Scottish Office

Mr B D Winkett
Department of Industry

Mr I T Manley
Department of Energy

Mr D H Metz
Department of Energy

Mr D B Smith
Department of Employment

Mr C Beauman
Central Policy
Review Staff

SECRETARY

Mr W Moyes

SUBJECT

DRAFT REPORT TO MINISTERS

MEMOS

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DRAFT REPORT TO MINISTERS

The Group discussed the draft of a report to Ministers on power station endurance in the longer term and on coal burning industry, circulated under cover of MISC 57(83) 6.

In discussion of the timetable for the submission of the Group's report the point was made that the strategic review of the finances of the National Coal Board (NCB) was unlikely to be submitted to Ministers until June at the earliest. The Group's report on power station endurance in the longer term could only be usefully considered by Ministers at the same time as the strategic review. But decisions on measures to assist coal burning industry ought to be taken much earlier. It was, therefore, agreed that the Group should report separately to Ministers on coal burning industry, if possible before the end of April. The aim should be to complete the Group's report on power station endurance by about the end of May. Once the strategic review had been completed consideration would need to be given to how best to draw out the relationships between it and the Group's report; the best course might be to do so in a covering note to the latter.

In discussion of the structure of the draft report attached to MISC 57(83) 6 the point was made that it failed to draw out for Ministers the different scale of problems involved in dual firing and perhaps also in burning lighting-up oil as compared with those which arose with the strategy of maintaining power station coal stocks at about their present levels. The report also included no assessment of what a desirable level of endurance might be. However, it was unlikely that this could be undertaken satisfactorily. The better approach would be to illustrate for Ministers what the options were for endurance in the longer term and what the constraints might be on achieving these. It was also suggested that the Group's report might be simplified by treating the position in Scotland separately, perhaps in an annex, since further work now suggested that the endurance of the Scottish electricity grid could be made to match whatever level of endurance was achieved in England and Wales. This was, however, on the assumption that the interconnector between the two electricity systems might not be continuously available on a one-way basis throughout a lengthy miners'

strike. The Department of Energy and the Scottish Office should consider the impact of this on power station endurance in England and Wales and the steps that might need to be taken to enable the interconnector to be continuously available.

In discussion of the section of the draft dealing with coal-burning industry the following were the main points made -

- a. The estimates of endurance in paragraph 34 of the draft had been calculated on a somewhat optimistic basis. The Department of Industry would provide revised calculations and would also indicate the extent of the seasonal variation in endurance in each of the key industries.
- b. It had previously been assumed that during a miners' strike 50 per cent of normal cement consumption could continue to be provided. However, the Department of the Environment now took the view that a miners' strike would completely disrupt domestic production of cement and that imports could provide at most 20 per cent of normal consumption. This assumed that coal would not be imported into the Northfleet cement plant for the purposes of cement production. The feasibility of doing this could be determined only by consultations with its owners, the Blue Circle Cement Company. ^{It was not certain} ~~But the Department of the Environment were sceptical that~~ the import of coal into Northfleet would prove feasible. The Blue Circle Cement Company had not so far been consulted about the scope for importing coal into Northfleet, but it was argued that this should be put in hand at an early date. On the other hand, the point was made that to do so would incur too great a risk of a leak. It seemed very likely that coal imports would be severely disrupted during a miners' strike. The best course would therefore be for the Group's report to assume as a worst case that no coal imports into Northfleet would prove possible and that only 20 per cent of normal cement consumption could therefore be met. The Department of Industry should arrange for its input/output model to be rerun on this basis.
- c. The proposal in paragraph 40(a) was designed to persuade industry to maintain its coal stocks at about the maximum levels physically possible, rather than running them down as they would normally do. If

this and the proposal in paragraph 40(b) were to be implemented, normal consumption of cement could probably be maintained for around 20 weeks in total, taking into account the usual levels of stocks of cement and cement clinker. However, it was not clear that the proposals in paragraph 40(a), which had been devised when a miners' strike early in the year had seemed possible, remained well-directed at a strike beginning in the autumn. There was a danger that this approach might lead the NCB to offer discounts to customers for doing what they would in any case have done. The better course, in the case of the cement industry, might be to offer discounts along the lines proposed in sub-paragraph (b) but on condition that normal coal stocking sites were first filled to capacity. The Department of Industry and the Department of Energy should consult the NCB further about whether the proposal in paragraph 40(a) still seemed sensible and about whether that in paragraph 40(b) could be made more effective.

d. There was a real risk that the increase in the stocks held in coal depots proposed in paragraph 40(c) could be rendered ineffective by picketing, particularly if a miners' strike were to last for some time. However, there might well be time for increased stocks to be distributed from the depots before a miners' strike began or picketing became effective; and the costs involved were modest. On balance the risks involved in this option seemed worth taking.

e. The Group's report should also remind Ministers of the need to avoid offering greater discounts than strictly necessary. The Treasury would propose a draft.

In further discussion of the remainder of the draft attached to MISC 57(83) 6 the following were the main points made -

f. An early decision was required if Ministers wished the stocks of carbon dioxide at the power stations to be increased to around 20 weeks or higher by November 1984, and if they wished stocks of other ancillary materials to be increased to 26 weeks by the same date. The scope for doing so and the costs involved had already been established. The Central Electricity Generating Board (CEGB) was against doing so.

However, Ministers might well feel, particularly in the case of carbon dioxide, that it would be imprudent not to do so. The National Union of Mineworkers (NUM) was coming to be increasingly opposed to nuclear power. This might well lead them to pay greater attention to picketing nuclear stations than they had during previous disputes. If so, they might well discover the scope for disrupting the operation of nuclear stations by preventing the replenishment of stocks of carbon dioxide. However, any decision substantially to increase stocking capacity of carbon dioxide would be difficult to explain publicly and the work and the costs involved would be impossible to conceal. The danger, therefore, was that undertaking this work could unnecessarily identify this area of vulnerability well before the work in question had been completed. It would be easier to build substantially greater capacity in new nuclear power stations, but the effects of this on the endurance of the electricity system as a whole would be slight. Since early decisions were required the best approach would be for the Group to report separately on ancillary materials to Ministers.

g. The Group's report should remind Ministers of the past and continuing expenditure incurred in increasing power station endurance to the levels so far achieved. The Department of Energy and the Treasury would consider this aspect further and would jointly propose a draft to the Secretariat.

h. Each Magnox station was unique and decisions on when each should be closed down would therefore be taken individually. The first such cases would arise in 1987-88. It was impossible to predict at this stage what view might be taken at that time.

i. The CEBG and the South of Scotland Electricity Board (SSEB) remained concerned that their staff would come under intense pressure to do no more than their normal work during a miners' strike. In previous disputes this pressure had amounted in Scotland to physical intimidation. Overall, however, the assessment in paragraph 8(ii) seemed right.

j. Further work now suggested that the limit of the coal storage capacity of power stations in England and Wales would be around 40 million tonnes.

k. If it were to prove feasible to burn lighting-up oil along the lines proposed in paragraphs 23 and 24, endurance would be increased by perhaps 2 months assuming that 12 months endurance could be achieved by other means. The capital costs involved would be modest but the current expenditure very high. It was unlikely that power station workers would rule out this approach on the grounds that it involved excessive abnormal working. Consultations would be required with the commercial users of the strategic pipeline network to determine the impact on them and their customers ^{or} monopolising it to supply power stations during a strike. However, it might be best to delay such consultations until it was clear that Ministers wished this option to be pursued.

l. The CEBG was confident that staff would be prepared during a miners' strike to transfer between oil-fired power stations. But neither they nor the SSEB thought that it would be possible to transfer staff from coal-fired stations to oil-fired stations in order to prolong endurance.

m. It was difficult without detailed studies to specify with any precision what the costs of an extensive programme of dual-firing might be. However, the Group's report would have to indicate what the orders of magnitude were and what the trade off might be between increased operating costs during conversion and the speed of completion of the conversion programme. It should also remind Ministers that power station endurance would be significantly reduced during the conversion period. On balance it seemed unlikely that extensive dual-firing would prove to be a feasible option, but the Group's report would clearly have to assess it thoroughly.

THE CHAIRMAN, summing up the discussion, said that the Secretariat would prepare drafts of reports to Ministers on coal-burning industry and on ancillary materials which he hoped it would be possible to submit by the end of the month. The Departments of Industry and Energy should therefore supply the contributions identified in discussion to the Secretariat during the course of the following week. The Secretariat would circulate the drafts to the Group for clearance in correspondence if possible. The

Secretariat would also revise the draft of the Group's report on power station endurance in the longer term taking into account the points made in discussion. Departments should provide outstanding contributions to it as soon as possible. The aim should be to finalise the report by about the end of May. But it would not be submitted to Ministers until the Department of Energy's strategic review of the NCB's finances had been completed. Further consideration would be required of how best to draw out for Ministers the relationships between the two studies.

The Group -

1. Took note, with approval, of the Chairman's summing up of their discussion.
2. Instructed the Secretariat to prepare drafts of reports to Ministers on coal burning industry, ancillary materials and power station endurance in the longer term as indicated by the Chairman in his summing up.
3. Invited the Departments of Industry and Energy to review the proposals in paragraph 40 of the draft attached to MISC 57(85) 6 in consultation with the National Coal Board; and to report during the course of the following week.
4. Invited the Department of Industry to rerun the input/output model on the assumption that only 20 per cent of normal cement consumption could eventually be maintained during a lengthy miners' strike; and to report during the course of the following week.
5. Invited Departments to send to the Secretariat as quickly as possible the outstanding contributions to the draft attached to MISC 57(85) 6.
6. Invited the Department of Energy and the Scottish Office to consider the impact on power station endurance in England and Wales of the interconnector with Scotland were not to be continuously and fully utilised during a strike and the steps that might be taken to ensure that it could be continuously available on a one-way basis throughout a strike; and to report.
7. Invited the Department of Energy and the Treasury to prepare a passage for the report on power station endurance on the costs incurred so far in achieving current levels of power station endurance.

Cabinet Office

14 April 1985

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MISC 57(83) 1

COPY NO 21

16 February 1983

CABINET

OFFICIAL GROUP ON COAL

POWER STATION ENDURANCE IN THE LONGER TERM

Note by the Secretaries

Attached is a paper prepared by the Departments of Energy.

Signed J A J BUDD
W MOYES

Cabinet Office

16 February 1983

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POWER STATION ENDURANCE IN THE LONGER TERM

Note by the Department of Energy

Power Station Coal Stocks

1. The CEGB's present plans involve maintaining stocks of about 24 mt through till April (assuming average weather conditions), thereafter building up to 30 mt by September. Power Station coal stocks in Great Britain should not fall below about 26 mt this winter and will build up to 33 mt next autumn. The cost of the CEGB's stock build from 26 mt (last November) to 30 mt is estimated to be about £6/tonne.
2. The CEGB have expressed reluctance to plan for yet higher levels of coal stocks at power stations than 30 mt because of the visibility and cost of using land not normally employed for this purpose. It would probably be possible, however, to add another 2-3 mt by the winter of 1984 on existing land at a cost of perhaps £8-9/tonne (excluding the cost of the coal itself). If additional land were acquired, or leased land recovered, further coal might be put into stock over a further two year period (ie by 1986) at a rather higher cost.

Oil burn

3. The CEGB have at present 6000 MW of large modern oil-fired plant available and some 2000 MW of older plant. A further 3000 MW is being commissioned or is under construction, most of which should be available by next winter. The total will then be some 11000 MW, subject to the closure of any older stations. The Board intends to put some 3500 MW of the 9000 MW of modern plant in reserve because the expected balance between plant availability and demand over the next 10 years shows this to be acceptable, and

because of the cost savings that can be made. Units would be put into reserve on a rotating basis so that all generating sets at the oil-fired stations would be fully operational for part of the time, and for the remaining time kept on standby. The CEGB are confident that standby plant could be returned to service in an emergency within three weeks, the power stations being staffed so that key operators would be available to run all units simultaneously for a limited period. It would be necessary to draft in additional staff to support operations for a longer period of emergency.

4. A total of 11000 MW of main oil-fired plant operated on base load would save about 0.6 mt of coal a week in the winter at a gross cost of £40m, and 0.7 mt in the summer at a cost of £50m.

Fuel Endurance

5. For the period to next autumn CEGB endurance builds up to a maximum of 27 weeks for a miners' strike starting in May/June and thereafter should not fall below 26 weeks. These estimates allow for the planned level of coal stocks, maximum oil burn on main oil-fired plant, no replenishment of lighting-up oil, maximum use of the Scottish inter-connector, and the latest projections of electricity demand.

6. An additional 2-3 mt of coal stocks (paragraph 2) would increase endurance by about 3 weeks for a strike beginning in mid-November 1984, ie to early June. In the summer, when electricity demand is lowest, coal burn represents about a third of electricity output, on the basis of maximum oil burn and maximum nuclear availability. So loss of all coal-fired output would result in severe power cuts.

7. There is no obvious optimum level for power station endurance considered in isolation. Judgment about any target must be made in the context of the likely endurance of the miners in the event of a strike and the way in which such a dispute might be handled.

Arguably, a reasonable target to aim at would be a reliable period of power station endurance of six months, irrespective of the starting date and without power cuts. The latest plans of the CEGB would attain this objective.

Ancillary Materials

8. The CEGB are working to a very tight timetable to bring stocks of ancillary materials at power stations to a level sufficient for 20 weeks' endurance without replenishment by next November. The Board estimate that to achieve 26 weeks' stocks would take a period of 18 months and cost £22m.

9. The CEGB judge that with the most prudent use of essential commodities the 20 weeks could be stretched by a further 1-2 weeks. They believe that during such a long period there are bound to be opportunities for replenishment and have made arrangements for unorthodox forms of delivery. The Board are therefore prepared to accept a commitment to achieve a full 26 weeks endurance, without further expenditure on additional storage for ancillary materials, by November 1983.

Carbon Dioxide

10. The above endurance figures assume that carbon dioxide will continue to be delivered to nuclear power stations where stocks support 3 weeks normal operations. If deliveries ceased at the outset of a strike system endurance would only be reduced by 10-14 days.

11. Increasing carbon dioxide stocks to 26 weeks would cost perhaps £40m, take at least 18 months, and would be very visible (the new tanks would become a very obvious major feature of the stations concerned). During the 1972 and 1974 strikes carbon dioxide supplies continued to flow. The CEGB believe that this is likely to happen in a future strike since the majority of nuclear stations are remote from coal fields and there is no possibility of pickets blocking the primary fuel supplies. Moreover, plans have been laid for some clandestine carbon dioxide

deliveries should they be necessary. On the other hand the NUM is now "anti-nuclear" and may on that account picket nuclear stations more determinedly in the future; loss of any of the nuclear stations could be damaging psychologically.

Dual firing

12. Dual fired power stations are those with the capability of burning a high preponderance of one fuel or another, or a mixture of both. The position at present is that only about 10 per cent of coal-fired plant can be switched to oil or gas:

	<u>Coal</u>	<u>Coal/Oil</u>	<u>Coal/Gas</u>
Output (MW)	33000	1900	1600
Potential for replacement of coal (MW)	3500	900	1600*

(* the full switch to gas would take 3 months though 400 MW is available immediately)

Although most coal-fired stations can make additional use of their light-up burners to burn oil, only a few large stations have significant overburn capability of up to 25 per cent of their capacity.

13. Probably most coal-fired plant could be converted to dual firing though there would be technical difficulties at some stations including the provision of appropriate oil delivery and storage. Converting a large coal-fired station to dual-firing would cost around £80m and would take three years. For the dozen largest coal-fired stations the capital cost would be of order of £1000m and there would be additional system generation costs while base-load plant was out of service. The cost of operating on heavy fuel oil would be about 70 per cent higher compared with coal burn (over £100m a week for 12 large stations).

14. Heavy fuel oil is supplied to the CEB's oil-fired power stations very largely either by coastal tanker or by pipeline from the adjacent refineries. Conversion to dual firing of the main inland coal-fired stations, mostly located in the northern half of the country, would involve transport of 40-80 miles per

local refineries and ports and up to 200 miles from southern refineries. Heavy fuel oil can only be transported short distances by (heated) pipeline; otherwise heated rail tankers must be used or possibly barge transport in suitable cases. To cope with conversion of the main coal-fired stations in an emergency to oil burn would require substantial infra-structure investment in rail tankers and barges.

15. Lighter grades of oil could be transported by pipeline and burned using existing lighting-up burners in coal-fired stations. The cost of operating on light oil could be 180 per cent more than for coal burn. New pipelines to supply light oil to coal-fired power stations would be expensive but the CEB have explored with BNOC the possible use of the Government pipeline system in an emergency. Assuming the CEB could be given full priority over existing military and commercial users, some six power stations (10,000 MW) might be connected over 2 years at a cost of £4m to save around 100,000 mt of coal a week. For a 26 week dispute starting in November the additional oil burn would increase endurance by up to 4 weeks at a cost of around £400m for the light oil. It seems unlikely, however, that the CEB could be given full priority in the use of the Government pipeline system, though further studies would be needed.

16. Heavy fuel oil deliveries by surface transport (rail or barge) would be vulnerable to picketing. Pipeline supplies of light oil would be less vulnerable though there could be pressure on refinery and port workers, and on the ESI unions, to refuse to handle "abnormal" deliveries.

Department of Energy

16 February 1983

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MISC 57(83) 2

COPY NO 21

17 February 1983

CABINET

OFFICIAL GROUP ON COAL

INDUSTRIAL COAL STOCKS

Note by the Secretaries

Attached is a paper prepared by the Department of Energy.

Signed J A J BUDD
W MOYES

Cabinet Office

17 February 1983

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INDUSTRIAL COAL STOCKS

Note by the Department of Energy

Background

1 The attached table shows coal and coke consumption by industry in 1981. The market is dominated by a few large firms, chiefly in the iron and steel, cement, and paper sectors.

2 Statistical information on stocks at coke ovens is quite detailed and published monthly. At end-December, coke oven stocks were sufficient for 10 weeks consumption at 1982 levels. Information on stocks held by the rest of industry is confined to a quarterly survey of 120 firms, covering 2/3 of industrial consumption excluding iron and steel. These data suggest that average endurance varies between about 7 and 10 weeks, but the variations between individual firms are very large. Typically, the smaller coal users have lower endurance than the larger coal users. Some stocks of coal for industrial use are held by coal merchants/depots, serving small coal users. The larger customers buy direct from NCB.

3 The NCB have a good "feel" for the stock holdings of their larger industrial customers, and rather less information on smaller customers. Their estimates of normal stock levels are 1 or 2 weeks lower than those suggested by the quarterly survey figures. In the rest of this paper, we have used figures based on NCB's estimates of stocks and endurance.

Measures so far

4 Ministers agreed before Christmas to allocate £2.5m to finance discounts and extended credit terms offered by the NCB for the purpose of maintaining the stocks of their industrial customers (including BSC) at a higher level than they would otherwise have been. Arrangements have since been concluded which have increased (or will shortly increase) stocks at the two BSC works entirely dependent on NCB supplies, Llanwern and Scunthorpe,

by 8 weeks and 2½-3 weeks respectively above what the NCB believe the works would otherwise have held. In the rest of industry, arrangements have been concluded covering 175,000t of additional stocks, mainly in the cement industry. The NCB have made offers covering a further 150,000t, and expect these to lead to agreed arrangements within the next few weeks. They are also considering with ICI the establishment of an additional coal stock of about 1/4m tonnes, located in Cheshire, to extend endurance at the company's coal-fired works. Expenditure under these arrangements in the current FY may be about £2m.

Possible Next Steps

5 The NCB would like to build out from the measures already taken. They argue that a more ambitious scheme to build up stocks would have to be publicly avowed, which would be counterproductive.

6 Provided that the necessary finance is available in 1983/4, the NCB propose to continue to build up the stocks of their major industrial customers, using discounts/extended credit terms, to about the maximum extent of their present stocking grounds. This would give the large industrial coal users an average of 8 weeks stocks. The NCB would intend then to explore with large industrial coal users the possibility of extending stocking sites in return for further discounts on supplies; this might extend endurance by another 2 weeks. Small industrial users of coal typically have small stocks and very restricted stocking areas. In order to extend their endurance, the NCB intend to expand stocks of industrial coal held at coal depots (both those owned by Board subsidiaries and those in private hands) by offering discounts and extended credit. There may be scope for 20-30,000t of additional stocks in this form, and for an extension of endurance of small consumers from typically 4 weeks to 5-6 weeks. The value of increasing stocks at depots rests however on the assumption that they would not be subject to picketing by the unions which will need further clarification with the Board.

7 The costs of the measures at para 6 above at present envisaged by NCB might be £4m in 1983/4; though the Board may as the programme progresses be able to identify further useful possibilities for extending the endurance of industrial users.

The NCB's agreements with its customers in most cases are related to the holding of higher stocks until November 1983. If the government wished to maintain industrial coalstocks at a high level beyond that point, it would be necessary to meet the financing costs of the "additional" element of the stocks for a further period at a rate of about 55p per tonne per month. (The NCB meet the financing cost of accelerated delivery stocks at power stations, because these are stocks which would otherwise have added to those at the pit head. But they have made it clear that they are not willing to do the same for industrial coal, their stocks of which are not significantly above commercial levels.) There are likely to be problems of financial control over a long-term scheme, particularly in determining the level of stocks that a customer would have held in the absence of a scheme.

Longer-term Possibilities

8 The NCB have agreed to examine with government and BSC the practicality and cost of a scheme to accelerate production of coke for stock. One of the limiting factors on the stocking of high-volatile coking coal is the need to rotate the stock regularly to avoid deterioration of quality. Coke can be stored more easily. The Department of Industry are to examine the possibility of amending the boiler conversion scheme (assuming that it is extended beyond end-March) to encourage more extensive stocking facilities in newly-converted installations. But this would affect only new conversions to coal, not existing installations, and would increase average endurance only very slowly therefore.

DEPARTMENT OF ENERGY

17 February 1983

COAL/COKE CONSUMPTION BY INDUSTRY 1981

(m tonnes)

Iron and Steel (a)	8.7
Engineering & other metal	2.2
Food, drink & tobacco	0.7
Chemical & allied trades	0.5
Textiles, leather & clothing	0.5
Paper, printing & Stationery	0.6
Bricks, tiles, fireclay and building materials	0.4
China, earthenware & glass	0.02
Cement	2.0
Other	0.6
	<hr/>
	16.2
	<hr/>

Source: D/En Stats Digest 1982, tables 8, 11, 177

(a) proportion of coke oven output consumed X coal input, plus direct consumption of coal.

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MISC 57(83)3

8 March 1983

COPY NO 21

CABINET
OFFICIAL GROUP ON COAL

POWER STATION ENDURANCE IN SCOTLAND IN THE LONGER TERM

Note by the Scottish Office

Background

1. At the meeting of MISC 57 on 18 February the Scottish Office was invited to prepare a paper assessing the scope for increasing power station endurance indefinitely, by say 1986, and the likely order of costs involved in doing so. This paper discusses these points but does so in broad terms only as no approaches have been made to outside bodies. The paper discusses the problem both with and without the option of using the interconnector between Scotland and England.

2. Under normal winter running conditions, the nuclear, gas-fired and hydroelectric stations in Scotland are run at full capacity. The average winter weekly coal-burn is of the order of 130,000 tonnes. No oil-fired power station is used. The overall position is unlikely to change significantly before 1987 when the new AGR nuclear power station at Torness is scheduled to come on stream (see para 5 below). Torness apart, it would not appear feasible during the present decade to significantly increase the amount of nuclear, gas or hydro generating capacity in Scotland and the average winter weekly coal-burn of 130,000 tonnes would require to be replaced by an oil-burning capacity of some 1,650 megawatts to meet Scotland's electricity needs. With this level of oil-burning capacity only very minor electricity supply cuts might be required on exceptionally cold days in Winter. To provide maximum electricity supply using the interconnector to the CEBG a further 1,000 megawatts of oil-burning capacity would be required. Assuming an 80% availability factor for oil-burning stations, the total oil-burning capacity to meet Scotland's domestic needs would be 2,000 megawatts; if in addition exports are to be maintained to the CEBG the total would be 3,180 megawatts.

Oil-fired stations

3. These are Inverkip and Peterhead. Inverkip has 3 x 660 megawatt sets, one out of commission providing spare parts to other sets, one in rotating storage and one fully manned. Peterhead has two 660 megawatt dual-fired (oil/gas) sets, one of which is at present fired by gas liquids and the other which is partially manned to provide a minimum of 30 days' running each winter period. The SSEB are to submit a proposal in the course of their forthcoming Investment Financing Review to cut the manning level of the Inverkip set to day-running only for next winter.

Coal-fired stations

4. There are two major coal-fired power stations in the Scottish system, both situated on the Firth of Forth, one at Longannet with four sets providing 2,300 megawatts and the other at Cockenzie with two sets at 1,150 megawatts. Longannet and Cockenzie have a facility for the discharging of lighting up oil direct by pipeline from coastal tankers to the storage at the stations. Longannet is directly across the river from the BP oil refinery, Grangemouth - a distance of about 2 kilometres.

Nuclear stations

5. The Magnox and AGR nuclear power stations at Hunterston A and Hunterston B respectively are in full operation. The new 1,320MW AGR nuclear power station at Torness is not scheduled to raise power until the winter of 1987: even then it will be at least 1989 before full power, allowing for a 10% derating, is reached. We expect that the AEA plant at Dounreay and the BNFL plant at Chapelcross will continue to contribute to the grid as at present.

OPTIONS

Without the interconnector

6. The requirement is to provide 2,000 megawatts of oil-fired capacity. This could be provided by repairing the third set at Inverkip and fully manning that power station and the second set at Peterhead. The estimated additional cost would be £5m annually and this course of action would be very transparent, wasteful in trained manpower and would create morale problems. It would be extremely difficult to make the Board and the public accept this as a rational proposition. The alternative of moving staff from coal-fired power stations has been considered but discarded as being completely unrealistic. Alternatively the Inverkip set and the Peterhead set could be manned as at present and two of the Longannet or the two Cockenzie sets could be converted to dual-firing at an estimated cost of £60m-£80m which would include oil storage, pipelines etc.

With the interconnector

7. It can be seen from the study of the previous option that there is no alternative to a coal to dual-firing conversion if the interconnector is to be used for the supply of electricity to CEBG. The obvious station in this case is Longannet (four sets) at a cost of £80m-£100m. This, together with Inverkip and Peterhead on present manning levels, could provide the necessary capacity. However it may be that the cost of this conversion is uneconomic when compared to a conversion carried out by CEBG on one of their own stations.

Maintenance and breakdown

8. This assessment makes no allowance for major breakdowns but the 80% availability covers normal maintenance procedures. By basing the proposals on an average weekly winter coal-burn, allowance is made for annual overhauls during the summer months. Any major breakdown



during the winter months would necessitate reducing the flow of electricity through the interconnector.

Fuel oil supplies

9. As mentioned previously, both Longannet and Cocksennie have facilities for off-loading lighting up oil from coastal tankers but further work would be necessary to confirm that these could be uprated to take fuel oil. The upper reaches of the Firth of Forth can take tankers of 25,000 to 30,000 dead weight tons which on the assumption of 120,000 tonnes oil-burn per week would entail four tankers per week off-loading at Longannet. If this proposal is taken forward the Forth Ports Authority would have to contribute their view on this increased shipping activity in a busy port area. The idea of a fuel oil pipeline from Grangemouth to Longannet is attractive and could be considered but there are problems of deep mining in the area, closeness of Grangemouth dock entrance and the difficulty of finding pipeline access at the Grangemouth refinery. The cost of a pipeline would be approximately £3m.

OTHER OPTIONS

10. The options described above are based on the assumption that no electricity would be produced by coal-burn. This would seem to be a somewhat unlikely scenario, not least because at the start of any period of cessation of coal supplies, Scottish coal-burning power stations would be likely to have stocks equivalent to about 6 months endurance. The endurance period could be very considerably extended if enhanced oil-burn was used from the start and no electricity was exported on the interconnector to the CEGB. There are a range of options. If, for example, the Inverkip second set (at present in rotating storage) and the Peterhead second set (at present partially manned) were fully manned then, using maximum oil-burn from the outset, the domestic endurance of the Scottish system might be extended to about two years. (The additional manning costs would be £3m-£4m per year.) Further detailed work would be required to identify the best option (on grounds of cost, practicability etc) which would enable the endurance of the Scottish system to match that of the CEGB.

Ancillaries

11. This paper does not discuss the question of indefinite supplies of ancillaries which it is presumed will be discussed separately by the Group.

Summary

12. It is possible to supply Scotland's own electricity needs without recourse to coal-burn by making the existing oil-fired stations fully operational and manning them at an annual cost of £5m. The alternative option would be to convert 1,150 megawatts of existing coal-burning capacity to dual-firing at an estimated cost of £60-£80m. On the basis of an initial assessment, without consulting the Electricity Boards or considering the political implications, the alternative option might, on balance, appear preferable. Somewhat more modest options are discussed in paragraph 10. If, in addition to providing for domestic needs, the Scottish power stations are to provide exports



There are two major coal-fired power stations in the Scottish system, both situated on the Firth of Forth, one at Longannet with four sets providing 2,000 megawatts and the other at Cocksennie with two sets at 1,150 megawatts. Longannet and Cocksennie have a facility for the discharging of lighting up oil from coastal tankers to the storage at the stations. Longannet is situated on the river from the BP oil refinery Grangemouth - a distance of about 2 Kilometres

5. The Magnox and AGR nuclear power stations at Hunterston A and Hunterston B respectively are in full operation. The new 1,200MW AGR nuclear power station at Torness is not scheduled to raise power until the winter of 1987. Even then it will be at least 1988 before full power, allowing for a 10% de-rating, is reached. We expect that the AGR plant at Hunterston and the BWR plant at Capenhurst will continue to contribute to the grid as at present.

Without the interconnector

The requirement is to provide 2,000 megawatts of oil-fired capacity. This could be provided by replacing the third set at Hunterston and fully manning that power station and the second set at Peterhead. The estimated additional cost would be £1m annually and this course of action would be very transparent, wasteful in terms of manpower and would create morale problems. It would be extremely difficult to make the Board and the public accept this as a rational proposition. The alternative of moving sets from coal-fired power stations has been considered but discarded as being completely unrealistic. Alternatively the Inverkip set and the Peterhead set could be manned as at present and two of the Longannet or the two Cocksennie sets could be converted to dual-firing at an estimated cost of £60m-£80m which would include oil storage, pipelines etc.

With the interconnector

It can be seen from the study of the previous option that there is no alternative to a coal to dual-firing conversion if the interconnector is to be used for the supply of electricity to CEGB. The obvious station in this case is Longannet (two sets) at a cost of £80m-£100m. This, together with Inverkip and Peterhead on present manning levels, could provide the necessary capacity. However it may be that the cost of this conversion is unnecessary when compared to a conversion carried out by CEGB on one of their own stations.

Maintenance and breakdown

This assessment makes no allowance for major breakdowns but the availability covers normal maintenance procedures. By doing this on an average weekly water coal-burn, allowance is made for annual overhauls during the winter months. Any major breakdown

SECRET AND PERSONAL

of 1,000 megawatts on the interconnector then the only option is to convert existing coal-burning sets, probably at Longannet power station, to dual-firing at an estimated cost of £80-£100m. The above initial assessments are based on purely theoretical grounds; broader considerations, such as the implications of the location of Longannet in a mining area, have not been examined.

Scottish Office
8 March 1983



SECRET AND PERSONAL

10. The options described above are based on the assumption that electricity would be produced by coal-burn. This would seem to be a somewhat unlikely scenario, not least because at the start of any period of cessation of coal supplies, Scottish coal-burning power stations would be likely to have stocks equivalent to about 8 months endurance. The endurance period could be very considerably extended if enhanced oil-burn was used from the start and no electricity was exported on the interconnector to the CEGB. There are a range of options. If, for example, the Inverkeithing second set (at present in rotating storage) and the Peterhead second set (at present partially burned) were fully manned then, using maximum oil-burn from the outset, the domestic endurance of the Scottish system might be extended to about two years. (The additional running costs would be £25-£30 per year.) Further detailed work could be required to identify the best option for grounds of cost, practicability etc) which would enable the endurance of the Scottish system to match that of the CEGB.

11. This paper does not discuss the question of industrial supplies of another which it is presumed will be discussed separately by the Group.

12. It is possible to supply Scotland's own electricity needs with recourse to coal-burn by using the existing oil-fired stations (in operations) and running them at an annual cost of £25. The alternative would be to convert 1,150 megawatts of existing coal-burning capacity to dual-firing at an estimated cost of £50-£60m. On the basis of an initial assessment, without consulting the Electricity Board on considering the political implications, the alternative option might, on balance, appear preferable, somewhat more modest options are discussed in paragraph 10. It, in addition to providing for domestic needs, the Scottish power stations are to provide export



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9 March 1983

CABINET

OFFICIAL GROUP ON COAL

THE EFFECT OF CESSATION OF COAL SUPPLIES TO INDUSTRY,
AND THE DESIRABILITY OF MEASURES TO IMPROVE INDUSTRY'S
ENDURANCE

Paper by the Department of Industry

INTRODUCTION

1 Over 70% of total available coal supply is used in electricity generation. Only 16% of coal is used in industry, of which about half is used in the iron and steel industry (mainly in the form of coke and breeze). The remainder of coal is used domestically or in miscellaneous, small consumption sectors.

UK CONSUMPTION OF COAL IN 1981 BY SECTOR

<u>Coal use</u>	<u>% of total consumption</u>
Electricity supply industry	70
Iron and steel	7½
Other industries	6
Domestic	8½
Miscellaneous	8

(1) Source: Energy Balance in 1981 (Table 6):
Digest of UK Energy

(2) Coal use includes use of coal based secondary
fuels: coke and breeze, and coke over gas.

2 For many sectors within manufacturing, coal and its derivative secondary fuels are not critical in the direct sense. However, its importance should not be underestimated; some key industries,



notably iron and steel, cement and motor vehicles are ultimately heavily dependent on coal, and the 'knock-on' effect from an interruption in these industries would be considerable.

3 Manufacturing accounted for nearly 24% of total GDP in 1981 or nearly 30% of GDP with the inclusion of construction (which is indirectly, i.e. via cement, vulnerable to disruption of coal supplies). This does not take account of the interdependencies between the various sectors in the economy, and understates the amount of GDP dependent on, as opposed to directly generated by, manufacturing and construction.

4 The same is true for employment where about 6 1/2 million jobs (32% of total employment) depend directly on the manufacturing and construction sectors.

ENDURANCE LEVELS OF INDUSTRIAL COAL CONSUMERS

5 The recent paper by the Department of Energy (MISC 57(83)2 (paragraphs 1-3, and the annex) explained briefly what is known about industrial coal stocks. Annex 1 to this paper gives the average endurance level of major users in the industries most dependent on coal for the five most recent available dates. "Endurance" is calculated by relating the stock at the end of the quarter to coal consumption in that quarter. It does not, therefore, take into account planned levels of coal consumption.

6 There is some seasonality in manufacturers' endurance levels. This is most apparent for motor vehicle manufacturing and paper and board, but some seasonality appears to exist in all the major sectors. For total manufacturing however the seasonal variations in "endurance" as defined above are almost negligible. However, figures provided by the Iron and Steel Statistics Bureau suggest that there is stocking up in the summer months, and the NCB believe that industrial consumers build up stocks until November and run them down during the winter months, particularly if this helps to minimise stocks at the end of their own financial years.



7 The figures in the table relate only to the large users included in the survey. The following points about particular sectors should be borne in mind.

8 BSC has five main plants. Ravenscraig uses mainly imported coal (though it does use the output of one NCB pit). Its stocks are at Hunsterston on the coast 20 miles away, and are hauled by rail to the works. BSC Teeside (Redcar) can manage on imports of coal and coke if domestically produced products are not available. Port Talbot can also manage on imports. Llanwern and Scunthorpe currently use only domestic coal. Physically they could be supplied with coal from Immingham and Port Talbot docks respectively. However, this would have to move by train, as does the iron ore now, and this would probably be picketed successfully in the event of a coal strike.

9 The integrated steel works at Lackenby, Scunthorpe, Ravenscraig, Port Talbot and Llanwern stock coal and coke for their ironmaking operations and even manufacture coke for stock on occasions e.g. when the blast furnaces are not operating. Whilst increased coke stocks of bought in coke from, say the NCB, would increase the endurance of the operations at a time of restricted coal supplies, coke is not kept easily without significant deterioration and water absorption. Additionally at some works e.g. Redcar, special grades of coke are necessary which cannot be made easily by the NCB and therefore require blends of coal from abroad.

10 Coal also deteriorates during storage but the effects are much less pronounced and there is some possibility of making up deficiencies during coke making. Moreover BSC's policy is, as far as possible, to be self-sufficient in coke, because it is helpful to them to use the gas produced in the carbonisation of coal. British Steel would not, therefore, wish to stockpile more coke than was in their commercial interests.

11 Overall there is a reasonable chance that at least some of BSC's capacity could be kept going during a lengthy coal strike.

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In addition there is some possibility of substitution between the products of the west coast and east coast plants respectively, and so even if the most vulnerable plants (Llanwern and Scunthorpe) were to cease production BSC might still be able to meet some of the demand for a range (though not all) of its products.

12 In the food, drink and tobacco sector, the most important coal burners are sugar companies. The main coal-consuming establishments are those which deal with preliminary processing of sugar beet. Three out of the thirteen factories for processing use coal, as does one of the two cane sugar refineries. The sugar beet harvest is processed from October to January. Typically the sugar factories and refineries carry coal stocks of between 4 and 5 weeks.

13 Apart from sugar the main users of coal within the food, drink and tobacco sectors are cocoa, chocolate and confectionery manufacture, and brewers. A number of food processing firms and brewers are amongst those who have recently taken up coal-fired boiler conversion grants, but even so the food industry is not typically dependent on coal.

14 There are few large consumers in the chemical sector, though ICI currently have a major conversion project in Cheshire. In the case of paper and board endurance levels tend to range between 1½ and 8½ weeks, and the larger consumers tend to have the higher endurance levels. About a quarter of the mills depend on coal.

15 The cement industry is a large user of coal, and is very dependent on coal.

16 Most of the coal consumed in the engineering and metal trade is accounted for by motor vehicle manufacturing, and the aerospace industry, with a number of electrical engineering firms also of importance. In the vehicle industry a number of key plants are dependent on coal, and the industry's endurance level depends on them.

17 Only rubber and floor covering firms are included in the survey under the "other trade" category. The "other levels" endurance figure is therefore not representative. None of the firms use large amounts of coal.

EFFECTS ON OUTPUT, EMPLOYMENT AND BALANCE OF PAYMENTS OF A LENGTHY ABSENCE OF COAL SUPPLIES TO INDUSTRY

18 A simulation of the effects of a prolonged dispute in the coal mining sector on industry using the Department of Industry's input-output model suggests that the index of industrial production (excluding oil extraction and mining and quarrying) would fall by 23%, manufacturing output by 19%, while 1.2 million workers would be at risk of being laid off or put onto short time working. The main contribution to these comes from a halving of construction output and the impact of the closure of a small number of key car assembly plants. The GDP would be reduced by about 10%, and the effect on the balance of payments would be mainly that resulting from a loss of 10% of visible exports.

19 These figures depend on the following assumptions:-

- (1) The power stations continue in operation.
- (2) There are no movements of coal either home produced or imported.
- (3) The Unions do not block imports of items other than coal.
- (4) The dispute is of sufficient length to exhaust industry's stocks of coal.
- (5) The percentage of output that will be lost initially is the same as the percentage of energy requirements normally met by coal, coke and coke over gas.
- (6) The dispute is of sufficient length to exhaust manufacturers' stocks of cement and cement clinker (the material from which cement is ground) as well as their coal stocks. Manufacturers' stocks of cement and cement clinker are typically in the region of 4 to 6 weeks supply.
- (7) Except in the case of cement any short fall in home production is made up from imports.
- (8) Residual home production and imports are sufficient to satisfy only 50% of normal demand for cement.
- (9) Industrial exports fall in proportion to the fall in industrial output directly dependent on coal.

20 These assumptions may be untrue where coal forms only a tiny part of the energy requirement (possibly only for office heating for example) and also in the case where coal is the dominant or critical fuel without which the entire production activity would cease. However it is unlikely to be seriously misleading overall.

21 In the terms of the industrial impact, the most important assumptions are those for the cement industry, because of the potential impact on construction, and for the motor vehicle industry.

22 Annex 2 shows estimates of the first round effects of a cessation of coal supplies to a number of industrial sectors. In the table column 1 shows the percentage of output in each of the sectors identified which would be unaffected by a coal dispute. The most affected industries are cement (15% of output not affected), iron and steel (40%), motor vehicles (60%) and sugar (50%). Column 2 gives an estimate of how far under-utilised capacity in the unaffected part of the industry could be brought into play to reduce the shortfall. Cement remains the worst affected industry with only 20% of normal production available. Column 3 is an estimate of how much of domestic demand can be met by a combination of home output and imports. Of the industries identified cement is the only one where difficulty is seen in importing in sufficient quantity to satisfy home demand. In this case, only half of home demand is assumed to be met.

23 In addition to these first round effects, there would be consequences for the rest of industry. The most important of these is the impact that the short fall in cement supplies would have on the construction industry. Construction output is assumed to be reduced to a half as virtually all processes in construction are dependent on cement. Another significant area is the motor vehicle industry where the cessation of work at a small number of key assembly plants has an impact throughout the component supply industry, both in other parts of the motor vehicle industry itself and in other industries linked to vehicle production.

- 24 The outcome of the exercise points to the following:-
- (1) the cement industry is vulnerable to disruption in coal supplies;
 - (2) the construction industry is vulnerable to disruption in cement supplies;
 - (3) on the basis of the "endurance" figures in annex 1 a coal strike would have to last for some 12 - 15 weeks before the serious effects on the construction industry would occur;
 - (4) the likely endurance of a small number of key motor vehicle assembly plants is also significant.

25 Most of the effects on the economy could be expected to unwind after the strike was over. However some markets might be lost permanently, or be very difficult or expensive to regain.

POSSIBLE MEASURES TO INCREASE THE ENDURANCE OF COAL-BURNING INDUSTRY

26 It would normally be uneconomic to import industrial coal at present price levels unless the establishment using the coal was near a port. The main coal importing facilities are at establishments of the Electricity Generating Boards and British Steel. In the case of a coal strike it might be possible to import coal at places such as Shoreham and Avonmouth. Normally the Dover Harbour Board will not accept coal lorries, but this would presumably not apply in the event of a strike. Coal traders, and very large consumers such as cement companies, have enough knowledge of the trade to arrange imports if this was both economic and feasible in the light of the situation on picketing. The NCB would be prepared to give advice, but naturally would not wish people to become tied to imports after the strike has ended. It is unlikely that any Government action could usefully be taken to facilitate imports of industrial coal in advance of, or in the event of, a strike by British coal miners.

27 The main possibilities for increasing the endurance of coal-burning industry are therefore to provide subsidies for holding higher than normal stocks, or for holding stocks away from normal

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premises, or for site preparation, or for installing extra coal-stocking capacity such as coal silos. Measures which are overt - i.e. explicable only on the basis that they are to prolong endurance against the possibilities of a coal strike - would be controversial and might even be counter-productive.

28 The Departments of Industry and Energy have had further discussions with the NCB about the possibility of increasing coal stocks held by industrial consumers. The NCB's views and the figures given below relate to their judgement of the present situation, and are not based on the historic data given above. The NCB now believe that over the period April - November 1983 a rather larger programme should be possible than that which they discussed with us earlier (paras 6 and 7 of the note attached to MISC 57(83)2). The main possibilities are as follows: -

- (a) by offering discounts or extended credit terms equivalent to £4-£5/tonne they believe they can persuade many of their large industrial customers to increase stocks to the physical limits of their normal stocking sites. The delivery of about 750,000 tonnes of coal might be accelerated in this way, at a cost to NCB in discounts of £3-4m. This would increase the endurance of the cement industry to 10-12 weeks, and of most other large industrial customers to 8-10 weeks;
- (b) by offering discounts or extended credit equivalent to about £7/tonne, the NCB believe that they could persuade the three major cement manufacturers, and BSC, to stock additional coal on land away from their normal coal stocking grounds (e.g. in quarries associated with cement works). The higher level of discount would be necessary because of higher costs to the customer, for site preparation and internal coal haulage for example. It may be possible to increase stocks by 300,000 tonnes in this way, at a cost to NCB of £2-2.5m;

- (c) by offering discounts of £7/tonne or perhaps rather more, the NCB believe they could persuade 44 coal depots to take up to an additional 100,000 tonnes of industrial grades of coal, which could then be distributed to small industrial coal users in the event of a strike. The total cost to NCB might be £1m. It is difficult to assess the risk that such coal depots would be picketed (illegally) during a strike. There was little or no picketing of such depots in the strikes in the early 1970s, but that is not necessarily a guide to what would happen today. Against the risk of picketing, however, must be set the probability of pressure from small industrial consumers, who typically have short endurance and little scope for extra stocking on the premises, for the Government to intervene to secure an early settlement to a strike. Many of the depots are in the south and west of the country and in the northwest. Those in the northwest would probably be the more vulnerable to picketing.

29 The costs given above are the gross costs to NCB of discounts or extended credit terms. There would almost certainly be some offsetting savings to the NCB, but the NCB may well ask for full adjustment of their deficit grant and EFL as a condition of their co-operation. The additional stocks mentioned above would, in most cases, be held by the customers concerned until November, after which they would presumably wish to run them down, unless the NCB offered some further inducement to maintain stock levels. To the extent to which the costs of these inducements exceeded any offsetting savings the NCB would expect further compensation.

30 Even if all the measures referred to were adopted the endurance of coal-burning industry would still be very much less than that planned for the power stations. However doing so would help postpone, though not avert, the adverse economic effects referred to in paragraph 18 above, and also postpone the time at which pressure on the Government was exerted from industry. It



would not be worthwhile to amend the rules of the boiler conversion scheme (which will probably last only for a few more months) for this purpose. The subsidy for the extra stocking capacity would have to be 100%, and the effect on industry's total endurance would be marginal, as it would operate only on a few cases.

31 The desired measures should be put in hand as soon as possible and well before the colliery holidays.

CONCLUSIONS

32 The main conclusions are:-

- The average endurance of large industrial coal users at normal rates of burn varies according to industry and time of year, but might typically be in the region of 6 - 8 weeks.
- The average endurance of small to medium consumers would be significantly less, typically not more than 3 weeks.
- The effect on the economy of the absence of the output of coal-burning establishments in industry would probably be to reduce manufacturing output by about 20% and affect about 1.2 million workers.

The effect on the cement and motor vehicle industries is particularly significant.

- Measures could be taken to extend industrial endurance by two weeks or so, at a cost of not more than £5m and in the case of depots, a risk that at least some of the resulting stocks could not be moved during a strike because of unlawful picketing.
- If a national coal strike this autumn/winter is thought probable then the measures at (d) should be taken.

SECRET

ANNEX 1

	ENDURANCE LEVELS (3) OF COAL STOCKS HELD BY THE MAIN COAL BURNING ESTABLISHMENTS				
	1981 Q4	1982 Q1	1982 Q2	1982 Q3	1982 Q4
Food, Drink and Tobacco (including Sugar)	7	10½	10	17	5½
Food, Drink and Tobacco (excluding Sugar)	..	..	..	7½	6
Sugar	..	..	..	62½ (2)	5½
Chemicals and Allied Trades	4½	5	5	9½	6½
Textiles etc.	4½	5	6	14½	5½
Paper, Printing and Stationery	8½	4½	4½	6	9½
Bricks, Tiles, Fireclay and other building materials	6	6½	6	11½	6½
China, Earthenware and Glass	4½	5	6	8	7½
Cement	7½	8½	6½	9½	13
Engineering and Metal Trades	10	10	8½	18½	8½
Iron and Steel (1)	11	..	8	..	14½
Other Trades	12½	7½	6	11	12½
Total Manufacturing	8½	8 ² / ₅	6½	10	9½

Source: BSO quarterly purchases and stocks of fuel enquiry

.. Not available

(1) Source: Iron and Steel Statistics Bureau.

(2) Includes some companies with zero coal consumption during the quarter.

(3) Endurance level for companies actually operative during quarter = 30 weeks

Endurance levels are calculated by dividing total consumption of coal during the quarter by the level of stock at the end of the quarter.

No account is taken of expectations about the development of consumption

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ANNEX 2

FIRST ROUND EFFECTS ON INDUSTRY OF A DISRUPTION OF COAL SUPPLIES

	Percentages of current output		
	Output not dependent on coal	Available supply using excess capacity	Available supply using excess non-coal burning capacity and increased imports
Iron and Steel	40	65	100
Engineering and Metal Trades (excl. motor vehicles)	85	98	100
Motor Vehicles	60	65	100
Food, Drink and Tobacco (excl. sugar)	89	99	100
Sugar	60	61	100
Chemicals and Allied Trades	96	100	100
Textiles, Leather and Clothing	85	100	100
Paper, Printing and Stationery	83	91	100
Bricks, Tiles, Fireclay and other building materials	78	94	100
China, Earthenware and glass	97	99	100
Cement	15	20	50
Other trades	93	100	100

Source: 1974 Input-Output Tables
1982 Digest of UK Energy Statistics

Output using spare capacity not normally coal burning

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9 March 1985

CABINET

OFFICIAL GROUP ON COAL

PROLONGING POWER STATION ENDURANCE

Note by the Secretaries

Attached is a Note prepared by the Department of Energy.

Signed J A J BUDD
W MOYES

Cabinet Office

9 March 1985

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PROLONGING POWER STATION ENDURANCE

Note by the Department of Energy

Plant availability

1. The additional nuclear capacity that is due for commissioning in the next few years will make a significant difference to the endurance of the CEGB system. The AGRs at Dungeness, Hartlepool and Heysham should generate power this year. It is assumed that they will be fully operational by 1986/87, allowing for a ten per cent derating. This will increase the proportion of nuclear-generated electricity under normal operating conditions to about 22 per cent, compared with 13 per cent currently. Heysham II is intended to be available in 1987/88.

2. The 2000 MW inter-connector with France is planned to be fully operational by 1986/87. It is assumed that this could operate one way in an emergency.

3. There will be 11000 MW of main oil-fired plant available next winter. Closure over the coming years, probably in the period to 1987, of smaller, older stations seems likely to reduce capacity to about 9000 MW. This is the level currently available, though efficient modern plant will have replaced the older stations.

Residual coal requirements

4. CEGB coal burn at present is about 76 mt a year. Maximum and continual use of oil and nuclear stations and supplies from the SSEB could in theory reduce coal burn to about 48 mt a year. 30 mt of coal would have been burned after 26 weeks starting

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from early November - hence the 6 months endurance arising from the 30 mt of coal to be at the power stations next Autumn.

5. By 1986/87 - with the additional nuclear plant and with use of the French inter-connector - theoretical annual coal burn is likely to be reduced to 37 mt, again assuming maximum supplies from other sources; (new plant would save about 10 mt of coal, if fully used). A modest growth of electricity demand, corresponding to GDP growth of about 1½% pa, is also allowed for. Thus if power station stocks were increased to about 37 mt, endurance would be about one year. The cost of acquiring an additional 7mt of coal would be perhaps £70m, excluding the cost of the coal. Retaining power station coal stocks at 30 mt in 1986/87 would still give endurance of about nine months.

Indefinite endurance

6. Conversion of sufficient coal-fired plant to dual oil/coal firing to allow about 40 mtce a year of oil to be burned after all coal stocks had been consumed would, in theory, allow indefinite endurance based upon oil, nuclear plant and inter-connection alone. About 15,000 MW of dual-fired plant would be needed.

7. There are three Thameside coal-fired stations, one in South Wales and one in the North West which could conceivably be converted to dual firing using heavy fuel oil delivered by coastal tanker. This would give 7000 MW of oil-capacity, including 900 MW of existing dual-fired plant. The cost of conversion of these five stations would be of the order of £400m.

8. The further 8000 MW would need to be at inland sites - possibly one coal-fired station on Merseyside and three in South Yorkshire, near Humberside. The distances from the nearest refineries are of the order of 12 and 40-50 miles respectively. It seems possible that heavy fuel oil could be piped over these distances if the oil is heated sufficiently at the outset and pumped quickly enough. The costs of converting

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four power stations, pipelines and associated equipment would be of the order of £400m.

9. An additional 15000 MW of oil burning (dual-fired) plant would more than double the present maximum rate of oil burn, giving a gross cost of oil consumed of around £130m a week and a net additional cost of some £40-£50m a week, allowing for the coal saved, at current prices.

Conclusions

10. The following periods of endurance might in principle be available by 1986/87. The costs are in respect of fuel and are in addition to those incurred in achieving six months endurance in 1983/84:

- a. 9 months at no extra cost;
- b. 12 months, £70m for additional coal stocks;
- c. indefinite, £800m capital expenditure, net operating costs £25-30m a week.

11. The CEGB are spending £70m or more to increase stocks of ancillaries from 9 to 20 weeks and have estimated further expenditure of £22m to reach 26 weeks. Increasing stocks of ancillary materials to achieve 12 months endurance might cost of the order of another £100m-£150m, were this to be technically feasible.

12. The analysis in this paper has been carried out without consulting the CEGB. It assumes.

- no industrial relations' problems in acquiring and burning abnormal amounts of oil;
- prolonged use of the inter-connector with France on a one-way basis:

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- high levels of availability of nuclear and oil-fired plant;
- continuing supplies from Scotland. If not, an additional 1000 MW of CEGB dual-fired plant would be needed;
- technical feasibility, particularly in respect of supplying heavy fuel oil to inland power stations.

Department of Energy

7 March 1983

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29 March 1983

CABINET
OFFICIAL GROUP ON COAL

POWER STATION ENDURANCE IN THE LONGER TERM

Note by the Secretaries

Attached is the first draft of a report to Ministers.

Signed J A J BUDD
W MOYES

Cabinet Office

29 March 1983

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POWER STATION ENDURANCE IN THE MEDIUM TERM

Report by the Official Group on Coal (MISC 57)

INTRODUCTION

1. In [Great Britain] 70 per cent of coal consumption is for electricity generation at the power stations and a further 16 per cent is used by coal-burning industry (of which nearly half is for iron and steel production); only 8 per cent is used domestically; the remaining [6 per cent] is accounted for by a variety of miscellaneous consumers. The first priority, therefore, in withstanding a miners' strike is to maintain electricity generation; this has been the basis of the Government's strategy over the last eighteen months or so in building up power station coal stocks. The second priority is clearly to prolong the endurance of coal-burning industry so far as possible. In the event of a miners' strike it has been assumed, not unreasonably, that domestic and small industrial users would be able to use alternative sources of energy to a considerable extent. Where this is not possible some inconvenience and possibly hardship would have to be endured, although in the case of particularly vulnerable domestic users (the old, the sick etc) the National Union of Mineworkers (NUM) has maintained coal deliveries during previous strikes and there is no reason to believe that they would not do so again.

2. Against that background the purpose of this report is as follows:-

- (i) to consider how far it is feasible and desirable to extend power station endurance further; and

(ii) in respect of coal-burning industry:

- to assess the significant to the economy of the continued functioning of coal-burning industry during a miners' strike;
- to confirm the continued acceptability of a strategy which assumes considerably shorter endurance of coal-burning industry than of power stations; and
- to consider how far it would be feasible and desirable to increase the endurance of coal-burning industry.

POWER STATION ENDURANCE

3. The present position, following Ministerial endorsement of the Group's previous report, circulated on 3 December 1982, is that power station coal stocks are currently sufficient for [26] weeks and will fluctuate by a week or so around that level throughout the summer and autumn. Work is urgently in hand to provide 20 weeks stocks of ancillaries at the power stations by November. The Electricity Boards are confident that this will be achieved and that in the event of a miners' strike these stocks could be made to last for 26 weeks either by replenishing stocks by unorthodox means or by altering the normal pattern of power station operation.

4. The object of the analysis in this report is to look ahead to the mid-1980s and beyond when the endurance offered by current levels of power station coal stocks will be considerably extended by planned

changes in the pattern of electricity generation (principally an increase in the proportion of nuclear power and the coming into service of a very much larger interconnector with the French electricity grid. By the mid-1980s or so it might also be possible to extend power station endurance by very much longer through more radical measures than further increases in coal stocks (eg dual-firing), which have a longer timescale.

5. Our previous reports have tended to concentrate on the level of power station coal stocks. Since Scotland is very much less dependent on coal than England and Wales and can moreover export up to 1000mW through the interconnector, it was necessary to consider separately the desirable level of power station coal stocks in Scotland and in England and Wales. However, in this report the focus is the period of time over which power stations might endure. We therefore consider the position in Great Britain as a whole, since it would clearly be of limited value that power stations in Scotland might be put in a position to endure a miners' strike for longer than those in England and Wales. Thus the figures in this report for endurance and costs are for Great Britain, unless otherwise stated.

The likely pattern of electricity generation to the early 1990s

6. The present pattern of electricity generation is as follows:-

	Winter peak demand in	
	England and Wales	Scotland
coal		
oil		
nuclear and other		
sources		

The proportion of nuclear-generated electricity in the period up to the early 1990s will depend on two conflicting factors. First, the advanced gas cooled reactors (AGRs) at Dungeness, Hartlepool and Heysham should begin to generate power this year and should be fully operational by 1986-87; and the AGR at Torness is expected to come on stream in 1987 and to be fully operational by 1989. Second, if the working lives of the existing Magnox stations cannot be extended beyond the planned 25 years (/ ^{although} some experts think that a 30 year life might be possible) they will begin to be phased out in 1987 and their withdrawal would reach a peak in 1990-91. Assuming that the planned AGR programme is achieved and that the working lives of the Magnox stations cannot be extended beyond 25 years, nuclear power in England and Wales is likely to increase by 1986 to one and a half times its present level ie. [] per cent of electricity would then be generated by nuclear power. Thereafter it might fall back very slightly over the period to the early 1990s. If the working lives of the Magnox stations could be extended to 30 years the proportion of electricity generated by nuclear power would be [] per cent in 1986 and [] per cent in the early 1990s. A decision on this is expected [.....] In Scotland nuclear power should be sufficient to meet roughly half of indigenous winter peak demand by 1989.

7. The other development which needs to be taken into account in assessing future power station endurance is that the 2000mW interconnector with France is planned to be fully operational by 1986-87.

8. In assessing the effects of these developments on power station endurance realistic assumptions have to be adopted about certain key factors which are set out below.

(i) Technical constraints affecting power station operations

The Electricity Boards normally withdraw individual power stations systematically from operation during the summer for maintenance so that maximum capacity is available by October and continues to be available throughout the winter. In the case of nuclear stations there is a statutory requirement for them to be withdrawn periodically for inspection. In the event of a lengthy miners' strike lasting from November into the summer or longer maintenance might have to be deferred and as a result [.....]. We have therefore assumed [100 per cent] power station availability for the first six months of a strike falling to [per cent] thereafter.

(ii) Likelihood of industrial action by power station workers

There is always a risk that power station workers will respond to an appeal from the NUM during a miners' strike to do only their normal duties; the more abnormal working involved in prolonging power station endurance (for example by burning oil in dual-fired stations which normally burn coal or by utilising oil-fired stations that are normally kept in reserve) the greater is the risk. This can be offset to some extent by reducing the range of options which might arguably be abnormal, although were this to involve higher-than-normal levels of oilburn as a matter of routine the cost

would quickly become high.

(iii) Constraints affecting French interconnector

We have assumed that the French Government would not object to prolonged use of the new interconnector on a one-way basis during a miners' strike and also that there would be no technical constraint to such use. There is however a risk that use of the interconnector might be denied by sympathetic industrial action in France. If the interconnectors were not to be available for use, available electricity generating capacity in Great Britain would be reduced by [] per cent.

9. In the event of a miners' strike we assume that every measure would immediately be taken to conserve power station coal stocks i.e. maximum power station oilburn and the maximum use of the interconnectors with France and Scotland. The endurance offered by such measures in combination with the current level of power station coal stocks in 1986-87 and 1990-91 on alternative assumptions about the lives of Magnox power stations and about growth in electricity demand is estimated in the table below:-

Annual growth in electricity demand	Magnox lives	1986-87	1990-91
		weeks	weeks
0%	25 yrs		
	30 yrs		
1½% (central assumption)	25 yrs		
	30 yrs		
3%	25 yrs		
	30 yrs		

10. In practice power station endurance is, of course, constrained by the availability of ancillary materials. It is impossible to provide power stations with an indefinite supply of ancillary materials; many of the chemicals involved can be stored for only a limited period and could not be manufactured at the power stations. The replenishment of stocks of ancillary materials in the event of a lengthy miners' strike is therefore inevitable. The Electricity Boards are confident that this will prove possible and that the unorthodox means which may have to be employed will not give rise to serious industrial relations problems at the power stations.

11. The power station stocks of ancillary materials by this November could be made to last for up to 26 weeks in the event of a strike. To increase stocks to a level sufficient for nine months might cost [£] million. Further work would be required to determine whether this would be technically feasible. Implementation of such a programme might take [] years.

12. In the case of carbon dioxide stocks are normally sufficient for only three weeks. In his minute of 13 December 1982 to the Prime Minister the Secretary of State for Energy said that he would be pursuing with the CEB how quickly and at what costs stocks of carbon dioxide could be brought up to 20 weeks endurance allowing for a single replenishment. The position is as follows. [.....]

13. To summarise, maintaining the current level of power station coal stocks ought to provide power station endurance of nine months by 1986 at a cost of [£] million per annum, mainly arising from the extra handling involved in maintaining coal stocks of this size in

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a useable condition. In the event of a miners' strike net costs of [£] million per week (at current oil prices) would be incurred for maximum power station oilburn; a strike lasting for a full nine months would thus involve total extra expenditure of [£] million on oilburn.

14. The above analysis takes no account of any coal imports that might prove possible during a miners' strike. In a strike the miners would attach very great importance to preventing all movement of coal; and the level of imports is a matter of considerable sensitivity for them. It therefore seems only prudent to assume that all coal imports would be stopped. If, however, some coal imports into the Thameside power stations were to continue, [endurance would probably not be significantly extended, because the imported coal probably could not be distributed to other power stations; but the costs of oilburn would be reduced.]

Increasing power station endurance further

15. We consider in this section the measures that might be taken to increase power station endurance in the medium term beyond that which the maintenance of current levels of coal stocks seems likely to provide. The measures considered are as follows:-

- (i) a further increase in the level of coal stocks;
- (ii) the retention of existing oil-fired capacity which would otherwise be closed on commercial grounds;

- (iii) using the lighting-up burners to burn oil in coal-fired stations;
- (iv) dual-firing.

(i) increasing power station coal stocks

16. It would be possible to increase power station endurance to 12 months by increasing power station coal stocks by a further 7 million tonnes. To accommodate this some power stations would have to acquire new land and all would have to construct extra storage capacity; the cost of this would be perhaps £70 million. About [18 months] would probably be required to complete the land acquisition and receive any planning permission etc, that might be required. Thereafter it might take [] months for coal stocks to be built up. Thus if a decision to proceed were to be taken this Spring, the programme might be completed by [].

17. It is difficult to judge whether it would be physically feasible to increase coal stocking capacity beyond this. At some stage it will be difficult to find new land for stocking which is contiguous with power station sites and further scope for action on these lines may therefore be very limited. If it were to prove physically possible to increase endurance beyond 12 months by increasing power station coal stocks, a further [] million tonnes would be required for every [1] month extra endurance at a cost, in terms of land acquisition etc. of [£] million]. The time involved in achieving such a programme would depend on the target level of coal stocks; to achieve 18 months endurance would require [] million tonnes of coal and might take [] years to complete.

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(ii) retaining existing oil-fired capacity

18. By November oil-fired capacity in the CEGB system will increase from the present level of 9000mW to 11000mW [because]. The CEGB plans to close some 2000mW capacity of smaller, older oil-fired stations by about 1987 on commercial grounds. Thus, if these plans were to be implemented, total oil-fired capacity in 1987 would be unchanged from present levels.

19. The position in Scotland is slightly different. Three oil-fired sets could be made available at Inverkip and Peterhead power stations. However at present one of the sets at Inverkip is kept in storage while the other is fully manned, and the set at Peterhead is only partially manned. The South of Scotland Electricity Board (SSEB) intends shortly to propose to cut the manning level of the full-manned set at Inverkip to a level sufficient for only daytime running.

20. *or brought back into use* In each case the question ^{is therefore} arises whether the capacity should be retained so as further to conserve power station coal stocks during a strike.

21. The costs of retention and the likely impact on endurance are as follows:-

	costs of retention	net costs of extra oilburn in a strike	increase in endurance now	1986
England and Wales				
Scotland				
TOTAL				

22. There are two main counter arguments to this course of action. First, the capacity involved could not simply be mothballed; it would have to be kept fully operational [because]. Instructing the Electricity Boards to do this would run entirely counter to the pressure being put on them by the Government for maximum economy and efficiency.

Second, there could be industrial relations problems with the Scottish power station workers. It would not be sensible to keep the oil-fired stations fully manned. Staff would therefore be required to transfer from coal- to oil-fired stations once coal stocks had been exhausted. There is no certainty that they would be willing to do so, although in the case of the CEGB the assumption is that *they would*

(iii) burning lighting-up oil

23. At coal-fired power stations the lighting-up burners can be used to burn oil although in an inefficient manner. This technique could be used further to conserve power station coal stocks. Doing so from the start of a strike would increase endurance by [] weeks now and [] weeks by 1986 at a net cost of [£] million per week in oil. The modifications required to the burners to achieve this would cost [£] million and the work might take [] to complete.

24. The volumes of oil would be too great for re-supply by road tanker to be reliably feasible; pipelines would therefore have to be installed. This could most easily be achieved by utilising the Government's strategic pipeline network. The capital costs involved of connecting sufficient power stations to it might be [£] million

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and the work would take perhaps [a year] to complete. Monopolising the strategic pipeline throughout a lengthy miners' strike would not raise unacceptable problems of national security; [reference to the position of the commercial users].

25. [The main disadvantage of this approach is that burning lightening oil in this way would probably be regarded by the power station workers as highly abnormal, which would increase the chances of their non-co-operation.]

(iv) dual-firing

26. At present about [900 mW] of generating capacity is dual-fired in England and Wales. To enable power stations to continue independently of coal (ie indefinite endurance) would require the conversion of perhaps 27000mW capacity; this is equivalent to about 14 large coal-fired power stations. The capital costs of the conversion and of the installation of the necessary oil-supply pipelines would be perhaps [£1300 million]. In the event of a miners' strike the net costs of this level of power station oilburn would be [£ million] per week at present oil prices.

27. It is likely that a programme of this magnitude would take until [] to complete. The conversion of each power station is likely to take about three years irrespective of its location. During conversion the power stations will have to be withdrawn from normal operation and replaced by more expensive oil-fired plant. Only [] conversions could be undertaken simultaneously. This is likely to result in extra operating costs of the order of [£ million] per annum.

28. An alternative would be a more limited programme of dual-firing designed to make present levels of power station coal stocks last for, say, 2 years in the event of a strike; this is the current maximum endurance of the Scottish electricity system with present coal stocks. This would involve the conversion to dual-firing of 1500mW capacity at a capital cost of [£800 million]. The increased operating costs arising out of the conversion programme - which might take [] years - would be roughly [£ million]. The net costs of this level of oilburn during a strike would be [£] million per week.

29. The technical feasibility of either option has still to be explored with the Electricity Boards. One of the main constraints is the distance over which heavy fuel oil, which is extremely viscous, can be pumped.

30. Either programme of dual-firing carries a number of potentially serious industrial relations risks. It would be impossible for the programme to be carried out unobtrusively or for its real purposes to be concealed. The costs involved would almost certainly have to be met by grant, which would require Parliamentary authority; moreover the engineering work involved would be plainly visible. There is, *unimmediately the programme became public knowledge*, therefore, a risk of industrial action, particularly in the coal industry. Even if the work were to be completed without serious trouble, the power station workers might not be prepared to co-operate in extensive dual-firing during a strike on the grounds that this involved extensive abnormal working. It is difficult to assess in the abstract how serious a risk this is.

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31. A further area of risk is that the substantial volumes of oil required cannot be guaranteed to be immediately available in the case of the 15000mW option or to be available indefinitely in the case of the 27000mW alternative. However, the 6-9 months endurance provided by the current level of coal stocks ought to prove adequate time for oil supplies to be organised which would extend endurance substantially even if not indefinitely. If difficulties were to arise with this, the stocks which the oil companies are required to hold in this country could be drawn on; these would provide perhaps [] weeks supplies.

POWER STATION ENDURANCE OPTIONS

32. The costs of and endurance offered by the above options may be summarised as follows:-

	TOTAL CAPITAL COST (£M)	TOTAL INCREASED OPERATING COSTS (£M)	NET COST OF OILBURN DURING A STRIKE (£M per week)	TOTAL endurance by 1986	Timescale for completion (years)
I. maintain current levels of coal stocks					
II. increase coal stocks to 12 months endurance					
III. retain existing oil-fired capacity					
a. with current levels of coal stocks					
b. with coal stocks as in II.					
IV. burn lighting-up oil					
a. with existing levels of coal stocks					
b. with coal stocks as in II.					
V. dual firing					
a. 15000mW					
b. 27000mW					

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TOTAL
CAPITAL
COSTS
£ m

TOTAL
COSTS
OF
STOCKS
£ m

TIME FOR
COMPLETION
OF
PROGRAMME

Ancillaries

- a. maintain 20 weeks stocks (likely to be sufficient for 26 weeks in a strike)
- b. increase stocks to [9 months]
- c. increase stocks to [12 months]

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COAL-BURNING INDUSTRY

33. In terms of the percentage of their output dependent on coal the industries most vulnerable to a miners' strike are: cement, iron and steel, motor vehicles and sugar processing. For the remainder of manufacturing industry a lengthy interruption in coal supplies would be, at most, inconvenient.

34. The endurance of a miners' strike of each of the above four most vulnerable industries at the beginning of October 1982 was as follows:-

cement	13 weeks
iron and steel	14½ weeks
motor vehicles	[8½] weeks
sugar	5½ weeks

All manufacturing industry 9½ weeks

35. An extensive analysis has been undertaken of the possible industrial effects of a miners' strike using the Department of Industry's input/output model. The results of this are not necessarily accurate in detail, since past experience suggests that industry will be a great deal more flexible in adjusting to the effects of a lengthy miners' strike than can be predicted; but the orders of magnitude are probably about right. The most important assumptions adopted in this analysis are: that all significant movements of coal would be halted during a miners' strike; that, however, the trades unions would not

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prevent the movement or import of goods other than coal; and that imports of materials other than coal could readily be arranged.

35. The analysis concludes that for all sectors of manufacturing industry, except for cement, the shortfall in normal levels of production could generally be made good, probably indefinitely, by utilising spare capacity and increasing imports. In the case of cement these measures, and the production capacity which is not dependent on coal, could together sustain only 50 per cent of normal production. [Passage on the measures that might be taken to improve this situation.] ^{4 37.} Overall the model suggests that once manufacturing industry's stocks of coal had been exhausted (ie. on average after 10 weeks or so) manufacturing output might temporarily be reduced by perhaps 20 per cent and GDP by 10 per cent with unemployment and short time working rising temporarily as a result by perhaps 1-1½ million; the commercial and services sectors of the economy would, however, be less severely affected so long as power supplies could be maintained. The permanent effects on manufacturing industry of a lengthy miners' strike in terms of increased unemployment, lost production and markets not regained are much more difficult to predict. Experience of the miners' strikes in the early 1970s suggests that they might be fairly minor, but those strikes lasted for only [3-4] weeks.

36. Although the immediate effects of a miners' strike on the economy are clearly likely to be serious, the above analysis suggests that they would be far from intolerable so long as power supplies were maintained. This confirms that the correct strategy is to concentrate on improving power station endurance. Nonetheless, measures which might

improve the endurance of coal-burning industry at reasonable cost clearly ought not to be overlooked. We therefore consider in the following section the possibilities identified by the NCB.

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Measures to Increase Industrial Coal Stocks

37. It ought to be possible in principle for large industrial coal users to import coal during a miners' strike. Coal traders and large companies would know the market well enough to be able to do so; and no doubt the NCB would be prepared to offer advice to smaller firms despite its obvious concern to protect its markets. However in practice the miners are likely to succeed during a strike in blocking imports on any significant scale. The main scope for improving industrial endurance therefore lies in offering incentives to industry to increase their normal levels of coal stocks and perhaps also their coal stocking capacity.

38. The main possibilities based on extensive discussions with the NCB are as follows:-

- (a) by offering discounts or extended credit terms equivalent to £4-5/tonne the NCB believe they can persuade many of their large industrial customers to increase stocks to the physical limits of their normal stocking sites. The delivery of about 750,000 tonnes of coal might be accelerated in this way, at a cost to NCB in discounts of £3-4 million. This would increase the endurance of the cement industry to 10-12 weeks, and of most other large industrial customers to 8-10 weeks;
- (b) by offering discounts or extended credit equivalent to about £7/tonne, the NCB believe that they could persuade the three major cement manufacturers, and BSC, to stock additional coal on land away from their normal coal stocking grounds

(e.g. in quarries associated with cement works). The higher level of discount would be necessary because of higher costs to the customer, for example for site preparation and internal coal haulage. It may be possible to increase stocks by 300,000 tonnes in this way, at a cost to NCB of £2-2.5 million. This would extend endurance by [];

- (c) by offering discounts of £7/tonne or perhaps rather more, the NCB believe that they could persuade 44 coal depots to take up to an additional 100,000 tonnes of industrial grades of coal, which could then be distributed to small industrial coal users in the event of a strike. The total cost to NCB might be £1 million. It is difficult to assess the risk that such coal depots would be picketed (illegally) during a strike. There was little or no picketing of such depots in the strikes in the early 1970s, but that is not necessarily a guide to what would happen today. Against the risk of picketing, however, must be set the probability of pressure from small industrial consumers, who typically have short endurance and little scope for extra stocking on the premises, for the Government to intervene to secure an early settlement to a strike. Many of the depots are in the south and west of the country and in the north west. Those in the north west would probably be the more vulnerable to picketing.

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39. The costs given above are the gross costs to NCB of discounts or extended credit terms? There would almost certainly be some offsetting savings to the NCB, but the NCB may well ask for full adjustment of their deficit grant and EFL.

42. Given an early decision to proceed all the above measures could be completed by November. The increases in coal stocks resulting from them would probably be maintained by industry at least until next Spring and possibly for longer.

CONCLUSIONS AND RECOMMENDATIONS

43. Ministers are invited:-

In respect of the Government's strategy:

a. to note that the likely industrial and economic effects of a serious miners' strike as summarised in paragraph 35 would be serious but not intolerable provided that power supplies could be substantially maintained;

b. To agree that in the light of (a) above the main focus of the Government's strategy for enduring a miners' strike should continue to be power station endurance.

In respect of power station coal stocks:

c. to note that by 1986 the maintenance of current levels of power station coal stocks is likely to offer 9 months endurance subject to the replenishment of [some] ancillary materials;

d. To decide whether to seek any further increase power station endurance in the medium term and, if so, which of the options summarised in paragraph 32 they favour.

In respect of ancillary materials:

e. to note the present position on stocks of ancillary materials summarised in paragraphs 10-12;

f. To decide whether to seek any further increase in stock levels, and, if so, what the target level should be (illustrative costs of various levels are summarised in paragraph 32).

In respect of coal-burning industry:

g. to note the likely stock levels of the four most vulnerable sectors of manufacturing industry as summarised in paragraph 34;

h. To decide whether to take steps to increase industrial endurance in the short term and, if so, which of the options outlined in paragraph ⁴⁰38 they wish to pursue.

Cabinet Office

28 March 1983

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MISC 57(85) 7
22 April 1983

COPY NO 21

CABINET

OFFICIAL GROUP ON COAL

ANCILLARY MATERIALS: DRAFT REPORT TO MINISTERS

Note by the Secretaries

At the Group's meeting on 13 April (MISC 57(85) 3rd Meeting) it was agreed that a separate report should be prepared on ancillary materials. A draft of this is attached. Comments should be sent to the Secretaries by close of business on Wednesday 27 April 1983.

Signed J A J BUDD
W MOVES

Cabinet Office
22 April 1983

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POWER STATION ENDURANCE: ANCILLARY MATERIALS
Report by the Official Group on Coal (MISC 57)

INTRODUCTION

1. This report considers the steps that might be taken to increase further by November 1984 the stocks of ancillary materials held at the power stations. We shall shortly be reporting to Ministers on the options for increasing power station endurance of a miners' strike in the medium term. However, very early decisions are required on ancillary materials if the work required to increase stocks by November 1984 is to be completed on time. Hence this separate report.

THE PRESENT POSITION

2. By November 1983 power station coal stocks will provide some 26 weeks endurance of a miners' strike. Ministers have taken no decisions on the desirable size of power station coal stocks by November 1984, so we have assumed for planning purposes that they will remain unchanged at about 26 weeks.

3. Work is urgently in hand to increase stocks of ancillary materials at the power stations (except for carbon dioxide, see below) to 20 weeks normal use by November 1983 at a cost of some £70 million. The Electricity Boards have assured the Government, however, that this level of stocks could be made to last for up to 26 weeks in the event of a miners' strike, either by altering the normal pattern of power station operations or by replenishing stocks by other means.

4. In the case of carbon dioxide [(which is used as a coolant only in nuclear power stations)] stocks at the power stations are sufficient for three weeks normal use. There are no plans at present to increase this, because the Electricity Boards are confident, based on past experience, that pickets would be prepared on safety grounds to allow stocks of carbon dioxide to be replenished during a strike. However, in his minute of 13 December 1982 to the Prime Minister the Secretary of State for Energy expressed disquiet about this position and said that he would therefore be pursuing with the Central Electricity Generating Board how quickly and at what costs stocks of carbon dioxide might be brought up to 20 weeks endurance allowing for a

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single replenishment. This is discussed below.

OPTIONS: ANCILLARY MATERIALS OTHER THAN CARBON DIOXIDE

5. There seem to be two options for stocks of ancillary materials generally by November 1984, namely:-

(a) maintain stocks at the levels planned for November 1983 i.e. a guaranteed 20 weeks and in the view of the Electricity Boards a high probability that this level of stocks could be made to last for 26 weeks during a miners' strike. This option would involve no further expenditure beyond that already authorised; or

(b) increase stocks of ancillaries to match exactly the likely level of power station coal stocks by November 1984. We have assumed this to be 26 weeks. This would cost £22 million more than option (a) above.

6. The decision between these options turns on the practicality of replenishment of stocks of ancillary materials at the power stations during a miners' strike. The Electricity Boards are confident that this will prove possible [by, for example]. They, therefore, oppose any increase above the level of stocks planned for November 1983 i.e. they favour option (a). If, however, their judgement were to prove incorrect and replenishment were to prove impossible, power station endurance would be limited to [] weeks, even when steps had been taken to conserve lighting^{ing} oil, which in this context is the most important ancillary, whatever other measures might have been taken to increase the endurance of fuel supplies well beyond this.

7. The assessment of the Electricity Boards' views on this turns on a judgement about the likely scale of picketing at the power stations by the time a miners' strike had lasted unsuccessfully for about 4-5 months. On the one hand picketing might well by then have dwindled to the point where replenishment would be possible. But the possibility clearly cannot be ruled out that the extent and intensity of picketing would increase the longer the dispute lasted; if so, the replenishment of all ancillary materials would almost certainly prove impossible since some of these (eg those chemicals which require specialised containers) can only be transported by road.

8. The cost of the work already in hand to provide 20 weeks supplies of ancillaries is some £70 million; the extra cost of guaranteeing 26 weeks supplies of ancillaries would be £22 million.

OPTIONS: CARBON DIOXIDE

9. Increasing stocks of carbon dioxide at the power stations beyond their normal level of 3 weeks raises somewhat different considerations. If stocks of carbon dioxide at the nuclear power stations were to run out these power stations would have to be closed down. This could be completed safely, but if all nuclear stations were to be affected total endurance of a strike might be reduced by some [] weeks. However, in previous miners' strikes the scope for reducing electricity supplies in this way was not exploited by the miners, if, indeed, they were aware of it. The nuclear stations were generally not picketed, but where they were the replenishment of stocks of carbon dioxide was never seriously impeded, ostensibly on safety grounds. However, it clearly cannot be assumed that the same would happen in any future miners' strike. Unlike in the early 1970s the NUM is now firmly opposed to nuclear power. They might well now be aware that the operations of power stations could quickly be impeded during a strike by denying supplies of carbon dioxide; and any attempt by the Electricity Boards to oppose this for reasons of safety would clearly suit the NUM's wider purposes.

10. There would therefore seem to be a good case in principle for increasing stocks of carbon dioxide to the level of stocks of other ancillary materials. The problem is that the work involved would take about 18 months to complete. Since the construction of large storage tanks would be required, this work could not be concealed for very long. Moreover, the Electricity Boards would almost certainly insist that the costs involved (of the order of £ million to increase stocks to 26 weeks) should be met by a special grant, for which Parliamentary approval would be required. Thus, public attention would quickly be drawn to the increase in stocking capacity well before the work could be completed, and the reasons for the increase would be difficult to obscure. The danger, therefore, is that the measures required to increase stocking capacity could unnecessarily draw the attention of the trade unions, particularly the NUM, to this area of vulnerability, perhaps at a time when the risks of industrial action in the pits was quite high. Increased stocking

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capacity could more easily be installed in nuclear stations still under construction, but the impact of this on endurance over the next 18 months or so would be very slight.

11. The decision for Ministers is thus whether the advantage of having 26 weeks assured stocks of carbon dioxide at the power stations in the event of a miners' strike after November 1984 outweighs the disadvantage that the work required to achieve this will increase the likelihood that the nuclear power stations will be disrupted in the event of a miners' strike before November 1984, thereby reducing endurance by perhaps [] weeks.

CONCLUSIONS

12. Ministers are invited to decide whether:-

(i) in the case of ancillary materials other than carbon dioxide stocks by November 1984 should be:-

(a) maintained at their November 1983 level; or

(b) increased to 26 weeks at a cost of £22 million;-

(ii) in the case of carbon dioxide stocks by November 1984 should be:-

(a) maintained at the present level of 3 weeks; or

(b) increased to the level of ancillary materials generally at a cost of [£ - £] million.

Cabinet Office

22 April 1983



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MISC 57(83) 8

COPY NO

4 May 1985

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CABINET

OFFICIAL GROUP ON COAL

COAL-BURNING INDUSTRY: DRAFT REPORT TO MINISTERS

Note by the Secretaries

At the Group's meeting on 13 April (MISC 57(83) 3rd Meeting), it was agreed that a separate report to Ministers should be prepared on measures to assist coal burning industry. A draft of this is attached. The aim is to submit this to Ministers early next week at the same time as the Group's report on ancillary materials, the final version of which will shortly be circulated to the Group. Comments on the attached draft should therefore be sent to the Secretaries by close of business on Friday 6 May.

Signed J A J BUDD
W MOYES

Cabinet Office

4 May 1985

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INCREASING INDUSTRIAL ENDURANCE OF A MINERS' STRIKE

Report by the Official Group on Coal (MISC 57)

INTRODUCTION

1. The current pattern of coal consumption in Great Britain is as follows:-

electricity generation	70 per cent
industry	16 per cent
domestic consumption	8 per cent
miscellaneous	6 per cent

Most of the industrial consumption is accounted for by large firms; at least 80 per cent is consumed in major establishments, and nearly half is used by the iron and steel industry.

2. The above figures clearly demonstrate that in the event of a miners' strike the Government's first priority must be the maintenance of electricity supplies, which is the basis of the present strategy; and that the second priority must be to prolong the endurance of coal burning industry so far as possible. It is not unreasonable to assume that domestic and commercial users would often have access to alternative sources of energy to a considerable extent. Where this was not possible some inconvenience and possibly hardship would have to be endured, although in the case of particularly vulnerable domestic users (the old, the sick etc) the National Union of Mineworkers (NUM) has maintained coal deliveries during previous strikes and there is no reason to

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believe that they would not do so again.

3. The purpose of this report is:-

- a. to assess the significance to the economy of the continued functioning of coal burning industry during a miners' strike;
- b. to confirm the continued acceptability of a strategy which assumes considerably shorter endurance of coal burning industry than the power stations; and
- c. to consider how far it would be feasible and desirable to increase the endurance of coal burning industry.

In order to set the remainder of this report in context Ministers should be aware that work currently in hand on possible power station endurance in the medium term, on which we shall be shortly reporting to Ministers, suggests that by the mid-1980s power station endurance of a miners' strike might be 9-12 months or even more.

THE INDUSTRIAL AND ECONOMIC EFFECTS OF A LENGTHY MINERS' STRIKE

4. The industries whose output is entirely or very largely dependent on coal and which would therefore be most quickly affected by a miners' strike are as follows:-

- iron and steel
- cement
- motor vehicles
- sugar processing

Other industries which would be affected eventually are parts of the engineering and metal trades (including aerospace and electrical engineering), the paper and board industries and, to a lesser extent, the chemical industry.

5. However, for all industries except cement production the shortfall in domestic production occasioned by a miners' strike could be made good, probably indefinitely, through increased imports or extra production by manufacturers not dependent on coal. In particular, in the case of iron and steel it seems likely that production could be maintained at two of the five main plants (Redcar and Port Talbot) since these are normally supplied with coal by ship.

6. The production of cement is totally dependent on coal. Since cement is heavy and bulky it is not normally imported in significant quantities. However, in the event of a miners' strike it might prove possible to import about 20 per cent of normal cement consumption. Moreover, if the major cement works at Northfleet were successfully to import coal during a miners' strike (which it is capable of doing, but normally does not), its continued cement production plus cement imports might together provide up to 40 per cent of normal domestic consumption.

7. The economic effects of a miners' strike would build up only gradually as industrial stocks of coal and raw materials ran out and were gradually replaced by imports. The possible eventual economic effects of a lengthy miners' strike have been analysed using the Department of Industry's input/output model. Once coal burning industry's stocks of coal and raw materials had been exhausted the impact on the economy would be to reduce GDP by around 20 per cent, to increase unemployment by about 1½ million, or possibly slightly more, and to worsen the balance of payments by £3-5 billion. This is on the assumption that only 20-40 per cent of normal cement supplies could be maintained. If on the other hand normal supplies of cement could be maintained, which is not thought possible, the economic effects would be relatively modest. The reduction in GDP would be around 5 per cent and unemployment might increase by only around ½ million. The impact on the balance of payments, however, might be much greater, involving a worsening of possibly £9 billion. [This is because the maintenance of a relatively high level of economic activity through the continued operation of the construction industry would mean that imports would continue at about the normal level, but the cessation of other coal burning industries would have a disproportionately large effect on the level of exports.]

8. It is impossible to predict what, if any, the permanent effects on manufacturing industry would be of a lengthy miners' strike in terms of lost jobs, production and markets. There has never been a really lengthy miners' strike on which to base such an analysis. However, it is generally true that the lasting effects on the economy of strikes are often less serious than were supposed before or during the strike.

9. The above analysis suggests that, although the immediate effects on the economy of a prolonged miners' strike would be serious they would not be intolerable so long as power supplies were maintained. This confirms that the correct strategy is to concentrate on improving power station endurance. Nonetheless, measures which might improve the endurance of coal burning industry at reasonable costs are clearly worth considering, particularly in the case of the cement industry and to a lesser extent vehicle production. The possibilities which have been identified in consultation with the National Coal Board (NCB) are discussed in the following section.

POSSIBLE MEASURES TO INCREASE INDUSTRIAL COAL STOCKS

10. The NCB believes that industrial coal stocks are normally at their highest in October, because the NCB traditionally increases prices on 1 November; industrial action associated with the NUM pay claim can normally be expected in the winter; and heating requirements are greater in the winter. The average endurance of major establishments in manufacturing industry as a whole was 9½ weeks at the end of September 1982, based on coal consumption during the fourth quarter of 1982. Because of the likelihood of a miners' strike at that time, this level of industrial coal stocks is believed to be close to the physical limits of normal stocking sites. The average endurance, calculated on the same basis, of major establishments in the four most vulnerable industries was as follows:-

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iron and steel

16 weeks (this is untypically high because of depressed production; a more typical figure would be 6-8 weeks)

cement

11½ weeks

motor vehicles

6½ weeks

sugar

9 weeks

Small industrial consumers typically have endurance of not more than 3-4 weeks.

11. In principle industrial coal users might import coal during a miners' strike. Coal traders and large companies would know the market well enough and the NCB would be prepared to offer advice despite its obvious concern to protect its markets. However, in practice the miners are likely to succeed during a strike in blocking abnormal imports on any significant scale. The main scope for improving industrial endurance lies, therefore, in offering to industry incentives to increase their levels of coal stocks above what they would otherwise have been and perhaps also their coal stocking capacity. The options for doing so are discussed in the following paragraphs. These generally build on the arrangements which the NCB has already negotiated with a number of its major customers, including the cement companies, following the decision taken by Ministers before Christmas to allocate £2.5 million to finance discounts and extended credit terms by the NCB for the purpose of ensuring that industrial coal stocks were maintained at [about the October 1982 level rather than being run down towards the end of the financial year, which is the normal practice for most companies.]

The Cement Industry

12. The present arrangements with the three cement companies provide

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for their coal stocks in October 1983 to be sufficient for about 18 weeks normal consumption in the case of one company and 10-12 weeks [Why has the effect on one company been greater?] in the case of the other two.] It ought to be possible to bring the coal stocks of all three up to between 16-18 weeks, but this would require new arrangements involving in total about 200,000 tonnes extra coal at a cost of £5-6 per tonne. [In addition, stocks of cement and cement clinker are normally sufficient for a further 4-6 weeks normal consumption. Thus, the total endurance of the cement industry would be 20-24 weeks if this measure were to be implemented.]

The British Steel Corporation

13. The endurance of the British Steel Corporation's two major plants which are dependent on NCB coal (Llanwern and Scunthorpe) is currently only about five weeks. The NCB considers that there is no practical chance of building up stocks further at Llanwern if the [low/high] present/rate of/production there continues. The level of coal stocks at Scunthorpe could in the NCB's view be increased from the 6 weeks planned for October 1983 to perhaps [weeks], but the local works management is apparently disinclined to do so. [Passage on/whether this matters.]

Motor Vehicles

14. The existing arrangements should bring stocks very close to capacity - about 6 weeks - at British Leyland, but the NCB are currently considering whether this could be improved by exceptional measures.

Other Major Industries

15. The present arrangements with most other large coal consumers should provide for an average endurance of about 10 weeks by October 1983. The NCB considers that it ought to be possible to raise this

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substantially [quantify] by offering an additional incentive of about £5 per tonne relating to total additional coal stocks of 450,000 tonnes.

Smaller industry

16. Stock holding on their own sites by smaller industrial companies away from the immediate coal field area is limited, and it is unlikely that such companies' endurance would exceed 3 or 4 weeks. NCB consider that with a determined effort this could be raised to 5 or 6 weeks at a cost, probably, of £6 a tonne on a total tonnage of about 150,000 tonnes. A number of consumers in this category are supplied from depots, and the total stockholding for this category could be raised to an equivalent of 7 weeks consumption if additional deals were made to hold increased stocks of industrial coal at depots. This would be more expensive per tonne because of double handling, and NCB estimate that this would cost about £7 to £8 a tonne on a total tonnage of 80,000. If both measures were implemented, endurance of smaller firms might then be [about 6] weeks on average.

larger

17. The NCB would plan to use about 15 of the 44/coal depots throughout the country for this purpose. Many of the 44 depots are in the South and West of the country, and in the North West. Those in the North West would probably be the more vulnerable to picketing, but the location of coal there would probably be the more valuable to industry. There was little or no picketing of these depots in the strikes in the early 1970s, but that is not necessarily a guide to what would happen today. Against the risk of successful picketing, however, must be set the probability that some coal could be got away from these depots in anticipation of a strike. Moreover, this measure would make it easier for the Government to resist pressure during a miners' strike from

small industrial consumers for it to be settled quickly.

Special strategic stocks

18. Another problem relates to the concentration of industrial consumers in and near the coal fields who typically can hold little or no stock on their premises, and normally draw coal direct from the pit. NCB believe that it would be possible to organise strategic stockholding for these customers, involving perhaps up to 150,000 tonnes. This would give them endurance of perhaps around 7 to 8 weeks, but would be more expensive because some of these sites would need to be specially equipped. The cost of this provision would be between £8 and £10 per tonne. [Passage on likelihood of effective picketing.]

Summary of Costs

19. To summarise, the total costs of the above schemes are as follows:-

cement	£1-1.2m
other large industries	£2.2m
small industries	£0.9m
coal depots	£0.6m
strategic stocks	£1.2 - 1.5m
TOTAL	£5.9 - 6.4m

DISCUSSION OF THE OPTIONS

20. All the above measures are designed to maximise stocks by November 1983, and if they are to be implemented fully early decisions will be required. The question of whether further measures should be taken to increase stocks in the longer term, and, if so, what these

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should be, are matters for later decision. It is very likely that further incentives would be required since, if there is not a miners' strike, industry's normal inclination would be to run down their coal stocks towards the end of the financial year.

21. The approach of offering subsidies to industry to increase coal stocks or to maintain them at higher levels than normal carries the risk that the subsidy will be spent on measures which industry would anyway have taken of its own accord. The NCB's view is that in general industry will only build up its coal stocks and maintain them at relatively high levels if there is a clear threat of early industrial action in the coal industry; and that at present industry does not generally perceive such industrial action taking place in the foreseeable future. Its judgement, therefore, is that the subsidies proposed above will be required if the endurance of coal burning industry is to be increased. It is clearly impossible completely to avoid the risk that a subsidy will be offered needlessly. This risk can, however, be minimised by concentrating subsidies on those industries where increased endurance is of particular importance to the economy as a whole (ie the cement industry) or where the industry concerned is least likely to take measures of its own accord to improve its endurance of a miners' strike.

22. The other problem raised by this approach to improving industry's endurance is the difficulty of financial monitoring. Detailed monitoring is unlikely to be possible in the near future, because it will necessarily be based on information provided by the NCB about customers' planned stock levels and the pattern of delivery to them, and this is likely to be imprecise. However, this position could not be

allowed to continue for very long without a real risk of criticism from the Parliamentary Accounts Committee. [Thus, if Ministers decide that schemes along the lines discussed above should be introduced this year and perhaps in the future, better systems of monitoring will have to be devised. The Treasury, the Department of Energy and the NCB are considering this question.]

23. The discussion in paragraph 7 above of the extent to which the economic effects of a miners' strike would be mitigated by maintaining as high a proportion as possible of normal cement supplies suggests that the measure discussed in paragraph 12 to increase the endurance of the cement industry to a total of around 20-24 weeks would be worthwhile. These would cost £1-1.2 million. The economic impact of the cessation of other large coal-burning industries is, however, relatively modest. Arguably these industries are as least as well placed as the Government to assess whether they should take special steps to increase their endurance beyond the average of 10 weeks which will be achieved by October 1983. The case for offering subsidies of up to £2.2 million to do so (ie the measures in paragraphs 13-15 above) does not therefore seem well-founded.

24. There might, however, be a case for taking steps to ease the pressure on those smaller industries whose endurance of a miners' strike is likely to be least (ie the measures discussed in paragraphs 16-18 above). If the problem of picketing at depots and at strategic stocks near the pitheads could be overcome this might cost up to £3 million. If not, and the measures were confined solely to increasing the coal stocks held by small industries on their own sites, the cost would be around £0.9 million.

FINANCING THE SCHEMES

24. The costs given above are the gross costs to the NCB of discounts or extended credit terms in the period 1 April - 31 October 1983. The NCB have argued that they represent also a reasonable measure of the net additional costs to them, the benefits to the Board of earlier payments being balanced by the costs of disruption of delivery patterns when the additional stocks are drawn down at the end of the period. However, it is not clear how rapid or disruptive a run-down of stocks by industrial customers will occur in November; and it is possible that it will not happen at all, if, for instance, Ministers agree a scheme to maintain stocks at high levels for a further period. The Department of Energy has proposed to the Treasury that the Government should meet the full costs to the NCB of discounts/extended credits (ie the figures in paragraph 19 above) through increases in the Board's EFL and Deficit Grant limits, but that, if the scheme to increase industrial coal stocks continues beyond November, the costs would be adjusted downwards by a retrospective calculation of the financial benefits to the NCB.

CONCLUSIONS

25. Ministers are invited:-

- (i) to note the likely industrial and economic effects of a lengthy miners' strike as set out in paragraphs 4-8 above;
- (ii) to agree in the light of that that the Government's strategy should continue to be to give first priority to power station endurance and that it is acceptable that the endurance of coal burning industry should be less, perhaps considerably so, than that of the power stations;

- (iii) to note the likely stock levels of the four most vulnerable industries as set out in paragraph 10;
- (iv) to decide which, if any, of the measures to increase industrial endurance discussed in paragraphs 12-18 the NCB should be authorised to take at a total cost of up to around £6 million;
- (v) to note the problems involved in the financial monitoring of such schemes (paragraph 22).

Cabinet Office

3 May 1983

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MISC 57(83) 9

COPY NO 21

11 May 1985

CABINET
OFFICIAL GROUP ON COAL

ANCILLARY MATERIALS

Note by the Secretaries

A copy of the final version of the Group's report, which is now being submitted to Ministers, is attached for information.

Signed J A J BUDD
W MOYES

Cabinet Office
11 May 1985

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POWER STATION ENDURANCE: ANCILLARY MATERIALS
Report by the Official Group on Coal (MISC 57)

INTRODUCTION

1. This report considers the steps that might be taken to increase further by November 1984 the stocks of ancillary materials held at the power stations. We shall shortly be reporting to Ministers on the options for increasing power station endurance of a miners' strike in the medium term to 9-12 months or more. However, very early decisions are required on ancillary materials if the work required to increase stocks by November 1984 is to be completed on time. Hence this separate report.

THE PRESENT POSITION

2. By November 1983 power station coal stocks will provide some 26 weeks endurance in the event of a miners' strike. Ministers have taken no decisions on the desirable size of power station coal stocks by November 1984, so we have assumed for planning purposes that they will remain sufficient to provide 26 weeks endurance.

3. The Central Electricity Generating Board (CEGB) has urgent work in hand to increase stocks of, or manufacturing capability at power stations for, essential ancillaries (other than carbon dioxide, for which see below) to 20 weeks normal use by November 1983. The cost of about £70 million is being borne by the Board. The CEGB judge that with prudent use and with the deliveries that should be possible during a strike lasting for up to 6 months, 20 weeks stocks should be stretchable to 26 weeks. The Board is therefore prepared to accept a commitment to 6 months endurance without further expenditure on storage facilities for or additional stocks of ancillaries.

4. In the case of carbon dioxide (which is used as a coolant only in nuclear power stations) stocks at the power stations are sufficient for 3 weeks normal use. There are no plans at present to increase this. The CEGB believe that, since the majority of nuclear power stations are remote from the coal fields and there is no possibility of pickets influencing the primary fuel supply, picketing would be sporadic and not determined. Moreover, past experience is

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that pickets would be prepared on safety grounds to allow stocks of carbon dioxide to be replenished during a strike. However, in his minute of 13 December 1982 to the Prime Minister the Secretary of State for Energy expressed disquiet about this position and said that he would therefore be pursuing with the Central Electricity Generating Board how quickly and at what costs stocks of carbon dioxide might be brought up to 20 weeks endurance allowing for a single replenishment. This is discussed below.

OPTIONS: ANCILLARY MATERIALS OTHER THAN CARBON DIOXIDE

5. There seem to be two options for stocks of ancillary materials generally by November 1984, namely:-

- (a) maintain stocks at the levels planned for November 1983 i.e. a guaranteed 20 weeks and in the view of the CEGB a high probability that this level of stocks could be made to last for 26 weeks during a miners' strike. This option would involve no further expenditure beyond that already authorised; or
- (b) increase stocks of ancillaries to match exactly the likely level of power station coal stocks by November 1984. We have assumed this to be 26 weeks. This would cost £22 million more than option (a) above.

In the case of option (b) it is likely that the CEGB would seek reimbursement of the expenditure involved from the Government. This could well involve a grant, which would have to be announced publicly.

6. The decision between these options turns on the practicality of replenishment of stocks of ancillary materials at the power stations during a miners' strike. The CEGB is confident that this will prove possible; it has laid plans for unorthodox deliveries, including the use of large helicopters, to all power stations during a miners' strike. The Board is, therefore, as noted above, prepared to accept a commitment to achieve 26 weeks endurance on the basis of 20 weeks normal stocks. However, the possibility clearly cannot be excluded that the extent and intensity of picketing would increase the longer the dispute lasted. If in these circumstances replenishment were to prove impossible power station endurance would be determined by the availability of ancillary materials and, after allowing for measures to ensure the most economical use of such materials, might be limited to perhaps 22 weeks.

OPTIONS: CARBON DIOXIDE

7. Increasing stocks of carbon dioxide at the power stations beyond their normal level of 3 weeks raises somewhat different considerations. If stocks of carbon dioxide at the nuclear power stations were to run out, these power stations would eventually have to be closed down. However, the CEGB estimates that 3 weeks stocks of carbon dioxide could in practice be made to last for up to 6 weeks at full output or rather longer at reduced output. Even if all the nuclear stations were eventually to have to close down, coalburn in other stations would have to be increased by only about 15 per cent to make good the shortfall; the CEGB therefore estimates that total endurance of a strike would be reduced by only about 2 weeks. In previous miners' strikes the scope for reducing electricity supplies in this way was not exploited by the miners, if, indeed, they were aware of it. The nuclear stations were generally not picketed, but where they were the replenishment of stocks of carbon dioxide was never seriously impeded, ostensibly on safety grounds. However, it clearly cannot be assumed that the same would happen in any future miners' strike. Unlike in the early 1970s the NUM is now firmly opposed to nuclear power. They might well now be aware that the operations of power stations could quickly be impeded during a strike by denying supplies of carbon dioxide; and any attempt by the Electricity Boards to oppose this for reasons of safety would clearly suit the NUM's wider purposes.

8. There would therefore seem to be a case in principle for increasing stocks of carbon dioxide to the level of stocks of other ancillary materials. The problem is that the work involved would take about 18 months to complete. Since the construction of large storage tanks would be required, this work could not be concealed for very long, particularly given the need for planning permission. Moreover, the CEGB would almost certainly insist that the costs involved (of the order of £40 million to increase stocks to 26 weeks) should be met by a special grant, for which Parliamentary approval would be required. Thus, public attention would quickly be drawn to the increase in stocking capacity well before the work could be completed, and the reasons for the increase would be difficult to obscure. The danger, therefore, is that the measures required to increase stocking capacity could unnecessarily draw the attention of the trade unions, particularly the NUM, to this area of vulnerability, perhaps at a time when the risk of industrial action in the pits was quite high.

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CONCLUSIONS

9. Ministers are invited to decide whether:-

- (i) in the case of ancillary materials other than carbon dioxide stocks by November 1984 should be:-
 - (a) maintained at their November 1983 level pending decisions on coal stocks and endurance in the medium term; or
 - (b) increased to 26 weeks at a cost of £22 million;
- (ii) in the case of carbon dioxide stocks by November 1984 should be:-
 - (a) maintained at the present level of 3 weeks; or
 - (b) increased to the level of ancillary materials generally at a cost of up to £40 million.

Cabinet Office
4 May 1983

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MISC 57(83) 10

COPY NO 21

12 May 1985

CABINET

OFFICIAL GROUP ON COAL

INCREASING INDUSTRIAL ENDURANCE
OF A MINERS' STRIKE

Note by the Secretaries

A copy of the Group's report is attached for information.

Signed J A J BUDD
W MOYES

Cabinet Office

12 May 1985

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INCREASING INDUSTRIAL ENDURANCE OF A MINERS' STRIKE

Report by the Official Group on Coal (MISC 57)

INTRODUCTION

1. The current pattern of coal consumption in Great Britain is as follows:-

electricity generation	73 per cent
industry	16 per cent
domestic consumption	7 per cent
miscellaneous	4 per cent

Most of the industrial consumption is accounted for by large firms; at least 80 per cent is consumed in major establishments, and over 60 per cent is used by the iron and steel industry, including substantial imports.

2. In the event of a miners' strike the Government's first priority must be the maintenance of electricity supplies, which is the present strategy. As the table above demonstrates, industry is the only other substantial user of coal. The achievement of lengthy power station endurance therefore raises the questions of how far industrial endurance might similarly be extended and what the effects would be if coal burning industry were temporarily to cease operation during a miners' strike. The purpose of this report is therefore:-

- a. to assess the significance to the economy of the continued functioning of coal burning industry during a miners' strike;
- b. to confirm the continued acceptability of a strategy which assumes considerably shorter endurance of coal burning industry than of the power stations; and
- c. to consider how far it would be feasible and desirable to increase the endurance of coal burning industry.

In order to set the remainder of this report in context, Ministers will recall that the level of power station endurance planned for November 1985 is 26 weeks.

3. There seems no need to consider special measures to improve the endurance of domestic and other minor coal consumers. It is not unreasonable to assume that they would often have access to alternative sources of energy to a considerable extent. Where this was not possible some inconvenience and possibly hardship would have to be endured, although in the case of particularly vulnerable domestic users (the old, the sick etc) the National Union of Mineworkers (NUM) has maintained coal deliveries during previous strikes and there is no reason to believe that they would not do so again.

THE INDUSTRIAL AND ECONOMIC EFFECTS OF A LENGTHY MINERS' STRIKE

4. The main industries whose output would be directly affected by a loss of coal supplies are as follows:-

iron and steel
cement
motor vehicles

Other industries which would be affected eventually are parts of the engineering and metal trades (including aerospace and electrical engineering), the paper and board and sugar processing industries and, to a lesser extent, the chemical industry.

5. However, for all industries except cement production the shortfall in domestic production occasioned by a miners' strike could probably be made good for the duration of a lengthy miners' strike through increased imports or extra production by manufacturers not dependent on coal. In particular, in the case of iron and steel it seems likely that production could be maintained at two of the British Steel Corporation's (BSC) five main plants (Redcar and Port Talbot) since these are normally supplied with imported coal by ship. Whether production could also be maintained at Ravenscraig would depend on whether the movement by rail of imported coal from Hunterston to Ravenscraig continued during a miners' strike.

6. In the case of motor vehicle production, some of British Leyland's major plants are dependent on coal and might, therefore, have to close temporarily. The effects of this would clearly be felt not only by the Company itself but also by its component suppliers.

7. The production of cement is totally dependent on coal. Cement is not normally imported in significant quantities. However, in the event of a miners' strike it might prove possible to import about 20 per cent of normal cement consumption. Moreover, if the major cement works at Northfleet were successfully to import coal during a miners' strike (which it is capable of doing, but normally does not), its continued cement production plus cement imports might together provide up to 40 per cent of normal domestic consumption.

8. Given that normal electricity supplies would continue for up to 26 weeks, the industrial and economic effects of a lengthy miners' strike would build up only gradually, since different establishments have different durances; there would, however, be significant step changes when production had to cease at those vehicle plants dependent on coal and, more importantly, when supplies of cement were exhausted. The possible economic effects of a lengthy miners' strike have been analysed using the Department of Industry's input/output model. This suggests that once industrial coal stocks were exhausted and supplies of cement reduced to the 20-40 per cent of normal, GDP might be reduced by around 20 per cent and unemployment increased by about 1½ million, or possibly slightly more. The model attributes the bulk of these effects to the reduction in cement supplies. If the normal level of cement supplies could be maintained, the economic effects would be relatively modest; GDP would be reduced by only around 5 per cent and unemployment might increase by only ½ million. The most serious effect seems likely to be on the balance of payments. The model suggests that the adverse impact might range from £3½-5½ billion, with cement supplies of 20-40 per cent of normal, ^{to} up to £9 billion if normal levels of cement supplies were to be maintained. (The reason for this apparently paradoxical relationship between the level of cement supplies and the total impact on the balance of payments is that the greater the level of cement supplies the greater the level of total economic activity and therefore the higher is the demand for imports, while the level of exports is unlikely to vary much with the availability of cement supplies.)

9. It is impossible to predict what, if any, the permanent effects on manufacturing industry would be of a lengthy miners' strike in terms of lost jobs, production and markets. There has never been a really lengthy miners' strike on which to base such an analysis. However, it is generally true that the lasting effects on the economy of strikes are often less serious than were supposed before or during the strike.

10. The above analysis suggests that, although the immediate effects on the economy of a prolonged miners' strike would be serious they would not be intolerable so long as power supplies were maintained. This confirms that the correct strategy is to concentrate on improving power station endurance. Nonetheless, measures which might improve the endurance of coal burning industry at reasonable cost are clearly worth considering, particularly in the case of the cement industry and to a lesser extent vehicle production. The possibilities which have been identified in consultation with the National Coal Board (NCB) are discussed in the following section.

POSSIBLE MEASURES TO INCREASE INDUSTRIAL COAL STOCKS

11. The NCB believes that industrial coal stocks are normally at their highest in October, because coal prices are usually increased on 1 November; industrial action associated with the NUM pay claim can normally be expected in the winter; and heating requirements are greater in the winter. The average endurance of major establishments in manufacturing industry as a whole was $9\frac{3}{4}$ weeks at the end of September 1982, based on coal consumption during the fourth quarter of 1982. Because of the likelihood of a miners' strike at that time, this level of industrial coal stocks is believed to be close to the physical limits of normal stocking sites. The average endurance, calculated on the same basis, of major establishments in the three most vulnerable industries was as follows:-

iron and steel	6-10 weeks
cement	$11\frac{1}{2}$ weeks
motor vehicles	$6\frac{1}{2}$ weeks

The NCB believes that in the absence of incentives the average endurance of major establishments by this October would probably be about 10 weeks. Small industrial consumers typically have an endurance of not more than 3-4 weeks.

12. In principle industrial coal users might import coal during a miners' strike. Coal traders and large companies would know the market well enough and the NCB would be prepared to offer advice despite its obvious concern to protect its markets. However, in practice the miners are likely to succeed during a strike in blocking abnormal coal imports on any significant scale. The main scope for improving industrial endurance lies, therefore, in offering to industry incentives to increase their levels of coal stocks above what they would otherwise have been and perhaps also their coal stocking capacity. The options for

doing so are discussed in the following paragraphs. These generally build on the arrangements which the NCB has already negotiated with a number of its major customers, including the cement companies, following the decision taken by Ministers before Christmas to allocate £2.5 million to finance discounts and extended credit terms by the NCB for the purpose of ensuring that industrial coal stocks were maintained at about the October 1982 level rather than being run down during the winter, as is generally the case, both for financial reasons and because by then there is no longer perceived to be a risk of a miners' strike over pay. These special terms were introduced because of the possibility of a miners' strike early this year over closures. The issue now before Ministers is what measures need to be taken to ensure adequate industrial coal stocks by November 1983 against the possibility of a miners' strike then.

The Cement Industry

13. The present arrangements with the three cement companies provide for their coal stocks in October 1983 to be sufficient for about 18 weeks expected consumption in the case of one company and 10-12 weeks in the case of the other two. (The difference arises because one company had spare coal stocking capacity immediately available and could therefore take maximum advantage of the discount on offer, whereas the other two would have to enlarge their stocking capacity to increase their stocks above 10-12 weeks; this they would be prepared to do if the previous discounts were to be repeated). It ought to be possible to bring the coal stocks of all three up to between 16-18 weeks, but this would require new arrangements involving in total about 200,000 tonnes extra coal at a cost of £5-6 per tonne. In addition, stocks of cement and cement clinker are normally sufficient for a further 4-6 weeks normal consumption. Thus, the total endurance of cement supplies would be 20-24 weeks if this measure were to be implemented.

The British Steel Corporation

14. The endurance of the BSC's two major plants which are dependent on NCB coal (Llanwern and Scunthorpe) is currently only about 5 weeks. The NCB considers that there is no practical chance of building up stocks further at Llanwern if the present high rate of coal consumption there is maintained. The level of coal stocks at Scunthorpe could in the NCB's view be increased from the 6 weeks planned for October 1983 to perhaps 8 weeks, but the local works management do not regard this increase in endurance as worth the effort involved. In practice the temporary closure of Llanwern and Scunthorpe would not matter a

great deal, since at least some of their products could probably be supplied from those plants which are likely to continue to operate (see paragraph 5) or from stockholders or imports.

Motor Vehicles

15. The existing arrangements should bring stocks very close to capacity - about 6 weeks - at British Leyland, but the NCB are currently considering whether this could be improved by exceptional measures.

Other Major Industries

16. The present arrangements with most other large coal consumers should provide for an average endurance of about 10 weeks by October 1985. The NCB considers that it ought to be possible to increase the endurance of a few of its major customers, mainly in the chemical and textile industries, to perhaps 15-20 weeks or even longer in some cases by offering an additional incentive of about £5 per tonne relating to total additional coal stocks of 450,000 tonnes.

Smaller industry

17. Stockholding on their own sites by smaller industrial companies is limited, and it is unlikely that 'such companies' endurance would exceed 3 or 4 weeks. The NCB consider that with a determined effort this could be raised to 5 or 6 weeks at a cost, probably, of £6 a tonne on a total tonnage of about 150,000 tonnes.

18. A number of consumers in this category are supplied from depots. The total stockholding for this category of consumers could be raised to an equivalent of 7 weeks consumption if additional deals were made to hold increased stocks of industrial coal at depots. This would be more expensive per tonne because of double handling, and the NCB estimates that this would cost about £7 to £8 a tonne on a total tonnage of 80,000. The NCB would plan to use about 15 of the 44 larger coal depots throughout the country for this purpose. Many of the 44 depots are in the South and West of the country, and in the North West. Those in the North West would probably be the more vulnerable to picketing, but the location of coal there would probably be the more valuable to industry. There was little or no picketing of these depots in the strikes in the early 1970s, but that is not necessarily a guide to what would happen today. Against the risk of successful picketing, however, must be set the probability that some coal could be got away from these depots in anticipation of a strike. Moreover, this measure would make it easier for the Government to resist pressure during a miners' strike from small industrial consumers for it to be settled quickly.

Special strategic stocks

19. Another problem relates to the concentration of industrial customers in and the near the coal fields who typically can hold little or no stocks on their own premises and who therefore normally draw coal direct from the pits. The NCB believes that it ought to be possible to organise strategic stockpiles for these customers on sites away from the pit fields; neither the sites nor the coal stockpiled at them would be owned or manned by the NCB. The NCB has in mind a total provision of perhaps 150,000 tonnes, which would provide an endurance of perhaps 7-8 weeks. The cost involved would be between £8 and £10 per tonne. This is higher than in the other proposals discussed above, because the sites involved would have to be specially equipped.

20. The creation of such stockpiles would be bound to be visible and difficult to explain in the absence of a threat of early industrial action. Moreover, during a miners' strike such stockpiles would clearly be targets for picketing. Thus, if Ministers agree in principle that discounts along the lines proposed above might be offered, Departments will have to establish urgently with the NCB whether a practicable scheme along these lines could be devised before any steps are taken to establish the stockpiles.

Summary of Costs

21. To summarise, the total costs of all the above schemes are as follows:-

cement	£1-1.2m
other large industries	£2.2m
small industries	£0.9m
coal depots	£0.6m
strategic stocks	£1.2-1.5m
	<u>£5.9-6.4m</u>

The NCB thinks that in practice extra expenditure in 1983-84 of £5 million in round figures might be involved, since it may not prove possible in the event to carry out fully all of the schemes discussed above.

DISCUSSION OF THE OPTIONS

22. All the above measures are designed to maximise stocks by November 1983, and if they are to be implemented fully early decisions will be required. It is for later decision whether further measures should be taken to increase

industrial stocks in the longer term, either generally or in particularly important industries such as cement, and, if so, what these measures should be. It is very likely that further incentives would be required since, if there is not a miners' strike, industry's normal inclination would be to run down their coal stocks.

23. The approach of offering subsidies to industry to increase coal stocks or to maintain them at higher levels than normal carries the risk that the subsidy will be spent on measures which industry would anyway have taken of its own accord. Arguably industry is at least as well placed as the Government to assess whether to take special steps to increase its endurance of a miners' strike beyond that already planned for October 1983. However, the NCB's view is that in general industry will only build up its coal stocks and maintain them at relatively high levels if there is a clear threat of early industrial action in the coal industry; and that at present industry does not generally perceive such industrial action taking place in the foreseeable future. Its judgement, therefore, is that the subsidies proposed above will be required if the endurance of coal burning industry is to be increased. It is clearly impossible completely to avoid the risk that a subsidy will be offered needlessly. This risk can, however, be reduced by monitoring the expenditure closely and by concentrating subsidies on those industries where increased endurance is of particular importance to the economy as a whole, and coal stocks therefore need to be as large as possible, (ie the cement industry) or where the industry concerned is least likely to take measures of its own accord to improve its endurance of a miners' strike. But it cannot be eliminated altogether, because there is no way of knowing for certain what firms would have done in the absence of a scheme. It is for Ministers to decide whether this risk should be accepted given the overall benefits of the additional stock levels which might be achieved.

24. The discussion in paragraph 8 above of the extent to which the economic effects of a miners' strike would be mitigated by maintaining as high a proportion as possible of normal cement supplies suggests that there is a good case on wider economic grounds, which the industry itself may not be best placed to judge, for ensuring that normal cement supplies are maintained for as long as possible. The measures discussed in paragraph 13 above would increase the endurance of the cement industry to a total of around 20-24 weeks at a cost of £1-1.2 million. The same is also true of motor vehicle production, although

as noted in paragraph 15, there appears to be only very limited scope for increasing its coal stocks.

25. The economic impact of the cessation of other large coal burning industries would, however, be relatively modest. The case for a subsidy to them therefore requires more careful consideration.

26. As for smaller industries, the economic effects would also be modest if they were temporarily to cease operation. But since their endurance of a miners' strike is likely to be very much less than that of major companies, Ministers may feel that there is a case for encouraging them to increase their coal stocks through the measures discussed in paragraphs 17 to 20. If the problem of picketing at depots and at strategic stocks near the pitheads could be overcome and all the above measures could therefore be implemented, the cost might be up to £3 million. But if not, and the measures were confined solely to increasing the coal stocks held by small industries on their own sites (ie. paragraph 17), the cost would be around £0.9 million.

FINANCING THE SCHEMES

27. The costs given above are the gross costs to the NCB of discounts or extended credit terms in the period 1 April - 31 October 1983. The NCB have argued that they represent also a reasonable measure of the net additional costs to them, the benefits to the Board of earlier payments being more than balanced by the costs of disruption of delivery patterns when the additional stocks are drawn down at the end of the period. However, it is not clear how rapid or disruptive a run-down of stocks by industrial customers will occur in November; and it is possible that it will not happen at all, if, for instance, Ministers agree a scheme to maintain stocks at high levels for a further period or industry retains high stocks of its own accord. Departments are agreed that the NCB might be told that the Government was prepared in principle to meet the full costs incurred by the NCB in offering discounts/extended credits through increases in the Board's EFL and Deficit Grant limits, if this proved necessary, but that, if high levels of stocks continue beyond November, the costs would be adjusted downwards by a retrospective calculation of the financial benefits to the NCB.

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CONCLUSIONS

28. Ministers are invited:-

- (i) to note the likely industrial and economic effects of a lengthy miners' strike as set out in paragraphs 4-10 above;
- (ii) to agree that in the light of (i) the Government's strategy should continue to be to give first priority to power station endurance and that it is acceptable that at November 1983 endurance of coal burning industry should be less, in some cases considerably so, than that of the power stations;
- (iii) to decide which, if any, of the measures to increase industrial endurance discussed in paragraphs 15-20 the NCB should be authorised to take at a total cost in practice of up to perhaps £5 million.

Cabinet Office

11 May 1985

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MISC 57(83) 11

COPY NO 21

7 July 1983

CABINET

OFFICIAL GROUP ON COAL

POWER STATION ENDURANCE IN THE MEDIUM TERM

Note by the Secretaries

I attach a draft report by the Group on power station endurance in the medium term. The Chairman hopes to submit the report to Ministers by the end of the week beginning 11 July: would members please provide the Secretariat by 12 July with comments on the draft generally and with figures or other information to allow square brackets to be removed.

Signed J A J BUDD
J F STOKER

Cabinet Office

7 July 1983

SECTION I : THE PRESENT POSITION

1.1 In this section we summarise power station endurance for 1983 and the decisions which Ministers have now taken on the other aspects of increasing endurance in the event of a miners' strike i.e. relating to ancillary materials and coal-burning industry.

1.2 Power station coal stocks are currently sufficient for at least 26 weeks' endurance, on the basis of maximum oil burn, and will remain at around that level through to November and beyond. The question of the desirable level of power station coal stocks by November 1984 and in subsequent years now needs to be addressed.

1.3 Work is urgently in hand to provide 20 weeks' stocks of ancillaries at the power stations by November 1983. The Electricity Boards expect this to be achieved and are confident that in the event of a miners' strike this autumn stocks could be made to last for 26 weeks. The only exception to this is carbon dioxide, stocks of which at nuclear power stations are currently sufficient for only 3 weeks normal use. No decisions have been taken to increase stocks of ancillaries yet further.

1.4 Ministers have decided that discounts should be offered with a view to increasing levels of coal stocks held by industry.

- (i) Present arrangements for the cement industry provide for their coal stocks in October 1983 to be sufficient for about 18 weeks expected consumption by one company and 10-12 weeks by the other two. Attempts are being made to bring the stocks of all three companies up by October 1983 to 16-18 weeks at a cost of £1-1.2 million. This level of stocks would provide for a total endurance of 20-24 weeks for cement supplies.

(ii) Present stocks of smaller industrial companies are unlikely to provide for endurance of more than 3 or 4 weeks. Attempts are being made to increase this endurance to 5 or 6 weeks at a cost of £1.5 million.

(iii) Present arrangements with most large industrial coal consumers should / provide for average endurance of about 10 weeks by October 1983. Attempts are being made to increase the endurance of some major NCB customers (mainly in the chemical and textile industries) to perhaps 15-20 weeks or longer at a cost of £2.2 million.

These measures will need to be financed by increases in the NCB's deficit grant limit and EFL. The Official Group on Coal has also been asked to examine further the possibilities for a scheme to help certain customers who normally draw coal direct from the pits. The question whether further measures should be taken to maintain or improve the endurance of coal-burning industry by November 1984 is a matter for later decision.

Costs

1.5 The costs of the various measures to increase endurance which have been taken since February 1981 are broadly as set out below. The expenditure to increase coal stocks has been financed by the Exchequer via the NCB's deficit grant. That for the build up of ancillary materials has been found by the CEEB and SSEB from within their own resources.

	£m (Great Britain)
Increased coal stocks at power stations	55
Ancillary materials	90
Incentives to industry to increase coal stocks	[2½]
TOTAL	[150]

1.6 In the event of a strike net additional costs of about £20 million per week would be incurred through maximising power station oil burn which would be required to achieve endurance of 26 weeks.

SECTION II: POWER STATION ENDURANCE OVER THE NEXT DECADE

2.1 At present about 14 per cent of electricity demand in England and Wales is met by nuclear power. (In Scotland the figure is 26 per cent.) This proportion will tend to increase as new nuclear stations are commissioned. Power station endurance in the event of a miners' strike will tend to increase correspondingly, because a smaller proportion of electricity demand will be met by coal and a given level of power station coal stocks will therefore last longer. Two factors working the other way, however, are the phasing out of the first generation of nuclear stations and any increase in the demand for electricity. The following considerations have therefore been taken into account:

- a. the Advanced Gas-cooled Reactors (AGRs) at Dungeness, Hartlepool and Heysham are beginning to generate power this year and should be fully operational by 1985/86. The second AGR at Heysham, and that at Torness, should first be available in 1987/88.
- b. the existing Magnox stations are approaching the end of their working lives. Although the planned lifetime is generally 25 years, extension to 30 years may be possible if experience continues to be favourable and the licensing authority can be satisfied. A 25 year lifetime would involve initial phasing out in 1987 and their withdrawal would reach a peak in 1990/91.

- c. as a central case we consider electricity demand corresponding to GDP growth averaging about $1\frac{1}{2}$ per cent per annum. For a high case it is assumed that GDP grows by 3 per cent per annum and for a low case that electricity demand remains unchanged.

2.2 On the basis of the planned AGR programme and the central case for demand growth, the proportion of electricity demand met by nuclear power should increase to about 22 per cent by 1986/87 for the CEGB system. By 1991/92 the proportion would be 16-24 per cent depending whether the Magnox stations turn out to have a life of 25 or 30 years.

2.3 Another factor that will influence power station endurance in the medium term is interconnection with other systems. A new 2000 MW interconnector with France is under construction and should be fully operational by 1986/87. It is probable that this could be used to its full capacity during a miners' strike on a one way basis, from France to England. It would, in effect, substitute for one large coal-fired station.

2.4 The interconnector between England and Scotland is of 1000 MW capacity. It seems unlikely, however, that this would be used to its fullest extent to supply the CEGB system from Scotland in the event of a miners' strike. In theory, there is sufficient oil-fired capacity in Scotland to render the Scottish system independent of coal in an emergency and (under normal weather conditions) also to supply the CEGB at the full capacity of the interconnector. In practice, however, the SSEB is reducing the manning levels of its oil-fired stations to make cost savings

(see Annex A). It now seems unlikely that exports averaging more than 500 MW would be possible for more than 26 weeks, without prejudicing endurance in Scotland on present arrangements. The SSEB judge that they would be unable to export to the CEGB at all if they were required to endure for 9 months on the basis of this autumn's coal stocks and usable oil-fired plant.

2.5 The combined effect of new nuclear power stations, nuclear retirements, demand growth and interconnection is summarised in Table 1. The present six months endurance of the CEGB system with respect to fuel supplies should increase to $7\frac{1}{2}$ -9 months in 1986/87 with unchanged power station coal stocks (30 mt), depending on how electricity demand grows. Twelve months' endurance would need 38-43 mt of coal at power stations. Some additional coal stocking at power stations is likely to be possible though the CEGB would need to explore in detail the practicalities.

2.6 These estimates assume no imports to England and Wales from Scotland (see paragraph 2.4). If the Scottish interconnector could be used continuously at maximum capacity CEGB endurance would be increased by 4-6 weeks in 1986/87, on the basis of 30 mt of power station coal stocks (see Table 2). This would require all Scottish oil-fired plant to be available continuously. Lower levels of availability would enable the interconnector to be used to a lower extent (Table 2).

2.7 Looking further ahead to 1991/92 the main uncertainties are electricity demand and the lifetime of the Magnox stations. For a 25 year Magnox lifetime the position should be no worse than at present - 30 mt giving about 6 months endurance - unless electricity demand grows rapidly (Table 1).

2.8 The discussion thus far has dealt with power station endurance over the next decade in terms of fuel supplies. Power stations are, however, dependent on a wide range of ancillary materials. Stocks this Autumn will stand at 20 weeks usage. There is a risk that endurance could be limited by the availability of ancillaries unless stocks are further increased. There is also a risk that endurance would be limited by industrial action by power station staff responding to an appeal from the NUM.

TABLE 1

millions of tonnes coal equivalent
England and Wales

	1986/7			1991/92 (25 year Magnox life)			1991/92 (30 year Magnox life)		
	Low	Central	High	Low	Central	High	Low	Central	High
Electricity demand (annual)	95	97	100	95	102	109	95	102	109
Nuclear supply (annual)		21½			16½			24½	
Measures to conserve coal during a strike (mtce per year)		29½			29½			29½	
- maximum oil burn									
- French interconnector		6			6			6	
- Scottish interconnector*									
Shortfall (annual) to be met from power station coal stocks	38	40	43	43	50	57	35	42	49
Endurance based on present power station coal stocks (30 mt) (months)	9	8	7½	7½	6	5	10	7½	6½
Stocks (mt) required for endurance of 9 months	30	32	34	34	40	46	28	34	39
12 months	38	40	43	43	50	57	35	42	49

* Assumed to be zero (see para 2.4)

TABLE 2

Additional * endurance from use of Scottish interconnector

<u>Scottish contribution</u>	<u>Electricity demand (1986/87)</u>		
	<u>Low</u>	<u>Central</u>	<u>High</u>
a. 500 MW, 26 weeks	2	1½	1½ weeks
b. 500 MW indefinitely	3	2	2
c. 1000 Mw indefinitely	6	4½	4

* The base case in Table 1 assumes no exports from Scotland. Endurance corresponding to 30 mt of CEB power station coal stocks would be 38 weeks (9 months), 36 weeks (8 months) and 33 weeks (7½ months) respectively for the 3 demand cases shown above, in the absence of imports from Scotland.

SECTION III: THE OPTIONS FOR FURTHER EXTENDING POWER STATION ENDURANCE BY THE MID-1980s

3.1 We consider in this section the measures that might be taken to increase power station endurance in the medium term beyond that which the maintenance of current levels of coal stocks seems likely to provide. The measures considered are as follows:-

- (i) a further increase in the level of coal stocks;
- (ii) the retention of existing oil-fired capacity which would otherwise be closed or kept in reserve on commercial grounds;
- (iii) using the lighting-up burners to burn oil in coal-fired stations;
- (iv) dual-firing.

(i) increasing power station coal stocks

3.2 By November 1983 power station coal stocks in England and Wales will be 30 million tonnes. It is difficult to judge how far it would be physically possible to increase coal stocking capacity. At some stage it will be difficult to find new land for stocking which is contiguous with power station sites and is thus safe from picketing. The physical limit is unlikely to be greater than 40 million tonnes and could be significantly less. Subject to this limit it should be possible to build coal stocks to the 40 million tonnes or so needed to provide by the mid-1980s power station endurance of around 12 months.

To achieve this some power stations would have to acquire new land and all would have to lay down extra storage capacity; the cost of this could be perhaps £70 million. The timing of site acquisition and preparation, and of coal build up, would need further examination by the CEEB if Ministers decide to take this course. Possibly stocks might be increased at the rate of 2-3 mt a year.

3.3 As the table in paragraph 2.5 shows, this level of coal stocks could not be guaranteed to continue to provide 12 months endurance in the period after the mid-1980s. If electricity demand were to increase at a high rate and Magnox stations were found to have useful lives of only 25 years, ^{the} ^{provided} ^{only} endurance ^{by} 40 mt would be around 8 months.

(ii) retaining existing oil-fired capacity in operation

3.4 Last autumn the CEEB had some 9000 MW of oil-fired capacity available (including 900 MW of dual coal-oil fired plant which would be used to burn oil in an emergency). A further 3000 MW has since been commissioned or is under construction but planned to be available early next year. The CEEB plan to put 3500 MW of modern oil-fired plant into reserve; this would be available for recall at three weeks' notice in an emergency. The Board expects to close some 1700 MW of older oil-fired units over the next 3-4 years on commercial grounds. This would still leave oil-fired capacity above last autumn's level.

3.5 The position in Scotland is different and is described in detail at Annex A. Briefly, five modern oil-fired sets could in theory be made available, three at Inverkip and two at

at Peterhead power stations. However at present only one of the sets at Inverkip is partially manned while the others are in reserve, and only one set at Peterhead is fully manned. On the basis of this level of manning the Scottish Boards could export at the rate of 500 MW (half the capacity of the interconnector) for 26 weeks for a strike lasting no longer than that period. But were the SSEB required to meet an endurance target of 9 months or more, no exports would be possible since all available oil-fired plant would be needed to supplement ^{coal} stocks in Scotland.

3.6 The questions therefore arise whether this oil-fired capacity should be retained or brought back into use so as further to conserve power station coal stocks during a strike.

3.7 The costs of retention and the likely impact on endurance are as follows:

	costs of retention	net costs of extra oilburn in a strike (per week)	increase in CEEB endurance (weeks)	
			now	1986/87
England and Wales (retention of 1700 MW of old plant)	£10m p.a.	£3m	n.a.	1-1½
Scotland (manning all modern plant)	£10-15m p.a.	£6m	1-2	4-6

3.8 Retaining this capacity could raise some difficult industrial relations problems. Neither the CEEB nor the SSEB considers that the trade unions would be prepared to co-operate in the transfer of staff between power stations during a miners' strike. The CEEB therefore proposes to man the 3500 MW of

excess modern oil-fired capacity which it proposes to put into reserve at a level which would enable this to be brought into use at short notice during a miners' strike. The Board does not, however, think that the extra endurance of 1-1½ weeks which would be gained by retaining 1700 MW of old oil-fired plant which it currently proposes to close down would justify the £10 million per annum cost of continuing to man that at about the same level. In Scotland, where oil-fired capacity is not normally utilised, the SSEB thinks that the only way that oil-fired capacity could be brought into use during a miners' strike would be for it to be manned throughout the year. In practice, this would mean that the staff concerned would have virtually nothing to do except during a miners' strike. Requesting the Scottish Boards to operate their power stations in this way would run counter to the pressure being put on them by the Government for maximum economy and efficiency; and it would also increase electricity prices /SEPD to quantify.

3.8a The questions for decision are therefore whether Ministers should ask

- a. the CEBG to keep open 1700 MW of older oil-fired stations which it would otherwise expect to close over the next few years.
- b. the Scottish Board to arrange for all their modern oil-fired plant to be manned for use in an emergency.

(iii) burning lighting-up oil

3.9 At coal-fired power stations the lighting-up burners could be used to burn oil continuously in an emergency. This could be used to conserve power station coal stocks provided that an assured means of delivery were available. Under normal circumstances deliveries of lighting-up oil to CEBG power stations take place as follows: rail, 55 per cent; road, 30 per cent; barge/coaster, 15 per cent. Rail- and road-borne deliveries could not be relied upon in a miners' strike. The most certain alternative would be by pipeline. Laying new pipelines to power stations would be a major task. One possibility, however, would be to use the existing Government strategic pipeline system which runs close to a number of inland coal-fired power stations. In the first ^{instance} / some 6 large power stations (total capacity 8000 MW) might be connected at a capital cost of £4m over a two year period. This would extend a 26 week period of endurance by some 4 weeks, and pro rata for longer periods, at a net cost of some £10m per week.

3.10 The Government pipeline system is used both for commercial and defence purposes. The Ministry of Defence see no difficulty in meeting the needs of Service Establishments in an emergency affecting the CEBG by a combination of the use of alternative routes on the pipeline system and other means of delivery. However, the relevant parts of the pipeline system are predominantly used by the oil companies who would need to be consulted before a judgment could be reached as to the feasibility of CEBG use in an emergency. There would also be the need for the power station workers to cooperate in the abnormal activity of burning lighting-up oil on a continuous basis.

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3.11

(iv) dual firing

3.12 At present only 900 MW of generating capacity is dual-fired in England and Wales. To enable power stations to operate independently of coal (ie indefinite endurance in the event of a miners' strike) would require the conversion of perhaps 27000 MW capacity, equivalent to about 14 large coal-fired stations. However, the time involved for each conversion (3 years) and the fact that during that period the power station has to be withdrawn from operation (which means that only a limited number of conversions could prudently be undertaken simultaneously while still meeting peak winter demand) would impose major limits on the rate at which conversion programme could be undertaken. In practice the best that could probably be achieved, on the basis of optimistic assumptions about other factors, is the conversion of around 15000 MW by 1988-89 and 19000 MW by 1991-92.

3.13 The conversion of 15000 MW would cost perhaps £800 million in direct capital costs and possibly as much as £1½-2½ billion in increased operating costs of the remainder of the electricity system during the conversion programme (when base load coal-fired stations would need to be replaced by oil burn). In the event of a strike, burning oil in the converted stations and in the

main oil-fired stations would mean that the present level of power station coal stocks would last for perhaps $\frac{1}{2}$ years; the net cost of this level of oil burn would be around £50 million per week.

3.14 An extensive programme of dual-firing of this nature carries a number of potentially serious industrial relations risks, viz:-

- (a) it would be impossible for the programme to be carried out unobtrusively or for its real purpose to be concealed. The costs involved would almost certainly have to be met by grant, which would require Parliamentary authority; moreover the engineering work involved would be plainly visible. There would therefore be the risk of provoking industrial action immediately the programme became public knowledge, particularly in the coal industry;
- (b) even if the conversion work were to be completed without serious trouble, the power station workers might not be prepared to cooperate in operating dual-fired plant during a strike on the grounds that this involved abnormal working. It is difficult to assess ⁱⁿ the abstract how serious a risks this is.

3.15 A further area of potential difficulty lies in the substantial additional volumes of oil that would be needed. The 6-9 months endurance provided by the current level of coal stocks should allow time for oil supplies to be organised. Nevertheless, the extra demand on the refineries would be significant and consultations with the oil industry would be needed to assess the implications.

Summary of options

3.16 Maintaining the level of power station coal stocks that will be attained this autumn should lead to an increase in endurance from the present 6 months to 7½-9 months over the next 3-4 years as new nuclear capacity and the interconnector is commissioned. But endurance based on current coal stocks could fall again by the end of the decade, depending on the growth of electricity demand and the lifetime of the Magnox stations (Table 1).

3.17 The most straightforward approach to increasing endurance yet further would be to build CEGB power station coal stocks to a level close to the utilisable physical maximum. This might give endurance in the mid-eighties of approaching 12 months. Since this would be an extension of present policy which has not so far met serious resistance, there seems no reason to believe that the unions concerned would not co-operate in its execution. There may also be scope for increasing power station coal stocks in Scotland yet further to increase exports via the interconnector.

3.18 The other means of boosting endurance all involve increased oil burn, which is significantly more expensive than burning coal and may also involve additional capital and operating costs. The possibilities discussed earlier are summarised in Table 3. In brief

- a. retaining old CEGB oil-fired plant that is due to be phased out would entail modest extra operating costs (£10m a year) for a small gain in endurance (1-1½ weeks). The CEGB would not welcome such a suggestion which would be at odds with their desire to cut costs;
- b. fully manning Scottish modern oil-fired plant would cost £10-15m a year and would be resisted by the SSEB on commercial grounds but would give a useful increase in endurance (4-6 weeks).
- c. supplying lighting-up oil by pipeline to certain CEGB power stations to supplement coal burn would not be costly (£4m) and would extend endurance by 4-6 weeks. But the feasibility of using the Government pipeline system for this purpose would need further investigation. There may also be scope in Scotland for burning oil at coal-fired stations.
- d. Rendering the CEGB independent of coal supplies by converting the main coal-fired power stations to

TABLE 3

Options for extending endurance beyond
expected level of 7½-9 months in 1986/87

	Capital cost	Net weekly cost of oilburn	Additional endurance
Increase coal stocks to maximum physical limits	£70m	-	3 to 4 months
Retain the CEGB oil-fired plant	£10m	£5m	1-1½ weeks
Man SSEB modern oil-fired plant	£10-£15m	£6m	4-6 weeks
Burn lighting-up oil supplied in extended Government pipeline system	£4m	£10m	4-6 weeks
Dual firing of 1500 mW of coal-fired plant	£2-£3½ billion*	£50m	1 year

* The capital cost of dual firing includes the additional system operating costs while conversion is taking place.

dual coal/oil firing would be exceedingly expensive and would in any event take more than a decade. Even increasing endurance to about 2 years by partial conversion to dual firing would cost over £2 billion and would take at least 5 years.

3.19 There must always be some doubt about the willingness of the power station workers to co-operate in achieving abnormal levels of oil burn during a miners' strike. The more obvious the measure, and the larger the scale, the greater would be the risk. This argues against a major programme of dual firing and, to a lesser extent, against keeping available oil-fired plant which would not be used except in emergencies.

SECTION IV: SUMMARY OF DECISIONS FOR MINISTERS

Ministers are invited to decide

- i) whether they wish to achieve power station endurance greater than the 6 months available next winter; and if so, what should be the objective.
- ii) whether they wish to prolong endurance beyond 6 months solely by increasing power station coal stocks to the maximum physical limit; or whether they are prepared to contemplate additional oil burn beyond that which would be attainable on the Electricity Boards' present plans.

iii) if Ministers are prepared to consider additional oil burn, which of the following options should be pursued further:

- a. keeping available existing oil-fired plant;
- b. burning lighting-up oil at coal-fired power stations supplied by the Government pipeline system, extended as necessary;
- c. an extension programme of conversion of coal-fired power stations to dual-firing.

SCOTLAND

1. In present circumstances coal together with maximum nuclear, gas-fired and hydro electric power are sufficient to meet the winter peak demand for electricity; no oil-fired power stations are used. This is likely to remain the position for the foreseeable future until the Torness AGR comes fully on stream in 1989, when the proportion of electricity demand met by nuclear power will increase from approximately 26% to approximately 43%.

2. There are five 660 MW oil-fired sets in Scotland, which are utilised as follows:-

Inverkip: 3 sets, of which one is partially manned;
 one is in rotating storage;
 one is currently inoperable because the stator has been removed to supply another turbine.

Peterhead: 2 sets, of which one is fully used and burns gas liquids;
 one is partially manned (and is currently earmarked for burning surplus gas liquids) to provide 30 days' running during the winter period.

The SSEB have recently announced that the partially manned set at Inverkip will be capable of operating for twelve hours per day from Monday to Friday. By commencing oil-burn as soon as a miner's strike begins the current position is that SSEB could export an average of 500 MW to CEEB through the interconnector for 26 weeks. This would be made up of 1,000 MW, twelve hours per day, Monday to Friday and about 300 MW through the night and at weekends. If longer endurance is required in Scotland then similar oil-burn could extend the coal stocks to provide over 39 weeks' endurance but without using the interconnector on a regular basis.

3. If the interconnector were required for a longer period than 26 weeks or if overall endurance of more than 39 weeks is required then there are four options:-

- (a) reliance on the transfer of workers from coal-burning stations to oil-burning stations when stocks at the former run out;

- (b) increase the manning levels of the partially manned sets at Peterhead and Inverkip and manning the remaining two sets at Inverkip;
- (c) increase coal stocks at coal-burning stations;
- (d) increased burning of oil in coal-fired stations.

On option (a), Scotland's main coal-burning stations are located in coal-fields and, in past disputes, there have been considerable tensions between the power station workers and the local miners. Quite apart from trade union opposition, it would not be safe to rely on the required cooperation of the power station workers at the height of a dispute; the SSEB share this view. The cost of option (b) would be £10m-£15m per annum. The workers at the oil-burning sets, which would only be used during miners' strikes, would have virtually nothing to do at other times and this, the SSEB judge, would create industrial relations problems with the very group of workers on whom they would have to rely during a miners' strike. The SSEB are strongly opposed to this option also on financial grounds. Options (c) and (d) are both technically feasible and the implementation of either could increase the endurance of the Scottish system from 39 to 52 weeks by the end of 1986. Option (d) would require consultation with SSEB to determine the cost of providing increased oil storage facilities at the coal fired power stations. Once Ministers have reached a view on the desired endurance for the electricity system in Great Britain as a whole, further work will be undertaken by the Scottish Office to establish how this can best be achieved in Scotland.

4. The issue for Ministers is whether, despite the opposition of the SSEB and the visibility of the measures involved, additional oil-fired generating capacity should be manned to enable the use of the interconnector throughout a miner's strike, although this has only a marginal effect on CEEB's endurance, or to increase endurance in Scotland by increasing coal stocks and planning to burn oil in coal fired stations.

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21 July 1983

CABINET

OFFICIAL GROUP ON COAL

POWER STATION ENDURANCE IN THE MEDIUM TERM

Note by the Secretaries

A copy of the final version of the Group's report, which has now been submitted to Ministers, is attached for information.

Signed J A J BUDD
J F STOKER

Cabinet Office

21 July 1983

SECRET
AND PERSONAL

POWER STATION ENDURANCE IN THE MEDIUM TERM

Report by the Official Group on Coal (MISC 57)

SECTION I The present position

SECTION II Power station endurance over the next decade

SECTION III The options for further extending power station endurance by the mid-1980s

SECTION IV Issues for Ministers

SECTION I : THE PRESENT POSITION

1.1 In this section we summarise power station endurance for 1983 and the decisions which Ministers have now taken on the other aspects of increasing endurance in the event of a miners' strike i.e. relating to ancillary materials and coal-burning industry.

1.2 Power station coal stocks are currently sufficient for at least 26 weeks' endurance, on the basis of maximum oil burn, and will remain at around that level through to November and beyond. The question of the desirable level of power station coal stocks by November 1984 and in subsequent years now needs to be addressed.

1.3 Work is urgently in hand to provide 20 weeks' stocks of ancillaries at the power stations by November 1983. The Electricity Boards expect this to be achieved and are confident that in the event of a miners' strike this Autumn stocks could be made to last for 26 weeks. The only exception to this is carbon dioxide, stocks of which at nuclear power stations are currently sufficient for only 3 weeks normal use. Further consideration of carbon dioxide stocks will be necessary in the light of the level of endurance which Ministers decide they wish to achieve in the medium term. Ministers have decided that no immediate action should be taken to increase stocks of other ancillaries yet further.

1.4 Ministers have decided that discounts should be offered with a view to increasing levels of coal stocks held by industry.

(i) Present arrangements for the cement industry provide for their coal stocks in October 1983 to be sufficient for about 18 weeks' expected consumption by one company and 10-12 weeks by the other two. Attempts are being made to bring the stocks of all three companies up by October 1983 to 16-18 weeks at a cost of £1-1.2 million. This level of stocks would provide for a total endurance of 20-24 weeks for cement supplies.

(ii) Present stocks of smaller industrial companies are unlikely to provide for endurance of more than 3 or 4 weeks. Attempts are being made to increase this endurance to 5 or 6 weeks by October 1983 at

a cost of £1.5 million.

- (iii) Present arrangements with most large industrial coal consumers should provide for average endurance of about 10 weeks by October 1983. Attempts are being made to increase the endurance of some major NCB customers (mainly in the chemical and textiles industries) to perhaps 15-20 weeks or longer at a cost of £2.2 million.

These measures will need to be financed by increases in the NCB's deficit grant limit and EFL. The Official Group on Coal has also been asked to examine further the possibilities for a scheme to help certain customers who normally draw coal direct from the pits. It will be necessary in due course to decide whether further measures should be taken to maintain or improve the endurance of coal-burning industry by November 1984.

Costs

1.5 The costs of the various measures to increase endurance which have been taken since February 1981 are broadly ^{as} set out below. The expenditure to increase coal stocks has been financed by the Exchequer via the NCB's deficit grant. That for the build up of ancillary materials has been found by the CEBG and SSEB from within their own resources.

	£m (Great Britain)
Increased coal stocks at power stations	55
Ancillary materials	90
Incentives to industry to increase coal stocks	5
TOTAL	150

1.6 In the event of a strike net additional costs of about £20 million per week would be incurred through maximising power station oil burn which would be required to achieve endurance of 26 weeks.

SECTION II : POWER STATION ENDURANCE OVER THE NEXT DECADE

2.1 At present about 14 per cent of electricity demand in England and Wales is met by nuclear power. (In Scotland the figure is 26 per cent). This proportion will tend to increase as nuclear stations are commissioned. Power station endurance in the event of a miners' strike will tend to increase correspondingly, because a smaller proportion of electricity demand will be met by coal and a given level of power station coal stocks will therefore last longer. Two factors working the other way, however, are the phasing-out of the first generation of nuclear stations and any increase in the demand for electricity. The following considerations have therefore been taken into account:

- a. The Advanced Gas-cooled Reactors (AGRs) at Dungeness, Hartlepool and Heysham are beginning to generate power this year and should be fully operational by 1985/86. The second AGR at Heysham, and that at Torness, should first be available in 1987/88.
- b. The existing Magnox stations are approaching the end of their working lives. Although the planned lifetime is generally 25 years, extension to 30 years may be possible if experience continues to be favourable and the licensing authority can be satisfied. A 25 year lifetime would involve initial phasing out in 1987 and their withdrawal would reach a peak in 1990/91.
- c. As a central case we consider electricity demand corresponding to GDP growth averaging about 1½ per cent per annum. For a high case it is assumed that GDP grows by 3 per cent per annum and for a low case that electricity demand remains unchanged.

2.2 On the basis of the planned AGR programme and the central case for demand growth, the proportion of electricity demand met by nuclear power should increase to about 22 per cent by 1986/87 for the CEBG system. By 1991/92 the proportion would be 16-24 per cent depending whether the Magnox stations turn out to have a life of 25 or 30 years.

2.3 Another factor that will influence power station endurance in the medium term is interconnection with other systems. A new 2000MW interconnector with France is under construction and should be fully operational by 1986/87. The

intention would be to use it to its full capacity during a miners' strike on a one way basis, from France to England. It would, in effect, substitute for one large coal-fired station.

2.4 The interconnector between England and Scotland is of 1000MW capacity. In theory, there is sufficient oil-fired capacity in Scotland to render the Scottish system virtually independent of coal in an emergency and also (under normal weather conditions) to supply the CEGB at almost full capacity of the interconnector. In practice, however, because of the over-capacity of the Scottish system, the SSEB has never considered it justifiable to man its oil-fired stations fully. To secure further savings it has recently reduced its manning levels (see Annex A). Exports of more than 500MW for the duration of a 26 week strike now seem unlikely on present arrangements if endurance in Scotland is not to be prejudiced. The SSEB judge that until Torness comes on line in 1987/88 it would be unable to make significant exports to the CEGB if it were required to endure for more than 9 months on the basis of usable oil-fired plant without increasing coal stocks or introducing lighting-up oil burning at coal-fired stations.

2.5 The combined effect of new nuclear power stations, nuclear retirements and demand growth and interconnection is summarised in Table 1. The present 6 months endurance of the CEGB system with respect to fuel supplies should increase to 7½ to 9 months in 1986/87 with unchanged power station coal stocks (30mt), depending on how electricity demand grows. At these levels of endurance, for reasons given in paragraph 2.4, no imports to England and Wales from Scotland via the interconnector are assumed in the table. Twelve months endurance in England and Wales would need 38-43mt of coal at power stations. Some additional coal stocking at power stations is likely to be possible though the CEGB would need to explore the practicalities in detail.

2.6 Looking further ahead to 1991/92 the main uncertainties are electricity demand and the lifetime of the Magnox stations. For a 25 year Magnox lifetime the position should be no worse than at present - 30 mt giving about 6 months endurance - unless electricity demand grows rapidly. (Table 1).

2.7 The discussion thus far has dealt with power station endurance over the next decade in terms of fuel supplies. Power stations are, however, dependent

on a wide range of ancillary materials. Stocks this Autumn will stand at 20 weeks normal usage. There is a risk that endurance could be limited by the availability of ancillaries unless stocks are further increased. The question of stocks of ancillaries will need to be reviewed in the light of any further decisions on coal supplies and oil-burn, options for which are set out below in Section III.

2.8 There is also a risk that endurance would be limited by industrial action by power station staff responding to an appeal from the NUM. For instance the miners might ask that ESI employees refuse to undertake "abnormal work". This could include operations designed to achieve enhanced levels of oil-burn. Subject to this proviso, CEGB senior management believe that maximum oil-burn should be achievable this winter. Looking further ahead a number of influences may be significant, including the general political climate, the reasonableness of the NUM position and the ESI unions' own pay or privatisation concerns.

SECTION III : THE OPTIONS FOR FURTHER EXTENDING POWER STATION ENDURANCE BY THE MID-1980S

3.1 We consider in this section the measures that might be taken to increase power station endurance in the medium term beyond that which the maintenance of current levels of coal stocks seems likely to provide. The measures considered are as follows:-

- (i) a further increase in the level of coal stocks;
- (ii) the retention of existing oil-fired capacity which would otherwise be closed or kept in reserve on commercial grounds;
- (iii) using the lighting-up oil burners to burn oil in coal-fired stations;
- (iv) dual-firing.

(i) increasing power station coal stocks

3.2 By November 1985 power station coal stocks in England and Wales will be 30 million tonnes. It is difficult to judge how far it would be physically possible to increase coal stocking capacity. At some stage it will be difficult to find new land for stocking which is contiguous with power station sites and is thus safe from picketing. The physical limit is unlikely to be greater than 40 million tonnes and could be significantly less. Subject to this limit it should be possible to build coal stocks to the 40 million tonnes or so needed to provide by the mid-1980s power station endurance of around 12 months. To achieve this some power stations would have to acquire new land and all would have to lay down extra storage capacity; the cost of this could be perhaps £70 million. The timing of site acquisition and preparation, and of coal build-up would need further examination by the CEBG if Ministers decide to take this course. Possibly stocks might be increased at the rate of 2-3 mt a year.

3.3 As Table 1 shows, this level of coal stocks could not be guaranteed to continue to provide 12 months endurance in the period after the mid-1980s. If electricity demand were to increase at a high rate and Magnox stations were found to have useful lives of only 25 years, the endurance provided by 40mt would only be around 8 months.

(ii) retaining existing oil-fired capacity in operation

3.4 Last autumn the CEBG had some 9000MW of oil-fired capacity available (including 900MW of dual coal-oil fired-plant which would be used to burn oil in an emergency). A further 3000MW has since been commissioned or is under construction but planned to be available early next year. The CEBG plan to put 3500MW of modern oil-fired plant into reserve; this would be available for recall at three weeks' notice in an emergency. The Board expects to close some 1700MW of older oil-fired units over the next 3-4 years on commercial grounds. This would still leave oil-fired capacity above last autumn's level.

3.5 The position in Scotland is different and is described in detail at Annex A. Briefly, five modern oil-fired sets could in theory be made available, three at Inverkip and two at Peterhead power stations. However at present only one of the sets at Inverkip is partially manned; one is in rotating storage; one is inoperable and could take some months to repair if required for use; and only one set at Peterhead is fully manned. On the basis of this level of manning the Scottish Boards could export at the rate of 500MW (half the capacity of the interconnector) for 26 weeks for a strike lasting no longer than that period. But were the SSEB required to meet an endurance target of 9 months or more, no exports would be possible since all available oil-fired plant would be needed to supplement coal stocks in Scotland.

3.6 The questions therefore arise whether this oil-fired capacity should be retained or brought back into use so as further to conserve power station coal stocks during a strike.

3.7 The costs of retention and the likely impact on endurance are as follows:

	costs of retention	net costs of extra oilburn in a strike (per week)	increase in CEBG endurance (weeks)	
			now	1986/87
England and Wales (retention of 1700MW of old plant)	£10m p.a.	£3m	n.a.	1-1½
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3.8 Retaining this capacity could raise some difficult industrial relations problems. Neither the CEGB nor the SSEB considers that the trade unions would be prepared to co-operate in the transfer of staff between power stations during a miners' strike. The CEGB therefore proposes to man the 3500MW of excess modern oil-fired capacity which it proposes to put into reserve at a level which would enable this to be brought into use at short notice during a miners' strike. The Board does not, however, think that the extra endurance of 1-1½ weeks which would be gained by retaining 1700MW of old oil-fired plant which it currently proposes to close down would justify the £10 million per annum cost of continuing to man that at about the same level. In Scotland, where oil-fired capacity is not normally utilised, the SSEB thinks that the only way that oil-fired capacity could be brought into use during a miners' strike would be for it to be manned throughout the year. In practice, this would mean that the staff concerned would have virtually nothing to do except during a miners' strike. Requesting the Scottish Boards to operate their power stations in this way would run counter to the pressure being put on them by the Government for maximum economy and efficiency; and it would also increase electricity prices by 2 per cent to all consumers unless the Government covered the full additional cost.

3.9 Options which would be open to Ministers would therefore be to ask

- a. the CEGB to keep open 1700MW of older oil-fired stations which it would otherwise expect to close over the next few years;
- b. the Scottish Board to arrange for all their modern oil-fired plant to be manned for use in an emergency.

(iii) burning lighting-up oil

3.10 At coal-fired power stations the lighting-up burners could be used to burn oil continuously in an emergency. This could be used to conserve power station coal stocks provided that an assured means of delivery were available. Under normal circumstances deliveries of lighting-up oil to CEGB power stations take place as follows: rail, 55 per cent; road, 30 per cent; barge/coaster, 15 per cent. Rail- and road- borne deliveries could not be relied upon in a miners' strike. The most certain alternative would be by pipeline. Laying new pipelines to power stations would be a major task. One possibility, however,

would be to use the existing Government strategic pipeline system which runs close to a number of inland coal-fired power stations. In the first instance some 6 large power stations (total capacity 8000MW) might be connected at a capital cost of £4 million over a two year period. This would extend a 26 week period of endurance by some 4 weeks, and pro rata for longer periods, at a net cost of some £10 million per week.

3.11 The Government pipeline system is used both for commercial and defence purposes. The Ministry of Defence see no difficulty in meeting the needs of Service Establishments in an emergency affecting the CEGB by a combination of the use of alternative routes on the pipeline system and other means of delivery. However, the relevant parts of the pipeline system are predominantly used by the oil companies who would need to be consulted before a judgement could be reached as to the feasibility of CEGB use in an emergency. There would also be the need for the power station workers to co-operate in the abnormal activity of burning lighting-up oil on a continuous basis.

3.12 Similar problems exist in Scotland, where lighting-up oil is delivered to the two coal-fired power stations by coastal tankers. Preliminary discussions with the SSEB have shown that this option could be limited by the availability of coastal tankers of the right size. If Ministers wanted to follow this option further studies would have to take place, including one of the possibility of laying a pipeline to Longannet from Grangemouth.

(iv) dual firing

3.13 At present only 900MW of generating capacity is dual-fired in England and Wales. To enable power stations to operate independently of coal (ie indefinite endurance in the event of a miners' strike) would require the conversion of perhaps 27000MW capacity, equivalent to about 14 large coal-fired stations. However, the time involved for each conversion (3 years) and the fact that during that period the power station has to be withdrawn from operation (which means that only a limited number of conversions could prudently be undertaken simultaneously while still meeting peak winter demand) would impose major limits on the rate at which conversion programmes could be undertaken. In practice the best that could probably be achieved, on the basis of optimistic assumptions about other factors, is the conversion of around 15000MW by 1988-89 and 19000MW by 1991-92.

3.14 The conversion of 15000MW would cost perhaps £800 million in direct capital costs and possibly as much as £1½-2½ billion in increased operating costs of the remainder of the electricity system during the conversion programme (when base load coal-fired stations would need to be replaced by oil burn). In the event of a strike, burning oil in the converted stations and in the main oil-fired stations would mean that the present level of power station coal stocks would last for perhaps 2 years; the net cost of this level of oilburn would be around £50 million per week.

3.15 An extensive programme of dual-firing of this nature carries a number of potentially serious industrial relations risks, viz:-

- (a) it would be impossible for the programme to be carried out unobtrusively or for its real purpose to be concealed. The costs involved would almost certainly have to be met by grant, which would require Parliamentary authority; moreover the engineering work involved would be plainly visible. There would therefore be the risk of provoking industrial action immediately the programme became public knowledge; particularly in the coal industry;
- (b) even if the conversion work were to be completed without serious trouble, the power station workers might not be prepared to co-operate in operating dual-fired plant during a strike on the grounds that this involved abnormal working. It is difficult to assess in the abstract how serious a risk this is.

3.16 A further area of potential difficulty lies in the substantial additional volumes of oil that would be needed. The 6-9 months endurance provided by the current level of coal stocks should allow time for oil supplies to be organised. Nevertheless, the extra demand on the refineries would be significant and consultations with the oil industry would be needed to assess the implications.

Summary of options

3.17 Maintaining the level of power station coal stocks that will be attained this autumn should lead to an increase in endurance from the present 6 months to 7½-9 months over the next 3-4 years as new nuclear capacity and the

interconnector is commissioned. But endurance based on current coal stocks could fall again by the end of the decade, depending on the growth of electricity demand and the lifetime of the Magnox stations (Table 1).

3.18 The most straightforward approach to increasing endurance yet further would be to build CEBG power station coal stocks to a level close to the utilisable physical maximum. This might give endurance in the mid-eighties of approaching 12 months. Since this would be an extension of present policy which has not so far met serious resistance, there seems no reason to believe that the unions concerned would not co-operate in its execution. There may also be scope for increasing power station coal stocks in Scotland yet further to increase exports via the interconnector.

3.19 The other means of boosting endurance all involve increased oil burn, which is significantly more expensive than burning coal and may also involve additional capital and operating costs. The possibilities discussed earlier are summarised in Table 2. In brief

- a. retaining old CEBG oil-fired plant that is due to be phased out would entail modest extra operating costs (£10 million a year) for a small gain in endurance (1-1½ weeks). The CEBG would not welcome such a suggestion which would be at odds with their desire to cut costs;
- b. fully manning Scottish modern oil-fired plant would cost £10-15 million a year and would be resisted by the SSEB on commercial, efficiency and staff morale grounds. This measure would give a useful increase in endurance (4-6 weeks), though it might be possible, subject to further studies by SSEB, to achieve the same result at lower cost;
- c. supplying lighting-up oil by pipeline to certain CEBG power stations to supplement coal burn would not be costly (£4 million) and would extend endurance by 4-6 weeks. But the feasibility of using the Government pipeline system for this purpose would need further investigation. There is also scope in Scotland for burning oil at coal-fired stations but further studies would be needed to establish the effect on endurance.

d. Rendering the CEGB independent of coal supplies by converting the main coal-fired power stations to dual coal/oil firing would be exceedingly expensive and would in any event take more than a decade. Even increasing endurance to about 2 years by partial conversion to dual firing would cost over £2 billion and would take at least 5 years.

3.20 There must always be some doubt about the willingness of the power station workers to co-operate in achieving abnormal levels of oil burn during a miners' strike. The more obvious the measure, and the larger the scale, the greater would be the risk. This argues against a major programme of dual firing and, to a lesser extent, against keeping available oil-fired plant which would not be used except in emergencies.

SECTION IV : ISSUES FOR MINISTERS

Ministers will wish to decide, in the light of the strategic decisions on the coal industry which they will be taking shortly, whether they wish to achieve power station endurance greater than the 6 months available next winter; and if so, what should be the objective. The Official Group would provide further advice on how best any required level of endurance might be met. In setting objectives, however, Ministers will wish to consider whether they would wish to proceed solely by increasing power station coal stocks to the maximum physical limit; or whether they would be prepared to contemplate additional oil burn beyond that which would be attainable on the Electricity Boards' present plans. In deciding how far they were prepared to consider additional oil burn, Ministers would need to bear in mind the cost and other implications of:

- a. keeping available for use in an emergency all existing oil-fired plant;
- b. burning lighting-up oil at coal-fired power stations, supplied by the Government pipeline system or other suitable means; and
- c. an extensive programme of conversion of coal-fired power stations to dual-firing.

Cabinet Office

20 July 1983

SCOTLAND

1. In present circumstances coal together with maximum nuclear, gas-fired and hydro-electric power are sufficient to meet the winter peak demand for electricity; no oil-fired power stations are used. This is likely to remain the position for the foreseeable future until the Torness AGR comes fully on stream in 1989, when the proportion of electricity demand met by nuclear power will increase from approximately 26 per cent to approximately 43 per cent.

2. There are five 660 MW oil-fired sets in Scotland, which are utilised as follows:-

Inverkip: 3 sets, of which one is partially manned;
one is rotating storage;
one is currently inoperable because the stator has been removed to supply another turbine.

Peterhead: 2 sets, of which one is fully used and burns gas liquids;
one is partially manned (and is currently earmarked for burning surplus gas liquids) to provide 30 days' running during the winter period.

The SSEB have recently announced that the partially-manned set at Inverkip will be capable of operating for twelve hours per day from Monday to Friday. By commencing oilburn as soon as a miners' strike begins the current position is that SSEB could export an average of 500 MW to CEGB through the interconnector for 26 weeks. This would be made up of 1000 MW, twelve hours per day, Monday to Friday and about 300 MW through the night and at weekends. If longer endurance is required in Scotland then similar oil-burn could extend the coal stocks to provide over 39 weeks' endurance but without using the interconnector on a regular basis.

3. If the interconnector were required for a longer period than 26 weeks or if overall endurance of more than 39 weeks is required then there are four options:-

- (a) reliance on the transfer of workers from coal-burning stations to oil-burning stations when stocks at the former run out;

- (b) increase the manning levels of the partially-manned sets at Peterhead and Inverkip and manning the remaining two sets at Inverkip;
- (c) increase coal stocks at coal-burning stations;
- (d) increased burning of oil in coal-fired stations.

On option (a), Scotland's main coal-burning stations are located in coal-fields and, in past disputes, there have been considerable tensions between the power station workers and the local miners. Quite apart from trade union opposition, it would not be safe to rely on the required co-operation of the power station workers at the height of a dispute; the SSEB share this view. The cost of option (b) would be £10-15 million per annum. The workers at the oil-burning sets, which would only be used during miners' strikes, would have virtually nothing to do at other times and this, the SSEB judge, would create industrial relations problems with the very group of workers on whom they would have to rely during a miners' strike. The SSEB are strongly opposed to this option also on financial grounds. Options (c) and (d) are both technically feasible and the implementation of either could increase the endurance of the Scottish system from 39 to 52 weeks by the end of 1986. Option (d) would require consultation with SSEB to determine the cost of providing increased oil storage facilities at the coal-fired power stations. Once Ministers have reached a view on the desired endurance for the electricity system in Great Britain as a whole, further work will be undertaken by the Scottish Office to establish how this can best be achieved in Scotland.

4. The issue for Ministers would be whether, despite the opposition of the SSEB and the visibility of the measures involved, additional oil-fired generating capacity should be manned to enable the use of the interconnector throughout a miners' strike, although this would have only a modest effect on CEGB's endurance; or whether endurance in Scotland should be increased by increasing coal stocks and planning to burn oil in coal-fired stations.

millions of tonnes coal equivalent
England and Wales

Electricity demand (annual)
Nuclear supply (annual)

Measures to conserve coal during
a strike (mtce per year)

- maximum oil burn

- French interconnector

- Scottish interconnector*

Shortfall (annual) to be met
from power station coal stocks

Endurance based on present power
station coal stocks (30 mt)

(months)
Stocks (mt) required for endurance of

9 months

12 months

* Assumed to be zero (see paras 2.4-2.5)

	1986/7			1991/92 (25 year Magnox life)			1991/92 (30 year Magnox life)		
	Low	Central	High	Low	Central	High	Low	Central	High
Electricity demand (annual)	95	97	100	95	102	109	95	102	109
Nuclear supply (annual)		21½			16½			24½	
Measures to conserve coal during a strike (mtce per year)		29½			29½			29½	
- maximum oil burn		6			6			6	
- French interconnector									
- Scottish interconnector*									
Shortfall (annual) to be met from power station coal stocks	38	40	43	43	50	57	35	42	49
Endurance based on present power station coal stocks (30 mt)	9	8	7½	7½	6	5	10	7½	6½
Stocks (mt) required for endurance of	30	32	34	34	40	46	28	34	39
9 months	38	40	43	43	50	57	35	42	49
12 months									

TABLE 2

Options for extending endurance beyond
expected level of 7½-9 months in 1986/87

	Capital cost	Net weekly cost of oilburn	Additional endurance
Increase coal stocks to maximum physical limits	£70m	-	3 to 4 months
Retain the CEGB oil-fired plant	£10m	£5m	1-1½ weeks
Man SSEB modern oil-fired plant	£10-£15m	£6m	4-6 weeks
Burn lighting-up oil supplied in extended Government pipeline system	£4m	£10m	4-6 weeks
Dual firing of 15000 mW of coal-fired plant	£2-£5½ billion*	£50m	1 year

* The capital cost of dual firing includes the additional system operating costs while conversion is taking place.

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26 August 1983

SECRET

CABINET

OFFICIAL GROUP ON COAL

INDUSTRIAL COAL STOCKS

Note by the Secretaries

Attached is a Note by the Department of Energy on the possibility, referred to in paragraphs 19 and 20 of MISC 57(83) 10, of creating strategic stock-piles of coal to assist small industrial consumers who normally draw their supplies from the pithead. It is circulated for discussion at a meeting of the Group to be arranged.

SECRET

Signed J A J BUDD
SECRETARY

SECRET

Cabinet Office

26 August 1983

SECRET

INDUSTRIAL COAL STOCKS

Note by the Department of Energy

INTRODUCTION

MISC 57(83)10, paras 19 and 20, referred to the possibility of creating strategic stockpiles of coal in the coalfield areas but away from pitheads, in order to assist small industrial consumers who normally draw their supplies direct from the pithead. The Secretary of State for Energy's minute of 23 June to the Prime Minister suggested that the scope for such a scheme should be examined further.

CONSIDERATION

2 Further discussion with NCB has confirmed that a strategic stock of around 150,000 tonnes remains a desirable objective. However, the Board now doubts whether this objective could be achieved in practice, either within the agreed timescale or at the previously estimated cost. The costs for such a scheme as quoted in MISC 57(83)10 would seem to have been substantially under-estimated. This reflects, first, recognition by the Board that stockpiles of this nature would have to be handled by the trade, rather than directly by NCB, if they were to have any realistic hope of avoiding picketing, and secondly the

trade's perception of the risks involved, in particular the absence of a firm market for the coal. Revised cost estimates are now some £14-15/tonne (rather than £8-10/tonne).

3 Although it is clear that it would be possible to devise a scheme which could in theory enable these small consumers to work normally for some time during a strike, the overall value of such a scheme needs to be assessed in terms of costs, benefits which might be achieved and the likelihood of their achievement. The benefits are twofold - enabling a large number (around 10,000) of small consumers to continue more or less normal business for perhaps 7-8 weeks into a coal strike, and the PR value of being able to say that action had been taken to help them. Even if picketing prevented achievement of the primary purpose of the scheme this would still leave the PR benefits of being able to lay the blame for defeating contingency plans firmly on the unions and might thus lessen for a time pressure for settlement from this sector of industry.

4 Against these benefits must be set the costs of the scheme and the likelihood of its fulfilling its objective. The likely cost would be about £2m. On picketing, both the Board and the Department take the view that if the scheme could be managed quietly enough then the risks of successful picketing would remain acceptable; but for the scheme to be successful in

reaching its likely customers, its existence must be made widely known - and this knowledge could not be kept from the unions. Picketing is therefore a very strong possibility. In addition the NCB are convinced that to proceed with this scheme at this stage would necessarily divert management effort away from those other elements of the industrial coal stocks scheme aimed at the larger customers where the benefits are much greater and more likely to be realised.

CONCLUSIONS

5 It seems unlikely that a strategic stocks scheme could have more than a modest chance of succeeding in its primary objective of enabling small industrial consumers to continue normal working for some time into a strike. While the PR benefits would remain as an offset we do not believe they alone could justify the substantial premium (over £2m) which would be involved.

6 We therefore recommend that no further effort be devoted at this stage to a strategic coal stock for small industrial consumers.

Department of Energy
23 August 1983