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21 May 1984

The Rt Hon Norman Tebbit MP
Secretary of State for Trade
and Industry

John Vorster

OVERSEAS PROJECTS BOARD REPORT ON THE OVERSEAS
ROLE OF THE NATIONALISED INDUSTRIES

You wrote to me on 11 May enclosing a copy of the report prepared by the Ewbank Committee and asking the Treasury to take the lead in carrying its recommendations forward.

I agree generally with the views and proposals contained in your letter. The report is valuable in throwing light on an important aspect of nationalised industry affairs which normally receives little publicity and attention. The recommendations, particularly those affecting project management, seem on the face of it well aimed and should yield long-term benefits, both to the private sector, in terms of providing greater experience in this field, and to the nationalised industries, through better use of their resources. Sponsor Departments will clearly need to discuss the recommendations in detail with each of their industries but I agree this can best be done under the coordination of a central steering group which the Treasury is well placed to organise.

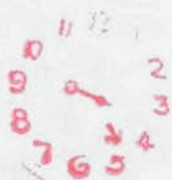
We must now, as you say, arrange a meeting between officials of our Departments and the NICG who have written to the Treasury separately. Meanwhile I am sending a copy of the report to John Dent, as the current NICG Chairman, so that the industries can begin to take stock of the report's recommendations.

I am copying this letter to the recipients of yours.

Nigel Lawson
NIGEL LAWSON

ENVIRONMENTAL AFFAIRS Effect of Acid Rain: Sept 79

22 MAY 1984



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Secretary of State for Trade and Industry

11 May 1984

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Chancellor of the Exchequer
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D Nigel,

OVERSEAS PROJECTS BOARD REPORT ON THE OVERSEAS ROLE OF THE
NATIONALISED INDUSTRIES

There has for some time been concern in the private sector about the overseas role and activities of the nationalised industries and the adverse impact of their domestic project management and procurement practices on UK export capability, particularly in the major projects field. A number of the EDCs had proposed mounting a study earlier but were forestalled by the Overseas Projects Board (OPB) which, early in 1983, set up a Working Party (the Ewbank Committee) to examine the overseas role of the industries. You will recall that the existence of this Group led NEDC on 5 August last year to decide to postpone further action until the results of their work were known.

2 The Working Group have completed a Report which has now been endorsed by both the OPB and the British Overseas Trade Board (BOTB). While originating from a concern to enhance our export capability, the subject will clearly be of wider interest, to you for its relevance to financial economy in the public sector, and to colleagues with nationalised industry sponsoring responsibilities concerned with efficient management. A copy of the document is enclosed for your and others' consideration.

3 The proposals would involve significant changes to the nationalised industries' domestic attitudes. The recommendations fall into three main groups:

(a) Overseas advice and assistance - where a need is seen for clearer commercial and financial objectives for the international subsidiaries, and a greater recognition that their role should be complementary to that of the private sector and not competitive.

JH1ACN

*Sent to NO 11/5 with
request to return.*



(b) Project management and design - where the industries are urged to examine the scope for contracting out more work to the private sector, for commercial reasons as well as in order to enhance the export capability of the private sector consultants and contractors.

(c) Procurement - where suggestions are made to reinforce the public sector purchasing initiative, with the aim of encouraging the development of products which will meet the industry's own needs and at the same time be more readily marketable internationally.

4 The main target is project management, and I have no hesitation in endorsing the Working Group's arguments for a re-examination of practices. It is frankly ridiculous that our contractors and companies should be compelled to take on their first turnkey role or lead in major contracts outside this country. First, the progressive concentration of design and project management work into the hands of nationalised industries has undermined the ability of UK contractors to secure major business abroad by denying them a domestic track record. This applies to a number of sectors, including power engineering, gas, railways, airports, coal extraction, hospitals and water. It is notable that the areas where UK contractors have been most successful, for example process and steel works plant, are those in which the UK investors such as British Steel, Shell and ICI, are accustomed to rely upon private sector services. Secondly, it must be commercially dubious for the nationalised industries, which are principally operators and providers of services to maintain, unlike major private sector owners and plant operators, generous design and engineering establishments, in order to undertake the great bulk of their own development and project management work. Given the cyclical trend of investment in the public sector, it is not surprising that many of the staff concerned are now greatly under-utilised, and this is yet another example of the tendency of state enterprises to grow flabby and complacent. In this case, all the more objectionable since such practices have detracted from our ability to exploit public sector investment by gaining comparable export business.

5 As a first step, we need to agree a common attitude to the report and its conclusions. I hope you would agree that the Treasury is best placed to take the lead but I would wish my Department to be fully associated with this work at every stage. Secondly, the nationalised industry Chairmen must have the opportunity of commenting on the proposals, though I should say that the report has been seen by Philip Jones and Bob Haslam who have reacted quite favourably. In this context, I understand that the Nationalised Industry Chairmen's Group have already approached your Department about the possibility of an early meeting with your officials and mine. That would provide an occasion to pass a copy of the report to the Chairmen and formally seek their views.

JH1ACN



Thirdly, it will also be necessary to consider how the recommendations can best be put into effect assuming, as I hope, that we agree them to be helpful and sensible in principle.

6 On the last point, the approach from the Chairmen's Group could be helpful and if they are willing to undertake a review on their own initiative, we would clearly wish to encourage them. I am also attracted by their idea of establishing a small steering group which, on the Government's side, could consist of officials from our two Departments and representatives from one or two of the sponsoring Departments, although the size of the group would need to be limited if it were to work effectively. I would suggest that our officials should meet shortly to consider the approach most likely to yield positive results.

7 Finally, there is an implied commitment to give the NEDC an opportunity to discuss the report. Clearly, that cannot be done until the autumn. But I see no need to hold up progress on that account.

8 I would be interested to have your reactions and those of colleagues. I am sending copies of this letter and the report to the Secretaries of State for Defence, Environment, Health, Energy and Transport, Sir Robert Armstrong and No 10.

A handwritten signature in dark ink, appearing to read 'Norman', with a stylized flourish above it.

NORMAN TEBBIT



IN CONFIDENCE

PLEASE RETURN TO
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(S/S DTI to CH/EX 11/5)

BRITISH OVERSEAS TRADE BOARD

OVERSEAS PROJECTS BOARD

REPORT

of the

WORKING GROUP ON THE OVERSEAS ROLE

OF THE

NATIONALISED INDUSTRIES

London

February 1984

IN CONFIDENCE

OVERSEAS PROJECTS BOARD

REPORT
of the
WORKING GROUP ON THE
OVERSEAS ROLE
of the
NATIONALISED INDUSTRIES

February 1984

M H Ewbank CBE (Chairman)

Ewbank Preece Ltd

D A Holland

Balfour Beatty Ltd

T W B Sallitt

Hawker Siddeley Group Ltd

In Support:

A C Hutton

Department of Trade and Industry

K Inglis

Department of Trade and Industry

D J Miller (Secretary)

Department of Trade and Industry

REPORT OF THE WORKING GROUP ON THE OVERSEAS ROLE OF THE NATIONALISED
INDUSTRIES

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SUMMARY OF CONCLUSIONS AND RECOMMENDATIONS

OVERSEAS ACTIVITIES

1.1 Most nationalised industries have international subsidiaries offering a range of advisory services overseas. These subsidiaries are subject to statutory and financial constraints which limit their spheres of activity. But the private sector provides a full range of consultancy services embracing areas beyond the capability of the international subsidiaries of the nationalised industries.

Recommendation 1

The capability of the public and private sectors is complementary and the aim should be collaboration in the pursuit of business not competition. In this respect, the nationalised industries should concentrate upon those services which they are best fitted to undertake, such as operational studies, systems planning and training based on their experience, and leave the private sector to offer such services as financial justification studies, project planning, detailed project design and project management, and supervision.

1.2 The international subsidiaries are staffed by a limited number of professional managers and engineers engaged in marketing the services on a world-wide basis. Their strength lies in their ability to call upon the skills and experience of those managing and operating the service provided by the parent undertaking.

Recommendation 2

The industries should review their policies on secondment of staff overseas and on the terms granted. They should encourage more of their progressive, highly-qualified staff to accept a period on overseas work. It would be helpful if this could be recognised as a positive factor in career development and not as time spent outside the main career activity. Care should be taken to set appropriate terms for overseas allowances and remuneration taking account of commercial practice.

1.3 No evidence was found to support charges that international subsidiaries are unfairly subsidised, but their terms of reference and commercial objectives should be more precisely defined and publicised.

Recommendation 3

The international subsidiaries should continue to be required to operate within normal commercial objectives, but should be given clear guidance on the terms of reference and scope of their permitted activities.

PROJECT MANAGEMENT

1.4 The trend over the last decade for various reasons has been for nationalised industries to bring an increasing share of their major project work in-house. This has damaged UK capability to bid overseas, because of the lack of domestic reference for the engineering contracting industry. It is not practicable for the nationalised industries to assume a project leadership role overseas and the experience of private sector purchasers of

major plant suggests that it would be in their commercial interest to contract out more domestic project work to main contractors. This in turn would certainly improve the UK's prospects on overseas projects, and create opportunities for savings in staff and establishments over a period.

Recommendation 4

Each of the nationalised industries should examine its approach to design and project management work taking into account the experience of the private sector, giving wide consideration to the national benefits which can accrue from contracting out a higher proportion of its requirements.

Recommendation 5

Each should also regularly monitor the balance between in-house capability and the use of outside resources and expertise.

PROCUREMENT

1.5 It is recognised that there are difficulties in reconciling domestic and international requirements and that the nationalised industries are beginning to respond to the 1982 White Paper on 'Standards, Quality and International Competitiveness'. Nevertheless they could do more to make products marketable overseas by fostering closer liaison with private consultants and suppliers, and by widening specifications to take greater account of costs and global market considerations.

Recommendation 6

In drawing up specifications nationalised industries should, in order to develop products and processes which can be more easily marketed overseas:-

- (i) work more closely with private sector consultants;
- and (ii) set up arrangements to ensure closer liaison with their suppliers;

Recommendation 7

In writing procurement specifications, nationalised industries should take steps to:-

- (i) draw up performance as opposed to detailed product specifications;
- and (ii) wherever possible, stipulate performance standards acceptable in overseas markets.

1.6 There appears to be some scope for nationalised industries to collaborate with suppliers in proving and, occasionally developing, new products and processes for export markets.

Recommendation 8

Nationalised industries should be encouraged to assist suppliers to introduce export products and processes by making available existing facilities for demonstrating and proving such equipment.

Recommendation 9

Nationalised industries should be encouraged to collaborate with suppliers in developing export products and processes, where the suppliers, (with the assistance of Government where appropriate), are prepared to support the costs incurred by the nationalised industries on activities which go beyond their own commercial needs.

INTRODUCTION

2.1 Following discussions on how the UK could best harness the extensive operating experience of the nationalised industries when bidding for project work abroad, the Overseas Projects Board set up a working party early in 1983 to examine this question. The working party's terms of reference were:-

To examine the role of the nationalised industries in the overseas projects field and the impact of their domestic policies on UK export capability and to consider in particular:-

- (i) the nature of the contribution the nationalised industries can make in the overseas field;
- (ii) the scope for allowing greater participation by the private sector in project management and design work currently undertaken by nationalised industries on projects in the UK thereby enabling it to establish a domestic record to support overseas bids;
- (iii) how the nationalised industries could assist suppliers and manufacturers to develop internationally marketable products through their purchasing and project requirements and by other means.

2.2 The working party took evidence from:-

- trade associations, groupings and companies in the contracting and engineering consultancy sectors;
- private sector enterprises with substantial investment programmes involving major project work;
- government departments with sponsorship responsibilities for individual nationalised industries.

A list of the organisations which submitted evidence is given at Annex 1. The working party had discussions with the Chairman of the Nationalised Industries Overseas Group (NIOG), and it also considered the position of nationalised industries in some other countries involved in overseas project work.

2.3 The nationalised industries, both through their domestic and through their overseas activities, can exercise a significant influence on the UK's project capability. This influence is principally in those fields where they are the monopoly or dominant operators, and to an extent in other areas where their domestic policies affect the ability of the private sector to compete abroad. There are three distinct areas of potential influence:

- (a) Overseas technical advice and assistance - in support of or in competition with the private sector.

- (b) Domestic project management and design work related to their investment requirements - and the impact on the private sector's experience, track record and capability.
- (c) The purchasing and procurement of equipment for their operating needs - and its effect on the exportability of British goods.

Each of these areas is examined below.

OVERSEAS ACTIVITIES

3.1 Although the principal statutory duty of most of the nationalised industries is to provide goods and services to domestic private or public users, most have developed an overseas capability, usually exercised through a separate subsidiary arm, which for convenience we shall refer to throughout this report as the "international subsidiaries". The main exceptions are those industries like British Airways whose market is international as well as domestic. A list of the main international subsidiaries is given in Annex 2. The services offered are based normally upon the operating experience and related activities of the main undertaking and cover such aspects as technical advice, operational management, commissioning, quality assurance and training. In the case of certain major industries, such as power generation, steel and railways, the stated range of services may extend to design and project management. However, because of the inherent limitations under which the international subsidiaries operate, notably as

regards their ability to accept risk on their own account, such activities tend to be restricted in scope and to cover feasibility studies, preliminary planning and outline design rather than complete project management, including detailed design and supervision.

3.2 The international subsidiaries, even of the larger industries, tend to be small. Typically, they are staffed by a limited number of professional managers and engineers, who are principally engaged in marketing services on a world-wide basis. The capability of these organisations lies, however, not just in their permanent complement but in their ability to call upon the expertise and knowledge available from within the parent body. Having access to the resources of the parent industry represents a strength but having to rely upon it can also act as a limitation, since a potential conflict can arise between the objectives and the requirements of the domestic organisations and the international subsidiaries when they have to compete for the more talented and scarce specialists. Certain industries have responded well to overseas demands on their services. However, given that the primary duty laid upon the Boards is to maintain an efficient domestic service, and taking into account the difficulty of persuading key UK based career personnel to accept short and often inconvenient secondments abroad, it is not surprising that the international subsidiaries do not always appear to be successful in establishing a prior claim. This view was supported in the evidence submitted to the group in which some dissatisfaction was expressed about the commitment of the parent Boards to supporting overseas activities.

3.3 As the subsidiaries of statutory undertakings, the international subsidiaries have to accept a number of restrictions on their freedom of operation and in that respect, as in the scope of the services they can offer, they are in a materially different position from firms in the private sector which have greater opportunities to recruit and develop their range of expertise in depth in response to the demands of the market, to expand into other areas of commercial activity and, most important, to take risk on their own account. The limitations on the nationalised industry subsidiaries in part derive from their relationship with their parent organisations but more fundamentally, from the statutory and financial framework within which they, no less than their parents, are required to operate. The fact that the main Boards' borrowing requirements are stringently controlled and that during periods of financial restraint, the parent industries may find it difficult to cover their own investment requirements, unavoidably affects their ability to commit resources to a subsidiary activity which can contribute only at the margin to the efficiency of their main operations. That constraint, in itself, would be enough to discourage the main Boards from allowing their international subsidiaries to accept significant commercial risks. There is an additional and more formal reason. The Boards are under a statutory duty to maintain their basic services. It would therefore be contrary to their central responsibilities if they were to jeopardise their domestic operations by exposure to the possibility of substantial contingent liabilities, including civil damages, incurred on their overseas activities. It has been argued that this limitation should be eased to enable the international subsidiaries to expand their range of services and assume a full consultancy capability. We would not support such an approach. Ultimately the only

solution would be for the government, on behalf of the taxpayer, to underwrite such risks on behalf of the industries. That, in our view, would be commercially unsound. Moreover, it is unnecessary. The private sector is geared to taking the major risks associated with consultancy, contracting or other forms of involvement in project work. To the extent that nationalised industry participation is required, contractual means exist to apportion the risks and liabilities, so that the industries need not be exposed to more than their appropriate and limited share.

3.4 Although the nationalised industries are precluded, by the terms of their operation as well as limitations imposed by resources and experience, from providing the full range of services offered by the private sector, their advice and assistance is much valued by overseas customers. NIOG's Annual Report for 1982/83 recorded that its members generated a turnover of £342 million from their activities abroad, representing an increase of £112 million over the results for 1981/82.

3.5 Despite the size of their turnover, the charge is sometimes made against the international subsidiaries that they are unprofitable or are subsidised by their parents and can thus afford to undercut the private sector where their fields of activity overlap. Against that, can be set a complaint that at least some of the international subsidiaries' services are too expensive and that they tend to offer over-generous terms to their domestic personnel posted overseas. Yet a third line of argument, which is sometimes developed, is that the UK nationalised industries should act as

loss leaders, as it is alleged their foreign counterparts do, in order to open a market for British manufacturers and suppliers by offering cut-price feasibility studies.

3.6 We have come across no evidence that the nationalised industries do subsidise their overseas operations. It is firmly denied by NIOG and the industries themselves, who point out that the parent organisations could neither afford to support unprofitable activities of this kind, nor would wish to defend themselves against possible criticism by their sponsor Departments. That is not to say that all activities yield a full commercial rate of return, but we are satisfied that the intention in each case is, correctly in our view, that the international subsidiary in question should operate commercially. We consider, nevertheless, that in this respect, as in others, the terms of reference and the commercial objectives of the international subsidiaries could be more explicitly and publicly stated. That is not only desirable in itself, but would serve to reduce the potential for friction between the industries and the private sector and improve the climate for collaboration which is necessary if the UK is to make the fullest use of its project capability.

3.7 We believe that the overseas activities of the nationalised industries, given the right direction and kept within appropriate limits, should be beneficial to the industries themselves, enabling them to earn additional revenue, to acquire knowledge of other countries' technical and operating experience, and to expose staff, whose careers would otherwise be confined to the UK, to a different commercial and professional environment.

While nationalised industries continue to have the main part, if not a monopoly, of operating experience in a number of major sectors, including electricity, gas, coal, steel, water, railways and airports, it is important from a national point of view that they should have the capacity and enthusiasm to collaborate with or offer services to the private sector in the planning and execution of overseas projects.

3.8 We would emphasise that the private sector, particularly if reinforced by wider experience as proposed in section 4, should be capable of carrying out the full range of tasks associated with major project work. There are occasions when an overseas client attaches value to the introduction of direct operating experience at an early stage in project development and also wishes to build up a reserve of trained personnel prior to commissioning. In both these areas, the participation and collaboration of the relevant nationalised industry can be instrumental in securing the main business for the UK. In a number of instances indeed a foreign client has insisted that the appropriate UK public sector body should be involved in a project, partly as a means of securing access to operating advice and training but partly on the assumption that such an involvement would afford an additional assurance of HMG's interest and commitment to success.

3.9 There are other ways in which the nationalised industries can assist the UK project export effort. The ready access which a number of industries have to their public utility counterparts in other countries can be helpful in a number of sectors in creating openings for business. Secondly, the importance of allowing prospective overseas customers access to nationalised

industry operations was widely acknowledged in evidence. The existence of an international subsidiary can facilitate the demonstration of domestic plant or operations. The responsibility for making this operational experience available should, we believe, be accepted clearly by the parent undertaking itself, in recognition of its favoured monopoly status, and in no circumstances should denial of access be used as a means of reinforcing the position of an international subsidiary against UK private sector consultants or contractors. This we believe to be the position of the Boards concerned.

3.10 The development by the nationalised industries of the commercial and operating framework for overseas services appears to have been largely ad hoc, as can be seen from the comparison of the relevant statutory powers (where they exist) authorising these activities. As illustrated in Annex 3, these range from a specific, if still somewhat imprecise, authority on the one hand to an inferential reading of the Act setting up the main undertaking on the other. Similarly, despite a continuing debate about the role of the nationalised industries in the export field, there remain areas of uncertainty and a number of unresolved issues about the objectives, nature and scope of their overseas activities. We are not convinced that sufficient thought has been given to delineating and defining this area of activity.

3.11 We consider that it would be helpful, not only to the nationalised industries themselves but also to the project sector generally, if the government and the industries were to review the latter's overseas activities with a view to giving clear published guidance on the objectives to be adopted and on the basis on which services should be offered. With this in

mind, and to avoid doubt about where we stand, we make a number of recommendations, based on our analysis of the position, which are intended to form the basis of the government/nationalised industry review:

Recommendation 1: The capability of the public and private sectors is complementary and the aim should be collaboration in the pursuit of business not competition. In this respect, the nationalised industries should concentrate upon those services which they are best fitted to undertake, such as operational studies, systems planning and training based on their experience, and leave the private sector to offer such services as financial justification studies, project planning, detailed project design and project management, and supervision.

Recommendation 2: The industries should review their policies on the secondment of staff overseas and on the terms granted. They should encourage more of their progressive highly qualified staff to accept a period on overseas work. It would be helpful if this could be recognised as a positive factor in career development and not as time spent outside the main career activity. Care should be taken to set appropriate terms for overseas allowances and remuneration taking account of commercial practice.

Recommendation 3: The international subsidiaries should continue to be required to operate within normal commercial objectives, but should be given clear guidance on the terms of reference and scope of their permitted activities.

DESIGN AND MANAGEMENT OF CAPITAL PROJECTS

4.1 Much of the evidence we collected concerned the way nationalised industries handle their major capital projects in the UK, and the impact of this on the private sector's performance overseas. In exploring this area, we focussed on two major project functions - design and management. By "design" we mean detailed engineering design as distinct from first stage conceptual design, and, in this context we define "management" as having responsibility for selection of major contractors and sub-contractors, procurement of hardware, control of interface, co-ordination of all inputs and day-to-day control of implementation.

4.2 We could not claim, in the case of each industry, to have established a complete picture of the way in which it has handled major capital projects. But the impression gained from those with long experience in these industries points to a discernible trend. In the early years of the main industries and up to the mid-late 1960s, the undertakings appear to have relied for the greater part of their design and project management work on private sector consultants and main contractors, the role of their own engineers and managers being largely confined to the formulation or agreement of specifications, participation in the adjudication of tenders and supervision and monitoring of the project during the implementation stage. Gradually, as internal design and engineering staff resources increased, the industries began to assume a greater responsibility for all aspects of detailed, as well as initial design, and for direct project management, using private sector consultants and contractors as sub-contractors. This pattern was mirrored in

the development of the on-shore transmission and distribution network for natural gas and electricity, and in investment in power stations.

4.3 The reasons given for this change in approach are various. It is claimed, for example, that some projects require special skills and knowledge beyond the resources of the private sector. Although this might be true of certain highly specialised fields, it is a view strongly contested by the private sector who point out that, overseas, main contractors are involved in the full range of major development work including nuclear technology as well as airports, metro systems and power stations. Indeed, there is an element of self-fulfilling justification about such a claim by the nationalised industries; the more the industries assumed these responsibilities, the less able was the private sector to satisfy their requirements. Another reason given is that such work can more economically be kept in-house. That, we think, is open to question, even at the peak of an investment cycle. There is the added difficulty that the in-house resources are linked to one industrial sector and there is thus no opportunity for using a common resource to serve several markets which may not all peak or trough together. At any point in the investment cycle we would expect that normal commercial pressures would force private sector contractors and consultants to keep their overheads to a minimum, thus enabling them to offer competitive prices for similar work. It is also said that for safety reasons, certain work has to be retained in-house. We acknowledge that nationalised industries must keep close control over design standards and must be fully engaged in monitoring the implementation of projects. But there are few, if any, areas where private sector contractors have not proved capable of working to

exacting, as well as economical, design standards when engaged on projects in such demanding markets as Hong Kong. We conclude that the industries behaved similarly to many large private sector undertakings during a period when work was relatively plentiful and financial and other pressures less than now - they allowed a trend towards in-house activity to develop, without looking sufficiently at the commercial and economic alternatives. Because of the expense of maintaining large design and engineering staffs during periods of relatively low investment, the pattern appears to be changing again. We welcome, for example, the award of the fourth Heathrow terminal to a lead private contractor and we believe that genuine efforts were made to put out as much as possible of the new Falklands airport to private sector consultants and contractors. The electricity, gas and water sectors also appear readier now than before to put out work to private firms and we would wish to give such developments every encouragement. However, we are conscious that a number of major industries still have sizeable design and engineering establishments and that the pressures on managers and boards to keep as much work in-house as possible is still strong. For instance the British Airports Authority is itself managing the extensions to terminal facilities at Gatwick, and we understand that the Authority is unlikely to contract out planned project work in the foreseeable future.

4.4 Whatever the reasons for maintaining project work in-house, the assumption by the nationalised industries of the main responsibility for detailed design and project management work has had a major and serious impact on the capability of the UK to bid for overseas projects. It has meant that in many sectors, including electrical power generation, airports

and mass transit systems, no private sector consultants, main contractor or manufacturer, either separately or in conjunction, has been able to cite a major investment in which they have had the role of project managers. The shortage of domestic reference has placed the UK engineering contracting industry at a severe competitive disadvantage with its foreign rivals, notably American, Japanese, French and West German contractors who, either in their own right or through a closer association with their public sectors, have secured an impressive track record in such areas as power engineering, mining, railways, airports, ports and water.

4.5 One solution which has been proposed is, following the logic of retaining project management in-house, that the nationalised industries should assume an overseas project leadership role themselves. The example of the "SOFRE" in France or public sector contractors such as Snamprogetti in Italy are sometimes quoted as models. We do not consider that this approach, in the UK context, is practicable or indeed desirable. We are quite clear that within their present operating framework, the nationalised industries could not undertake a lead contracting role, or indeed provide the main design and project management component within a joint private and public sector effort, the main reasons being:

- (a) The main responsibility of the industries is to provide an efficient service for domestic consumers; the addition of a major overseas dimension to their operations would entail a substantial change of direction and would give rise to

conflicting calls upon resources and management which could not be satisfactorily reconciled.

- (b) Under their present financial framework, the industries could not accept the large contingent risks associated with a major project role. Nor, for the reasons stated earlier, should the taxpayer be expected, even if willing, to accept the commercial and performance risks that would arise.
- (c) The industries do not have readily available a sufficient number of the right personnel with an appropriately broad engineering and commercial background, conditioned by hard selling experience in highly competitive markets, to transfer to overseas project management work.
- (d) It takes time to build up competence in project leadership, demanding, as it does, a blend of specialist skills and experience capable of harnessing a range of multi-disciplinary resources to deliver a completed, operational facility on time.

Our conclusion, taking into account the experience in France outlined in Annex 4, is that if the UK were to adopt a similar approach, it would require a full-blooded commitment. It would entail, for example, creating separate and substantial new public sector organisations with their own capital bases adequate to support the full range of project risks and liabilities. Senior

personnel would have to be transferred from within the existing industries and reinforced with suitably qualified professional staff from the private sector with experience of a wide range of expertise gained in different industries. Some means would have to be found of reconciling the interests and priorities of the new public sector contracting organisations with their existing private sector counterparts.

4.6 The more the implications are worked out, the less plausible and possible the public sector route appears. That is without taking into account what is in our view the gravest defect of proposals of this kind, namely that we already have in the UK a number of strong, competitive risk-takign enterprises, which despite the handicap imposed by being denied access to key nationalised industry design and project management work, have yet managed to maintain an international reputation and record of success. The experience of West Germany and the US, also outlined in Annex 4, would suggest that there is another approach better suited to the UK commercial environment - leaving the private sector to take the lead overseas, while encouraging the nationalised industries to contract out a much higher proportion of their design and project management work than at present.

4.7 Although we are convinced of the importance of such a change of direction, the strengthening of the UK private sector project capability may not be regarded as a sufficient reason for instituting a substantial shift in practice in the public sector. Nor do we underestimate the problems, not the least social, which would face a number of industries which even now are finding it difficult to utilise fully their design and engineering teams.

Furthermore, we have to acknowledge that the immediate impact of the greater delegation of project work would not be great during a period when major investment in the public sector is severely constrained.

4.8 Despite the problems, we are sure that it is right now to examine the balance between the design and project management work performed in-house by the nationalised industries and that put out to the private sector. We are led to that conclusion, not simply because of the need to strengthen the UK's overseas project capability but because we believe that there is independently a strong economic and commercial case for the greater delegation of such activities. Whatever case may be advanced for the maintenance of extensive in-house resources, we, as managers, think it questionable whether it is likely to be in the commercial interests of the public undertakings to attempt to maintain a design and engineering capability sufficient, at the extreme, to handle all or the greater part of their project work. Our investigations into the practice of large private sector enterprises, investing in major capital projects, supports that view.

4.9 The main private sector enterprises we approached - BP, Shell, ICI and RTZ - all emphasised that they regarded it as crucial to their commercial operations to get the balance right between the use of in-house skills and bought-in expertise in the project field. Most, at an earlier period, had built up their internal resources but had been forced to reduce to what they regarded as the minimum level of in-house engineering in order to:

- (a) match their resources to the fluctuations of the investment cycle;
- (b) keep overheads at the lowest possible point;
- (c) avoid the dangers of in-breeding and the narrowness of viewpoint and experience which result from a lack of interaction with outside professional engineers and designers. A number of those interviewed said that they had found that attempting to retain a major part of their design and engineering work in-house had resulted in more complex and more expensive solutions.

In essence, the commercial philosophy of such enterprises is a simple one - to retain a basic capability sufficient to carry out essential project related tasks but to transfer the problem of supporting overheads and the maintenance of teams of specialists to outside consultants and lead contractors. The result is one that should be of general benefit; not only do the purchasers limit their overheads, but consultants and lead contractors improve their work load and experience and, during a downturn in the investment cycle, they are normally better placed to shed staff or to find alternative outlets for their expertise, and are less likely therefore to be caught with the heavy burden of underutilised and expensive resources.

4.10 The approach to project management adopted by the major private sector enterprises also contains lessons for the public sector. The former regard the design and execution of a major investment as a joint effort with outside specialists. A typical pattern is as follows:

- (a) the basic design concept, including outline specifications, is worked out by their in-house engineering resources;
- (b) the project is contracted out in its entirety, either by negotiation or through competitive tender, to a company responsible for detailed design, the selection of sub-contractors and suppliers, co-ordination and overall control. (In a few cases, where difficult technology developed by themselves is involved, the investor may retain overall control);
- (c) a restricted in-house project team is created to monitor the main contractor. When problems arise, the team is already sufficiently involved to assist the main contractor to overcome them or even, in the most extreme circumstances, to bring in another firm. At no point, however, does the project team assume responsibility for management of the project.

We can see no reason why the same approach should not serve the nationalised industries equally well or should not yield the same benefits of reducing overheads and the risk of being caught with excess resources during a downturn in the investment cycle, of creating broader engineering experience and of promoting a greater awareness among managers responsible for major investments of the market price for capital works. We would emphasise that greater reliance on external design and project management expertise need not diminish the industries' control over their projects. Indeed, by concentrating on getting what they want rather than performing all areas of work themselves, their actual control of key aspects is greater. They will wish and will need to have the capability to be involved in all stages from conceptual planning, through detail design to implementation and commissioning - but on a partnership basis, not invariably as the principal executor and manager of the work.

4.11 Our recommendations are:

Recommendation 4: Each of the nationalised industries should examine its approach to design and project management work taking into account the experience of the private sector, giving wide consideration to the national benefits which can accrue from contracting out a higher proportion of its requirements.

Recommendation 5: Each should also regularly monitor the balance between in-house capability and the use of outside resources and expertise.

SPECIFICATIONS AND STANDARDS

5.1 The nationalised industries also influence the UK's international competitiveness by the specifications they draw up and the standards they set for supply of equipment in their domestic operations. On this area of activity the evidence we collected was mixed. In some sectors the excellence of nationalised industries' standards was widely recognised overseas, and a helpful factor in securing export business. In others, standards and specifications appeared to be pitched at levels beyond the needs of customers in third world developing markets, where cheaper options were sought. As a result, UK suppliers, who were geared to the needs of nationalised industries at home, were losing business. Apart from the charge of over-engineering, our attention was also drawn to the fact that products developed solely to satisfy nationalised industries' needs seldom proved attractive overseas.

5.2 We appreciate that there is a genuine dilemma here. Quite rightly, procurement by the nationalised industries is directed primarily at their own specific domestic requirements; and most of our private sector respondents recognised that this had to be the nationalised industries' first priority. The extent of the problem varies from sector to sector. In some such as airports, where international standards apply, or offshore gas extraction, where new technology can be exploited worldwide, domestic and international demands are more easily reconciled. In others, where a specific type of natural resource dictates special-to-type plant and equipment as in the coal industry, or where a long-established utility has been progressively tailored over many years to specific domestic needs such as the railway network, the

nationalised industries understandably find it more difficult to draw up specifications and develop products with good sales potential in overseas markets. Also there are sometimes compelling performance or safety reasons for adopting standards higher than current British standards.

5.3 This particular conflict of interests was recognised both in a recent report by an ACARD working group* and a 1982 White Paper on 'Standards, Quality and International Competitiveness'.[‡] The ACARD report concluded that "public sector organisations should seek to meet their requirements with equipment that can be sold in international markets, even if this means some compromise over specifications". We think that this is a good starting point for the nationalised industries to adopt in developing their purchasing policies. We also welcome the general thrust of the 1982 White Paper and support its proposals, notably that there should be:

(i) "closer co-operation between the government and the BSI to develop British Standards which are of the required quality, command respect in world markets and are suitable for regulatory purposes and/or for public purchasing";

and (ii) "a much greater emphasis in public purchasing on linking requirements to existing standards rather than technical specifications particular to the purchasers".

* "Facing International Competition" by the Advisory Council for Applied Research and Development (ACARD).

[‡] Cmd 8621

In relation to these, we note with satisfaction para 2.4 of the White Paper, which states:-

"The government will encourage other purchasing authorities (such as local authorities and nationalised industries) to participate fully in standards - making"

Moreover, we are encouraged to find that many nationalised industries are already acting in line with the White Paper policy, and are contributing to the promotion of better and more appropriate standards. British Rail, for one, have been progressively replacing their own standards with those of the British Standards Institution (BSI), though they, like other nationalised industries, sometimes operate outside the BSI system to produce their own specifications when these are urgently required.

5.4 Although the 1982 White Paper is stimulating some response, the evidence suggests that more could be done to attune nationalised industry specifications for new products and processes to international demand. In assessing the development of new plant and processes, the British Chemical Engineering Contractors Association, for instance, attaches considerable importance to the involvement of contractors' staff at an early stage in conceptual and detailed design, and sees a need for more systematic arrangements, broadly similar to those which existed in the 1950s to ensure that developments by nationalised industries are exploited overseas to best advantage. While acknowledging a certain degree of existing rapport with the nationalised industries, the British Metallurgical Plant Constructors'

Association suggests this might be reinforced by establishing an effective dialogue with British suppliers at the 'first thoughts' stage of a requirement. The British Electrical and Allied Manufacturers Association (BEAMA) sees effective collaboration between the private sector and nationalised industries in developing new products as particularly important, where most nationalised industries have in-house R & D resources and private sector supplies do not have equivalent access to relevant technology. One possible area of such collaboration suggested by BEAMA is improvement in the present transmission and distribution system for electricity supply. BEAMA believe that, though of limited economic benefit to the customer, such an improved system would provide an excellent shop window for overseas sales as well as yielding other national benefits in terms of employment and increased utilisation of existing capacity. In addition to consultations with suppliers, the evidence also indicated that a better appreciation of features with overseas appeal could be engendered both within the nationalised industries and amongst their suppliers through greater collaboration with private sector consultants in drawing up specifications. We think that more interaction between the nationalised industries and consultants in this area is likely to produce such a result, considering the latter's wide experience in international markets. We therefore recommend that:-

Recommendation 6: In drawing up specifications the nationalised industries should, in order to develop products and processes which can be more easily marketed overseas:

- (i) work more closely with private sector consultants;
- and (ii) set up arrangements to ensure closer liaison with their suppliers;

5.5 A consistent theme running through the evidence was that specifications adopted by the nationalised industries were too detailed, of too high a standard for either UK or overseas needs and too often needlessly different from what was available 'on the shelf'. So marked does the trend towards over-specification seem to be in certain areas, that some nationalised industries appeared to us to be straying inadvertently into a business quite different from their own ie that of the plant/equipment designer/supplier. Not only does this impose economic penalties on the nationalised industries themselves, but it places an onerous burden on suppliers, particularly when decline in public sector demand is hitting volume and has sharply reduced the share of their production going to nationalised industries. Unable to adjust rapidly to this situation because the bulk of their existing products are geared to nationalised industry requirements, suppliers are at a disadvantage when trying to capture new markets at home and overseas. Examples were submitted from a number of industries. In the gas industry several respondents detected a tendency within the British Gas Corporation to purchase equipment developed to its own specifications, rather than to buy what is commercially available, with the result that prices were unnecessarily high and suppliers had to manufacture to two standards to compete abroad. Similarly specifications adopted by the electricity supply industry were claimed to generate products, which are engineered to an

unnecessarily high standard and are uncompetitive in third world markets. There was also widespread criticism of British Rail specifications for the same reason. We think that the evidence presents a strong case for the nationalised industries to re-appraise their policies on drawing up specifications both to reduce their own costs and staff effort and to strengthen their suppliers by improving the latter's sales prospects in other markets. We therefore recommend:-

Recommendation 7: In writing procurement specifications nationalised industries should take steps to -

- (i) draw up performance as opposed to detailed product specifications;
- and (ii) wherever possible, stipulate performance standards acceptable in overseas markets.

We realise that this recommendation is already an integral part of the policy embodied in the government's Public Purchasing Initiative, launched in 1980, but, although some progress has been made, we consider that nationalised industries could go a good deal further in this direction.

5.6 A more difficult problem for suppliers to nationalised industries in a monopoly user position can arise when an opportunity occurs to develop a new product or process for which there appears to be an overseas demand, but for which there is no requirement at home. This may happen for a variety of

reasons eg wide differences in climate or operating environments. More often, the supplier's problem in such circumstances is to build up adequate user experience to back up launch of the product or process into overseas markets. Nationalised industries could help suppliers to bridge this gap by collaborating with them in proving new products and processes. Sometimes private sector manufacturers may need not only help to demonstrate new equipment for exclusive use overseas, but also assistance in developing it. For instance it is suggested that there is scope in the electricity supply industry for the nationalised industry and equipment suppliers to collaborate on adapting standard equipment for sale in export markets. Another example is drawn from the coal industry, where current boilers are designed to accommodate indigenous bituminous coal, to operate with high thermal efficiency and to provide high availability. A number of overseas territories have different coal types, such as the brown coals in Australia and lignites in Greece. While there is no need in the UK to develop specialised technology to deal with such fuel, lignite deposits in Northern Ireland do offer an opportunity to develop a plant which could be the foundation for future export plants utilising that type of fuel. These and other examples did persuade us that joint arrangements between nationalised industries and their suppliers for proving, and occasionally developing, 'export-only' products and processes will sometimes be justified. This could be done provided that suppliers, perhaps with assistance from government support schemes, are willing to support the extra costs incurred by the nationalised industries on activities which go beyond their own commercial needs. Accordingly we recommend that:-

Recommendation 8: Nationalised industries should be encouraged to assist suppliers to introduce new export products and processes by making available existing facilities for demonstrating and proving such equipment.

Recommendation 9: Nationalised industries should be encouraged to collaborate with suppliers in developing export products and processes, where the suppliers, (with the assistance of Government where appropriate), are prepared to support the costs incurred by the nationalised industries on activities which go beyond their own commercial needs.

LIST OF ORGANISATIONS FROM WHICH THE WORKING GROUP HAS RECEIVED EVIDENCE

(a) Government Sponsoring Departments:

Department of Energy

Department of Transport

Department of Trade and Industry

(b) Trade Associations:

Association of Consulting Engineers

British Chemical Engineering Contractors' Association

British Consultants Bureau

British Electrical and Allied Manufacturers Association

British Metallurgical Plant Constructors' Association

Electrical Cablesmakers Confederation

Energy Industries Council

Engineering Industries Association

Export Group for the Constructional Industries

Process Plant Association

Railway Industry Association

Telecommunications Engineering and Manufacturing Association

Society of British Gas Industries

British Water Industries Group

(c) Companies in Engineering Contracting Industry:

Babcock International

British Pipeline Engineers and Contractors (BPEC)

Davy McKee

General Electric Company

Hawker Siddeley Power Engineering

Laing

Plessey Telecommunications

Sim-Chem

Standard Telephones and Cables

Taylor Woodrow Group

William Press Group

(d) Project Owner Companies in Private Sector:

British Petroleum

Imperial Chemical Industries

Rio Tinto Zinc

Shell

NATIONALISED INDUSTRIES' INTERNATIONAL SUBSIDIARIES RESPONSIBLE FOR OVERSEAS
ACTIVITIES

Parent OrganisationInternational Subsidiary

British Airports Authority/Aeradio
International

British Airports International Ltd

National Coal Board

British Coal International

Electricity Council

British Electricity International Ltd

British Gas

International Consultancy Service

British Steel Corporation

British Steel Corporation (Overseas
Services) Ltd

British Telecom

British Teleconsult

Water Authority's Association

British Water International Ltd

British Rail

Transmark

London Transport

London Transport International

STATUTORY AUTHORITY FOR THE INTERNATIONAL SUBSIDIARIES OF THE NATIONALISED INDUSTRIES

BRITISH AIRPORTS INTERNATIONAL (BAI)

It is a limited company jointly owned by BAA and IAL (the latter being a subsidiary company of British Airways). British Airports International ultimately depends on section 2 of the Airports Authority Act 1975 which allows the Authority to provide consultancy services overseas, and on section 24 of the Civil Aviation Act 1980 which extends the Authority's powers to provide and assume management of any aerodrome outside Great Britain and provide services or facilities which are in the opinion of the Authority necessary or desirable for the operation of aerodromes outside Great Britain.

BRITISH ELECTRICITY INTERNATIONAL (BEI)

The only remit of the Electricity Supply Industry under the Electricity Act is to produce electricity in accordance with the best interests of the consumer. The only known statutory prohibition is not to engage in manufacture.

BEI's locus stems from the assumption that the company's consultancy work makes the manufacturers more healthy which is in the interests of electricity consumers through the provision of domestically produced plant, as opposed to imports.

BRITISH GAS CORPORATION

The Gas Act does not provide specific authority to undertake overseas consultancy. In cases of difficulty the Corporation consults the Secretary of State for Energy. The Gas Act prohibits the Corporation from investing overseas.

BRITISH RAIL

Section 50(7) of the Transport Act 1968 states:

"Each of the Boards shall have power to provide for any person technical advice or assistance, including research services, as respects any matter in which the Board have skill or experience."

BRITISH STEEL CORPORATION

Substantially all the consultancy activities carried out overseas within BSC as a group are carried out by its wholly owned subsidiary British Steel Corporation (Overseas Services) Ltd (BSCOS), a company incorporated under the Companies Act. The company derives its powers from its Memorandum of Association. In this respect, these powers are in no way circumscribed by the Iron and Steel Act 1975.

To a much smaller extent, technical advisory services within their own field are provided overseas by Redpath Dorman Long Ltd (RDL) and by BSC itself trading as Pipework Engineering Developments (PED - a part of BSC Tubes Division).

RDL is also registered under the Companies Act and derives its powers from its Memorandum of Association in the same manner as BSCOS.

BSC derives its powers in relation to the technical advisory services provided by PED under the provisions of section 3(b) of the Iron and Steel Act 1975, in terms of a general authority issued on 26 March 1970 by the Minister of Technology in pursuance of section 2(i) of the Iron and Steel Act 1967.

BRITISH TELECOM

The British Telecommunications Act provides under clause 2(4):

"The Corporation shall have power to furnish any authority or person outside the UK with assistance (whether financial, technical or of any other nature) if in its opinion the consequences of so doing will enure for its benefit."

NATIONAL COAL BOARD

The NCB is authorised under Section 2 of the National Coal Board (Overseas Activities) Order, 1975, to provide technical advice and services in relation to mining activities outside Great Britain.

WATER AUTHORITIES ASSOCIATION

British Water International Ltd (BWI) is a wholly owned subsidiary company of the Water Authorities Association and was established in July 1983 as a successor to the National Water Council International Advisory Service to manage and co-ordinate the overseas consultancy activities of the UK Public Sector Water Industry. The powers of the Water "Authorities" to act overseas are defined in Section 5 of the Water Act 1983, which reads:

"5 (1) Subject to subsection (2) below, a Water Authority or statutory water company may provide for any person outside the UK advice or assistance, including training facilities, as regards any matter in which they have skill and experience; and for the purposes of this section, statutory water companies shall have the same powers as Water Authorities

(2) The power conferred by subsection (1) above shall not be exercised except:-

- (a) with the consent in writing of the SoS; and
- (b) if the exercise of that power involves capital expenditure or the guaranteeing of any liability, with that consent given with the approval of the Treasury."

PRACTICES OF NATIONALISED INDUSTRIES IN SELECTED COMPETITOR COUNTRIES

As part of our investigation we looked at the project role of nationalised industries and like utilities in a selection of competitor countries. The three we chose, because of ease of access to relevant information, were the USA, West Germany and France. The situation in the first two is similar in that few nationalised industries exist. Those enterprises which are publicly owned, such as the Tennessee Valley Authority in the USA and the Bundesbahn and Bundespost in West Germany, tend to keep most of their project design and management in-house, (though this is not so true of NASA). However, the great majority of utilities in both these countries are in private hands, and they contract out a large degree of project management and design in much the same way as private sector 'owners' in the UK. Consequently private sector contractors bidding overseas have ample opportunity to build up an impressive track record in their home markets. In France nationalised industries are more numerous. In most cases French nationalised industries act themselves as maitre d'oeuvre on major projects. Electricite de France, Gaz de France and Charbonnages de France design and build their own new plant with the help of sub-contractors as necessary. There are limitations therefore to the experience French private sector companies can build up on domestic nationalised industry projects. However, the experience gained on design and management of nationalised industry projects in France is channelled overseas through the Sofre organisations which have contributed significantly to the success of French companies in securing export contracts. The Sofres are consultancy companies, which operate mainly outside France. They are partially owned and largely staffed by French public sector bodies, and, while they seldom lead a consortium bidding for a turnkey contract, they

frequently have a co-ordinating role within such consortia. More detailed information about the handling of projects by the particular enterprises whom we consulted in the three countries examined is given below.

USA

1.1 Tennessee Valley Authority (TVA)

TVA relies primarily on in-house staff for project development and management. It has about 2,000 engineers on its staff and rarely uses outside consultants. TVA has not experienced slack investment periods in recent years - when it does, the agency moves engineers to other jobs or lays them off. Capital projects undertaken include dams, multiple use reservoirs, nuclear and hydroelectric power plants, pollution and environmental research facilities.

1.2 Port Authority of New York and New Jersey (NYPA)

NYPA uses in-house resources almost exclusively and has around 450 engineers on its books. When the work load is too great, the Authority will take on contractors from among the top 30 engineering firms in the USA. It has not had a slack investment period in recent years.

1.3 National Aeronautics and Space Administration (NASA)

For most construction projects, NASA contracts design services to the private sector, but project management is normally undertaken by in-house resources.

However, for major construction projects in excess of several million dollars, or when project activities are at a peak, the management function is contracted to the private sector or other government agencies (eg US Army Corps of Engineers). In the case of major systems projects (eg Apollo or Shuttle launch vehicles), mission analysis and requirements definition is carried out in-house, while design and development is normally put out to contract. NASA has approximately 11,000 scientists and engineers out of a total work force of 22,000 employees. Amongst NASA contractors, who also operate overseas are:- Bechtel, Polote Corporation, Sverdrup and Parcel, Blount Bros, Burns and Roe, Ralph M Parson.

1.4 Washington Metropolitan Area Transit Authority

This authority often gives a large share of its project design and management work to outside contractors, but maintains in-house capability to monitor the project.

WEST GERMANY

2.1 Deutsche Bundesbahn (DB)

DB does not let out any turnkey contracts. In all projects DB has to undertake a certain amount of the design and management to meet its safety and other statutory responsibilities. Design and management of some of the more specialised projects, such as marshalling yards under construction at Munich, is carried out mostly by in-house resources. On a project like the new Nuremberg metro, some of the design is contracted out to the private sector. Design and construction of rolling stock is carried out by private

sector firms, though in the case of locomotives, which use a $16\frac{2}{3}$ cycle system, there is not much direct application to overseas markets. Planning of signal boxes is done mostly by Siemens. Out of a total work force of 308,000, DB has the following engineering strength -

Building Work	- 580 with university qualifications 6,700 trained in polytechnics
Mechanical/electric	- 500 university 3,900 polytechnic training

2.2 Bundesministerium für das Post- und Fernmeldewesen (Bundespost)

Bundespost does not let out turnkey contracts. Planning and design is done in-house by local area units, of which there are 110 in the Federal Republic. Projects are then broken down into work packages and let out to private contractors.

FRANCE

3.1 Charbonnages de France (CdF)

The Bureau d'Etudes of CdF's Lorraine Division is responsible for conceptual and detailed design of all CdF projects. CdF also use in-house resources to manage their projects. For instance new surface facilities and an associated power station at Gardonne in the south is being designed and managed by CdF itself. The Nord Division, centred in Lille, is running down fast and is expected to cease operations this decade. In response to that situation, the

Chief Engineers Unit of Nord Division is diversifying into design for civil engineering projects such as hospitals.

3.2 Electricite de France (EdF)

To a very large extent, EdF use in-house resources to design and manage their investment projects. This is particularly true of nuclear power stations, sixteen of which they have now built to the same design. In response to government pressure, there has been considerable concentration of suppliers in the last decade, leaving only one contractor on the nuclear side (Framatome) and two in turbine generation (GM and Alsthom).

3.3 La Societe Nationale des Chemins de Fer Francais (SNCF)

SNCF does not let out turnkey projects. It maintains close monitoring of all areas of work and is responsible for overall design and management. Formerly, SNCF participation extended into quite detailed control of most aspects of the projects. However, in some parts of the high speed train project to Lyons (TGV), SNCF adopted a different approach. For instance, for the supply of rolling stock, which has always been contracted out to the private sector, SNCF selected a lead contractor, Alsthom, which was entirely responsible for detailed design and management of that area of the work.

3.4 Sofrerail

Sofrerail was set up in 1957 and is owned by SNCF (33%) and seven nationalised French banks (66%). It is a railway consultancy company operating overseas. The range of its activities includes economic studies,

technical studies, feasibility studies, organisation and management studies, technical assistance, supervision of the execution of projects and staff training. It has a staff of 150-250, who are seconded on a volunteer basis from SNCF. There is no difficulty in recruiting staff from SNCF. The Deputy General Manager of SNCF is President of Sofrerail. Sofrerail is presently working on projects in over forty different countries. It is fulfilling a supervisory management role on a number of these, such as a railway project in Mozambique where it is co-ordinating a consortium of French, Portuguese and Canadian firms.

