

United Kingdom Atomic Energy Authority

A report on the service provided by the Authority



MONOPOLIES AND MERGERS COMMISSION

United Kingdom Atomic Energy Authority

A report on the service provided by the
Authority

**Presented to Parliament by the Secretary of State
for Trade and Industry by Command of Her
Majesty
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Members of the Monopolies and Mergers Commission as at 29 January 1992

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Note by the Department of Trade and Industry

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1 Assessment

1.1. On 30 July 1991 the Secretary of State for Trade and Industry referred to the Commission certain questions relating to the efficiency and costs of and the service provided by the United Kingdom Atomic Energy Authority (AEA) in carrying out its statutory functions and in meeting the objectives set by the Secretary of State for Energy (see Appendix 1.1).

1.2. In this chapter we discuss the main issues arising from the reference which required a wide-ranging inquiry covering both AEA's corporate affairs and the diverse activities of its nine businesses. A summary of our recommendations, including, wherever possible, specific target dates for implementation agreed with AEA, appears at the end of the report in Chapter 17. We draw attention to key recommendations in paragraph 1.46.

Background

1.3. When AEA was formally created by the Atomic Energy Authority Act 1954, its central role was to lead the development of nuclear technology in the United Kingdom. In 1965 it was allowed to extend its activities into non-nuclear research and development (R&D) under contract for customers but nuclear work still predominated. At its peak in the early 1960s it had over 40,000 staff. Substantial nuclear activities were transferred in the 1970s to other organisations including British Nuclear Fuels plc (BNFL) and the Ministry of Defence (MOD) and AEA's staff was reduced by around two-thirds. Significantly, however, it was left with a number of widely scattered nuclear sites, subject to varying degrees of contamination which would have to be dealt with eventually, from Winfrith on the south coast of England to Dounreay on the north coast of Scotland.

1.4. There was another important change in 1986 when AEA's finances were placed on a trading fund basis. Essentially, this meant that it was no longer vote-funded but required to secure its income through commercial agreements with customers. The effect of this change has been enhanced in particular by Government decisions to cut back the funding for AEA's major nuclear programmes and to impose a moratorium on future nuclear stations until at least post-1994, further reducing work for AEA.

1.5. AEA responded by carrying out a major review of its strategy, which led to a fundamental change in April 1990 from a management structure based on sites to a new business-led structure which managed businesses across sites. The role of sites was adjusted to cover primarily support services meeting the needs of the businesses. AEA's aim eventually is to transform AEA into 'a fully commercial, successful and profitable technology-based services and products operation', taking advantage of what it sees as significant synergy between its nuclear and non-nuclear businesses.

1.6. Meanwhile, the Government has made it clear that it supports AEA in carrying forward this major restructuring 'which is aimed at increasing competitiveness, cutting costs, providing better value for money for its customers and increasing profitability'. It looks to AEA 'to achieve returns to

enable it to fund the costs of restructuring and make a return for the Exchequer'. It has told AEA that its objectives will be reviewed not later than the summer of 1993 (see Appendix 1.3). In this report, we refer to the various funding and other arrangements AEA has made to implement this restructuring as the 'restructuring programme'.

Performance

1.7. In the terms of reference, we first are asked whether, in carrying out its functions and meeting the objectives set by the Secretary of State, AEA could improve its efficiency and thereby reduce its costs without affecting the quality of the goods and services it provides.

1.8. In reviewing AEA's performance, we have had to keep in mind that it is an organisation undergoing fundamental change. This has created problems for both AEA and ourselves. AEA has had to respond to our wide-ranging requirements for information at a time when it was already under considerable pressure, and we are grateful for its ready response. For our part, we have been looking at a new structure which is still evolving. AEA's nine businesses with forecast external sales ranging from £14 million to £126 million in 1991/92 had been in operation for only 16 months when we started the inquiry. It is too soon to reach a firm conclusion on this development (see paragraph 1.10). Similarly, although we welcome them, we have been unable fully to evaluate proposed changes such as the crucially important new financial information system (FIS) and the new sites structure, both to be implemented in April 1992.

1.9. We have also taken two general considerations into account. First, although AEA's nuclear activities are in decline, they still account for some two-thirds of the external sales of AEA's businesses, and are relatively secure, since the Government is their major customer. We note that the nuclear businesses, and, in fact, AEA's other activities as well, have so far been virtually unaffected by the recession. This degree of security is a significant advantage, although it is to some extent counterbalanced by other factors; there is a declining programme of Government-funded nuclear research, and AEA's major customer sets its financial and other objectives.

1.10. Secondly, AEA's diverse businesses (four nuclear and five industrial), with activities ranging from nuclear research to petroleum services, rest uneasily in the public sector where their entrepreneurial activities are inevitably somewhat constrained. AEA clearly cannot expect freedom to take on expensive new ventures in circumstances where the taxpayer will be left with the bill if things go wrong. Equally, however, we see little prospect of AEA meeting its ambitious financial objective of funding the cost of its restructuring programme and making a return for the Exchequer, while its business expansion is constrained. It seems to us that this dilemma is only likely to be satisfactorily resolved by removing AEA's business activities from the public sector so far as this is practicable. We recognise that this would entail both some financial reconstruction and satisfactory arrangements for taking care of AEA's legacy of nuclear sites. It would be most apt to determine the appropriate course of action after completion of the review of nuclear power which the Government has announced it intends to carry out in 1994 (see paragraph 1.42); the new business structure will by then have had the opportunity to prove its worth.

1.11. We also note that AEA's businesses have the expense and inconvenience of being spread over widely dispersed sites which are too extensive for their needs and in most cases difficult fully to exploit commercially because of problems of location and nuclear contamination. It is not surprising that relatively remote sites chosen for their suitability for nuclear development are less convenient for other business purposes. Dounreay, Windscale and Winfrith all fall into this category. As we have indicated, this spread of sites is a legacy of AEA's nuclear activities. AEA intends to continue to rationalise sites, particularly those which are reasonably adjacent, enabling staff relocation costs to be contained and avoiding the potential problem of staff refusing to move with the business. The

Risley/Culcheth sites are in this category. The Harwell/Culham sites are another possibility in due course. Meanwhile we welcome the steps AEA has taken and is continuing to take to reduce its very high overheads, although we fear that under present arrangements they are likely to remain uncomfortably large (see paragraph 1.34).

1.12. Taking these considerations into account, we believe that AEA in carrying out its functions could continue to improve its efficiency and reduce its costs without affecting the quality of goods and services it provides. AEA plans to reduce its staff further, by about a sixth, in order to reduce costs and achieve a closer match of manpower with the needs of the businesses. We have noted particular weaknesses in financial and project control, investment appraisal and marketing, and have made recommendations which should result in further improvements in efficiency in these areas. We are also asked whether the quality of AEA's goods and services could be improved without any increase in costs; it follows from the above that it could.

1.13. The final broad question in the terms of reference is the extent to which alteration of quality might generate higher net revenue. Our survey of AEA's customers indicated that its technical performance was well thought of. Customers were least satisfied with its achievement of milestones and deadlines, contract administration, and marketing and provision of pre-contract information. It is reasonable to suppose that improvements in these areas would in due course generate higher net revenue, and we have made a number of recommendations to assist this process.

1.14. We now turn to the particular questions in the terms of reference.

(a) The efficient and economic use of manpower

1.15. In the course of its restructuring programme, AEA has reduced its staff from some 13,600 in 1988 to around 9,600 by 31 March 1991 and it expects a further reduction of about 1,500 by 31 March 1995. Staff costs are an important element in site overheads and AEA has recognised that further reductions are an essential part of the change to a corporate sites structure in April 1992.

1.16. We have concluded that the proportion of personnel and training staff in the workforce is unusually high and have recommended that within the six months following the introduction of the new corporate personnel service, in April 1992, the numbers should be reviewed.

1.17. We have also concluded that quantifiable objectives for non-industrial staff are not always being set; the productivity bonuses for industrial employees, which are based solely on attendance measures, are not related to increased productivity; and there is a need for further manpower reductions to bring numbers into line with expected reductions in work. We have recommended the setting of quantifiable and challenging objectives for all non-industrial staff; review of the operation of all bonus and productivity schemes for industrial employees; and that AEA should continue to adjust workforce numbers in order to reduce costs and achieve a close match of manpower with the needs of the business.

1.18. To reinforce and support this endeavour, we believe that AEA's consultation and bargaining machinery and pay structure should move away from the Civil Service model to arrangements more suited to the new business-led organisation. We have made a number of recommendations to this end.

(b) The economy, efficiency and effectiveness of the implementation of the restructuring programme

1.19. The restructuring programme is an essential part of AEA's strategy. At present AEA estimates that in round figures it will cost £392 million of which £279 million will be borne by AEA and £113 million by Government grant. Additional restructuring costs may arise from the proposed closure of the Dounreay Prototype Fast Reactor (PFR), the commitment to take back staff seconded to the Joint European Torus (JET) fusion research project and increased contracting out.

1.20. Over 60 per cent of the programme is accounted for by people-related costs, and the handling of this tranche of expenditure is therefore crucial to our assessment of the implementation of the programme. In AEA's view, the significant reduction in staff necessary to place its nine businesses on a viable footing has been facilitated by the introduction of special early release terms (SERT). We have found that in over 2,500 cases of early release under SERT there have been isolated instances where released employees have been re-engaged for specific tasks on a short-contract basis. But these few cases do not detract from the general efficiency and effectiveness of the implementation of a massive redundancy programme, which has speedily and flexibly reduced staff numbers without industrial unrest and any severe effects on staff morale. We have, however, been unable to reach a firm conclusion on the economy of the implementation of the redundancy programme because AEA has not produced overall costings either of the redundancy options open to it or of extending the restructuring process, as envisaged originally, over a longer period. We acknowledge the difficulties of producing overall costings in an evolving situation but in our view useful broad-brush comparisons of options could and should have been produced at the significant stages of the programme, for example at the commencement and when each major closure decision was reached. On the face of it, the redundancy programme could have been implemented at lower cost by a less liberal application of SERT terms. Against this AEA says that the unquantifiable effects of possible industrial unrest and loss of staff morale should be taken into account.

1.21. As to the restructuring programme as a whole, we are concerned that, although the costs associated with each segment of the programme have been reviewed against broad business objectives, there is little evidence of costed options having been prepared prior to decisions on restructuring spend. Moreover, although corporate management has been involved by way of general guidance and some initiatives, much of the responsibility for the development of restructuring plans has been placed on site and business management, with the focus on sites and businesses to the possible neglect of the overall corporate position. The introduction of the Chief Executive's restructuring committee in September 1991 was a useful step, taken somewhat late in the day, given the magnitude of the expenditure.

1.22. We appreciate the problems, inherent in any appraisal, of developing accurate estimates but have concluded that tighter control of restructuring expenditure should be introduced for the remaining £80 million of the programme which has not yet been committed. We have accordingly recommended that AEA should prepare before June 1992 a reasonably broad-brush costing of the options open to it for the remainder of the existing programme in order to establish that future spend is directed in the most profitable way.

1.23. We calculate that AEA's estimate that it would be free of restructuring debt by 2002 is dependent upon earning net profits of around £28 million a year over the period 1994/95 to 2001/02, or three times its 1991/92 forecast net profits. The attainment of this level of net profits is critically dependent on AEA's ability to achieve increased productivity to offset the growth in costs and to make up its loss of traditional nuclear business by increases in decommissioning and radioactive waste management operations (DRAWMOPS) work and particularly by expanded United Kingdom private sector and overseas sales. This seems to be unduly optimistic. We also believe that, as argued

by AEA, the debt burden stemming from the cost of restructuring is inhibiting the realisation of its full commercial potential. Moreover, the rising interest burden, the accumulated deficit and heavy borrowing have resulted in an unsound financial position, and an annual requirement for a letter of comfort from the Department of Energy (DEn) guaranteeing financial support to justify AEA's continuing to trade. We have recommended that after the Government's review of the future of nuclear power in the United Kingdom in 1994, it should look at the possibility of a financial reconstruction with existing restructuring-related borrowing being wholly or partly written off. Meanwhile any additional restructuring driven by Government decision regarding AEA's nuclear activities should be grant-funded in order to avoid any further distortion of AEA's financial structure.

(c) The efficient and economic use of physical assets

1.24. We have already indicated that AEA has too many sites (see paragraph 1.11) but that its options for rationalisation are constrained. We have nevertheless found that there is scope for improved management of AEA's property assets. The variation in information on performance between sites reflects, in part, differences in activities and types of accommodation but it would be beneficial if such information was subject to systematic analysis and review. We have therefore recommended that the responsibilities of the proposed corporate Director of Estates should include the encouragement of 'best practice' across sites and the comparison of costs between sites and with local market prices.

1.25. We have looked in some detail at the decision to relocate Corporate Headquarters (CHQ) at Harwell, and have concluded that whilst there may have been good reasons for the decision, it would nevertheless have been wiser to have carried out detailed cost benefit analysis of all available options, given the large sums involved. We have recommended that AEA's own investment guidelines should be strictly followed in relation to estates projects.

1.26. We have also recommended that AEA should revalue its land and buildings at least once every five years. We understand that it is AEA's intention to revalue all its properties in 1992. In our view, consideration should be given to revaluing them on a rolling basis thereafter. Finally, as regards properties, we have recommended that AEA's internal tenants should be charged market rents.

1.27. As to other physical assets, we have noted that AEA has longstanding procedures which should encourage their economic and efficient use. We have, however, recommended that AEA should develop reports that enable each business and site to show on a regular basis whether their major assets are earning an appropriate return.

(d) The control of working capital

1.28. We have concluded that more effective monitoring of working capital is necessary and have recommended that the present budgeting system should be extended to incorporate an integrated phased balance sheet and funds flow statement. We have also recommended that a set of target criteria for working capital items should be established, together with targets for invoice production and despatch. We noted in particular that invoicing delays have occurred and that there have been other weaknesses in contract administration. AEA indicated that closer attention would be paid to these matters and agreed that the Requirements and Guidelines document, which it planned to issue by April 1992, should make the project manager clearly responsible for invoicing and ensuring that payment is received.

(e) The methods for determining the nature, amount and timing of capital and 'recovered' expenditure and the allocation of expenditure between these categories

1.29. In its expenditure on fixed and durable assets, AEA draws a distinction between those projects that are directed toward meeting the needs of a particular customer, which AEA treats as 'revenue schemes' funded by 'recovered expenditure'; and projects that have a wider customer application, which it regards as capital expenditure. In some cases, the distinction may be somewhat arbitrary. Both types of scheme are subject in principle to the same assessment and approval procedures and we have concluded that the allocation of expenditure between them is a matter primarily for negotiation between AEA and its customers, most particularly DEn.

(f) The control of capital and recovered expenditure

1.30. We have concluded that AEA gives insufficient attention to the range of feasible options associated with meeting a particular project objective; the variation in the way projects are presented indicates a lack of effective control; investment guidelines applying to revenue schemes and infrastructure projects are inappropriate and unsatisfactory; insufficient use is made of sensitivity analysis; and the Financial Manual should be revised in order to strengthen the basis of appraisals. We have made a number of recommendations aimed at improving investment procedures, particularly in the areas of appraisal and control.

(g) The methods for allocating costs among management units

1.31. It was not until four years after the change to trading fund status that AEA began to move towards standardisation of procedures for collection, classification and allocation of site service department costs, although it had been recognised that such standardisation would facilitate monitoring and control of costs. We have concluded that standardisation of the accounting procedures for site services departments might have been effected much earlier and recommended that the required changes should be implemented by April 1993.

(h) The methods for determining the level of charges to customers, including the appropriate level of overheads

1.32. Bearing in mind AEA's possibly unique spread of skills and its monopoly position in a substantial area of its activities, we have considered whether there was any danger of AEA exploiting its customers by overcharging. Its policy of seeking full commercial viability by raising its level of profit is, however, explicitly supported by DEn in its role as AEA's *de facto* owner, despite also being AEA's largest customer. AEA's other major customers are mostly both technically informed and also able to exercise a degree of buyer power. Limited data are presently available on the profitability of AEA's individual businesses, particularly at product level, but its overall profitability, around 9 per cent on historic cost capital employed in 1990/91, is not excessive. We have concluded that AEA's policy of charging on the basis of full cost recovery, including a reasonable return on capital employed, is appropriate and consistent with its objective of seeking full commercial viability.

1.33. We have also concluded that AEA's shift away from cost-plus pricing is to be welcomed and that fixed-price contracts, wherever they are practicable, are a more satisfactory system of charging than *per diem* pricing. We have made a number of recommendations aimed at safeguarding customer interests and sharpening the incentives for AEA to continue to enhance its cost efficiency. We have also recommended that AEA should introduce a new system of arm's length inter-business charging aimed at improving accountability and economic efficiency. We recognise that this may require some additional ground rules or 'rules of thumb' about acceptable profit margins in order to avoid undue complexity and inter-business disputes.

1.34. As regards overhead charges, we have noted that overheads are a key element in AEA's costs; they can account, for example, for around two-thirds of *per diem* costs. Their main component is the cost of accommodation and associated services, including security costs. We have noted AEA's continuing efforts to reduce its overheads; our recommendations will assist it in this endeavour.

1.35. AEA's overheads include the cost of its discretionary research programmes. We have concluded that the level of AEA's charges for such work is appropriate.

(i) The appropriateness of financial and other information systems for the adequate control of costs and revenue and for the pursuit of commercial objectives

1.36. Before the corporate Information Technology (IT) Directorate was established late in 1989, AEA had no corporate IT strategy. We have concluded that its slow adoption of such a strategy has resulted in unco-ordinated and incompatible site-based management information systems (MIS) and computer hardware. These systems do not provide the information necessary to support decisions, particularly at business level. AEA is now taking steps to develop a strategy appropriate to the new business structure. Good progress is being made and a new FIS will come into use in April 1992. However, a considerable backlog of work remains to be dealt with before AEA will have MIS which fully meet its corporate needs and the needs of its individual businesses. We have made a number of recommendations to assist in its progress towards this goal.

(j) The efficient implementation of the safety procedures and standards agreed with or imposed by the safety authorities

1.37. AEA's safety management system is currently based on a three-tier approach, corporate, sites and businesses. However, sites' responsibilities for safety will be removed from April 1992. Safety management costs are a forecast £36 million, or 8 per cent of turnover, in 1991/92. AEA told us that the percentage of staff time devoted primarily to safety-related matters was similar to that found in other major United Kingdom nuclear undertakings. Although international comparisons were difficult because of different regulatory systems and requirements, where similar organisations existed safety costs had also been found to be similar. As to safety performance, we were told by the regulators that AEA's performance was good. We have recommended that in making regular reviews of the cost and effectiveness of its safety arrangements AEA should compare them with safety performance in the United Kingdom and elsewhere.

(k) The economy, efficiency and effectiveness of the implementation of the recommendations made by the Advisory Council on Science and Technology (ACOST) in respect of AEA's research programme

1.38. Since the second ACOST report in November 1990, AEA has introduced a number of changes in the procedures for selecting, approving, controlling and monitoring R&D projects related to new products and business opportunities. These changes have taken account of each of the ACOST recommendations except that relating to provision of a fund for projects initiated by the Chief Scientist, which is dependent on AEA's commercial success. We have concluded that AEA has effectively implemented the ACOST recommendations.

1.39. Certain other matters arising from our inquiry are, in our view, particularly important.

Structure and organisation

1.40. AEA's existing sites structure will be abolished in April 1992 and replaced by corporately-provided services demanded and paid for by the businesses. We have welcomed this development which we believe is more appropriate to the needs of the new business-led organisation.

1.41. To deal with DRAWMOPS, AEA has established a Corporate DRAWMOPS Directorate (CDD). CDD's duties include management of the work required to meet AEA's waste management and decommissioning liabilities. We have concluded that every effort should be made to ensure that this work is open to competitive tender from non-AEA businesses, and have welcomed the steps now being taken by CDD in that direction.

1.42. AEA's annual report and accounts record contingent liabilities in respect of costs to be incurred in the treatment and disposal of nuclear wastes and in decommissioning plant related to work undertaken for Government and public sector organisations, generally prior to 1 April 1986. Although these organisations have agreed in principle to meet these liabilities, currently estimated at £3 billion to £4 billion, the association of most of them with AEA sites limits its freedom to develop such sites in the most commercially effective way. Moreover, these liabilities impede AEA's progress to independent commercial viability. As foreshadowed in paragraph 1.10, we have recommended that in three years or so, after the Government's review of nuclear power in the United Kingdom, AEA should initiate a further strategic review to assess the position and future development. At that stage, depending on the prevailing circumstances, consideration should be given to a range of possibilities including separation of AEA into two businesses, nuclear and non-nuclear; separation of some of the existing businesses; creating a separate organisation to take over the nuclear-related plant, buildings and locations no longer required for AEA's continuing activities together with the associated decommissioning and radioactive waste treatment and disposal programme; and continuing as at present for a further period.

Planning

1.43. AEA's planning at both corporate and business levels needs to be sharpened up. We have made a number of recommendations concerning particularly the setting of specific, quantified, medium-term goals covering efficiency and quality of service; and a strategic review of options available to each business. We have also recommended that DEn's approach to setting AEA's return on capital employed (ROCE) target should have more explicit regard to the profit levels necessary to make AEA self-funding.

1.44. The range of products of AEA's industrial businesses is very wide, and the scale of operations sometimes correspondingly small. We are concerned that not all these activities may be commercially viable, particularly as AEA has been unable routinely to provide estimates of the profitability of product groups or products. AEA itself is aware of this potential difficulty and has made some progress in reducing its industrial product range. The new FIS (see paragraph 1.36) should reinforce the necessary continuing process of developing a portfolio of commercially successful products. We, for our part, have recommended improvements in AEA's planning at product-group level which address the need for AEA to determine which of its activities are not making a sufficient return and then to take appropriate action.

Marketing

1.45. AEA is already taking steps to remedy weaknesses in its approach to identifying relevant markets and its knowledge of new markets. We have made a number of recommendations aimed at supporting these steps. We have also recommended that AEA should apply 'best practice' marketing structures more uniformly across its businesses; increase the level of training, for example by secondment to suitable organisations; recruit more trained and experienced marketing staff; review its overall marketing spend and marketing strategies; and introduce procedures for evaluating the cost-effectiveness of its marketing.

Key recommendations

1.46. We have made 58 recommendations, all of which we would expect to assist AEA in improving its performance. We have, however, identified a dozen of these as key recommendations by setting them out in bold type in Chapter 17.

Conclusion

1.47. It is inevitable that this report concentrates on areas where AEA's performance could be improved. AEA itself recognises that it still has a long way to go to complete its transformation into a fully commercial operation (see paragraph 1.5). In our overall assessment of the public interest, however, we need to give proper weight to AEA's achievements since it embarked on its new business-led strategy in 1988. It has moved from a location-based management structure providing a service on behalf of the Government to a much more commercially driven business-based organisation. As part of this process, it has made substantial progress in changing the culture of the organisation by promoting the commercial awareness and customer orientation of its staff. Simultaneously, as we have already indicated, it has successfully managed a radical reduction in staff numbers and substantially reduced its infrastructure costs. It has also commenced a fundamental reform of its MIS.

1.48. We are required to consider whether, in relation to any matter falling within our terms of reference, AEA is pursuing a course of conduct which operates against the public interest. We find that it is not doing so. It is clear from the range of our recommendations that we have found deficiencies in AEA's performance in a number of areas. However, we believe that it has since 1988 made significant progress towards its goal of a successful commercial future. Full commercial viability will require significant growth and perhaps some financial reconstruction (see paragraph 1.23). AEA's individual businesses are mostly still quite small and their profitable expansion is by no means assured, but we were impressed by the expertise, enthusiasm and dedication of their staff.