

**Control and monitoring of pollution : review of the Pollution Inspectorate / report by the Comptroller and Auditor General.**

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NAO  
NATIONAL AUDIT OFFICE

Report by the  
Comptroller and  
Auditor General

# Control and Monitoring of Pollution: Review of the Pollution Inspectorate

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24 July 1991

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This report has been prepared under Section 6 of the National Audit Act, 1983 for presentation to the House of Commons in accordance with Section 9 of the Act.

John Bourn  
Comptroller and Auditor General

National Audit Office  
24 July 1991

The Comptroller and Auditor General is the head of the National Audit Office employing some 900 staff. He, and the NAO, are totally independent of Government. He certifies the accounts of all Government departments and a wide range of other public sector bodies; and he has statutory authority to report to Parliament on the economy, efficiency and effectiveness with which departments and other bodies use their resources.

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# Summary and conclusions

1. Her Majesty's Inspectorate of Pollution, part of the Department of the Environment, regulate the most harmful polluting substances affecting air, water and land in England and Wales. The Inspectorate were formed in 1987 from existing inspectorates for air, waste and radioactive substances, with new responsibilities added for controlling water pollution.
2. The full cost of the Inspectorate will be some £24 million in 1991-92, including about £10 million on research. The Inspectorate had 148 staff in post when set up, including 75 professional staff in inspectorate grades; by July 1991 they expected to have in post some 250 staff, including 133 professional staff in inspector grades. Plans were announced in January 1991 to increase staff numbers to over 300 by the end of 1991-92, with some 175 professional staff in inspectorate grades. Further increases to around 400 staff are expected to be required to meet an increasing workload.
3. The National Audit Office examination considered the planning and performance of the Inspectorate's work and how far they are meeting their objectives. It also reviewed the steps taken to prepare for a new system of integrated pollution control, introduced from April 1991 under the Environmental Protection Act 1990, which looks at the effects of pollution on the environment as a whole, rather than at air, water or land in isolation.
4. The National Audit Office's main findings and conclusions are as follows:
  - (a) **The different organisations which came together to form the Inspectorate had different systems for setting objectives, targets and priorities and for measuring outputs and performance. Substantial improvements were required and the Inspectorate are now implementing new systems to provide full management information and performance measurements consistently across the organisation.**  
 Reviews commissioned by the Department in 1987 and 1990 confirmed the need to introduce enhanced systems and procedures covering all aspects of the Inspectorate's work. The limitations of the existing data made it difficult to quantify the Inspectorate's effectiveness. However the new systems being implemented by the Inspectorate, from April 1991, will provide a comprehensive range of management and performance data (paragraphs 2.7 and 2.10-2.14).
  - (b) **The Inspectorate have commenced a system of long-term planning.**  
 Initially, the Inspectorate's planning systems focussed primarily on



the immediate year ahead. From mid 1989, when their future statutory functions were becoming clearer, the Inspectorate began to address the longer term, and in June 1990 they produced a "forward look", setting out workload and manpower requirements for the next five years. The forward look was updated in early 1991, and is to be developed into a full corporate planning system (paragraphs 2.8 and 2.9).

**(c) Determining the "best practicable means" of pollution control has had to take into account financial and commercial consequences as well as environmental factors. Decisions and follow up in individual cases rested on the experience and judgement of the inspector concerned.**

Under the concept of "best practicable means" implementing necessary pollution controls at individual sites could be deferred over an agreed timescale, after taking into account the cost and commercial implications for the industry sector to which the firms concerned belong, and provided any deferment was environmentally acceptable. This approach provided for similar processes in different firms or plants to be authorised to operate in the interim to different emission standards (paragraphs 3.2-3.8).

Under the Environmental Protection Act 1990 all new prescribed processes must operate from the outset to a revised standard of "best available technology not entailing excessive cost"; but application of this standard to existing plants allows the Inspectorate to exercise discretion on the timescale for attaining the full standard required (paragraphs 3.9 and 3.10). This underlines the continued importance of the Inspectorate ensuring an independent and consistent approach in interpreting and applying the new requirements and in dealing with industry.

**(d) Available documentary evidence on the results of the Inspectorate's regulatory work was in many cases insufficient, particularly on air inspections, to enable the National Audit Office to verify operators' performance on pollution control.**

The regulatory practice of the former Air Inspectorate was based on individual inspectors' exercise of their professional expertise and judgement, with limited documentation and reporting procedures. The Inspectorate have recognised the need for fuller documentation, particularly with the move to the larger integrated Inspectorate, multi-disciplinary working and the new statutory provisions for public availability of pollution information. They are now introducing new procedures, designed to ensure consistency of approach across the Inspectorate and full documentation of regulatory work (paragraphs 3.11-3.14).

**(e) Work to review and where necessary revise long-standing emission authorisations at major nuclear sites began in 1985 and is programmed for completion in 1992.**

Revising these radioactive authorisations to secure tighter regulatory control is a major undertaking for the Inspectorate. They



have reviewed all authorisations, and revision started with the highest priority cases. But until March 1991 there was no overall timetable for completing the remaining work; and in some cases individual revisions have taken at least four years to complete (paragraphs 3.20–3.23).

**(f) Both the targets set for air pollution inspections and the actual visits made have been falling since 1987–88. Inspection visits for all kinds of pollution in 1990–91 fell below targets, mainly due to staffing constraints and other competing priorities.**

Fewer programmed inspections for air and radioactive pollution are being undertaken; for example, programmed inspections comprised only 10 per cent of all air pollution inspection visits in 1989–90 compared with 50 per cent some 10 years ago. The reduction in visits reflects the Department's judgement of the relative priority and regulatory benefit secured from routine programmed visiting, against other priorities for available resources, including implementation of integrated pollution control (paragraphs 3.24–3.29).

**(g) The Inspectorate have established inspection frequencies to inform their inspection effort under the Radioactive Substances Act 1960, but visits to most non-nuclear sites were well below the benchmarks set. They are about to set benchmarks for all inspection areas.**

For premises handling radioactive substances the Inspectorate have given priority to nuclear sites. Against a benchmark of one full inspection every six months the Inspectorate have visited these sites on average every two months, though not necessarily inspecting the whole site on each visit. On air pollution, frequency of visits is at present determined by individual inspectors based on their professional judgement. The Inspectorate plan to introduce procedures by summer 1991 for formal assessment of pollution risk and setting of target inspection frequencies for all processes (paragraphs 3.30–3.38).

**(h) In 1990 the Inspectorate established enhanced arrangements for monitoring and sampling discharges, including greater use of self-monitoring by operators.**

The arrangements introduced are designed to facilitate a more cost-effective regime for monitoring operators' compliance with authorised limits, particularly at sites involving air pollution (paragraphs 3.39–3.47).

**(i) On enforcement, the Inspectorate in the first instance seek to persuade operators to introduce improvements on the grounds that this is normally more effective than prosecution.**

Persuasion has in most cases secured valuable results. However, since their inception the Inspectorate have issued 118 formal notices dealing with serious air pollution cases and initiated six prosecutions, of which five were successful. Information on



enforcement action is maintained locally, but enforcement actions and outcomes are reported annually in the Inspectorate's Annual Report. The Inspectorate are introducing regular in-year reporting to headquarters of all enforcement cases, so that detailed information on the level and success of enforcement activity can be monitored centrally (paragraphs 4.2-4.17).

**(j) Fines in magistrates' courts have until recently been limited to £2,000. Claims for costs have not reflected the Inspectorate's full costs.**

Higher fines are now possible under the Environmental Protection Act 1990. In recovering costs the Inspectorate have not claimed for their time spent on preparing cases for prosecution. But information to enable them to claim full costs was available from April 1991 (paragraphs 4.18-4.21).

**(k) The Inspectorate did not achieve their target of producing "best practicable means" notes covering all processes regulated under the old air pollution control system, due to shortfalls of professional manpower. However, in the Department's view all the most important processes were covered. Guidance for the new system of integrated pollution control is being prepared and published.**

The Inspectorate have also had difficulty meeting their targets for publishing waste management papers and updating existing material, due mainly to the need to use staff on higher priority work. The series of notes on "best practicable means" of process control is now being superseded by a new series relating to integrated pollution control. A set of five general notes covering all industries is to be published by end July 1991, while some 200 more detailed notes on individual processes are to be published over the next four to five years as integrated pollution control is progressively implemented (paragraphs 5.4-5.12).

**(l) The Inspectorate's decision to adopt a more arm's length approach with industry may affect the most vulnerable operators and pollution control generally, and should therefore be closely monitored.**

Close working with operators in the past, particularly on air pollution control, has helped to achieve high control standards. Within their new more structured and formal approach, and whilst maintaining their independence, the Inspectorate intend to ensure constructive links with operators and industry generally (paragraphs 5.13-5.17).

**(m) Links between the Inspectorate and other regulatory bodies are generally satisfactory.**

Co-operation has worked well on regulating pollution from radioactive substances. The Inspectorate and the National Rivers Authority have agreed a memorandum defining working relationships on integrated pollution control which will facilitate



more effective control of emissions to water. Most of the local authorities consulted by the National Audit Office commented favourably on the liaison and advice provided by the Inspectorate, though some saw a need for improvement (paragraphs 5.18–5.23).

**(n) The overall timescale for implementing integrated pollution control has been extended by about a year, to May 1996.**

The decision to extend implementation was caused by the need for further consultation with industry and the longer than expected passage of the Environmental Protection Bill through Parliament. But the Department have pointed out that this has provided the opportunity for more thorough preparation for implementing the new arrangements (paragraphs 6.2–6.6).

**(o) Until recently the Inspectorate have been below complement for professional staff, but recruitment has now improved. Although the complement has been progressively increased, further substantial increases are acknowledged to be required to deal with the additional demands being placed on the Inspectorate.**

Improvements in Inspectorate salaries and other initiatives appear to have resolved the problem of unfilled professional posts. The most recent recruitment competition has been much more successful than earlier ones, and the Inspectorate expected to be fully up to professional complement by July 1991 (paragraphs 6.17 and 6.18).

The Inspectorate complement has increased from 214 at their creation in 1987 to 248 at April 1991 rising to 313 by April 1992. This is considerably less than the full staffing requirement estimated by the forward look exercise (see (b) above) of 416 staff in 1991–92 rising to 458 in April 1994. But Ministers have already acknowledged that further increases to “around 400” are likely to be required. Within this projection the Department consider that implementation of integrated pollution control can be achieved within the planned period (paragraphs 6.10–6.16 and Figure 4).

**(p) The Inspectorate are introducing major information technology systems to support inspectors' administrative work, charging and management systems.**

The budgeted cost of introducing the new systems is £7.6 million, and projected efficiency savings are over £12 million at discounted 1990 prices. Completion of the systems is targeted for April 1994, and the first key system, to support integrated pollution control, was introduced in April 1991 (paragraphs 6.19–6.22).

5. Overall, the National Audit Office examination confirmed that the Inspectorate have made a good deal of progress in bringing together the work of the previous separate inspectorates, including integration of the staff in October 1989 into a single organisation and unified management structure. The report covers a period of transition and many of the matters raised reflect weaknesses which the Inspectorate had themselves identified for action. Evidence on performance and achievements has varied between different parts of the organisation,

due in part to the different practices of the previous inspectorates. Having established the new integrated organisation, the Inspectorate have been working to develop and implement consistent systems and reporting procedures, in particular through the development of operating procedures for the new system of integrated pollution control introduced from April 1991. Systematic forward planning of workload and resource requirements is now in place and staff numbers have been increased, with further increases approved and projected.

6. The significant initiatives for improved planning and management systems taken or under way are designed to ensure that the substantially increased resources now allocated to the Inspectorate are used to best effect. But the National Audit Office concluded that there is some way still to go and continued vigorous effort by the Inspectorate will be required to secure the full benefit from these initiatives and the successful implementation of integrated pollution control.

7. In July 1991 the Government announced their intention to create a new Environment Agency bringing together the Inspectorate and related functions of the National Rivers Authority. This further change will present fresh challenges and opportunities for the Inspectorate.



# Part 1: Introduction

**1.1** This report is concerned with the operations and performance of Her Majesty's Inspectorate of Pollution, part of the Department of the Environment. The Inspectorate have a key role in regulating the most harmful polluting substances which affect air, water and land in England and Wales.

**1.2** The full cost of the Inspectorate in 1991-92 will be some £24 million, including about £10 million on research mainly concerning radioactivity. However, the financial and economic implications of the Inspectorate's work are very much greater than their own direct expenditure; and the significance of this work will continue to grow in importance as companies and organisations increasingly seek, or are required, to achieve better environmental performance.

## The framework for pollution control

**1.3** The system of pollution control in England and Wales and the supporting legislation has developed piecemeal over many decades to deal with new environmental hazards as they arose or as new risks were identified. As a result the responsibility for controlling discharges to air, water and land is exercised by a number of government departments and other bodies under various statutes (Appendix 1).

**1.4** The Department of the Environment have general responsibility for co-ordinating policy on environmental protection, including pollution control. They receive independent advice on pollution issues from the Royal Commission on Environmental Pollution, a standing Commission. The Department, together with the Ministry of Agriculture, Fisheries and Food, also exercise direct control of industrial and other discharges, working mainly through the Inspectorate. The Inspectorate are responsible for regulating the most seriously polluting categories of industrial processes; but local authorities and the National Rivers Authority regulate the largest number of pollution sources.

**1.5** The Inspectorate are one of several directorates within the Department's environmental protection group. Like other directorates they are accountable to Ministers through the Permanent Secretary for the execution of their responsibilities and the use of resources.

## Establishment of the Inspectorate

**1.6** The fifth report of the Royal Commission on Environmental Pollution in 1976 highlighted the inter-relationships between different kinds of pollution and the inter-action between different methods of dealing with them. The Commission concluded that each industrial process had to be considered on an overall basis to determine how best to protect the environment as a whole. They recommended the establishment of an inspectorate to take a "whole environment" approach, a recommendation repeated in their eleventh report in 1985.

**1.7** In early 1986 a scrutiny report by the Cabinet Office Efficiency Unit concluded that there would be significant benefits in amalgamating the separate inspectorates for air, waste and radioactive substances, together with a new inspection function for water, to form a new pollution inspectorate. A unified inspectorate with a common management structure was expected to encourage an integrated approach to, and greater flexibility in, allocating resources to tackle a range of pollution problems.

**1.8** The Government decided in August 1986 to form a unified pollution inspectorate, within the Department of the Environment. In December 1986 the Department produced an action plan for achieving this, and the Inspectorate were established in April 1987, bringing together the Radiochemical Inspectorate and the Hazardous Waste Inspectorate (both already parts of the Department) and the Industrial Air Pollution Inspectorate, transferred from the Health and Safety Executive. Additional responsibilities were added for controlling some aspects of water pollution, particularly water authorities' own discharges, prior to the establishment of the National Rivers Authority in September 1989.

**1.9** There were substantial differences between these various component parts of the combined Inspectorate in terms of functions, background, approach to regulation and pay and grading structures (see notes at Appendix 2). In particular:

- the Industrial Air Pollution Inspectorate operated as a decentralised structure based on the 12 District Inspectors. The Inspectors normally held their posts for



many years, and were responsible for organising regulatory activity in their districts, on the basis of their knowledge of local plants and operators and with limited central specification of procedures and priorities;

- the Radiochemical Inspectorate, by contrast, operated essentially as a unit within the Department in London, with two outstations in Lancaster and Bristol. There was a centralised planning framework and uniform and more formally-defined regulatory procedures;
- the Hazardous Waste Inspectorate, unlike the two others, had an oversight and advisory rather than regulatory function (local waste disposal authorities being responsible for regulation of waste operators and sites). Their function was to promote and encourage high standards by providing advice and technical guidance.

**1.10** The Government recognised that achieving a cross-media approach to pollution control would require not only the establishment of an integrated Inspectorate, but also new legislation to provide for cross-media authorisations. A consultation document "Integrated Pollution Control" was issued in July 1988, leading to the legislative proposals in the Environment Protection Bill published in December 1989, and enacted in November 1990. Formulation of an appropriate future structure for the Inspectorate was dependent on the detailed statutory provisions to be enacted, for example as regards the respective responsibilities of the Inspectorate and the National Rivers Authority, discussions on which continued throughout 1988 and 1989 while the proposals for integrated pollution control were being formulated.

**1.11** Against this background, the Department's December 1986 action plan envisaged progressive integration of the component parts of the Inspectorate. The Department told the National Audit Office that this had involved various elements, including:

- integration of the staff of the previous inspectorates and their different pay and grading structures;
- integration of the separate management structures;
- formulation of a new structure of regional offices, and setting-up of new offices;
- formulation of the regulatory philosophy and procedures of the new integrated Inspectorate.

## Organisation and staffing

**1.12** Initially, on the Inspectorate's formation in April 1987, the four component parts operated alongside each other under their existing operational and staffing structures. In January 1988 the Inspectorate set up a working party to produce detailed proposals for moving to an integrated structure; and in October 1989, following discussions with the Treasury and Trade Union representatives, the Inspectorate brought together the staff from the four previous components under a new unified grading and pay structure, and a single management structure.

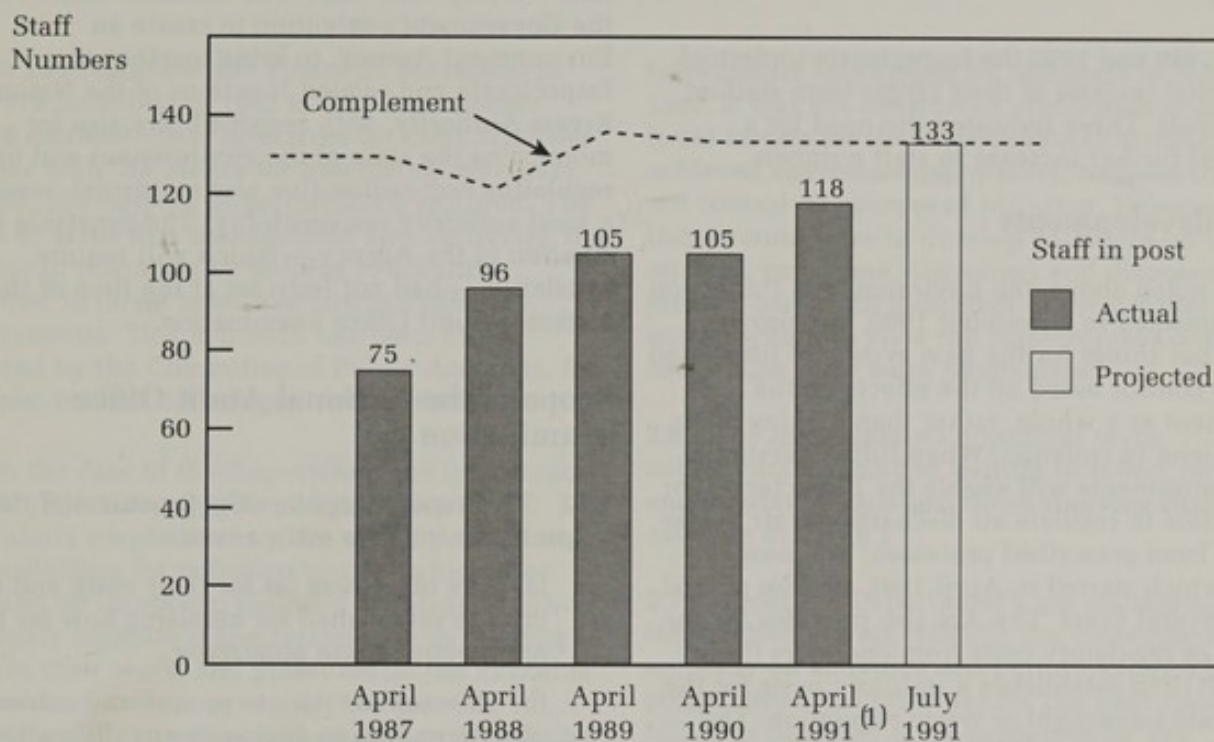
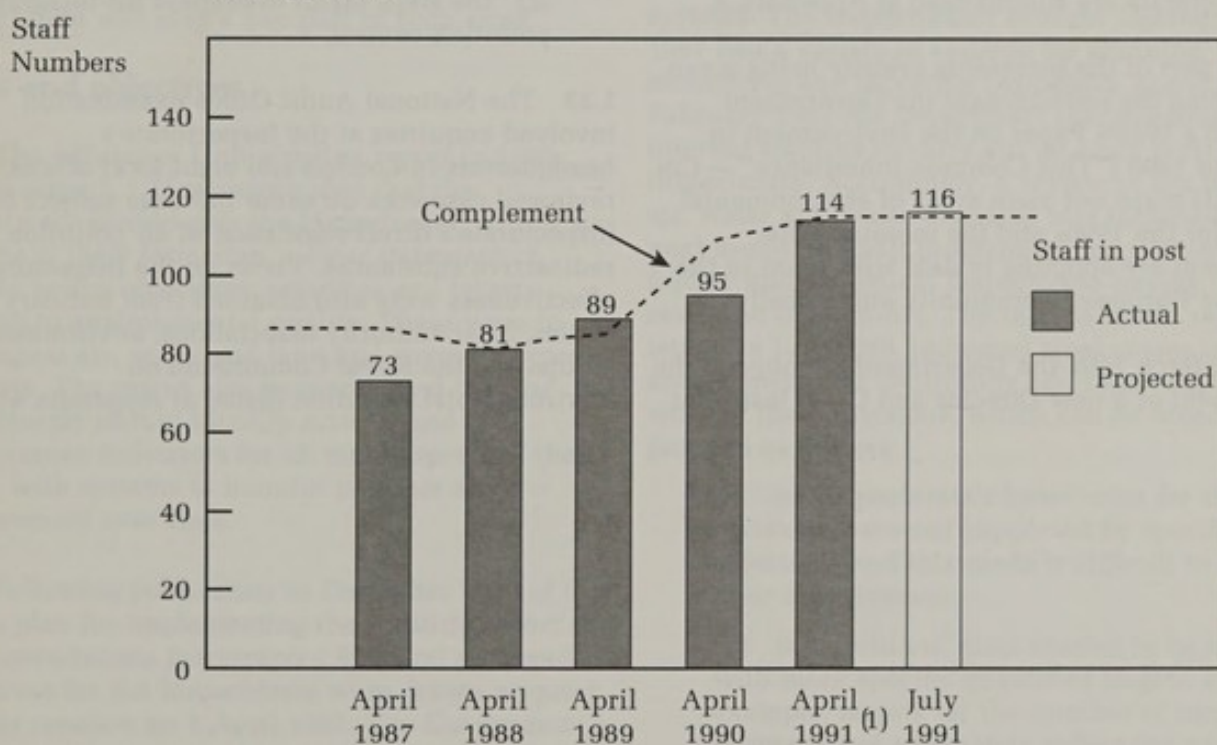
**1.13** These arrangements involved the creation of three new regional divisions with prime responsibility for regulatory work and a headquarters unit with an enhanced responsibility for central functions such as technical policy and methodology. Regional headquarter offices in Leeds and Bristol were occupied during the first half of 1990 and the third, in Bedford, at the beginning of 1991. Progressively the Inspectorate are developing multi-disciplinary teams of inspectors within the three regions, responsible for discharging all regulatory functions within specified areas.

**1.14** The Inspectorate were established on the basis that the initial complement would be that of the constituent inspectorates, with allowance for the additional functions allocated to the organisation. But, in addition, 19 new posts were created to strengthen the regulation of radioactive substances, giving a total complement at April 1987 of 214 (including 15 posts relating to functions subsequently transferred to an environmental policy division in the Department).

**1.15** The complement has since been substantially increased. A further 10 posts were allocated during 1988, and in January 1991 Ministers announced that the Inspectorate's complement was being further increased to 248 (excluding the transferred functions) as at April 1991, rising to 313 by April 1992.

**1.16** Since formation the Inspectorate have had a significant level of vacancies amongst inspectors and other professional staff. Over the three years from December 1987 the number of vacancies has been around 20 to 30 representing a shortfall of some 15 to 23 per cent from the approved complement. Uncompetitive salaries were one important factor. To overcome this, the Department secured agreement to a series of additional salary increases for professional staff between 1987 and 1990. Recruitment improved substantially in late



**Figure 1****Staffing of the Inspectorate****(a) Inspectors and other professional staff****(b) Support staff**

**Note:** 1. The figure excludes 3 inspectors and 25 support staff transferred to the Department, with their work, in November 1990.

**Source:** Inspectorate.

Since formation the Inspectorate have had a significant level of vacancies amongst inspectors and other professional staff, but they expect to reach full complement by July 1991.

1990 and the Inspectorate expected to be fully up to professional complement by July 1991, as successful candidates from the most recent competition take up their posts (see paragraphs 6.17 and 6.18, and Figure 1).

**1.17** In 1989 and 1990 the Inspectorate undertook fundamental reviews of their longer term staffing requirements. These indicated the need for a substantial further increase in staff numbers.

### **Recent developments**

**1.18** As noted above, the Environmental Protection Bill was enacted in November 1990, and provides among other things for the new system of integrated pollution control based on the effects on the environment as a whole, rather than looking at air, water or land in isolation. When fully operational these arrangements will enable the Inspectorate for the first time to regulate all discharges to air, water and land from prescribed processes. The new system, which started in April 1991, will be phased in over several years. The Act also provides for the recovery of regulatory costs from operators (from April 1991) and establishes a statutory basis for the Inspectorate's oversight of waste regulation. The main features of the Act in relation to the role of the Inspectorate are summarised at Appendix 3.

**1.19** As part of the increasing priority being given to protecting the environment the Government published a White Paper on the environment in September 1990 ("This Common Inheritance" — Cm 1200). This maps out main areas of environmental concern for the 1990s and the measures the Government are adopting to deal with them in the UK, in the European Community and globally.

**1.20** In March 1991 the Department announced the appointment of a new Director and Chief Inspector.

The new Director, previously head of a scientific consultancy firm, took over in May 1991 on his predecessor's retirement.

**1.21** In July 1991 the Prime Minister announced the Government's intention to create an Environment Agency, to bring together the Inspectorate and related functions of the National Rivers Authority, with responsibility also for monitoring the state of the environment and for regulating non-radioactive waste disposal, presently a local authority responsibility. The timetable for creation of the Agency — which will require legislation — had not been set at the time of the National Audit Office examination.

### **Scope of the National Audit Office examination**

**1.22** This report considers the functions of the Inspectorate in three main areas:

- (a) the objectives set for their work and the criteria established for assessing how far they are meeting these objectives;
- (b) the action taken to pursue and achieve objectives, and to deal with any difficulties;
- (c) the steps taken to prepare for integrated pollution control.

**1.23** The National Audit Office examination involved enquiries at the Inspectorate's headquarters in London and eight local offices. It reviewed casework on some 140 sites subject to the Inspectorate's direct regulation of air pollution and radioactive substances. Views on the Inspectorate's effectiveness were also obtained from industry bodies, local authority associations, environmental groups and the Royal Commission on Environmental Pollution (listed at Appendix 4).



## Part 2: Inspectorate aims and objectives

**2.1** A key feature of the Financial Management Initiative launched in 1982 is that departments should establish clear objectives for their activities together with the means for measuring, wherever possible, the outputs or performance required. The aim is to assist firm management and encourage the best use of resources by helping to identify priorities, to target resources and to examine achievements. This approach has been firmly endorsed by the Committee of Public Accounts, for example, in their 13th Report, session 1986-87.

**2.2** In the case of the Inspectorate the importance of clear objectives, targets and priorities is particularly emphasised by the varied powers and responsibilities for pollution control which they inherited on inception; the need to integrate the previously separate inspectorates; the developing range of their work; and pressures on the available staff resources. More generally, the growing importance of environmental protection means that there are increasing public expectations that the Inspectorate will play a key part in such work.

### Aims and objectives

**2.3** The Efficiency Unit scrutiny report in 1986 (see paragraph 1.7) recommended that the Department should give the Inspectorate, within six months of their formation, a clear statement of specific policy objectives, priorities and targets relating to environmental quality. These were to encompass air, water and land and cover all types of waste. The report also recommended that the Inspectorate should identify activity and performance indicators for all main aspects of their work, with systems to monitor progress and achievement over time.

**2.4** Following publication in December 1986 of the action plan for implementing the scrutiny report's recommendations (paragraph 1.8) initial aims and objectives for the Inspectorate were drawn up prior to their creation on 1 April 1987. The Government's main priorities were to ensure the continued effectiveness of the former inspectorates' work and to develop a more integrated approach to the control of pollution from major industrial processes.

**2.5** A guidance document specifying in more detail the policy objectives, priorities and targets for the

Inspectorate was agreed by Ministers in November 1987. It was not considered practicable at that time to set targets for the Inspectorate in terms of achieved environmental quality, because they did not control all sources of pollution. However, the Inspectorate were to develop databases on waste arisings, emissions, discharges and disposals to provide backcloth indicators of the broader context within which to view the Inspectorate's work and help shape their work programme.

**2.6** The Inspectorate's objectives were subsequently modified slightly to reflect progress and legislative changes; those applying from April 1991 are at Table 1.

**2.7** Under the Department's top management information system (MINIS), the Inspectorate report annually on activities and performance and agree programmes and priorities for the year ahead. MINIS is designed to be supported by key information from detailed line management systems. The inspectorates brought together in April 1987 had a variety of systems for planning, monitoring and reporting (Appendix 2) and in February 1987 the Department commissioned their internal auditors to carry out an early review of the Inspectorate. Accordingly, a review of the former air, water and waste divisions was included in the next available audit programme, for 1988-89 (the former Radiochemical Inspectorate having been reviewed in 1986-87). The internal audit report, issued in July 1989, indicated weaknesses in the arrangements for controlling and reporting on the work of these divisions, which can be broadly grouped as follows:

- (i) the Inspectorate's broad aims for the divisions were not supported by specific objectives and this made it difficult to gauge their effectiveness;
- (ii) the divisions' aims needed to be linked with more specific quantified targets. For example, targets for the number of inspection visits did not adequately reflect the nature and purpose of the different types of inspections;
- (iii) for the air division particularly there was insufficient information to allow effective monitoring of performance against work plans and there was scope to improve monitoring for all three divisions;



Table 1

**The Inspectorate's objectives**

1. To exercise efficiently and effectively statutory powers for controlling radioactive substances, emissions to air from scheduled processes and industrial discharges containing "red list" substances.
2. To audit the efficiency and effectiveness with which waste disposal, and in due course regulatory authorities exercise their powers of control; and to secure improvements where appropriate.
3. To ensure the development of economical and sound technical practices for disposing of waste in the most environmentally acceptable way.
4. To implement integrated pollution control following enactment of the Environmental Protection Act 1990 from 1 April 1991.
5. To make available authoritative and independent advice on pollution control practices.

**Source:** Department of the Environment (MINIS).

**Notes:** Objective 1, prior to 1 September 1989 the Inspectorate controlled water authority discharges to water.

Objective 2, also applied to water authorities prior to 1 September 1989.

(iv) existing performance indicators, such as visits planned/achieved, were too low level and needed to be developed to provide a better assessment of performance.

**2.8** In addition the National Audit Office examination noted that MINIS reports were designed to focus primarily on the detailed work programmes for the year ahead, ie in the shorter term. To address the longer term in more detail, in mid-1989 the Inspectorate initiated a detailed analysis of long term workload and resource requirements. This was taken further in early 1990 leading to the "Forward Look" report, finalised in June 1990. This covered the period 1990-91 to 1994-95, and provided a detailed analysis of the Inspectorate's functions, workload and resource requirements in the light of the legislative proposals for integrated pollution control subsequently contained in the Environmental Protection Bill published in December 1989. It also set out the Inspectorate's approach to regulation, and the planned organisational changes over the period. It under-pinned the resource bid on behalf of the Inspectorate in the 1990 Public Expenditure Survey. The "Forward Look" was updated in early 1991, and the Inspectorate intend to develop it into a full annual corporate planning system.

**2.9** The Inspectorate's response to the internal audit report in November 1989 noted that many of the recommendations had been overtaken, at least in part, by their re-organisation in October 1989. Nevertheless, they accepted the thrust of the report

and confirmed that they would continue to take its findings into account in establishing and reviewing their procedures, and would introduce improved management information arrangements covering the planning, monitoring and review of work. They also proposed to commission consultants to develop performance measures (see below).

## Management and performance information

**2.10** In March 1990 the Inspectorate appointed consultants (KPMG Peat Marwick McLintock) to review their management information and performance measurement systems and make proposals for improvement. The consultants' report in August 1990 concluded that the Inspectorate were very activity oriented and that their performance measurement concentrated on what was being done rather than what was being achieved. The consultants considered that several important changes were necessary to implement an effective management information system including:

- (i) the Inspectorate should set a single aim to give clearer focus and direction to their activities and to provide a firmer basis for performance measurement (Table 2);
- (ii) the Inspectorate needed to decide whether their main aim should be the wider one of contributing to the prevention of pollution (as some within the Inspectorate considered) or whether it should be confined, as presently defined, to the enforcement of



Table 2

## Consultants' proposals for the Inspectorate

## Aim

To contribute to the prevention of pollution by:

- exercising statutory powers in respect of regulated sites and processes;
- auditing the activities of waste regulation authorities;
- assisting in the development and implementation of the Government's pollution control policies.

## Operational objectives (examples)

- to reduce the pollution potential of, and the level of emissions from, regulated sites and processes and thus improve the quality of the environment;
- to reduce the number of breaches of authorisations, registrations and certificates without lowering the standards which are set;
- to determine each application for authorisation within four months of the application being made;
- to ensure improvements and consistency of standards in the activities of waste regulation authorities.

Source: Report of consultants to the Inspectorate.

their statutory responsibilities. The consultants supported the wider definition because this would emphasise the Inspectorate's concern with the final outcome and achievements of their work rather than tasks performed;

(iii) the Inspectorate should supplement their agreed main aim, and provide a basis for performance measurement, by setting more detailed objectives defining operational achievements and outputs. The consultants proposed 15 such objectives (see Table 2 for examples);

(iv) the Inspectorate would need to collect and aggregate a wide range of data, defined by the consultants, in order to measure performance against their objectives;

(v) comprehensive data about concentrations of pollutants in the environment and emissions and waste arisings from regulated sites and processes were required to enable the Inspectorate to draw systematic conclusions about the impact of their activities on the environment, to set priorities and to assist in resource allocation. But considerable development work would be necessary before this could be done.

**2.11** The consultants recognised that developing and implementing new management information and performance measurement arrangements would

impose a substantial additional burden on the Inspectorate. However, they believed that their proposals were necessary for managing the other changes taking place and successfully implementing integrated pollution control. The revised and strengthened arrangements proposed would be crucial to the future success of the Inspectorate.

**2.12** Following the consultants' report the Inspectorate formed a steering group to follow up their recommendations. By January 1991 the Inspectorate had drawn up proposals for systems to collect and monitor data—including a new time and activity recording system—to improve measurement of their performance and impacts. The new systems, progressively being implemented from April 1991, will provide information on:

(i) aggregate permitted and actual emissions of key pollutants from processes regulated by the Inspectorate under the new integrated pollution control arrangements. Initially this will cover a limited number of pollutants but will build up in parallel with implementation of the new system over five years or so to cover the full list of prescribed substances;

(ii) a wide range of measures concerning Inspectorate functions, such as the amount of time spent on different Inspectorate activities, average handling time for authorisations,

numbers of inspection visits of different types, the extent of breaches by, and complaints about, operators and the numbers of enforcement actions taken.

Other important measures being introduced by the Inspectorate covering the planning, prioritisation and control of inspections (considered at paragraphs 3.37 and 3.38) should also result in improved management information.

**2.13** These new systems, together with existing sources of information, cover all the new management information recommended by the consultants. The Department have confirmed that responsibility for collecting data on the general quality of the environment is not appropriate for the Inspectorate. Responsibility for monitoring radioactivity in drinking water and in the air has instead been assumed by the Department who will also remain responsible for determining the scope and nature of wider environmental monitoring.

**2.14** The Inspectorate's objectives (Table 1) continue to be framed in terms of the enforcement of their statutory responsibilities, rather than the wider environmental terms suggested by the consultants. The Department told the National Audit Office that, whilst the overall purpose to which the Inspectorate's work contributed was the protection of the environment, the statutory functions of the Inspectorate were to authorise and oversee plants and waste authorities, and it was appropriate to express their MINIS objectives and performance in terms of those statutory duties. Moreover, the Inspectorate were responsible for controlling only a proportion of the sources of emission to the environment. As indicated in paragraph 2.12 they were implementing systems to measure the aggregate emissions of pollutants from plants regulated under integrated pollution control, which would in due course provide an important "final outcome" measure of the environmental impact of the plants for which the Inspectorate were responsible. This information would be published in the Inspectorate's future reports.



## Part 3: Regulation and inspection

**3.1** This part of the report deals with the Inspectorate's performance of their key regulatory and inspection responsibilities, including those introduced or planned as a result of the Environmental Protection Act 1990. Prior to the Act these responsibilities included:

- regulation of the most potentially dangerous or difficult to control emissions to air at some 2,000 industrial sites, including power stations and factories in the chemical, metal manufacturing and mineral sectors.
- regulation of about 8,500 premises handling radioactive material, including some 1,300 authorised to accumulate or dispose of radioactive waste. These premises cover a wide range of pollution risk — from retailers of smoke detectors to major nuclear installations.
- from 1987 until establishment of the National Rivers Authority in September 1989, regulation of discharges to rivers and coastal waters by the former water authorities, mainly from some 6,500 sewage treatment works; and after September 1989 regulation of discharges to sewer of certain dangerous "red list" substances such as cadmium and mercury.
- inspection of the operations of all 117 waste disposal authorities under the non-statutory oversight and advisory responsibilities the Inspectorate inherited from the former Hazardous Waste Inspectorate.

### Defined standards of pollution control

**3.2** A key concept underlying the regulation of pollution is that operators will not be expected to comply with unreasonable or wholly uneconomic or impractical standards of pollution control. Until recently this concept was expressed by the term "best practicable means". For air pollution, operators of processes regulated by the Inspectorate were required by the Health and Safety at Work etc Act 1974 to use "best practicable means" to control emissions into the atmosphere; the Act however does not define "best practicable means". For radioactive discharges, the Radioactive Substances Act 1960 provides for the Inspectorate to set conditions in certificates of authorisation. Increasingly these conditions have included the requirement to use "best practicable means" to minimise the radioactive content of discharges

below the limits set in the authorisation, although again the term is not specified in the Act.

**3.3** On non-radioactive discharges, the Environmental Protection Act 1990 introduced a different terminology. Under the new system of integrated pollution control operators of prescribed processes will be required to employ "best available techniques not entailing excessive cost" ("BATNEEC") to control pollution. This term, increasingly used internationally, builds upon the concept of "best practicable means" but is not defined within the Act (although "techniques" is).

**3.4** In the absence of statutory definitions of "best practicable means" or "BATNEEC" the Inspectorate's interpretation is crucial. Essentially their approach seeks an appropriate balance between, on the one hand, the growing importance of preventing or controlling pollution by the best available technology and, on the other, maintaining the ability of a firm or an industry to compete commercially (within the UK and internationally) and the economy's need for production at viable cost.

### "Best practicable means"

**3.5** For air pollution, prior to the Environmental Protection Act 1990 and the advent of integrated pollution control, the Inspectorate published guidance notes setting out the minimum requirements of "best practicable means" for specific processes. They also provided more general guidance on relevant factors taken into account in determining individual cases. These factors included the latest developments in control technology; financial and trading implications; and local conditions and circumstances, where these required particularly stringent control.

**3.6** For radioactivity, the Inspectorate do not issue general guidance but have specified criteria for determining "best practicable means" for some individual authorisations, for example at Sellafield. These criteria are framed on the basis that the standards required will not be such as to necessitate investment "grossly disproportionate" to the benefits in control obtained.

**3.7** In making judgements about the "best practicable means" of pollution control the



Inspectorate have relied on the individual inspector's detailed knowledge and experience of the plant or process concerned. Their decisions in some cases have taken account not only of production and process engineering aspects which particularly relate to their professional and technical background, but also accounting, pricing, trading and sales factors which affect the ability of individual operators to finance required pollution controls within the context of the economic circumstances of their particular industry. Inspectors are recruited from the industries regulated by the Inspectorate, and in the Department's view maintain a good working knowledge of economic factors through their continued dealing with industry and operators. More specialist financial advice is available from the Department as necessary. The Inspectorate have sought such advice on one occasion.

**3.8** An important feature of "best practicable means" (and equally so of "BATNEEC") is that as pollution control techniques and technology improve, or the perception of environmental risk changes, so the environmental standards required of industry should be tightened. The tightening of standards applies to both new plant proposals and existing old installations. However, the Inspectorate have not automatically required existing plants to conform immediately to tightened standards but have used their discretion to allow operators to continue with existing standards if they judged this was environmentally acceptable and that the business concerned could not afford the costs of installing improved equipment. And where they required improvements to be made the Inspectorate could also allow these to be made to an agreed timescale, possibly over several years. In practice therefore the operation of the Inspectorate's discretion is likely to have resulted in the standards for treatment and discharge of wastes varying between similar production processes at different locations.

### **"Best available techniques not entailing excessive costs"**

**3.9** For new processes regulated under integrated pollution control the Department told the National Audit Office that under European Community legislative requirements, "excessive cost" would be assessed, and standards determined, on the basis of the industry sector overall. The standards thus determined would apply to all operators, without reference to their individual financial and trading circumstances.

### **3.10 Existing plants being re-authorised under**

integrated pollution control would be expected to attain the same standards — either immediately or on the basis of an agreed programme and timetable for improvement, which would be laid down in the integrated pollution control authorisation. However, unlike new processes such re-authorisations could take into account the financial and trading circumstances of the individual plant.

## **Conduct and outcome of inspections**

**3.11** The Inspectorate's regulatory decisions involve a complex range of factors, some technical and some more general but all having a significant impact on operators, the public and the environment generally. The National Audit Office examination therefore sought to establish whether the information available on the results of this regulatory work enabled clear and soundly based conclusions to be drawn on operators' performance on pollution control.

**3.12** In practice, the National Audit Office found that in many cases the available documentary evidence was insufficient to enable independent corroboration of results, even on individual inspections. Particularly for air regulation this reflected the general approach of the former Air Inspectorate with its emphasis on inspectors' exercise of individual professional expertise and judgement, and limited recording of results and outcomes with reporting only on an exception basis. Most importantly:

- (i) the basic quality of authorisation records was mixed, and key information was lacking for sites registered for air pollution control (see paragraph 3.16 (ii));
- (ii) programmes or plans for inspections of individual sites were rare, and the scope and frequency of visits and the tests and yardsticks proposed to measure operators' and waste disposal authorities' performance were often not specified in advance;
- (iii) the scope and content of inspection reports varied and the extent and depth of inspections were not always clear, particularly on air inspections where exception reporting was the practice;
- (iv) for sites registered for air pollution control there was limited monitoring to test compliance with specified emission standards or limits and, until recently, no clear strategy for this activity (see also paragraph 3.44).

**3.13** The internal audit review commissioned by the Department (paragraph 2.7 above), had



identified similar weaknesses. The Department told the National Audit Office that they had recognised the need to develop more standardised and formal procedures and documentation, as a consequence of developments in the regulatory framework and the Inspectorate's methods of operation, in particular:

- the integration of the four previous inspectorates, with their different approaches to documentation and inspection programmes, into a single organisation, for which a consistent approach was required;
- the transition from single-media inspectors, to multi-disciplinary teams of inspectors covering all types of emissions and a wider range of industrial processes;
- the requirements under the Environmental Protection Act 1990 for regulatory information to be available through statutory public registers.

**3.14** This work has been carried forward as part of the preparations for implementing integrated pollution control. It includes:

**(i) Development of an inspector's manual.**

Sections of the manual already issued provide detailed guidance and instructions on assessing and documenting authorisations and the conduct and recording of inspection visits. The Inspectorate expect sections on procedural guidance to be substantially complete by autumn 1991. The manual will be supplemented by technical guidance prepared as integrated pollution control is implemented.

**(ii) Introduction of peer review procedures.**

This was recommended by internal audit in view of the high degree of autonomy and independence enjoyed by inspectors. The Inspectorate began an interim peer review system from April 1991 to provide quality assurance for authorisations issued under integrated pollution control. And at the time of the National Audit Office examination they were considering consultants' proposals for a wider quality assurance framework.

The Inspectorate are also taking action to improve the planning and control of inspection work (see paragraphs 3.37 and 3.38).

## Registration and authorisation of operators

**3.15** To establish regulatory control over polluting processes before operations start the Inspectorate have given priority to the initial registration and authorisation of operators. Under the

Environmental Protection Act, and previous legislation, plant operators are legally responsible for seeking authorisation or registration where a plant is subject to pollution control, and it is an offence to operate a regulated process without authorisation. The Inspectorate consider that their knowledge of the field and their contacts with other control authorities make it unlikely that any significant number of polluting processes operate without the required consent. The comprehensive publicity for the new system of integrated pollution control has re-emphasised operators' legal responsibility to apply for necessary authorisations. None of the local authority associations or environmental organisations consulted by the National Audit Office expressed any concern about processes operating without consent.

**3.16** On the accuracy and completeness of registration and authorisation records the National Audit Office found that:

(i) For radioactive substances the Inspectorate maintained full records, including clear descriptions of sites and processes and well documented results of appraisals and operating and other conditions imposed.

(ii) Records of sites registered for air pollution control were much less complete. In 30 out of the 69 cases examined there was no documentary record, or no complete record, of what the Inspectorate regarded as current "best practicable means" of pollution control at the sites concerned. Many cases also lacked full descriptions of the processes concerned and the pollution risks involved. The Inspectorate attributed these shortcomings in part to a shortage of support staff for air inspectors.

**3.17** The Inspectorate themselves recognised in 1989 that they needed to improve the content, completeness and presentation of their air registration records, particularly to meet new European Community legislation. They estimated that it would take five years to complete the necessary improvements for existing works and some initial work was carried out. But this work was not completed once it became clear that full authorisation records would in due course be established through the re-authorisation of all existing plants under integrated pollution control commencing in April 1991.

**3.18** For the reasons given in paragraph 3.8, the Inspectorate need to review periodically the methods for achieving pollution control at individual sites and this is undertaken as part of



their routine inspections. However, with the exception of nuclear sites there has been no systematic procedure or clear policy and priority for a firm programme of updating reviews. Reporting the outcome of air inspection visits has usually been on an exception basis, and documentary evidence was not in all cases available to indicate how far sites were continuing to employ the "best practicable means" of control originally authorised, or the extent to which different control standards were being applied to sites operating identical processes. The Department told the National Audit Office that the need for review varied from plant to plant, according to the circumstances of the individual plant, developments in abatement technology and the pollution risks involved. Inspectors had detailed knowledge of the plants in their area, and were able to judge the priorities for review on an informed and effective basis; and they also followed up any complaints about plants, or problems drawn to their attention, for example by local authority environmental officers. In the Department's view, the Inspectorate's approach had been effective in securing progressive tightening of emission standards, and had contributed towards the improvement in air quality standards achieved over the years.

**3.19** The Department also explained that the practice of exception reporting had reflected the former Air Inspectorate's method of operation. But in addition, each District Inspector had produced an annual report providing information on all major plants in the district and this was circulated locally. For the reasons in paragraph 3.13, the Inspectorate were now moving to more formal and standardised procedures for review and documentation. The Environmental Protection Act 1990 provided that integrated pollution control authorisations must be reviewed not less than every four years, or more frequently as necessary. As regards documentation, inspectors were now required in all cases to document inspections and reviews of authorisations.

**3.20** The importance of regular review and updating is illustrated by experience on control of radioactive discharges. In 1985 the then Minister was concerned that authorised limits for discharges of liquid effluent from one nuclear site (Atomic Energy Establishment, Winfrith) were such as to allow a far higher level of discharge than the actual discharges taking place, and that the relevant authorisations had not been reviewed since they were introduced following the Radioactive Substances Act 1960. A three year review cycle for all authorisations for major nuclear sites was then initiated. On completion of the first cycle of reviews

in 1987 the Inspectorate concluded that most of the 54 existing authorisations at the 19 sites concerned — ranging from fuel re-processing to research facilities — needed revision. Many authorisations were over 10 years old and had not been previously reviewed, and a few dated back to 1954.

**3.21** Revising these radioactive authorisations is important as a means of securing tighter regulatory control. This is a major undertaking for the Inspectorate, complicated by the involvement of other regulators mainly the Ministry of Agriculture, Fisheries and Food. The Inspectorate had identified and prepared a schedule of the authorisations to be revised, and had started revision with the highest priority cases. But until recently there was no overall plan and target for completing the programme. The National Audit Office found that revisions at four major sites examined had in some cases taken a minimum of four years to complete (Table 3).

**Table 3**  
**Progress on revising authorisations at four nuclear sites**

| Site        | Progress  |
|-------------|---|
| Sellafield  | Completed to timetable. High standard of documentation.   |
| Trawsfynydd | Work on revisions began in 1987 but was not completed until 1990 and the new authorisations will not be in force until late 1991.   |
| Harwell     | Revisions of liquid and gaseous authorisations were first to be completed in 1986 but are now expected to be completed in late 1991. Revision of an authorisation for incineration was started in 1988 and completed in 1990. |
| Winfrith    | Revision of the liquid authorisation first started in 1985 and was completed in 1989. Revision of the gaseous authorisation first started in 1985 and completion is expected by late 1991.                                    |

Source: National Audit Office examination

**Revision of authorisations at nuclear sites is important in securing tighter regulatory control; although in some cases revisions took four years or more to complete, the Department have confirmed that their inspectors were in practice applying tighter emission standards than those formally authorised.**



**3.22** In March 1991 the Inspectorate reviewed progress and prepared an overall timetable for the remaining revisions. This showed that 10 of the 54 authorisations requiring revision had been completed and that the balance of the work would not be completed until 1992 i.e. some seven years after the programme began. Further work will be required beyond this date as authorisations become due for further revision.

**3.23** The Inspectorate have always recognised the need to establish review cycles for all regulated processes and sites. Following on from the requirement in the Environmental Protection Act 1990 that all integrated pollution control authorisations must be reviewed not less than every four years (paragraph 3.19), they intend to review sites regulated under radioactive substances legislation on a similar timescale. How far these review cycles will be achieved will depend on other competing priorities, the availability of staff resources (see part 6) and the co-operation of other regulators.

## Inspection visits

**3.24** The primary purposes of inspection visits are:

- (i) to assess how far operators meet acceptable standards of pollution control or, for waste disposal authorities, how effectively they have carried out their regulatory responsibilities;
- (ii) to investigate or follow up poor performance or reported irregularities or complaints, i.e. reactive or "firefighting" visits;
- (iii) to help assess proposals for new or modified plant, and to advise operators of the Inspectorate's pollution control requirements.

**3.25** In the first few years of the Inspectorate the number of visits undertaken usually met or came close to the targets set; but on air pollution inspections both the targets set and the actual visits taking place have been falling since 1987-88 and in 1990-91 some 3,600 visits took place against a target of 4,800. On all other kinds of inspection the visits in 1990-91 also fell below targets (Figure 2).

**3.26** Two main factors contributed to the reduction in the number of visits and, in some cases, the shortfall against targets:

- (i) vacancies throughout the period in the Inspectorate's professional staff (paragraph 1.16);

- (ii) the increased emphasis given to other higher priority work, for example, the preparation of technical guidance for applying integrated pollution control (see paragraphs 5.10-5.12).

**3.27** Other than on waste, the targets for visits do not distinguish between the different types of inspections. However, the National Audit Office's analysis of records of the time spent on visits on air pollution showed that, although the total number of hours devoted to inspections have increased, fewer and fewer regular inspections have been carried out (Figure 3). In 1989-90 regular planned visits occupied only some 2,600 hours of inspectors' time compared with about 25,000 hours spent on reactive visits and visits concerning new plant. This 10 per cent of time spent on regular inspections in 1989-90 compares with a 50 per cent allocation to such work in the 1970s. The Department explained that the lower proportion of regular inspection visits reflected their judgement that other functions warranted higher priority for regulatory effort than routine visiting of plants, including inspections to follow up problems or complaints, authorisation of new plants, review of authorisations, and preparation for implementation of integrated pollution control.

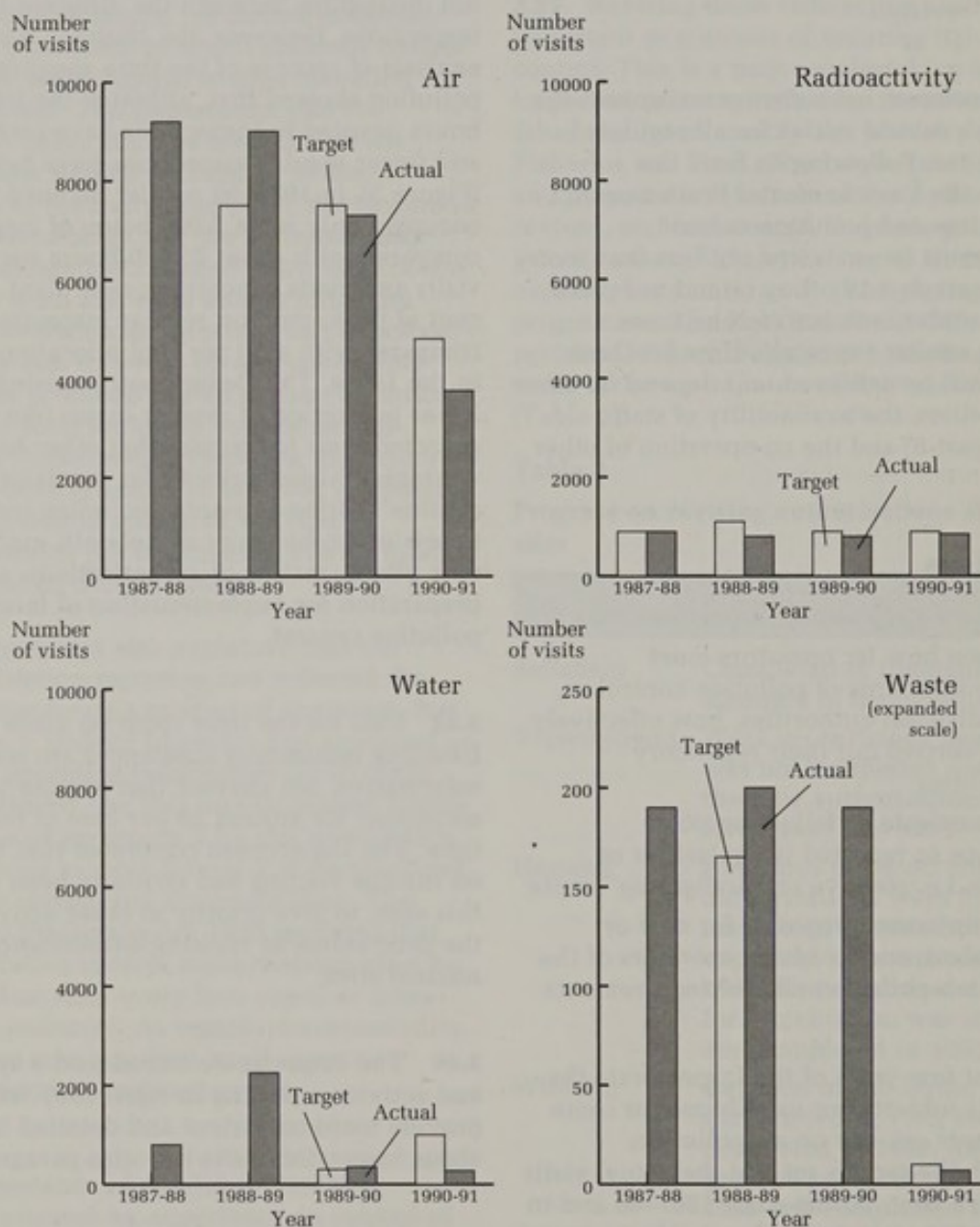
**3.28** Data for the time spent on visits to premises handling radioactive substances are less informative, but showed that routine visits accounted for around 20 per cent of inspectors' time. The Department confirmed that the emphasis on routine visiting had similarly been reduced in this area, to give priority to other activities such as the programme of revising authorisations for nuclear sites.

**3.29** The Inspectorate introduced a system of time and activity reporting in April 1991 which will provide more consistent and detailed information about inspection visits (see also paragraph 2.12(ii)).

## Frequency of inspections

**3.30** Targets for the number of inspection visits to be carried out each year have been largely based on what is achievable within the staff resources available rather than in relation to an appraisal of the risks involved and the visits required to ensure effective regulation. For premises regulated under the Radioactive Substances Act 1960, however, the Inspectorate have specified a range of benchmarks

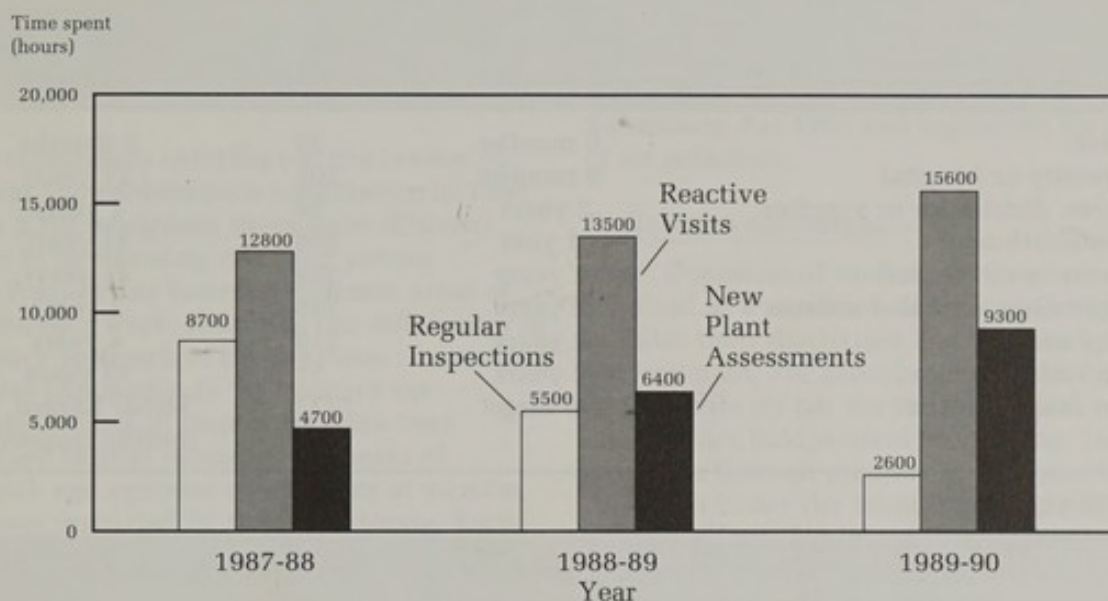


**Figure 2****Target and actual inspection visits from 1987-88 to 1990-91****Source:** MINIS returns and Inspectorate annual reports.**Notes:** 1. Figures for 1990-91 are Inspectorate estimates.

2. For waste, figures include both programmed and ad hoc visits. In 1988-89, the Inspectorate set a target of 100 programmed visits (100) and achieved 160. In 1990-91, visits were trial audits.

Over the period 1987-88 to 1990-91 the Inspectorate have usually met or come close to targets set, but air targets have gradually decreased and visits achieved were all below target in 1990-91. This was because of the emphasis given to other higher priority work including in 1990-91, the preparation for integrated pollution control.



**Figure 3****Air visits: time spent on inspections from 1987-88 to 1989-90**

**Source:** Inspectorate time-recording system.

**Notes:** 1. Figures reflect direct time and relevant administration time.

2. Data for 1990-91 were not available in this form due to new time recording arrangements.

**While the total time devoted to air inspections has increased fewer and fewer regular inspections have been carried out. This reflected the Inspectorate's judgement that other functions warranted higher priority for regulatory effort.**

based on quantified assessment of the levels of risk from the different types of regulated premises. These range from nuclear sites, such as Sellafield and nuclear power stations, to non-nuclear premises, such as laboratories, hospitals and industrial users of small closed radioactive sources. The benchmarks are intended to assist inspectors determine inspection programmes. But the National Audit Office found that in 1989-90 the intervals between Inspectorate visits to most premises other than nuclear sites were from two to six times longer than the benchmarks suggested were necessary (Table 4). The Department told the National Audit Office that the benchmarks were not minimum inspection requirements but the frequencies of visit which would ideally be carried out if resources were unconstrained.

**3.31** The Department also told the National Audit Office that the Inspectorate's available resources were focussed on the priority nuclear sites. In 1989-90 these premises were visited on average every two months, compared with the benchmark of one full inspection every six months (Table 4). However, the National Audit Office found that these visits generally involved inspection of

selected plant or buildings only. It was not possible therefore to ascertain whether the Inspectorate achieved the benchmark for the premises as a whole.

**3.32** At the site operated by British Nuclear Fuels plc at Sellafield, the most complex of those regulated, the Inspectorate set benchmark inspection frequencies building by building, with a benchmark aggregate of 70 days inspection effort per year. The National Audit Office's analysis for one year (1989) indicated that 36 days of programmed inspection visiting was carried out in that period. The Department told the National Audit Office that in addition a major programme of revision of the Sellafield authorisations was being carried out during the relevant period and that they were satisfied that Sellafield was receiving close and effective scrutiny.

**3.33** No targets or benchmarks for the frequency of air pollution inspections currently exist. The Department told the National Audit Office that, reflecting the general philosophy of the former Air Inspectorate (see Appendix 2), inspection priorities



Table 4

## Radioactive substances inspection: visit frequencies achieved during 1989-90

| Category and description                | Target period between full inspections | Number of premises | Actual period between visits (average) |
|---|--|--------------------|--|
| 1 Nuclear sites                         | 6 months                               | 30                 | 2 months                               |
| 2 Major university or hospital          | 9 months                               | 205                | 2½ years                               |
| 3 Manufacturer, distributor or supplier | 2 years                                | 34                 | 2 years                                |
| 4 Research establishment                | 1 year                                 | 298                | 3½ years                               |
| 5 Minor university or hospital          | 2 years                                | 309                | 4½ years                               |
| 6 Industrial premises unsealed sources  | 2 years                                | 166                | 2 years                                |
| 7 Radiography user                      | 2 years                                | 219                | 4 years                                |
| 8 Major user: sealed source             | 2 years                                | 51                 | 13 years                               |
| 9 Minor user: sealed source             | No target                              | 7222               | Minor hazard, no routine inspection    |

Source: MINIS 11 return

In 1989-90, except for the nuclear sites, the intervals between Inspectorate visits to other premises handling radioactive material were up to six times longer than the benchmarks set. The benchmarks are not minimum inspection requirements but the frequencies of visit which would ideally be carried out if resources were unconstrained.

and frequencies were judged by individual inspectors on the basis of their detailed local knowledge of plants and operators. But the Department accepted that with the move to a larger integrated Inspectorate and other factors referred to in paragraph 3.13, more formal benchmarks for all types of inspection were needed, and these were currently being developed (paragraph 3.37).

**3.34** In the absence of any standard benchmarks the National Audit Office were unable to make any quantitative assessment of the adequacy of the inspection effort on air pollution. However they noted that MINIS reports prepared in 1988 and 1989 concluded that while the effect of continuing lower levels of inspection (paragraph 3.25) was difficult to assess, emission and operational standards could be expected to fall. And nearly all the industry groups consulted by the National Audit Office were concerned that the level of the Inspectorate's resources was too low for effective regulation of air pollution. The Department told the National Audit Office that they had, since the Inspectorate's creation, been aware of the need to strengthen the manpower resources at their disposal, and drew attention to the successive increases in complement since 1987, and the action taken to raise recruitment (paragraphs 6.10-6.18). The Department confirmed that they were satisfied that, in the meantime, effective regulation had been maintained, through the Inspectorate's effective identification of priorities and targeting of effort.

**3.35** On waste, staff shortages prevented the Inspectorate in the period 1987-1989 from carrying out visits to waste disposal authorities on a systematic basis. Priorities were arrived at on an informal basis in response to particular problems and matters requiring investigation and advice. With the shift in emphasis towards an "audit" role, the Inspectorate in 1990 undertook field trials to determine the scope and methodology for a more systematic programme of inspection visits and decided to aim for a five year cycle of visits for the waste regulation authorities to be established in April 1993 under the Environmental Protection Act 1990. However, achieving this level of coverage will depend on further increases in staff. In the meantime the Inspectorate hope to examine about 10 per cent of waste disposal authorities in 1991-92.

**3.36** Initially the Inspectorate did not set targets for the frequency of their inspections of sewage works, again reflecting their limited resources. However, they gave priority to visiting all sewage treatment works reported to be breaching authorised discharge levels and this level of inspection was achieved as complemented posts were filled. Both complying and non-complying works were visited to get a balanced view of performance. Visits fell in 1989-90 as by then the Inspectorate had identified the main reasons for non-compliance and the Government had announced a related investment programme. The Inspectorate's responsibility for sewage works



passed to the National Rivers Authority on its creation in September 1989 and visits to sewage works in 1990-91 were mainly to prepare for the Inspectorate's new responsibilities for regulating discharges to water under integrated pollution control.

**3.37** The consultants carrying out the review of management and performance information in 1990 (paragraph 2.10) recognised there were different approaches to categorising risks and setting inspection frequencies between different areas of the Inspectorate's work, reflecting the differences in the regulatory approach of the previous inspectorates (Appendix 2). To improve the planning and control of inspection work they recommended regular formal assessments of pollution risk and operator competence at all sites and processes regulated by the Inspectorate. Such assessments would provide an objective basis for determining the planned level of compliance monitoring required, prioritising activities and making the best use of resources; and they would also enable the Inspectorate to monitor how far the inspection programme conformed to or departed from the ideal. The Department told the National Audit Office that in view of the move to integrated pollution control and the factors noted in paragraph 3.13 the Inspectorate were themselves already clear that a systematic approach to risk assessment and allocation of inspection effort should be extended to all areas of regulation. They accepted the consultants' recommendations and were developing procedures for implementation by summer 1991.

**3.38** Other steps being taken by the Inspectorate to help to target their inspection resources more systematically include:

- (i) when issuing or renewing authorisations under integrated pollution control inspectors will assess the need for inspection according to the individual circumstances of the process concerned;
- (ii) the establishment of target inspection frequencies for all regulated processes by summer 1991;
- (iii) a revised approach to monitoring discharges which will emphasise operators' responsibility to demonstrate compliance with emission limits (paragraph 3.46).

Guidance on these various improvements will be promulgated in the inspectors' manual in due course.

## Monitoring of discharges and environmental impacts

**3.39** In addition to their inspection visits, the Inspectorate monitor discharges and their environmental impacts, largely to support their regulatory responsibilities under the Radioactive Substances Act 1960 and legislation for the control of air pollution.

### Radioactive discharges

**3.40** Operators of nuclear licensed sites are required as a condition of their authorisation to monitor their discharges and the nearby environment. For gaseous discharges the Inspectorate do not normally undertake or commission independent monitoring, but maintain oversight through scrutiny of data provided by operators under the monitoring regimes specified in authorisations. For liquid discharges the Inspectorate's monitoring is undertaken by contractors. It includes independent analysis of liquid effluents, and instrumental monitoring and laboratory analysis of samples of environmental materials near certain sites. Such work complements the environmental monitoring undertaken by the Ministry of Agriculture, Fisheries and Food. Until recently the Inspectorate also monitored radioactivity levels in air and water supplies (see paragraph 2.13).

**3.41** The Inspectorate's monitoring provides a check that operators' own monitoring is soundly based and being properly implemented. The National Audit Office found that:

- (i) monitoring by contract was well established and structured, with clear objectives;
- (ii) inspectors regularly receive the results of the monitoring programme and work was in hand to draft a report for publication which would present a radiological assessment of the data;
- (iii) reports of the environmental monitoring undertaken by the Ministry of Agriculture, Fisheries and Food are also provided to inspectors and used in setting emission limits in nuclear site authorisations and keeping the limits under review.

**3.42** Monitoring by the Inspectorate of radioactive discharges from non-nuclear and lower-risk sites, such as industry, universities and hospitals, is correspondingly more limited, and is based on scrutiny of monitoring data maintained by the operators under the terms of their authorisations.



### Air discharges

**3.43** For non-radioactive discharges to air the Inspectorate employ sampling teams to visit works and undertake spot checks or remove samples for laboratory analysis. Their monitoring provides a check that operators are complying with the requirements of notes on the "best practicable means" of pollution control.

**3.44** In line with the general approach of the former Air Inspectorate (Appendix 2), priorities for monitoring air discharges have been determined largely by individual inspectors on the basis of their detailed knowledge of local plants and operators, and there has been no general definition of monitoring strategy or central specification of priorities. But as part of the move to a larger integrated Inspectorate and integrated pollution control, the Inspectorate are reviewing monitoring for all aspects of regulation and formulating a general policy (paragraphs 3.46 and 3.47 below).

**3.45** The National Audit Office found that because of staff shortages (four vacancies out of 12 posts) the number of samples taken by the sampling teams had fallen from almost 2000 in 1987-88 to 840 in 1990-91 (against a 1990-91 target of 1580 samples and a full complement target of 2500). The Department told the National Audit Office that the Inspectorate had not sought to recruit additional sampling officers at a time when their policy on monitoring and arrangements for handling sampling work were under review. In the meantime, the time of the sampling staff had been allocated between Inspectorate offices, and inspectors were responsible for determining priorities for sampling effort.

### **Review of monitoring arrangements**

**3.46** During 1990 the Inspectorate reviewed their monitoring policy in the light of their enhanced responsibilities following the introduction of integrated pollution control. They concluded that responsibility for demonstrating compliance with numerical limits specified within an authorisation should rest with the operator, as is already the case with nuclear licensed sites (paragraph 3.40). Under the "BATNEEC" concept (paragraphs 3.9 and 3.10) the Inspectorate will require the use of best available monitoring techniques such as continuous on-line instrumental monitoring coupled with data handling equipment, where appropriate and unless this can be shown conclusively to entail excessive costs. Within that general framework the review confirmed that the Inspectorate would need to maintain and expand their own monitoring to support their enhanced regulatory role and that contractors would continue to undertake monitoring.

**3.47** Whilst continuous monitoring of discharges may cost more than occasional physical inspection the move towards continuous monitoring is supported by experience in the USA of the benefits gained. The General Accounting Office reported in September 1990 that the US Environmental Protection Agency believes that emission monitoring equipment is ten times more likely to detect air quality violations from major stationary sources of pollution (such as power stations and oil refineries) than on site inspections. This is because such equipment measures emissions directly, provides nearly continuous coverage of the operations and processes concerned and detects violations that inspectors cannot.



## Part 4: Enforcement

**4.1** The objective of regulation and inspection is to ensure that operators of controlled processes achieve an acceptable level of performance and comply with their legal duties. But operators do not always achieve the required standards and this part of the report examines the action the Inspectorate take, including prosecution, to deal with poor performers.

### Prosecution vs Persuasion

**4.2** The Inspectorate take the view that persuading an offending operator to take remedial action is a more effective means of achieving their objectives than prosecution. In part this view recognises that the burden on the Inspectorate associated with prosecutions can be high, including the delays involved and tying up scarce professional resources. These factors have to be balanced against the risks in taking a persuasive approach, particularly where operators defer or delay the introduction of promised measures to improve performance.

### Enforcement: air

**4.3** Often the Inspectorate are able to deal with instances of poor performance without recourse to prosecution. Though the measures taken were not always fully documented the National Audit

Office's examination generally confirmed the Inspectorate's assurances that persuasion secures valuable results. For many sites examined the case papers contained evidence that the Inspectorate had successfully persuaded operators to comply with their requirements.

**4.4** The Inspectorate pursue more significant cases in the first instance by issuing improvement notices which require operators to introduce specified pollution control measures, and infraction letters which formally notify breaches noted by the Inspectorate. Both improvement notices and infraction letters are considered to be serious steps. Inspectorate policy is to prosecute in such cases unless operators introduce prompt and appropriate remedies. The issue of notices and letters is delegated to local staff though copies are sometimes sent to headquarters to inform the Chief Inspector in whose name the action is taken.

**4.5** Between April 1987 and April 1991 118 infraction letters and improvement notices were issued and six prosecutions were initiated, of which five were successful (Table 5). Decisions to issue enforcement notices are taken at local level, and records of individual cases are maintained in the local offices. Statistics on prosecution and

**Table 5**

**Enforcement action concerning air pollution and radioactive substances**

| Year    | Number of<br>infraction<br>letters | Air pollution                       |   | Radioactive substances                        |   |
|---------|------------------------------------|-------------------------------------|---|---|---|
|         |                                    | Number of<br>improvement<br>notices | Number of prosecutions<br>Total<br>Successful | Number of prosecutions<br>Total<br>Successful |   |
| 1987-88 | 25                                 | 2                                   | 1   | 1   | 2 |
| 1988-89 | 34                                 | 6                                   | 1   | 1   | 1 |
| 1989-90 | 27                                 | 5                                   | 3   | 2   | 1 |
| 1990-91 | 16                                 | 3                                   | 1   | 1   | 0 |
| Totals  | 102                                | 16                                  | 6   | 5   | 4 |

**Source:** Inspectorate.

**The Inspectorate's prosecutions are rare, though usually successful.**



enforcement are published in the Inspectorate's annual reports. But the National Audit Office found that there was no central system to monitor on an ongoing basis the level of enforcement activity and the outcome secured—for example to indicate how and when promised remedial action was taken and whether it was satisfactory. The Department commented that individual cases were reported on an exception basis to Inspectorate headquarters. They considered that unprosecuted cases were normally promptly resolved, but this could not be confirmed from central records.

**4.6** The Department told the National Audit Office that as part of the initiative to develop fuller performance measurement (paragraph 2.12 above), procedures for regular in-year reports to Inspectorate headquarters on enforcement action were to be introduced, to ensure that detailed and regular information on the volume and success of enforcement action was available centrally (paragraph 4.10 below).

**4.7** Notwithstanding the generally successful results of persuasion referred to in paragraph 4.3, the National Audit Office examination noted a small number of air pollution cases where the inspectors, although unable to secure substantial improvement in levels of discharge, had apparently remained reluctant to resort to prosecution. For example, in one case (Sherburn Stone Company Ltd, Inspectorate Leeds Office), an inspector refused in 1987 to register a plant required to be controlled under air pollution legislation because it did not meet necessary standards. An infraction notice was issued in March 1988, but public complaint about dust levels continued. Although operating without a registration certificate is an offence, the Inspectorate had not instituted prosecution at the time of the National Audit Office examination.

**4.8** The Department told the National Audit Office that they accepted that bringing the case of Sherburn Stone Company to a resolution had taken longer than was desirable, but they did not accept that the case supported any conclusion that the Inspectorate had been reluctant to resort to prosecution. In May 1991 improvement notices had been served on the Company and would if necessary be followed by prosecution. The Department pointed out that the pollution from the plant was dust, which was a nuisance rather than a hazard to the environment or to health.

**4.9** More generally the National Audit Office found that the documentation held centrally on air

pollution enforcement cases was poorly maintained. When this was raised with the Inspectorate, the National Audit Office were told that many matters are dealt with in discussions between headquarters and the districts, and that these discussions and the rationale for the decisions taken are not usually documented. However, the Inspectorate have introduced new filing arrangements to improve the holding of, and accessibility to, working papers and records generally.

**4.10** The introduction of improved systems to record enforcement activity and to take appropriate follow-up action under integrated pollution regulation has now been addressed in the new guidance manual for inspectors. This will help to ensure consistency and equity of treatment and enable lessons to be learned and communicated within the Inspectorate. Moreover, the in-year reporting to senior management on key enforcement actions and outcomes, introduced from April 1991, will provide the basis for periodic review of the Inspectorate's effectiveness in achieving enforcement objectives. Detailed guidance on prosecution procedures is also under preparation.

## **Enforcement: water**

**4.11** There were no prosecutions of water authorities in the Inspectorate's period of responsibility prior to the creation of the National Rivers Authority in 1989. Water authorities were engaged in a major programme of capital investment and improvement in operating standards, designed to bring sewage works up to compliance with legal limits. The Inspectorate's statement of policy, issued to the authorities in May 1988 and published in the 1988-89 annual report, noted these programmes, but stated that prosecution would be pursued in any cases of persistent or gross non-compliance or where there were no plans for necessary capital investment or improved operating practices. No such cases were identified.

**4.12** In 1989 the Inspectorate also considered prosecuting the South West Water Authority after an incident in July 1988 at Lowermoor water treatment works which led to the discharge of aluminium sulphate to the public water supply (the Camelford incident). There was, however, doubt whether for this case the provisions of the Water Act 1945 or the Control of Pollution Act 1974 were sufficient for the Inspectorate to sustain prosecution. Legal advice was sought and subsequently the Director of Public Prosecutions



took action under public nuisance powers. In January 1991 the residuary South West Water Authority were fined £10,000 with £25,000 costs on three counts arising from the incident.

## **Enforcement: radioactive substances**

**4.13** As with air pollution (paragraph 4.3) the Inspectorate's approach is to secure improved control of radioactive substances as far as possible without recourse to legal sanctions. Although there is no system of infraction letters to deal with more serious failures, the National Audit Office found that where poor performance was identified the Inspectorate had acted promptly to issue letters setting out the remedial actions required. Since 1989, the Inspectorate have required operators to provide positive written confirmation that recommendations arising from visits have been implemented.

**4.14** There have been four prosecutions, all successful, concerning radioactive substances since 1987 (Table 5). One of the difficulties is bringing prosecutions sufficiently quickly, since delays not only increase costs but also make it more difficult to prove the case and secure effective enforcement. The time taken to complete prosecutions on radioactive substances is generally longer than on air. For example, one offence identified by the Inspectorate in January 1988 was not tried until May 1989. To achieve faster action the Inspectorate have decided in future normally to use retained local solicitors who will develop expertise in this area of prosecution.

## **Enforcement: waste**

**4.15** As indicated at Appendix 2, Ministers set up the former Hazardous Wastes Inspectorate in 1983 to carry out an oversight and advisory role to local waste disposal authorities, and they had no statutory inspection or enforcement powers. Consequently, inspectors used advice and persuasion to improve authorities' performance. Although inspectors have notified authorities in writing of weaknesses and shortcomings identified in visits, there were no systematic arrangements for recording how such cases were finally resolved, and how quickly. There was therefore insufficient documentary evidence on which the National Audit Office could draw overall conclusions about how successfully the Inspectorate dealt with poor performance in this area.

**4.16** More recently, however, the emphasis of inspectors' fieldwork has changed towards formal inspection audits of the organisation and performance of individual waste disposal authorities, on a cyclical basis. This reflects Ministers' view that with continuing concern about standards and consistency of standards of waste disposal, a more formal regulatory role for Government was called for.

**4.17** The Environmental Protection Act 1990 provides a statutory framework for the Inspectorate's oversight of waste regulatory authorities to be established under the Act from April 1993, giving the Inspectorate a firm basis for specifying and monitoring improvements in performance.

## **Sanctions and penalties**

**4.18** A powerful sanction open to the Inspectorate where air pollution is concerned is to order instant cessation of operations where there is a risk of serious personal injury. This sanction, available under section 22 of the Health and Safety at Work etc Act 1974, has never been used by the Inspectorate. The Environmental Protection Act 1990 gives the Inspectorate more comprehensive powers to stop operations. These powers will become available as integrated pollution control is introduced progressively from April 1991.

**4.19** Financial penalties against offenders may also be levied through the courts. Most offenders prosecuted by the Inspectorate have been medium or large-sized industrial and commercial organisations. The level of fines imposed has ranged from £400 to £5,000 (the latter a total on three charges). All the convictions were secured in magistrates' courts where the maximum fine per charge is £2,000.

**4.20** Under the Environmental Protection Act 1990 fines of up to £20,000 may be imposed for offences similar to those prosecuted under previous legislation and tried by magistrates. This penalty will only be available progressively over several years as firms receive authorisations under the new system of integrated pollution control. For more serious offences tried by a crown court fines will be unlimited, as they are at present. Since formation of the Inspectorate in April 1987 only one case has been referred by magistrates to a crown court and this was unsuccessful.

**4.21** Claims for costs in successful prosecution

cases are low, ranging from nil to £860 per case. These mainly reflect the costs of legal representation only. In some cases, however, the cost of inspectors' time in court is also included, though not the cost of their investigation and

preparatory work. The Inspectorate told the National Audit Office that their policy was to claim the full costs associated with prosecutions, and information to enable them to do so (see paragraph 2.12) became available from April 1991.



## Part 5: Provision of advice and guidance

**5.1** This part of the report examines how far the Inspectorate have developed as an independent and authoritative source of advice and guidance on pollution control. It reviews the Inspectorate's performance in publishing guidance, providing advice to individual operators, and liaising with other regulators.

**5.2** In addition to publishing formal guidance for their own staff and for industry the Inspectorate provide advice and guidance on a more general basis across a wide number of fronts. For example, they give advice to Ministers and the policy divisions within the Department, to the Select Committee on the Environment, and to European Community bodies. They also respond to complaints and enquiries and contribute in a variety of ways to general debate and development on pollution control.

### Published guidance

**5.3** Since 1987 the Inspectorate have published formal guidance in two series initiated by their predecessors (waste management papers and notes on "best practicable means" of pollution control). Two new series are being introduced associated with the advent of integrated pollution control and other changes arising from the Environmental Protection Act 1990 (Table 6).

### Waste management papers

**5.4** The series of waste management papers is one of a number of means used by the Inspectorate to advise waste disposal authorities and encourage better waste management generally. The other means include inspection visits to authorities and waste sites, informal advice on particular cases and

**Table 6**

**Inspectorate guidance notes**

#### Existing series

##### Notes on "best practicable means"

set out the minimum requirements to be satisfied under existing air pollution control legislation, detailing emission limits, where these can be set, and other requirements on, for example, operational procedures or plant design principles.

##### Waste management papers

give detailed advice to all those involved in waste management on arisings, treatment and disposal of various types of waste and include codes of practice.

In April 1990 responsibility for producing these papers was transferred to another division within the Department.

#### New series

##### Integrated pollution regulation notes

will offer guidance on the standards relevant to the process prescribed for Inspectorate authorisation and describe techniques to achieve those standards. These will ultimately supersede notes on "best practicable means".

##### Notes on best available techniques not entailing excessive cost ("BATNEEC")

will provide guidance on the processes to be regulated by local authorities under the new system of local authority air pollution control introduced by the Environmental Protection Act 1990.

**Source:** National Audit Office.

**Note:** The Inspectorate have not published guidance notes on radioactive substances (though a guide to the Radioactive Substances Act 1960 was published by the Department in 1982, including guidance on certain solid wastes). Guidance to water authorities on frequency of sampling was in preparation but was overtaken by the formation of the National Rivers Authority.



Table 7

## Published guidance: achievement of targets

| Year    | Waste management papers |                | Notes on "best practicable means" |             |
|---------|-------------------------|----------------|-----------------------------------|-------------|
|         | Target                  | Achievement    | Target                            | Achievement |
| 1987-88 | 3                       | 0              | 11                                | 8           |
| 1988-89 | 2                       | 2              | 9                                 | 1           |
| 1989-90 | 4                       | 0              | 5                                 | 2           |
| 1990-91 | 4 <sup>1</sup>          | 0 <sup>1</sup> | —                                 | —           |

Source: National Audit Office and Inspectorate annual reports.

Note: 1. Although a target was set responsibility for preparation of waste management papers was transferred from the Inspectorate to a division within the Department during the year.

The Inspectorate have achieved only one of their targets for the publication of guidance notes. Effort was concentrated on work of higher priority.

contact with professional and industry bodies. As regards waste management papers, the National Audit Office found:

- (i) the Inspectorate had achieved only one of their publication targets (Table 7). The Inspectorate attributed the shortfalls mainly to the need to use staff on higher priority work such as a major review of waste disposal arrangements in the areas of the former GLC and metropolitan counties;
- (ii) although 20 of the 27 published papers were first issued between 1976 and 1980 and had remained unchanged the Inspectorate did not formally assess and confirm the need to review and revise this series until June 1990. The Department told the National Audit Office that prior to this assessment these papers had been kept under regular review and where in a few cases updated advice was required they had issued supplementary guidance through circular letters;
- (iii) the 1990 assessment concluded that while existing papers covered most of the technical ground a number of subjects remained to be dealt with;
- (iv) both the National Association of Waste Disposal Contractors and the Institute of Wastes Management confirmed their view that the production of papers had been insufficient in recent years.

and timely guidance on many topical concerns, and that the lack of guidance in some areas had led to waste disposal authorities imposing new standards unilaterally, with subsequent complaints from the industry about inconsistency. The Minister informed the Committee in January 1989 that the production of waste management papers was receiving very serious attention and it was planned to produce four new or revised papers a year.

5.6 For the reasons noted in paragraph 5.4(i), no papers were issued in 1989-90. However the Department told the National Audit Office that considerable progress was made on a number of topics particularly related to those papers dealing with the problem areas on which the Inspectorate had targeted their effort. Work was begun on revisions of waste management papers on special waste, the control of landfill gas and polychlorinated biphenyls (PCBs). A new paper entitled "Environmental Assessment for Waste Facilities" was circulated in draft and a major paper revising Waste Management Paper No 1 "The Reclamation, Treatment and Disposal of Waste" was begun and progressed to the final draft. A technical report was also published on the determination of certain toxic substances in UK soils.

5.7 In 1990 the Inspectorate and the Department concluded that the preparation of waste management papers did not sit easily with the Inspectorate's oversight and inspection role on waste and responsibility was accordingly transferred to a division within the Department in April 1990. Under these new arrangements it will still be necessary for Inspectorate experts to contribute to the preparation of papers. No papers

5.5 The Environment Committee, in its report on Toxic Waste in February 1989 (2nd Report, Session 1988-89), found that there was a need for central



were produced in 1990-91, but the Department told the National Audit Office that work continued on revising the papers on landfill gas and on the evaluation of options and work also began on drafting a paper on recycling.

### Notes on "best practicable means" (air)

**5.8** In the first three years of their existence the Inspectorate experienced similar difficulties in meeting their targets for the production of these notes (Table 7). In particular the National Audit Office found that:

(i) the Inspectorate's long term objective had been to revise the notes about every five years, but in practice the four revisions undertaken by the Inspectorate up to December 1989 were not completed until seven to nine years after initial publication;

(ii) by December 1989 there were 11 notes (out of a total of 29) which were more than five years old and which had not been reviewed and the Inspectorate had calculated that up to about 90 notes in total might be required;

(iii) companies and organisations representing industry consulted by the National Audit Office had mixed views on whether the Inspectorate's guidance was sufficient. But the Petroleum Industry Association and the Chemical Industries Association both commented that many notes were outdated.

**5.9** The Department told the National Audit Office that the Inspectorate's programme for preparing and reviewing notes on "best practicable means" gave priority to those processes with the greatest pollution potential, and to processes where the existing note was significantly out of date in terms of the advance of technology. In the light of the advent of integrated pollution control the Inspectorate have not published any notes in this series since 1989. Instead they have focussed their resources on other higher priority work including, more recently, the preparation of the new series of integrated pollution regulation notes (see below) which supersede the notes on "best practicable means".

### New series of guidance notes

**5.10** To facilitate implementation of integrated pollution control the Inspectorate are producing new guidance material. During the passage of the Environmental Protection Bill the Minister gave an

undertaking to Parliament that technical guidance would be available within two or three months of Royal Assent. The first material, in the form of five industry sector notes providing general guidance on all the processes prescribed for integrated pollution control, were circulated as consultation drafts to industry and other interests in September and October 1990 and were expected to be published by end July 1991.

**5.11** A second series of detailed integrated pollution regulation notes (Table 6) relating to individual prescribed processes is in preparation. The Inspectorate envisage that each note will be produced at least three months in advance of the industry process coming under integrated pollution control. The first note was published in April 1991 and the programme, likely to extend over four or five years, will involve the publication of about 200 notes in total.

**5.12** The Environmental Protection Act 1990 introduced a new system of local authority air pollution control, for which the Inspectorate also had a target to draw up a new series of notes on best available pollution control techniques by December 1990. This, however, depended on finalising the regulations for the new system, which were delayed. The first group of 24 notes was published in February 1991. Publication of the second and third groups is due in the summer and autumn of 1991 respectively. The Inspectorate told the National Audit Office that all the notes will be available before the process concerned comes under the new controls.

### Advice to operators

**5.13** Almost all of the companies and organisations representing industry (Appendix 4) supported the value of the Inspectorate's advisory role. For air pollution control in particular the Inspectorate have followed a long-standing tradition of supplementing published guidance by close working with operators, offering advice, suggestions and help in reducing pollution. In the Inspectorate's judgment this approach has been productive and effective in achieving high standards.

**5.14** However, the Environmental Protection Act 1990 marked a shift to a more formal approach to regulation. And in line with this the Inspectorate have decided to develop a more structured and formal relationship with operators. In particular they intend to withdraw as far as possible from providing substantive advice and assistance to individual operators on the design and operation of



processes. Factors influencing this decision included:

- (i) the Inspectorate must be able to exercise critical and detached scrutiny and to be independent of company management decisions when pursuing legal action;
- (ii) close working with individual operators is costly and may not represent the best use of scarce inspectors' time;
- (iii) provision of advice to all operators through published guidance notes would better encourage higher standards of pollution control;
- (iv) firms should build up pollution control skills either in-house or by using consultants and the Inspectorate want to encourage a stronger consultancy sector;
- (v) the Inspectorate and their predecessors had already successfully moved to a more detached relationship with the radioactivity sector.

**5.15** Nevertheless, the Inspectorate aim to maintain constructive links with operators and industry generally. They told the National Audit Office that in addition to publishing guidance notes they would continue to advise operators where, for example, a process is novel and no specific guidance exists.

**5.16** It is too early to assess the impact of this change on pollution control. Initially it may create difficulties for operators — particularly smaller firms who traditionally have relied most on the free advice available. It would be possible for the Inspectorate to provide consultancy advice to individual firms on a repayment basis subject to certain safeguards. But this could raise questions on Inspectorate independence (see paragraph 5.14) and is in any case not practical until the Inspectorate themselves have made further progress in implementing new information systems (see paragraphs 6.7 and 6.8). Whatever action is taken it will be important to monitor the outcome of the new arrangements on the most vulnerable operators and on pollution control generally.

**5.17** Developing and maintaining the right relationships with industry links up with wider aspects of the independence of the Inspectorate and of individual inspectors. Relevant issues — all of which have been, or are being, addressed by the Inspectorate — include the need for regular changes in the client allocations of individual inspectors, grouping inspectors in larger divisions to facilitate team working and wider exchange and testing of

ideas (paragraph 1.13), and the introduction of arrangements to ensure consistency in the application of regulatory standards (paragraph 3.14).

## **Liaison with other regulatory bodies**

**5.18** For some of their responsibilities on radioactive emissions and discharges, the Inspectorate must act jointly and in co-operation with the Nuclear Installations Inspectorate of the Health and Safety Executive, the Ministry of Agriculture, Fisheries and Food and the Welsh Office (Appendix 1). In September 1987 the Inspectorate and these organisations agreed a joint memorandum of understanding clarifying responsibilities and working arrangements. The National Audit Office found that the organisations had usually worked well together as a result.

**5.19** The National Audit Office asked local authority associations for their views on liaison with the Inspectorate. The response was mixed. Associations representing District Councils in England and Wales, which are responsible for local air pollution regulation and two individual metropolitan authorities who additionally volunteered a response, expressed a favourable view, reporting that informal advice on specific issues was usually available and that liaison was good. But the Association of County Councils whose members are responsible for waste regulation reported that authorities were concerned that both the quality and availability of advice and day-to-day contact had suffered, they felt, as a result of the Inspectorate's low staffing levels.

**5.20** The Inspectorate confirmed that they had assigned lower priority to consultation and advice than to site inspection. This reflected their view that authorities needed to develop the expertise to deal with their own pollution responsibilities and not to be dependent on the Inspectorate. The clear division of responsibilities between the Inspectorate and local authorities established under the Environmental Protection Act 1990 reinforced this view. The Inspectorate also drew attention to the published guidance material on air pollution and waste disposal matters.

**5.21** From April 1991 under the new system of air pollution control introduced by the Act local authorities have assumed responsibility for regulating some 30,000 individual sites or processes. Since November 1989 the Inspectorate, through their local authority unit, have liaised with local authority associations to facilitate the smooth implementation and running of the new system. They have also helped to prepare written guidance



(paragraph 5.12) and provided initial training for local authority staff. As from April 1991 the Inspectorate unit dealing with local authorities and its responsibilities was transferred to a division within the Department.

**5.22** While the National Rivers Authority are responsible for regulating most polluting discharges to rivers and other waters the Inspectorate, under the Environmental Protection Act 1990, are responsible for regulating a "red list" of dangerous substances (paragraph 3.1). It is therefore important that both bodies have a clear understanding of their responsibilities and working arrangements.

**5.23** A joint working group reported to Ministers

in October 1989 on the respective roles of the Inspectorate and the National Rivers Authority and draft memorandum of understanding was prepared by the Inspectorate in December 1989, shortly after formation of the Authority. Following the passage of the Environmental Protection Act in November 1990, which defined the respective responsibilities of the two organisations and the statutory procedures, the memorandum was agreed on and issued in late 1990, in readiness for the start of the implementation of integrated pollution control. The Inspectorate and the National Rivers Authority believe that the memorandum of understanding will result in fuller consultation and better exchanges of information with the Authority and ultimately more effective control of "red list" substances.



## Part 6: Achieving integrated pollution control

**6.1** The introduction of integrated pollution control and associated changes following the Environmental Protection Act 1990 will have a fundamental impact on the scale, nature and organisation of the Inspectorate's work. This part of the report deals with progress on preparing for this new system and with key issues crucial to its successful implementation, recognising that these are areas of current development and may be subject to further change.

**6.2** To explore how integrated pollution control might work in practice the Inspectorate undertook two pilot case studies in 1987. These examined integrated regulation at a major industrial site and a nuclear research establishment producing a range of effluents and waste for disposal to air, water and land. The studies concluded mainly that the Inspectorate could move to a system whereby a single inspector acts as the principal inspector for all of the Inspectorate's interests on a site; that integrated pollution control needs to be addressed at the design stage of a plant; and that substantial work would be necessary to develop suitable environmental assessment techniques for determining impacts on the environment resulting from multi-media disposals.

**6.3** The Inspectorate initiated research to develop the required environmental assessment techniques in early 1990. The first phase of the research programme is concerned with collecting and reviewing data and techniques. It is expected to be completed in autumn 1991. The information collected will be used as the basis for developing appropriate assessment methodologies in subsequent phases of the research programme, to coincide with the implementation of integrated pollution control between 1991 and 1996.

**6.4** Implementation of integrated pollution control involving some 80 categories of industrial process at 5,000 sites will be phased. From April 1991 all new proposed plants in these categories, and existing plants proposing substantial changes, require authorisation from the Inspectorate immediately.

Existing large combustion plants, including power stations, also required authorisation from April 1991, while existing plants in other categories will be converted to the new system in a phased programme, by process category, over the period April 1992 to May 1996.

**6.5** This timetable is later than first planned, by three months for new and substantially changed installations and by up to one year for most existing ones. The decision to extend implementation was caused by the need for further consultation with industry and extra time taken for the passage of the Environmental Protection Bill through Parliament. It did, however, provide the opportunity for more thorough preparation for implementing the new arrangements.

**6.6** As noted in paragraphs 5.10 and 5.11 the Inspectorate have been developing guidance notes to facilitate implementation of integrated pollution control. General guidance was due to be published by end July 1991. Some 200 process specific notes, offering more comprehensive guidance, are to be published over four or five years from April 1991 in advance of the industry process coming under the new system. It will be important, as the Inspectorate recognise, for this demanding publication programme to be met on time. The Royal Commission on Environmental Pollution has observed that slow progress on issuing guidance notes would seriously undermine the effectiveness of the new approach.

### Charging arrangements

**6.7** Although the Health and Safety at Work etc Act 1974 provides for charges to be made by order for the Inspectorate's regulation of air pollution, neither the Inspectorate nor their predecessors have previously charged operators for this activity. But, under the "polluter pays" principle, the Environmental Protection Act 1990 empowers the Inspectorate to recover relevant expenditure attributable to all regulatory work associated with authorisations under integrated pollution control. The Act also provides, for the first time, that charges may be made for regulation under the Radioactive Substance Act 1960 and requires that



schemes are framed as far as practicable to ensure that fees and charges payable are sufficient taking one year with another to cover the relevant expenditure.

**6.8** The Government's aim is to keep charging arrangements as simple as possible whilst recognising the need to link charges to the scale of firms' operations and the Inspectorate's costs. The Inspectorate have devised standard charges for different sizes and types of processes; these comprise an initial charge on authorisation and an annual charge to reflect the continuing costs of regulation and inspection. The introduction of charges reflecting the Inspectorate's actual costs for individual authorisations is an option for the future when computer support will be available through the Inspectorate's information systems strategy (see paragraphs 6.19-6.22).

**6.9** For 1991-92 the Inspectorate plan to recover through charges some £11.2 million of their total forecast costs of £23.8 million (full economic cost basis) including research. Recoverable costs relate to operating integrated pollution control and radioactive substances regulation and are expected to increase as processes convert to the new system. Non-recoverable costs total some £12.6 million and include oversight of waste disposal authorities (£1.8 million) and regulation of processes not yet subject to integrated pollution control (£3.5 million). Ministers also decided that the preparation of integrated pollution control guidance material (£1.6 million) and general research mainly associated with radioactive substances regulation (£5.7 million) should not be recovered from industry through charges.

## Staff requirements

**6.10** As noted at paragraph 1.14, the initial complement of the Inspectorate was set on the basis of the complements of the constituent inspectorates, with allowance for the additional functions allocated to the new organisation. In addition, 19 new posts were created to strengthen the regulation of radioactive substances, giving a total complement of 214 (including 15 posts relating to work subsequently transferred to an environmental policy division in the Department). Complement was kept under review, and a further 10 posts allocated to the Inspectorate during 1988.

**6.11** In mid 1989 the Inspectorate carried out their first fundamental review of their long-term staffing requirements. This took into account current workload pressures, the increased priority of

environmental issues, the expectations of the public and industry in relation to pollution regulation and the prospective new demands of legislative proposals for integrated pollution control which were then being formulated. The review concluded that a progressive increase in staff complement over a few years from 219 (at April 1989) to 400 a few years later was necessary.

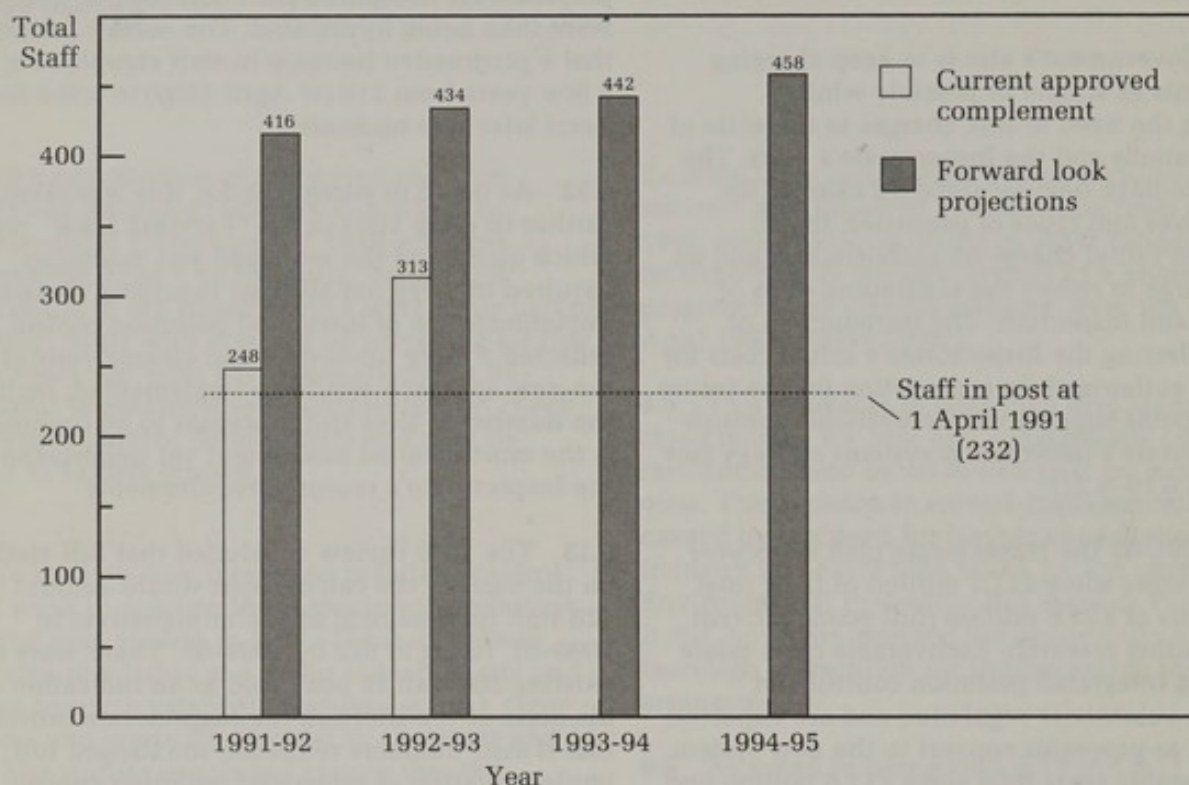
**6.12** As noted in paragraph 2.8, this was taken further in early 1990 in the "Forward Look" review which quantified the workload and resources required to carry out all their functions, including implementation of integrated pollution control. This reflected a more up-to-date and clearer view of how the new approach would be implemented, including the number of sites and processes to be covered. It is the most detailed assessment yet undertaken of the Inspectorate's resource requirements.

**6.13** The 1990 review concluded that full staffing on the basis of the calculations would amount to 426 staff (professional and administrative) in 1990-91, rising to 522 by 1994-95. There were an existing 206 staff in post. And as an indication of the scale of the shortfall the Inspectorate estimated that if staff numbers remained unchanged full implementation of integrated pollution control would take up to 10 years.

**6.14** The Department told the National Audit Office that, by its nature, it is not feasible to double a specialist professional organisation at a step. Moreover the pool of people with the qualifications and experience required to become a pollution inspector is relatively small and this constrains the achievable pace of recruitment. The Inspectorate have therefore sought to proceed by staged expansion. Following the 1990 public expenditure survey, Ministers in January 1991 announced an increase in the approved complement to 248 as at April 1991, rising to 313 by the end of 1991-92. At the same time it was acknowledged that further increases to "around 400 staff" were likely to be required as integrated pollution control was further implemented, subject to the Inspectorate's experience of operating the new system from April 1991 onwards. Ministers intended that the staffing position would be kept closely under review.

**6.15** In April 1991 the Inspectorate completed a review of the forward look projections in preparation for their 1991 public expenditure survey resource bid. This revised their projected staffing requirements downwards to a total of 416 staff in 1991-92 rising to 458 staff by 1994-95, still a substantial increase over the 232 staff in post at April 1991 (Figure 4). The revision reflected the



**Figure 4****Current and future staffing of the Inspectorate**

**Source:** The Inspectorate's "forward look" as revised in April 1991.

**Note:** There are no approved complements for 1993-94 and 1994-95.

**The inspectorate have identified the need for a substantial increase in staff compared to their current staff in post and complement.**

latest estimates of integrated pollution control and other work, the transfer of certain work and the 28 staff involved to the Department (paragraph 1.14) and projected efficiency gains from implementing their information systems strategy (paragraph 6.20).

**6.16** This latest estimate of the Inspectorate's staffing requirements considerably exceeds their approved April 1992 complement of 313. As regards the implications of this for the Inspectorate's work programme the Department pointed out that Ministers had acknowledged that further increases in complement were likely to be required and told the National Audit Office that, within the projection of "around 400" already referred to by Ministers, it would be possible to achieve implementation of integrated pollution control in the planned period (paragraph 6.4). Ministers had emphasised that this figure was provisional, and that the position of the Inspectorate would continue to be kept closely under review.

## Recruitment

**6.17** Until recently the Inspectorate have had difficulty recruiting sufficient staff with the required qualifications and industrial experience, and have experienced a shortfall against even their existing complement (Figure 1a). One factor has been insufficiently competitive salaries and, following discussions with the Trade Unions and the Treasury, the Inspectorate implemented successive annual increases in the professional salary scales between 1987 and 1990 (in addition to the general annual increases of civil service salaries). The initial increases were limited to nuclear specialists, of which there was a particular shortfall. Recruitment of these and other pollution inspectors continued to be inadequate, and in October 1989, the Inspectorate introduced a general increase, enabling recruits to be offered starting salaries up to 23 per cent higher in real terms than previously. Recruitment still remained inadequate,



Table 8

Results of recruitment exercises for inspectors and assistant inspectors: January 1989–April 1991

|                                | June<br>1989 <sup>1</sup> | Nov<br>1989 <sup>1</sup> | Feb<br>1990 <sup>1</sup> | May<br>1990 <sup>2</sup> | June<br>1990 | Dec<br>1990     |
|--------------------------------|---------------------------|--------------------------|--------------------------|--------------------------|--------------|-----------------|
| Vacancies to fill <sup>3</sup> | 25                        | 31                       | 28                       | 12–15                    | 31           | 33              |
| Applications                   | 230                       | 265                      | 134                      | 242                      | 71           | 592             |
| Interviews held                | 24                        | 37                       | 23                       | 20                       | 12           | 98              |
| Job offers made                | 5                         | 9                        | 2                        | 6                        | 5            | 38 <sup>4</sup> |
| Joiners                        | 5                         | 3                        | 1                        | 6                        | 5            | 31              |

Source: Inspectorate.

Notes: 1. These exercises were for inspectors only.

2. This exercise was for assistant inspectors only.

3. Vacancies to fill are approximate. They represent the shortfall in staffing around the time of recruitment.

4. This includes three job offers deferred to later in 1991.

**The Inspectorate's latest recruitment exercise has been much more successful than earlier exercises.**

and in 1990, the Inspectorate took the following further initiatives to remedy the situation:

(i) **Further salary improvements.** In October 1990, a further salary increase of some 18 per cent was announced, to take effect from April 1991.

(ii) **Introduction of an assistant pollution inspector grade in April 1990.** This enabled recruitment of staff with the same professional qualifications as inspectors and at least two years' practical experience (compared with at least five for inspectors), whose training would be completed within the Inspectorate.

(iii) **Appointment of recruitment consultants.** They were commissioned in May 1990 to review and advise on policies and methods concerning recruitment and retention.

**6.18** Following the consultants' report in September 1990, the Inspectorate have acted to improve recruitment advertising and information, raise their profile, and speed up and simplify recruitment. The subsequent campaign in late 1990 has shown an improved response and results (Table 8). Compared to the equivalent exercise a year earlier 592 (265) applications were received, and 38 (9) candidates selected from 98 (37) interviewed. As a result, the Inspectorate expected to be up to professional complement at July 1991 for the first time since they were established in 1987, as successful candidates from the campaign take up their posts; some 250 staff will then be in post, including 133 professional staff in inspector grades.

A further campaign is planned for autumn 1991, to recruit staff for the further programmed increase in the Inspectorate's complement to 313 by the end of 1991–92 (paragraph 6.14).

### Information technology

**6.19** A key element in improving efficiency and making the best use of available staff is the development of co-ordinated information technology systems now underway within the Inspectorate. In May 1988 the Inspectorate began to prepare an information technology strategy and in January 1989 they appointed consultants (Mouncey and Partners) to work jointly with the Department's information systems division, to review their requirements and make proposals. The joint team, who reported in July 1989, found that investment in information technology had been small, and that the existing systems operated by the three previous inspectorates were largely incompatible, and limited in effectiveness. In October 1989, the Inspectorate formally accepted the recommendation that they should implement a comprehensive IT strategy to support all aspects of their work, at an indicative cost of £4 million, and a target of April 1991 for implementing the first stage.

**6.20** In February 1990, the Inspectorate submitted an information systems strategy statement to the Treasury and, following approval, they then submitted further detailed costings and an investment appraisal supporting implementation of the first phase of the strategy. These showed a total



estimated cost of £7.6 million for phase 1 and expected savings over 10 years from the proposed systems of over £12 million at discounted 1990 prices compared with the cost of less automated alternatives. The Treasury gave approval to undertake the first and largest tranche of expenditure on phase 1, totalling £5.1 million, in September 1990.

**6.21** In addition to the increased cost estimate the target completion date for the full system is now April 1994. However, delivery of the priority elements, linked with the implementation of integrated pollution control and cost-recovery charging, began in April 1991. The Inspectorate told the National Audit Office that the changed cost and timescale estimates, compared to the first indicative assessment, arose largely because of:

- (i) the large increase in the Inspectorate's projected staff complement which has more than doubled since 1989 when the first cost estimate was prepared. This has necessitated more hardware, bigger systems and a larger number of regional office locations to be networked;

- (ii) the need to develop skills in the use of advanced programming techniques, including the acquisition of external skills;

- (iii) the Inspectorate's evolving requirements as the way forward on integrated pollution control became clearer.

- (iv) the fact that the initial report of July 1989 was by its nature a very broad assessment of the requirements of the organisation and the timeframe within which computerisation could be completed.

**6.22** Most of the projected net savings of over £12 million accrue from the later stages of phase 1 of the strategy. The expenditure on these later stages is subject to Treasury approval of detailed costings, but the Inspectorate told the National Audit Office that Treasury's approval to the first and largest tranche of investment indicated confidence in completion of phase 1 and acknowledgement of the need for this further expenditure. It is essential, however, that the Inspectorate fully monitor the delivery of benefits and the projected efficiency gains from implementing their strategy.



# Appendix 1

## Main responsibilities for pollution control in England and Wales

| The Inspectorate's responsibilities  | Statutes operated by the Inspectorate  | Other organisations' responsibilities   |
|--|--|---|
| <b>Air</b><br>Control of pollution from specified industrial processes: in 1989-90 some 3000 processes at 2000 sites.  | Alkali etc Works Regulation Act 1906;<br>Health and Safety at Work etc Act 1974;<br>Environmental Protection Act 1990. | <b>Department of the Environment, Welsh Office</b><br>Policy on air pollution control.<br><br><b>Local authorities</b><br>Control of emissions from a second tier of industrial processes and from domestic and commercial premises.<br><br><b>Department of Transport</b><br>Emissions from motor vehicles, ships and aircraft.  |
| <b>Radioactive</b><br>Authorisation of discharges of radioactive wastes to air, land and water: in 1989-90 some 8600 sites of which 1500 authorised for accumulation or disposal of radioactive wastes.<br><br>Shared responsibility with HM Nuclear Installations Inspectorate on design assessment of plant on nuclear licensed sites. | Radioactive Substances Act 1960;<br>Environmental Protection Act 1990.   | <b>Department of the Environment</b><br>Policy on radioactive waste management and radioactive substances.<br><br><b>Department of Energy</b><br>Policy on nuclear power.<br><br><b>Health and Safety Executive:</b><br><b>HM Nuclear Installations Inspectorate</b><br>Nuclear power plant safety and licensing.<br><br><b>Ministry of Agriculture, Fisheries and Food, Welsh Office</b><br>Joint responsibility with the Inspectorate for nuclear licensed sites. Also matters relating to radioactivity in food. |
| <b>Water</b><br>Authorisation of discharges of red list substances to sewer and, following Environmental Protection Act, to controlled waters: in 1989-90 some 5000 sites were involved.   | Control of Pollution Act 1974;<br>Water Act 1989;<br>Environmental Protection Act 1990.                                | <b>Department of the Environment</b><br>Policy on water management and protection generally including drinking water.<br><br><b>National Rivers Authority</b><br>Control of water pollution except discharges of red list substances.<br><br><b>Ministry of Agriculture, Fisheries and Food</b><br>Advice to farmers on pollution avoidance<br>Control of disposal or incineration at sea.  |



## Appendix 1—Continued

| The Inspectorate's responsibilities   | Statutes operated by the Inspectorate | Other organisations' responsibilities  |
|---|---------------------------------------|--|
| <b>Waste</b><br>Advice and guidance to waste disposal industry; overseeing performance of waste disposal authorities; and, following Environmental Protection Act, authorisation of processes producing significant quantities of special wastes. | Environmental Protection Act 1990.    | <b>Department of the Environment, Welsh Office</b><br>Policy on waste disposal.<br><br><b>Local authorities</b><br>Preparation of waste disposal plans, licensing of disposal operations, collection of household wastes, administration of the special waste regulations. |

**Source:** National Audit Office

**Note:** Areas in which the Inspectorate have no direct role, such as pesticides, toxic chemicals, and noise pollution, have been excluded.



## Appendix 2

### The constituent parts of the new unified Inspectorate as at 1 April 1987

#### The Industrial Air Pollution Inspectorate (IAPI)

##### Functions

IAPI was responsible for regulating air pollution, under the Health and Safety at Work Act etc 1974, from the categories of industry in England and Wales with the greatest potential for pollution, as defined under the Act. (Less serious categories of air pollution were, and remain, regulated by local authorities).

IAPI discharged this function through:

- registration of processes, and inspection and oversight of registrations;
- provision of guidance on air pollution matters through published "Best Practicable Means" (BPM) Notes and other contact with industry and operators.

##### Structure, Management and Operation

IAPI was a self-contained inspectorate within the Health and Safety Executive. It was organised on the basis of a highly decentralised structure of 12 small District Offices, each comprising a District Inspector (DI) and usually two Inspectors, reporting through two Deputy Chief Inspectors (East and West) to the Chief Inspector, in London. A third Deputy Chief Inspector at headquarters was responsible for development of technical policy, BPM Notes and other guidance.

The District Inspectors origins traced back to the 1863 Alkali Act, and they operated with a high degree of autonomy and delegated responsibility. Having attained the rank of DI, inspectors then generally remained in their districts for a long period. With their responsibility for air pollution only, within a given geographical area, and the small number of staff in each district, District Inspectors were expected to develop an extensive personal knowledge of the plants and operators in their area, and IAPI operated on the basis of a high level of delegation to District Inspectors, and limited central specification of priorities or procedures.

District Inspectors were responsible for drawing up their annual workplans which were then discussed with the relevant Deputy Chief Inspector. Each District Inspector produced an annual report which was circulated locally. Between annual reports, reporting and submission of casework information to headquarters was on an exception basis, or in response to particular headquarters enquiries. Similarly, files and papers were kept locally, and documentation of inspection visits and other regulatory activity was on an exception basis.

There was no central system of categorisation of plants or benchmark inspection frequencies: District Inspectors were responsible for determining priorities within their programmes on the basis of their professional judgement and extensive local knowledge.

##### Grading Structure

IAPI staff had different grading and pay structures from the standard Civil Service gradings of the other two constituent inspectorates which came together to form the integrated Inspectorate. The IAPI grades were paid as follows:



## Appendix 2—Continued

|                            |  |
|----------------------------|--|
| Chief Air Inspector        | between Civil Service grades 4 and 5                                 |
| Deputy Chief Air Inspector | " " " " 5 and 6  |
| District Inspectors        | " " " " 6 and 7  |
| Air Inspectors             | " " " " 7 and SPTO<br>(Senior Professional and<br>Technical Officer) |

## The Radiochemical Inspectorate (RCI)

### Functions

The RCI, which was part of the Department of the Environment, was responsible for regulating the holding, use and disposal of radioactive substances, under the Radioactive Substances Act 1960.

The RCI discharged this function through:

- authorisation and registration of premises;
- inspection and oversight of premises.

Provision of technical guidance was the responsibility of the Radioactive Waste Professional division of the Department, of which the RCI was a part.

### Structure, Management and Operation

The RCI, established in 1963, was a small centrally-managed organisation under a Chief Inspector. Until 1985, the organisation operated entirely from the London headquarters. At that point an outstation was established in Lancaster to deal with regulatory oversight of Sellafield. In 1987 a second outstation was set up in Bristol, to deal with the substantial focus of nuclear power and industry work in that area.

The management structure comprised the Chief Inspector, Deputy Chief Inspector, Superintending Inspectors responsible for the field operation in London, Lancaster and Bristol, Principal Inspectors and Inspectors.

The RCI's annual work plans were formulated by the Chief and Deputy Chief Inspector. These were translated into plans for individual inspectors, covering objectives, tasks and targets. Performance was reported to and reviewed monthly by the Deputy Chief Inspector, with a summary and key point report being made six monthly to the Chief Inspector.

Regulatory procedures were set out in an RCI Inspectors Manual, and formal desk instructions.

Premises regulated under the Radioactive Substances Act range from nuclear facilities such as Sellafield down to small users of closed radioactive sources. The RCI developed a quantitative classification of types of premises and benchmark inspector frequencies, based on risk assessment, which was used to inform the targeting of resources and programming of fieldwork.

### Grading Structure

RCI staff were on standard Civil Service grades, as follows:

|                        |  |
|------------------------|--|
| Chief Inspector        | Civil Service Grade 5                                |
| Deputy Chief Inspector | " " Grade 6, plus responsibility allowance           |
| Principal Inspector    | " " Grade 7  |
| Inspector              | " " SPTO (Senior Professional and Technical Officer) |



## Appendix 2—Continued

### Hazardous Waste Inspectorate (HWI)

#### Functions

The Government set up the HWI in 1983, following from a recommendation in a report on "Hazardous Waste Disposal" by the House of Lords Select Committee on Science and Technology (the Gregson Report).

Unlike the Industrial Air Pollution Inspectorate and the Radiochemical Inspectorate, HWI had no direct responsibility for regulation and local authority waste disposal authorities regulated waste operators and facilities. The Inspectorate's objective was to examine and advise waste disposal authorities and others on all aspects of waste management and enforcement with the objective of ensuring adequate and consistent standards. As they had no statutory or enforcement powers the Inspectorate in practice sought to achieve their objective through persuasion and promotion of best practice by means of:

- visiting and advising authorities and industry;
- developing and publishing technical guidance material;
- contributing to the development of policy.

#### Structure, Management and Operation

HWI was part of the Department of the Environment Directorate of Waste Disposal. It functioned as a small unit, based in the Department's headquarters in London, and consisted of a Chief Inspector and a number of Principal Inspectors (four, at April 1987).

HWI's work programmes were set by the Chief Inspector. Inspection and field work was allocated to inspectors on a geographical basis, and responsibility for technical development work and guidance material on the basis of their specialist expertise.

#### Grading Structure

HWI staff were on standard Civil Service grades, as follows:

|                      |                       |
|----------------------|-----------------------|
| Chief Inspector      | Civil Service Grade 5 |
| Principal Inspectors | „ „ Grade 7           |

### The Water Pollution Inspectorate (WPI)

#### Functions

As described in the Report the Inspectorate, in addition to bringing together the three existing IAPI, RCI and HWI inspectorates, were given additional responsibilities for controlling some aspects of water pollution, pending the establishment of the National Rivers Authority.

These functions were:

- assessment and issue of consents on behalf of the Secretary of State for water authorities' discharges, and compliance monitoring and oversight;
- provision of technical advice to the Department of the Environment and the Welsh Office on appeals to the Secretaries of State by individual dischargers against water authority consent conditions;
- development of proposals for a water quality database;
- audit of water authorities' sampling and monitoring procedures.

The first two of these had previously been carried out within the Water Quality Division of the Department.



## Appendix 2—Continued

### Structure, Management and Operation

At April 1987, the WPI comprised one Superintending Water Inspector, three Principal Pollution Inspectors, and three administrative support staff, all based in London, and reporting to the Chief Inspector of Air, Waste and Water. A further four professional staff were recruited in 1987-88 to strengthen the work. Initially, pending the Inspectorate's move to their new integrated regional offices these staff operated from home, managed by and reporting to the London headquarters.

Most of the functions described above transferred to the National Rivers Authority on its creation in September 1989. But the Inspectorate have a number of continuing water pollution responsibilities under the Water Act 1989.

### Grading Structure

WPI staff were on standard Civil Service grades, as follows:

|                                |               |  |
|--------------------------------|---------------|--|
| Superintending Water Inspector | Civil Service | Grade 6  |
| Principal Pollution Inspector  | „             | „ Grade 7  |
| Pollution Inspector            | „             | „ SPTO (Senior Professional and Technical Officer) |



# Appendix 3

## Main features of the Environmental Protection Act 1990 affecting the Inspectorate

| Regulation   | Enforcement   | Access to information  | Timetable  |
|--|---|--|--|
| <p><b>Integrated pollution control</b></p> <p>The Act establishes a new pollution control regime for prescribed processes and substances discharging, or being discharged, to air, water or land — integrated pollution control — to be regulated by the Inspectorate and a parallel regime for local authority control of emissions to air from less polluting processes.</p> <p>It specifies the objectives that the Inspectorate should aim to achieve in authorising processes under the new system. These objectives include requirements to use best available techniques not entailing excessive cost to control discharges and to comply with any limits or standards set by the Secretary of State.</p> <p>Authorisations are to be reviewed at least every four years and may be revoked or varied by notice.</p> <p>A charging scheme is provided for, to cover the costs attributable to regulation.</p> | <p>The Act empowers the Inspectorate to issue enforcement and prohibition notices to operators and sets out offences and relevant penalties. Offences tried in the High Court are subject to an unlimited fine, up to 2 years imprisonment or both.</p> | <p>Public registers are to be available for inspection free of charge and will include applications, authorisations, monitoring data and information relating to appeals, enforcement and prosecution.</p> <p>Information deemed commercially confidential or which could affect national security will be excluded.</p> | <p>Regulations made under the Act have set a timetable for phased implementation between April 1991 and May 1996.</p>  |
| <p><b>Radioactive substances</b></p> <p>Controls under the Radioactive Substances Act 1960 are extended and certain exemptions are withdrawn.</p> <p>A charging scheme is provided for which is similar to that for integrated pollution control.</p>  | <p>Enforcement and prohibition notices are introduced as for integrated pollution control.</p>  | <p>Specified documents are to be available for inspection by the public.</p> <p>Information excluded is similar to that for integrated pollution control.</p>  | <p>From January 1991 (April 1991 for charging).</p>  |
| <p><b>Wastes on land</b></p> <p>The Act replaces provisions of the Control of Pollution Act 1974 with clarified, strengthened and extended controls over waste. Local authorities retain the prime regulatory role but the Act requires the separation of authorities' disposal operations (either into public companies or by sale to or contract with the private sector) and introduces a duty of care for all those involved in waste management and disposal.</p> <p>The Secretary of State is required to keep under review the performance of waste regulation authorities and is empowered to appoint inspectors (i.e. the Inspectorate) to assist this.</p>   | <p>The Secretary of State is given default powers where a waste regulation authority has failed to discharge its functions properly.</p>  | <p>Waste regulation authorities are required to publish annual reports and to keep public registers.</p>   | <p>Operation by the Inspectorate of review procedures (audits) will not commence until after the separation of regulation and disposal takes effect (probably 1993).</p> |



## Appendix 4

### Organisations who provided evidence to the National Audit Office

Association of County Councils  
 Association of District Councils  
 Association of Metropolitan Authorities  
 Welsh Office of the Association of District Councils  
 Rotherham Metropolitan Borough Council  
 Wolverhampton Metropolitan Borough Council

Asbestos Information Centre Ltd  
 British Aggregate Construction Materials Industries  
 British Cement Association  
 Chemical Industries Association  
 Confederation of British Industry  
 Imperial Chemical Industries  
 Institute of Wastes Management  
 National Association of Waste Disposal Contractors  
 National Power  
 National Sulphuric Acid Association Ltd  
 Power Gen  
 UK Petroleum Industries Association Ltd

Environment Council (The)  
 Environmental Data Services Ltd  
 European Institute for Environmental Policy  
 Friends of the Earth  
 National Society for Clean Air  
 Robens Institute of Health and Safety, University of Surrey  
 Royal Commission on Environmental Pollution  
 Royal Town Planning Institute

**Note:** the National Audit Office examination also took account of public reports made by other organisations



## Reports by the Comptroller and Auditor General Session 1990-91

The Comptroller and Auditor General has to date, in Session 1990-91, presented to the House of Commons the following reports under Section 9 of the National Audit Act, 1983:

|   |        |
|---|--------|
| Monitoring and Control of Charities in England and Wales . . . . .  | HC 13  |
| Managing Computer Projects in the National Health Service . . . . .   | HC 22  |
| Department of Transport: Sale of the National Bus Company . . . . .   | HC 43  |
| The Elderly: Information Requirements for Supporting the Elderly<br>and Implications of Personal Pensions for the National Insurance<br>Fund . . . . .                          | HC 55  |
| Social Security Forecasting . . . . .   | HC 59  |
| Accommodation for HM Customs and Excise London Investigation<br>Division Staff . . . . .  | HC 101 |
| Ministry of Defence: Fraud and Irregularities at Defence<br>Establishments . . . . .  | HC 134 |
| Single European Market . . . . .  | HC 135 |
| Support for Low Income Families . . . . .   | HC 153 |
| Staff Appraisal in the Civil Service . . . . .  | HC 174 |
| Ministry of Defence: Initiatives in Defence Procurement . . . . .   | HC 189 |
| The Social Fund . . . . .   | HC 190 |
| NHS Outpatient Services . . . . .   | HC 191 |
| Department of Transport: Oil and Chemical Pollution at Sea . . . . .  | HC 225 |
| Ministry of Defence: Collaborative Projects . . . . .   | HC 247 |
| Management of Information Technology Security in<br>Government Departments . . . . .  | HC 248 |
| Telephone Services in the National Health Service . . . . .   | HC 258 |
| National Health Service Administrative and Clerical Manpower . . . . .  | HC 276 |
| Use of Operating Theatres in England and Wales:<br>A Progress report . . . . .  | HC 306 |
| Office Automation in Government Departments . . . . .   | HC 314 |
| Promoting Value for Money in Provincial Police Forces . . . . .   | HC 349 |
| HM Land Registry: Review of Performance . . . . .   | HC 350 |
| National Health Service Supplies in England . . . . .   | HC 357 |
| Advisory Services to Agriculture . . . . .  | HC 358 |
| Clearance of Uncertified Local Authority Grant Claims in<br>England and Wales . . . . .   | HC 359 |
| Performance Measurement in the Civil Service - Experience in the<br>Foreign and Commonwealth Office, HM Customs and Excise<br>and Department of Education and Science . . . . . | HC 399 |
| Management of Road Maintenance . . . . .  | HC 438 |
| Management of the British Council . . . . .   | HC 464 |
| Sale of the Skills Training Agency . . . . .  | HC 484 |
| The Condition of Scottish Housing . . . . .   | HC 485 |
| Ministry of Defence: Support Information Technology . . . . .   | HC 644 |
| Repair and Maintenance of School Buildings . . . . .  | HC 648 |
| Control and Monitoring of Pollution: Review of the Pollution<br>Inspectorate . . . . .  | HC 637 |



# Report of the Committee on the Administration of the Government of the District of Columbia Session 1901-02

The Committee on the Administration of the Government of the District of Columbia, created by the Act of March 3, 1899, Chapter 32, Section 2, and continued by the Act of March 3, 1901, Chapter 32, Section 2, and the Act of March 3, 1902, Chapter 32, Section 2, has the honor to submit herewith its report.

|     |                                  |
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| 5   | Public Works and Buildings       |
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| 7   | Sanitation and Health            |
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| 23  | Sanitation and Health            |
| 24  | Education                        |
| 25  | Public Safety                    |
| 26  | Public Health                    |
| 27  | Public Works                     |
| 28  | Public Buildings                 |
| 29  | Police Department                |
| 30  | Fire Department                  |
| 31  | Sanitation and Health            |
| 32  | Education                        |
| 33  | Public Safety                    |
| 34  | Public Health                    |
| 35  | Public Works                     |
| 36  | Public Buildings                 |
| 37  | Police Department                |
| 38  | Fire Department                  |
| 39  | Sanitation and Health            |
| 40  | Education                        |
| 41  | Public Safety                    |
| 42  | Public Health                    |
| 43  | Public Works                     |
| 44  | Public Buildings                 |
| 45  | Police Department                |
| 46  | Fire Department                  |
| 47  | Sanitation and Health            |
| 48  | Education                        |
| 49  | Public Safety                    |
| 50  | Public Health                    |
| 51  | Public Works                     |
| 52  | Public Buildings                 |
| 53  | Police Department                |
| 54  | Fire Department                  |
| 55  | Sanitation and Health            |
| 56  | Education                        |
| 57  | Public Safety                    |
| 58  | Public Health                    |
| 59  | Public Works                     |
| 60  | Public Buildings                 |
| 61  | Police Department                |
| 62  | Fire Department                  |
| 63  | Sanitation and Health            |
| 64  | Education                        |
| 65  | Public Safety                    |
| 66  | Public Health                    |
| 67  | Public Works                     |
| 68  | Public Buildings                 |
| 69  | Police Department                |
| 70  | Fire Department                  |
| 71  | Sanitation and Health            |
| 72  | Education                        |
| 73  | Public Safety                    |
| 74  | Public Health                    |
| 75  | Public Works                     |
| 76  | Public Buildings                 |
| 77  | Police Department                |
| 78  | Fire Department                  |
| 79  | Sanitation and Health            |
| 80  | Education                        |
| 81  | Public Safety                    |
| 82  | Public Health                    |
| 83  | Public Works                     |
| 84  | Public Buildings                 |
| 85  | Police Department                |
| 86  | Fire Department                  |
| 87  | Sanitation and Health            |
| 88  | Education                        |
| 89  | Public Safety                    |
| 90  | Public Health                    |
| 91  | Public Works                     |
| 92  | Public Buildings                 |
| 93  | Police Department                |
| 94  | Fire Department                  |
| 95  | Sanitation and Health            |
| 96  | Education                        |
| 97  | Public Safety                    |
| 98  | Public Health                    |
| 99  | Public Works                     |
| 100 | Public Buildings                 |





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