

APPENDIX 2.1
(referred to in paragraph 2.2)

**Extract from Hansard dated 14 July 1980: statement by Mr David Howell,
Secretary of State for Energy**

Electricity Supply Industry

Mr Mudd asked the Secretary of State for Energy whether he has now considered the organisation of the electricity supply industry and what are his proposals.

Mr David Howell: I have given careful consideration to how the electricity supply industry should be organised in England and Wales. I have consulted widely in the industry and have heard the views of other interests.

The industry's present structure dates from the 1957 Electricity Act and comprises 13 statutory boards—the Central Electricity Generating Board and 12 area boards—and the statutory Electricity Council which acts as a confederal body for the industry as a whole. It is the council's duty to advise me on questions affecting the industry and to promote and assist the maintenance and development of an efficient, co-ordinated and economical system of supply. In 1976 the Plowden committee recommended the unification of the industry into a single corporation. The last Administration published their proposals for such a corporation in a draft Bill which was the subject of pre-legislative hearings and a report by the Select Committee on nationalised industries towards the end of the last Parliament.

The question of the industry's organisation is not a new one. The need to strike a proper balance between healthy local independence and strategic decision-making at national level, and between generation and distribution, has been a theme for many years. The balance is not easily struck. Certainly, the creation of a large single corporation unifying the 13 boards and the council would carry significant risks of over-centralisation.

It was with this in mind that I informed the House last July that, although I did not rule out legislation to effect desirable change in the industry if it were necessary, I preferred to seek improvements if at all possible without it. I have now concluded that improved working arrangements of the kind I wished to see can be developed within the existing statutory framework.

For both technical and economic reasons the industry is divided into the generation and transmission of electricity through a high voltage grid, organised on a national basis on the one hand and its distribution by area boards on the other. I have not been persuaded that any benefits from bringing generation and distribution together in a unified corporate structure would outweigh the risk of over-centralisation.

I have been impressed by the extent of co-ordination and co-operative working that already exists in the industry. I propose to build on the progress that has been achieved and, 'within the terms' of the existing legislation, to develop relationships between the council and the boards, strengthening the co-ordinating and advisory role of the council and of its chairman, whom I regard as my main policy adviser within the industry, in the development of industry-wide policies. I also look to closer links between the boards, particularly at local levels. The statutory responsibilities of the council and the boards will of course remain as defined by the relevant statutes. I have been assured by the council and the individual boards of their commitment to my policy. In particular, there is agreement to develop co-operative working in the following ways:

- when consulting the Electricity Council on capital programmes and tariff proposals the generating and area boards will provide full information on the underlying assumptions and costs relating to those programmes and tariff proposals bearing in mind the council's duty of advising me on the maintenance and development of efficient supply by the industry. I will seek specific comments from the council before approving capital programmes;
- the boards will co-operate with the council in the development of an improved financial reporting system;
- the council will advise me on further development of physical, technical and financial measures of performance by the boards;
- the council will review with the generating board and the area boards the structure of the bulk supply tariff with a view to considering whether changes are desirable and will report its conclusions to me;
- the boards will co-operate with the council in developing arrangements to encourage transfers of managerial staff between the two sides of the industry;
- the chairman of the generating board and the chairmen of the area boards will promote closer contacts between CEGB regions and the relevant area boards.

In my consideration I have very much had in mind the industry's relations with its customers. I value the close links which exist between the area boards and the communities which they serve and wish them to continue their efforts to improve customer relations at all levels. The industry has large responsibilities and I hope that senior members of the area boards and CEGB management at regional as well as national level will continue to improve the public understanding of the nature of their tasks, and their efforts to provide economical, safe and efficient public service.

Finally I would like to thank all those in the industry both from management and the unions who have given me advice on this subject over the past months. I am conscious that widely different views are held. I believe however that all concerned will now work together to make improvements within the industry's existing statutory framework.

APPENDIX 2.2
(referred to in paragraph 2.15)

The East Midlands Electricity Board area



AREA AND ORGANISATION OF THE BOARD

Area boundary shown —
 Group boundaries shown —
 District boundaries shown
 Area Board Headquarters shown ■
 Group Headquarters shown ▲

NORTH WESTERN GROUP

- 1 BURTON DISTRICT
- 2 CHARNWOOD DISTRICT
- 3 CHATSWORTH DISTRICT
- 4 DERBY DISTRICT
- 5 ILKESTON DISTRICT
- 6 LEICESTER DISTRICT

NORTH EASTERN GROUP

- 7 EAST LINCOLNSHIRE DISTRICT
- 8 LINCOLN DISTRICT
- 9 MANSFIELD DISTRICT
- 10 NOTTINGHAM DISTRICT
- 11 RETFORD DISTRICT
- 12 WEST LINCOLNSHIRE DISTRICT

SOUTHERN GROUP

- 13 COVENTRY DISTRICT
- 14 HINCKLEY DISTRICT
- 15 KETTERING DISTRICT
- 16 MILTON KEYNES DISTRICT
- 17 NORTHAMPTON DISTRICT
- 18 SOUTH WARWICKSHIRE DISTRICT

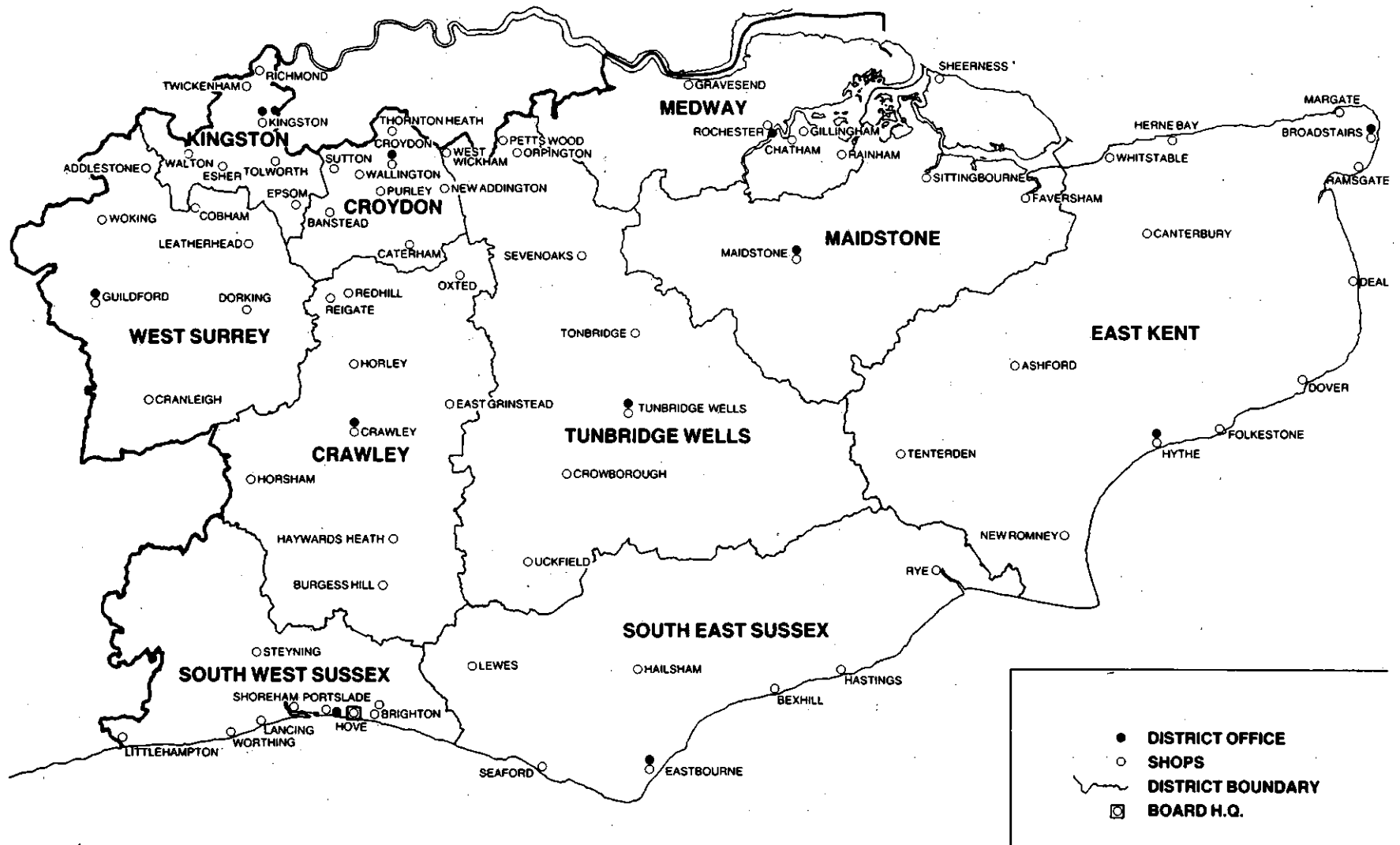
Note:

With effect from 1 April 1984 the following district mergers took place:

- (i) the Mansfield and Retford districts merged to form the new Mansfield District;
- (ii) the Derby and Burton districts merged to form the new Derby District;
- (iii) the Coventry and South Warwickshire districts merged to form the new Coventry District.

APPENDIX 2.3
 (referred to in paragraph 2.15)

The South Eastern Electricity Board area



Source: SEEB, Annual Report and Accounts 1983-84.

APPENDIX 2.4
(referred to in paragraph 2.15)

The North Eastern Electricity Board area

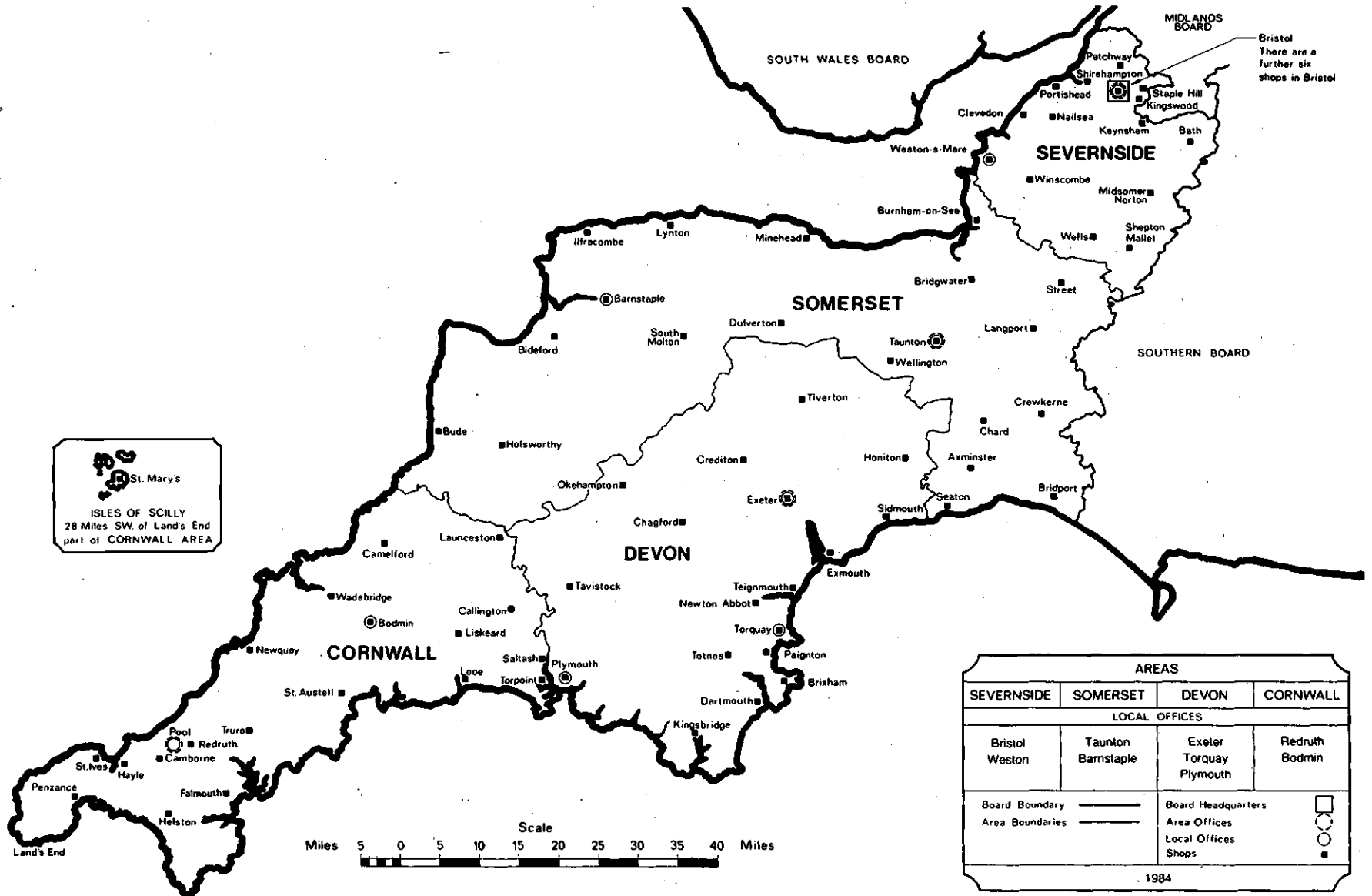
157



Source: NEEB, Annual Report and Accounts 1983-84.

APPENDIX 2.5
(referred to in paragraph 2.15)

The South Western Electricity Board area

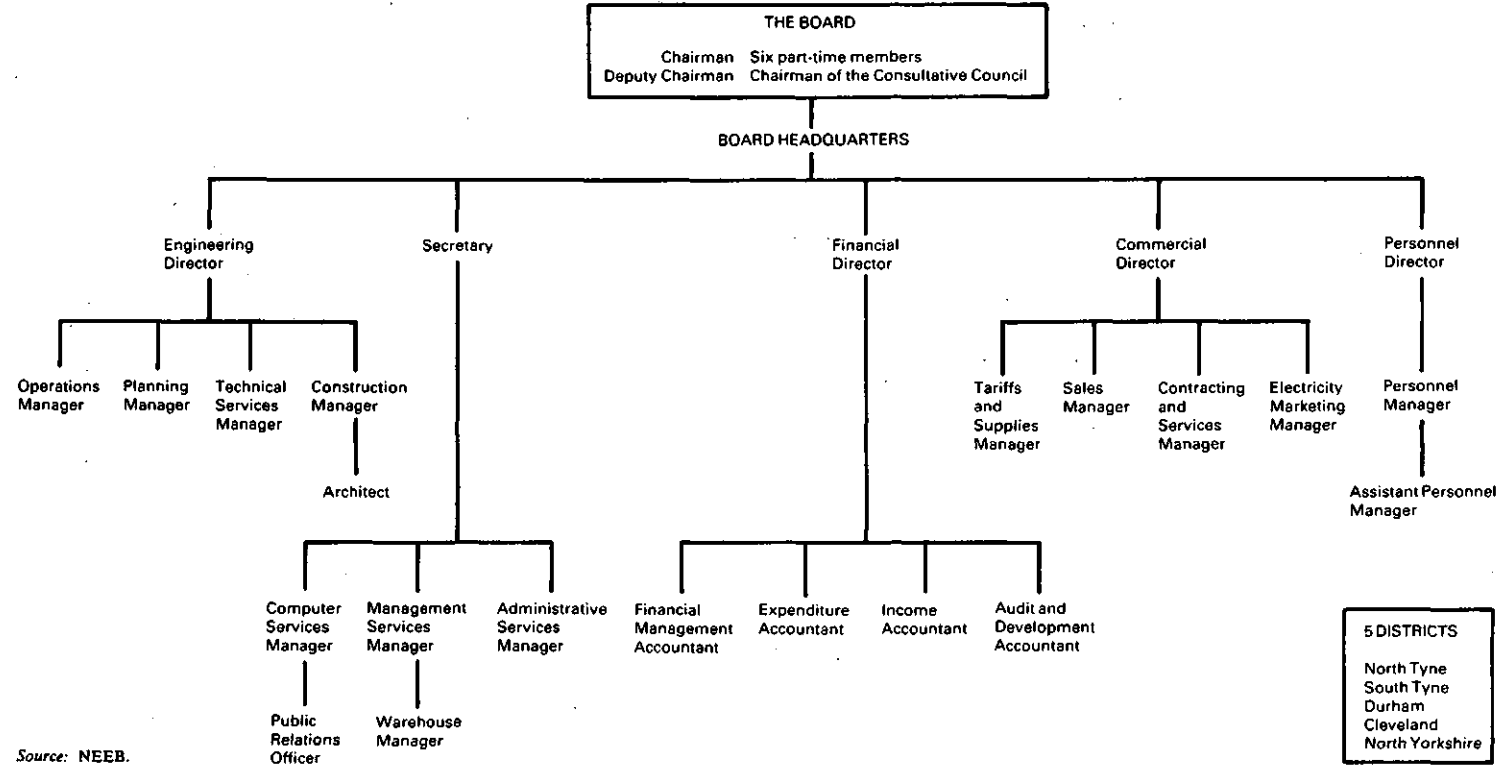


Source: SWEB, Annual Report and Accounts 1983-84.

APPENDIX 3.1
 (referred to in paragraph 3.4)

NEEB: management structure

159

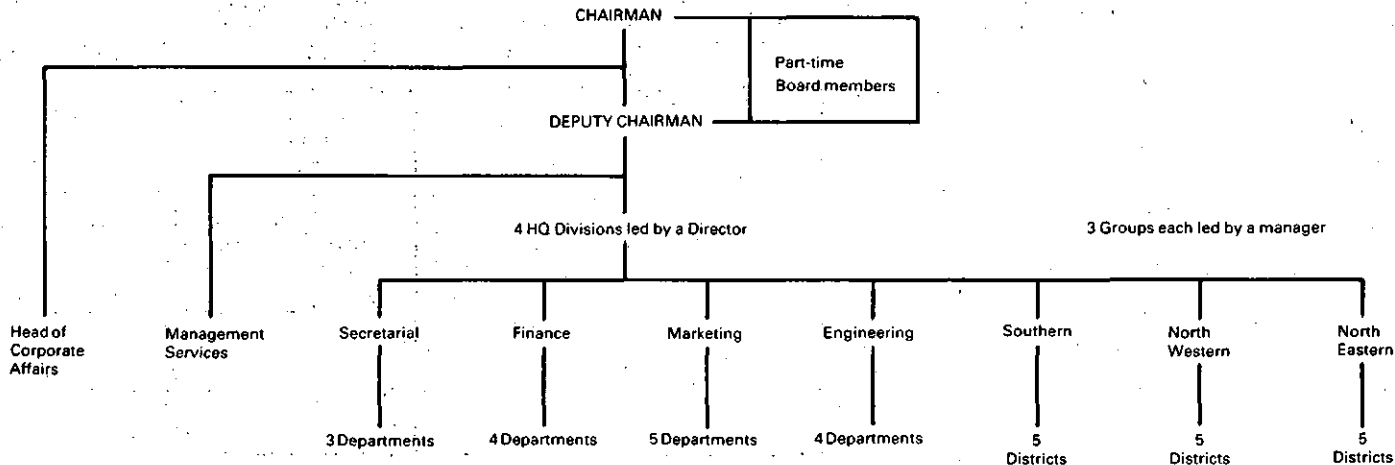


Source: NEEB.

APPENDIX 3.2
 (referred to in paragraph 3.4)

EMEB: management structure

160



Including away from HQ:

2 Regional Stores including Appliance Delivery

2 Training Centres

2 Regional Executives

75 Shops

2 Regional Workshops

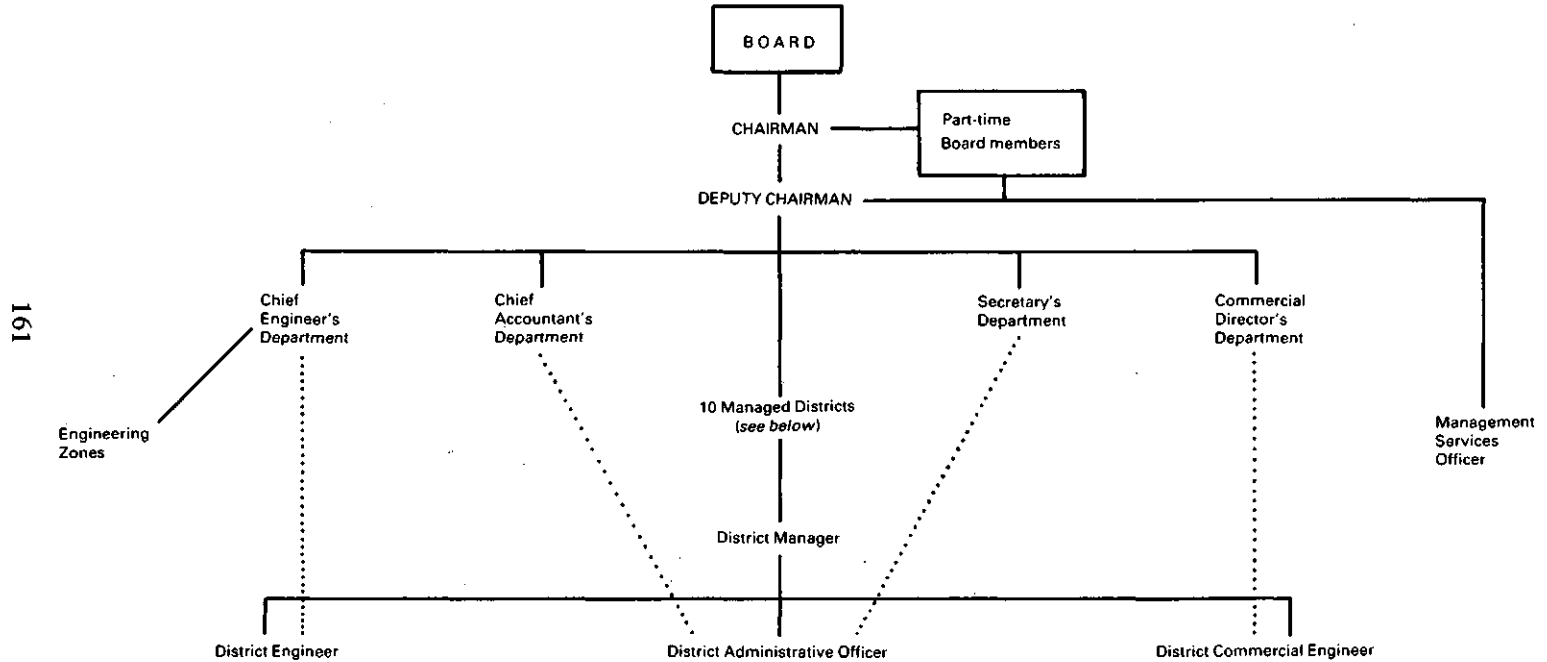
Meter Test Station

Timeswitch Workshop

Source: EMEB.

APPENDIX 3.3
(referred to in paragraph 3.4)

SEEB: management structure



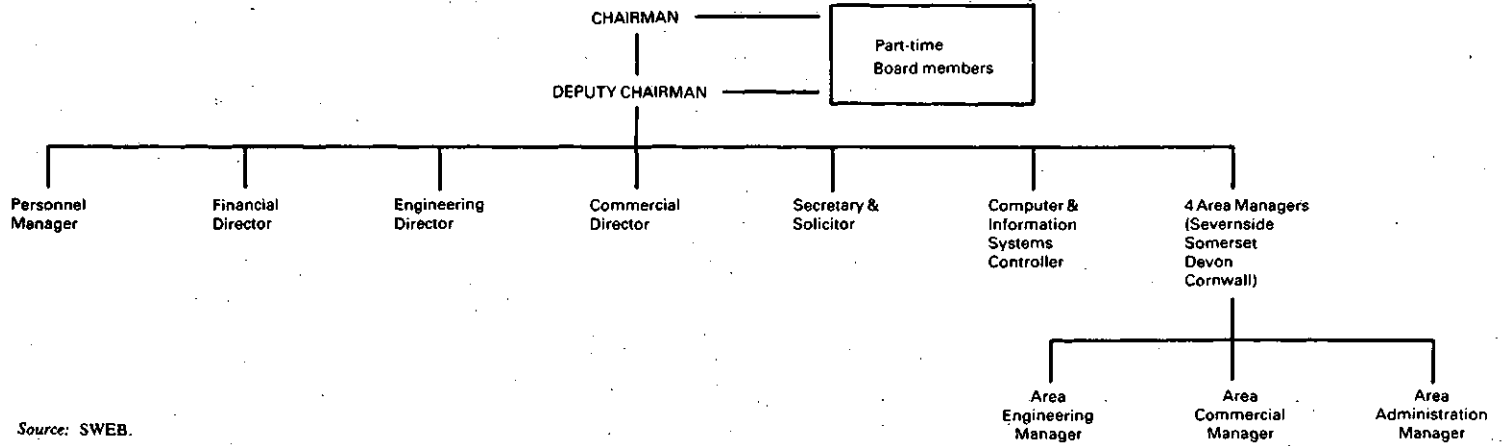
Kingston, West Surrey, Croydon, Medway, East Kent, Maidstone, Tunbridge Wells, South East Sussex, Crawley and South West Sussex.

(Dotted lines denote functional links)

Source: SEEB.

APPENDIX 3.4
(referred to in paragraph 3.4)

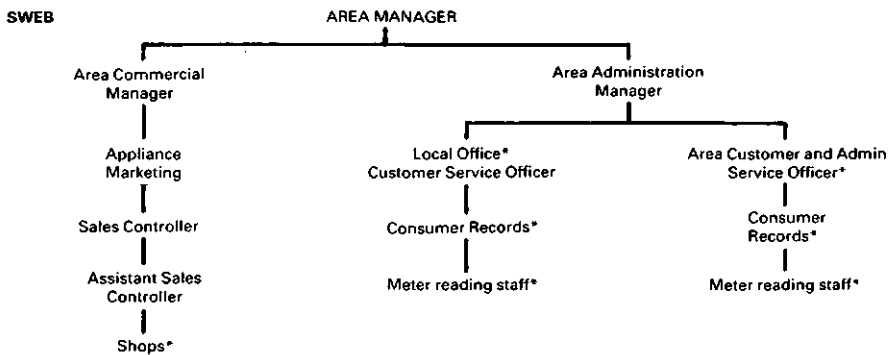
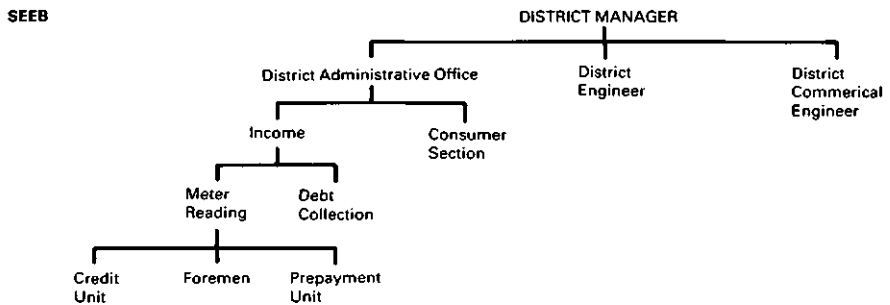
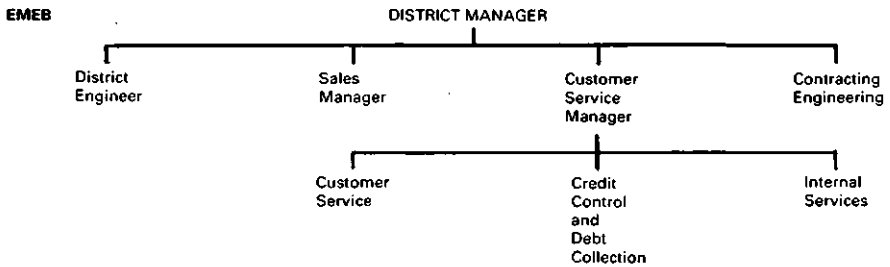
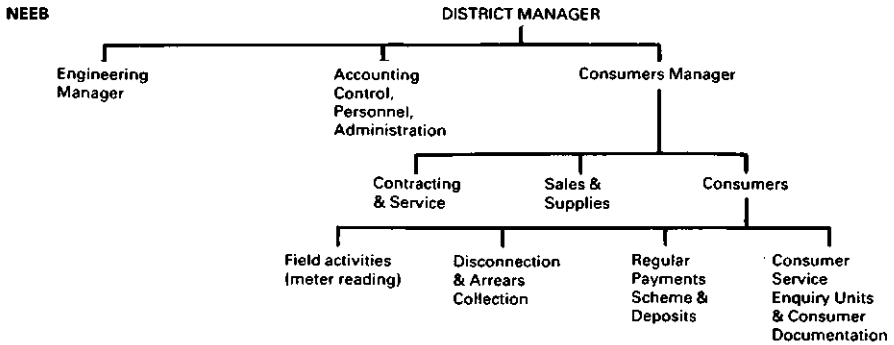
SWEB: management structure



Source: SWEB.

APPENDIX 3.5
(referred to in paragraph 3.9)

Area/district structure of meter-reading, billing and collection



Source: NEEB, EMEB, SEEB, and SWEB.

* Denotes staff whose salary is partly allocated to M/B/C.

APPENDIX 3.6
(referred to in paragraph 3.14)

NEEB: extracts from the Annual Operating Plan 1984-85

Finance Director

3. Income

3.3 Income items within the Computer Plan are as follows:

- (i) Cash Processing System. An extensive paper covering many improvements to the processing of cash is to be discussed with Computer Services, and a user requirement produced.
- (ii) Regular Payments Scheme for Non-Domestic Consumers. The Scheme will be introduced in February 1984 and consolidated with the existing Regular Payments Scheme for domestic consumers. The Scheme will be promoted particularly for new consumers.
- (iii) Payment of Accounts by Direct Debit. The Scheme is being finalised and will be available to all quarterly consumers during 1984.
- (iv) Prepayment System. An application description is being prepared and implementation arrangements should proceed towards the end of the accounting period.
- (v) Monthly Billing System. Discussions will continue between the Tariffs and Supplies Manager, Income Accountant and the Computer Services Manager, to agree improvements to the existing system.
- (vi) Single Payment Scheme. The existing manual system is to be computerised.
- (vii) Customer Service (Phase 1). Income Section will continue to participate in the implementation of this System throughout the board.

3.4 Direct debiting will be promoted vigorously throughout the year being the method most favoured for the settling of electricity accounts.

3.5 It is intended to purchase a limited number of token operated meters to gain experience of operating a token system and assist some consumers most in need to establish a disciplined payment habit with adequate security.

3.6 Following the issue of the Electricity Consumers' Council's Discussion Paper on Security Deposits to review the Board's procedures for requesting, reviewing and returning security deposits and the methods used to calculate and pay interest.

3.7 A redesigned electricity account combining the Bank Giro and National Girobank payment stubs with provision for a common scan line will be introduced. Optical scanning techniques for remittance processing to replace receipting machines in Cashiers Section will be considered.

3.8 Targets set and agreed by District Management on Income Performance will be examined against actual achievement. Difficulties being experienced will be a matter for discussion between the Income Accountant and District Management.

3.9 The Income Accountant will review with the Management Services Officer and district management the productivity of meter readers and collectors.

3.10 Accounting Instructions will be examined with a view to consolidation and updating arising from changes in policy.

3.11 Costs of meter-reading, billing and collection will be compared with those of other area boards and steps taken to identify any aspect where the board compares unfavourably, having regard to service provided and local circumstances.

3.12 Code of Practice statistics will be kept under review to monitor that the provisions of the Code are being correctly implemented. Consideration will be given to the speeding up of follow-up for consumers with a poor payment record.

APPENDIX 3.7

(referred to in paragraph 3.15)

EMEB: extracts from the Operating and Development Plan 1984 to 1989

Strategy and Specific Actions

2. Relations with the public

Strategy

Customer enquiry facilities will continue to be developed using the terminal network so that the progress of any customer related activity can be readily identified and new actions initiated.

The Board will continue to maintain and expand the range of payment methods available to their customers and the revised Code of Practice for Domestic Customers issued by the Electricity and Gas Industries will continue to be supported.

Specific actions for 1984-85

2.5 Further publicity will be given to the range of payment facilities and attention will be particularly directed to the budget account scheme. The target will be to have 160,000 customers on the scheme, of which at least 70,000 will be paying by direct debit.

2.6 The board will continue its efforts with manufacturers to develop acceptable token operated meters in order to provide a further alternative method by which customers can meet their accounts.

4. Management effectiveness

Specific actions for 1984-85

4.2 The average cost of routine meter changing will be reduced by 5 per cent in real terms over the next three years.

4.3 The average cost of the board's meter-reading, billing and collection activities will be reduced by 5 per cent in real terms over the next three years.

9. Computing and other technology

Specific actions for 1984-85

9.3 The customer referencing project will be completed. This will provide a greater degree of flexibility in making use of the computer-held information, and in particular will enable the sequence in which meter readings are obtained to be modified more readily.

9.4 Trials will be continued in support of the various methods of energy management and metering systems.

11. Meter security

The board will continue to seek ways to identify the proportion of customers who fraudulently use electricity and will take all possible measures to ensure that they are prosecuted. Efforts will continue to be directed at preventing theft both by technical measures and by the vigilance of all employees.

Specific actions for 1984-85

11.1 The board instruction on Meter Security will be simplified and extended to incorporate standard procedures to be followed where theft is discovered.

11.2 Sample checks will be carried out on selected groups of customers with a view to identifying areas where higher levels of security are required.

11.3 Technical measures will be developed to improve the security of meters and reduce the possibility of meters being tampered with.

11.4 Consideration will be given to introducing a reward scheme for the discovery of cases involving the theft of electricity.

APPENDIX 3.8

(referred to in paragraph 3.16)

SEEB: extracts from the Corporate Plan 1984-85 to 1988-89

Customer relations

Specific actions for 1984-85

3. A computerised system of direct debiting will enable the board to further publicise this means of payment in addition to standing order arrangements.

4. The implementation of a computerised system of handling the records and billing of industrial customers will be completed. This will give benefits in terms of response to customers.

5. New cashiering equipment will be introduced into shops giving an improved and more reliable service for handling cash receipts and updating records.

Electricity sales and pricing

Objectives

3. Plans will be prepared for phasing out over the next five years obsolete and administratively costly tariffs under agreement.

4. Standards of customer service will be maintained and improved by efficient installation of metering equipment. Guidance on interpretation of regulations for safety in customers' premises will be provided.

Specific actions for 1984-85

3. The use of magnetic cassette recorders will be extended to all load management customers to the extent where the data derived can be used for billing applications.

Appliance marketing

Objectives

1. To maintain Seeboard shops as a vital link with customers on all aspects of the business of providing a total electricity service, emphasis will continue to be placed on providing a high level of customer service and advice on all matters relating to the use of electricity, payment of accounts, customer queries, etc.

Specific actions for 1984-85

2. The Seeboard videotex/Seetext system will be introduced into all shops. The system answers the need for both general information and for specific up-to-the-minute appliance catalogue information at the point of sale in shops. It will also cover customer service, energy sales, accountancy and administration matters. Additionally, shops will complete appliance sales transactions, service and delivery arrangements through the terminals.

Computing and other technology

Objectives

5. Development of CALMS (Credit and Load Management System) has proceeded. Despite some delays, Credit and Load Management Units (CALMUs) are rapidly being installed in the field trial locations in West Surrey district. The performance of the system and customers' reaction will be evaluated and assessed.

8. New measurements and metering techniques that will be of technical and financial benefit will be evaluated and implemented.

Specific actions for 1984-85

1. Major applications being developed by the System Planning Section at CAO include:

Management Information System

Consumer Records — billing of customers on multiple accounts
— extension of VDT facilities

Cashiering and videotex terminals in shops

A system to schedule calls on customers' premises

Payment of invoices

8. Continued efforts will be made to minimise the purchase of new time-switches and single phase single rate credit meters by refurbishing old stocks in our own meter test stations.

9. The board will encourage manufacturers to commence development of a simplified CALMU. This will be based on a user specification reflecting a wide view of the industry's requirements.

APPENDIX 3.9

(referred to in paragraph 3.17)

SWEB: extracts from the Medium Term Corporate Plan 1984-85 to 1988-89

Capital expenditure

(b) Meters

A programme of scrapping obsolete meters was commenced in 1983-84. Expenditure on replacement meters will rise considerably in 1984-85 as the scrapping of these meters continues. It is expected that a higher level of expenditure on meters will be sustained throughout the plan period as policy decisions are taken to scrap additional meters which are over 40 years old.

Computer systems developments

Customer billing

26. During 1983-84 a pilot scheme was undertaken in Exeter to determine the feasibility of 'doorstep billing' using portable electronic devices. The pilot was successful and the full scheme will be implemented throughout the board during 1984-85 and 1985-86. Concurrently a total review of all billing operations will be undertaken on a phased basis covering the following areas:

- Meter reading and prepayment collection
- Debt collection
- Bill production
- Cash management
- Debtor follow-up
- Tariff management

Fixed payment system

30. A system satisfying the requirements for revised procedures relating to standing orders and other fixed payment procedures will be introduced during 1984-85.

Credit sale agreement

33. A system will be introduced to control credit sale agreements for trading activities in accordance with the revised requirements of the Consumer Credit Act.

Terminals in shops

37. An investigation and economic assessment of the role that terminals can play in shop activities will take place in the early part of the Plan period. This investigation will encompass consumer service, cash collection and accounting, and trading activities.

Closure of meter test station

49. Following the closure of Pool Meter Test Station in 1983 the board's requirements for meters and timeswitches are now met from the two remaining Meter Test Stations at Bristol and Newton Abbot. To improve efficiency a review is being carried out of current practices and procedures in dealing with the handling and refurbishment of meters and timeswitches. Consideration will also be given to the application of the latest technology in meter testing equipment.

Customer accounting*Token meters*

107. Appraisal of the technical and consumer reaction to the pilot token meter system will be undertaken and consideration given to the selective introduction of this facility.

Income collection

108. The major objective will continue to be the collection of all income within acceptable credit periods, thereby facilitating the achievement of financial targets and minimising the burden borne by the general body of customers in respect of interest charges and bad debts. At the same time, particular attention will be given to customers' needs, to ensure that income collection facilities match their requirements. In this context, proper regard will be given to the Code of Practice and the joint arrangements with the Department of Health and Social Security for the direct payment of electricity accounts.

Collection facilities

109. The board's budget payment system for the settlement of accounts monthly by bank standing order will be extended to permit regular monthly payments in cash and direct debit payments to the board.

APPENDIX 3.10

(referred to in paragraph 3.18)

**SWEB: extracts from the Computer and Information Systems
Controller's Departmental Operating Plan 1983-84**

Department objective I9: - meter reading

I9.1 To contribute to a review of the Board's Meter Reading Activity.

Specific targets for 1983-84

I9.2 Provide assistance with implementation of the recommendations contained in the previously published Cornwall Area reports.

I9.3 Examine the Meter Reading Activity in Bristol Local Office, consequent upon the transfer of monthly meter reads from SMI to the Meter Reading Activity, and prepare progress reports monthly.

I9.4 Re-examine the Meter Reading Activity in the new Bodmin and Liskeard combined Local Office consequent upon the merger of the two local Units.

Department objective I33: consumer records

I33.1 To investigate workloads and procedures within Consumer Record Sections.

Specific targets for 1983-84

To carry out detailed investigations into workloads and current procedures, the use of temporary staff, and to produce a report making recommendations as appropriate for efficient operation having regard to the staffing levels previously established:

I33.2 Taunton, Consumer Records Section.

I33.3 Exeter Consumer Records Section.

I33.4 To review the basis of salary allocations to account headings.

Department objective I36: customer accounting

I36.1 To contribute to a Working Party concerning the future requirements of Customer Accounting.

Specific targets for 1983-84

I36.2 To produce a 'WHAT' specification covering the following functions:

Work control

Debt creation and follow-up

Cash management

Production of bill
Tariff management
Energy marketing

I36.2 To provide membership to 'HOW' groups as required following acceptance of the 'WHAT' specification.

Department objective I39: inter-board comparison

I39.1 To compare SWEB procedures and staffing levels for comparable activities with those of other Boards.

Specific targets for 1983-84

I39.2 To compare procedures between Thameside Area (EEB) and Severnside Area (SWEB), to establish the comparative staffing levels on similar activities, and to report on the differences ascertained:

1. Consumer Records
2. Drawing Offices
3. Engineering Clerical.

Area objective No. 4 - administration revenue expenditure

To obtain income from sales of electricity within acceptable credit periods; to have regard to the impact of the Code of Practice.

To provide clerical services in support of the engineering, commercial, stores and general administrative activities.

To provide, at Area Office, personnel services sufficient to ensure that adequate standards in relation to training, welfare and working conditions are maintained.

To manage non-operational property in such a manner that accepted standards of appearance and maintenance are adhered to.

Specific targets for 1984-85

	<i>Improvement target</i>
4.1 Control total expenditure in the Administrative Cost Centre within the budget allocation and ensure that the total expressed as £'s per customer do not exceed:	—
4.2 Control Expenditure in the Administrative Cost Centre within the budget allocations as follows:	
(a) Total meter reading, prepayment collection and billing costs, £ millions:	1.893.
(b) Total meter reading, prepayment collection and billing costs expressed as £'s per customer:	5.0

(c) Industrial staff salaries – meter reading and billing expressed as £'s per credit customer:	1.7
(d) Industrial staff salaries – prepayment collection expressed as £'s per prepayment customer:	11.4
(e) Non industrial staff salaries – billing and collection – expressed as £'s per customer:	1.4

4.3 Limit debts outstanding over three months such that the debt expressed as a percentage of the workload for the quarter before last does not exceed:

(a) Energy	
(i) controlled at Local Office	% 3.4
(ii) not controlled at Local Office	% 3.5
(b) Recharge total	% 11.0

4.4 Monitor the progress of the Meter Reading programme so as to ensure that the total percentages do not exceed these stated:

(a) Meter Readings not attempted	0.0
(b) Meters not read	20.0

4.5 Maintain adequate welfare facilities within the following unit cost (excluding costs of staff discounts, canteens and redundancy payments) £'s per employee

—

4.6 Monitor postal and telephone charges to no more than:

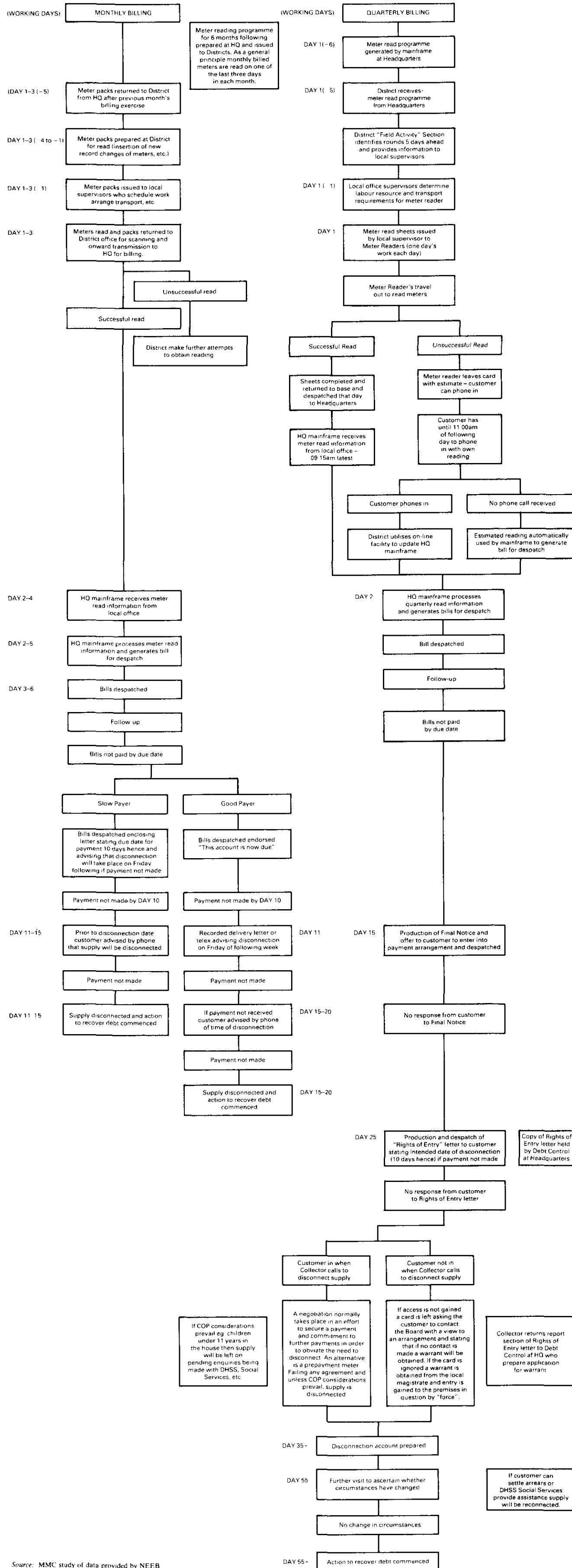
(a) Postal Charges expressed as £'s per customer	0.16
(b) Telephone charges expressed as £'s per customer	0.45

4.7 Limit customer complaints to those stated for:

(a) Total customer complaints	320
(b) Total customer complaints—expressed per 10,000 customers	8.55

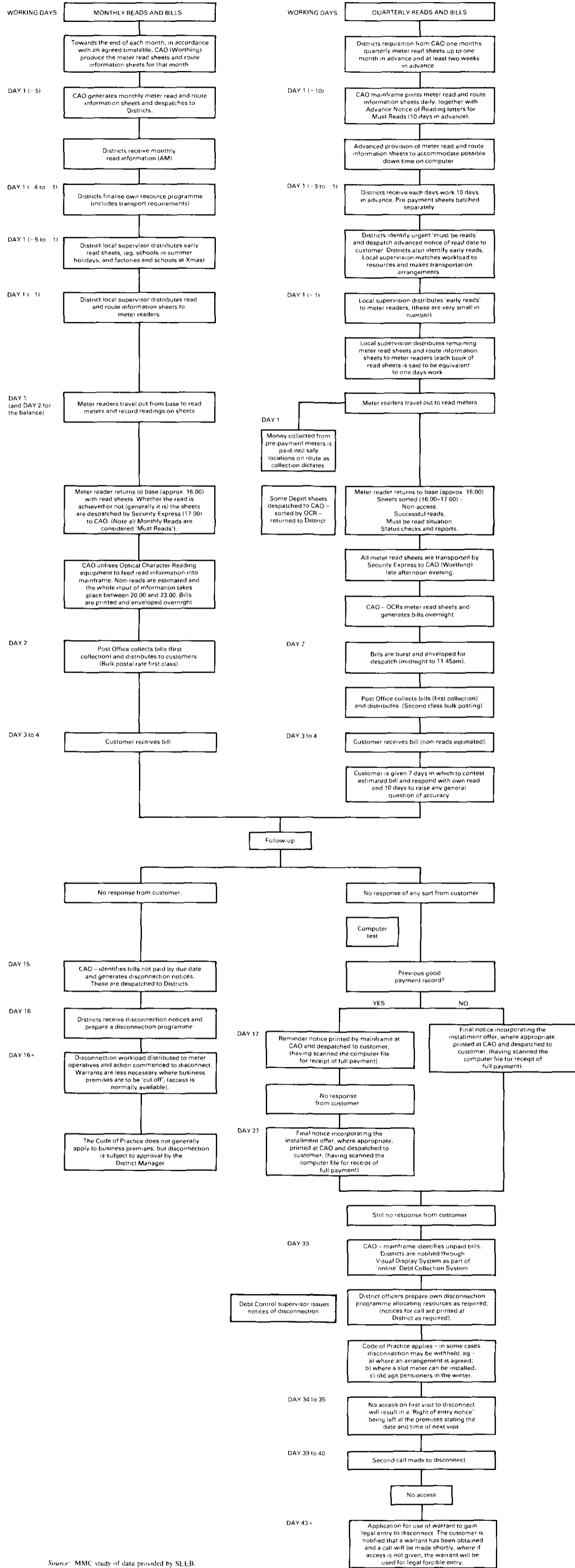
NEEB: meter-reading, billing, collection and the follow-up of overdue customer accounts

175



SEEB: meter-reading, billing, collection and the follow-up of overdue customer accounts

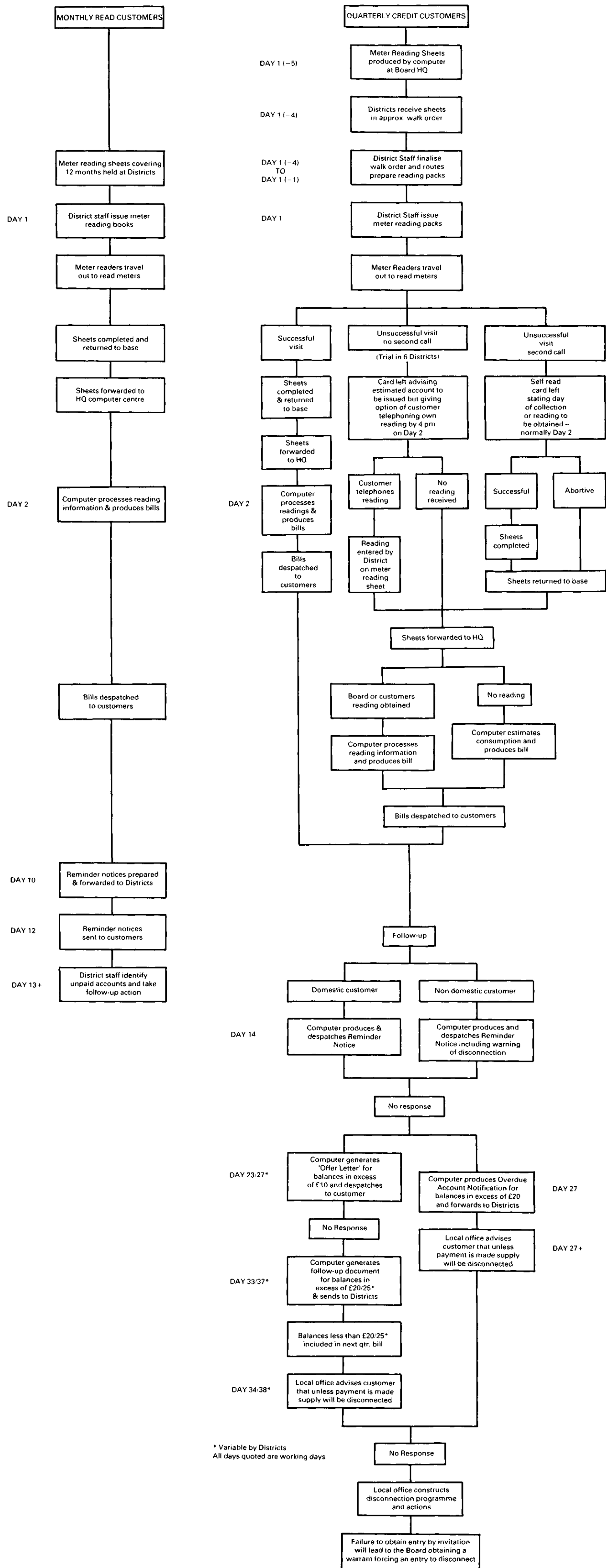
176



Source: MMC study of data provided by SLEB.

EMEB: meter-reading, billing, collection and the follow-up of overdue customer accounts

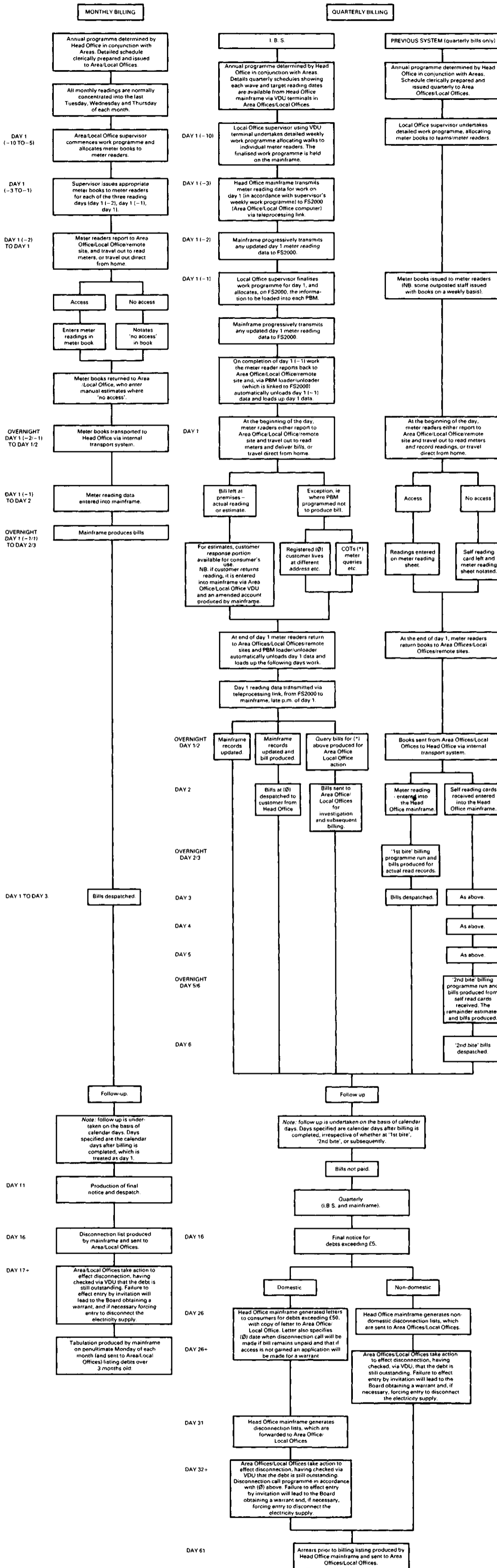
177



* Variable by Districts
All days quoted are working days

SWEB: meter-reading, billing, collection and the follow-up of overdue customer accounts

178



Source: MMC study of data provided by SWEB.

APPENDIX 5.1
(referred to in paragraph 5.2)

**Extracts from Area Boards (Accounts) Direction 1984 relevant to
reference activities of the four boards**

III. In preparing the profit and loss account of the Board or the profit and loss account of the Board and its subsidiaries, the Board shall adopt format 1 prescribed in Schedule 1 to the Companies Act 1981, subject to the following exceptions:

1. Turnover, operating costs, and operating profit shall be stated separately for each of electricity supply, electrical contracting, and sales of appliances.
2. Profit or loss on ordinary activities before taxation and interest shall be stated.
3. Headings 2 to 5 of format 1 need not be disclosed.
4. Interest receivable and interest payable may be stated after taxation and extraordinary items.

Schedule 2

II. The following information shall be shown supplementary to that in the profit and loss account:

- (a) an analysis of income and expenditure for electricity supply, which shall show, *inter alia*
 - electricity unit sales, revenue, and revenue per unit sold, between different class of consumer;
 - total costs and costs per unit sold for each of the following:
 - electricity purchases
 - generation
 - distribution
 - consumer service
 - meter reading, billing and collection
 - training, safety and welfare
 - administration and general expenses;
 - the quantities of electricity purchased, by different sources.

APPENDIX 5.2
(referred to in paragraph 5.3)

**North Eastern Electricity Board: Electricity Supply Account for
the year ended 31 March 1984**

	1983-84 £'000	1982-83	1983-84 pence per unit sold	1982-83 p	1983-84 units sold m	1982-83
<i>Turnover</i>						
Sales of electricity:						
Domestic	219,768	213,067	5.584	5.587	3,936	3,814
Farms	9,650	9,797	5.393	5.345	.179	.183
Commercial	111,197	195,911	4.755	4.741	2,338	2,234
Industrial	208,850	207,161	3.308	3.349	6,314	6,185
Public lighting	6,388	6,440	3.845	3.770	.166	.171
Traction	2,451	1,968	3.516	3.559	.070	.055
Total sales of electricity	558,304	544,344	4.294	4.306	13,003	12,642
Other income	4,412	4,181				
Total turnover	562,716	548,525				
<i>Operating costs</i>						
Purchase of electricity	443,423	437,719	3.410	3.462		
Distribution	63,909	60,181	0.492	0.476		
Consumer service	11,357	10,896	0.087	0.086		
Meter reading, billing and collection	10,239	10,009	0.079	0.079		
Administration and general expenses	13,187	12,542	0.102	0.100		
Training and welfare	5,648	4,827	0.043	0.038		
Total operating costs	547,763	536,174	4.213	4.241		
Operating profit	14,953	12,351				

Source: NEEB's published accounts for 1983-84.

APPENDIX 5.3
(referred to in paragraph 5.3)

**South Eastern Electricity Board: Electricity Supply Account for
the year ended 31 March 1984**

<i>1982-83</i>			<i>1983-84</i>		
<i>Units sold m</i>	<i>Pence per unit p</i>	<i>£,000</i>	<i>Units sold m</i>	<i>Pence per unit p</i>	<i>£'000</i>
<i>Turnover</i>					
<i>Sales of electricity</i>					
6,576	5.250	345,245	6,676	5.341	356,613
174	4.517	7,846	169	4.534	7,665
3,169	4.420	140,064	3,375	4.402	148,577
220	4.905	10,801	225	4.964	11,142
3,265	3.570	116,574	3,366	3.541	119,118
142	3.928	5,562	141	4.037	5,679
<hr/>			<hr/>		
13,546	4.622	626,092	13,952	4.650	648,794
—	4.600	23	—	4.600	16
<hr/>			<hr/>		
13,546	4.622	626,115	13,952	4.650	648,810
	0.057	7,673		0.073	10,189
	<hr/>			<hr/>	
	4.679	633,788		4.723	658,999
	<hr/>			<hr/>	
<i>Operating costs</i>					
3.743		507,051	3.680		513,517
0.499		67,639	0.521		72,683
0.103		13,918	0.102		14,188
0.079		10,682	0.083		11,594
0.128		17,364	0.123		17,161
0.041		5,490	0.058		8,043
<hr/>			<hr/>		
4.593		622,144	4.567		637,186
0.086		11,644	0.156		21,813

Source: SEEB's published accounts for 1983-84.

APPENDIX 5.4 (a)
(referred to in paragraph 5.3)

**East Midlands Electricity Board: Electricity Supply Account for
the year ended 31 March 1984**

	<i>1983-84</i>	<i>£'000</i> <i>1982-83</i>
<i>Turnover</i>		
Sales of electricity		
Domestic	328,685	313,548
Farms	15,213	16,760
Commercial	142,705	133,929
Combined domestic and commercial premises	8,448	8,351
Industrial	294,633	282,868
Public lighting	8,193	8,195
Total distribution sales	797,877	763,651
Sales to other area boards	205	190
Total sales of electricity	798,082	763,841
Other income	10,693	9,521
	808,775	773,362
<i>Operating costs</i>		
Purchase of electricity	653,272	646,517
Distribution	87,033	82,932
Consumer service	16,120	15,830
Meter-reading, billing and collection of accounts	13,917	12,529
Administration and general expenses	17,908	16,957
Training and welfare	3,664	4,064
	791,914	778,829
Operating profit/(loss)	16,861	(5,467)

Source: EMEB's published accounts for 1983-84.

APPENDIX 5.4(b)
(referred to in paragraph 5.3)

East Midlands Electricity Board: Electricity supply, sales and purchase of electricity for the year ending 31 March 1984

	<i>Income</i>		<i>Units</i>		<i>Per unit</i>	
	<i>1983-84</i>	<i>1982-83</i>	<i>1983-84</i>	<i>1982-83</i>	<i>1983-84</i>	<i>1982-83</i>
	<i>£'000</i>	<i>£'000</i>	<i>million</i>	<i>million</i>	<i>pence</i>	<i>pence</i>
<i>Sales of electricity</i>						
Domestic premises	328,685	313,548	6,260	6,039	5.251	5.192
Farms	15,213	16,760	308	341	4.939	4.917
Commercial premises	142,705	133,929	3,185	2,995	4.480	4.472
Combined domestic and commercial premises	8,448	8,351	160	160	5.293	5.234
	495,051	472,588	9,913	9,535	4.994	4.957
Industrial	294,633	282,868	8,038	7,842	3.665	3.607
Public lighting	8,193	8,195	191	186	4.295	4.416
Total distribution sales	797,877	763,651	18,142	17,563	4.398	4.348
Sales to other area boards	205	190	5	4	4.301	4.393
Total sales of electricity	798,082	763,841	18,147	17,567	4.398	4.348
<i>Purchase of electricity</i>						
	651,000	644,053	19,186	18,501	3.393	3.481
From Central Electricity Generating Board	2,060	2,255	65	65	3.182	3.477
From other area boards	212	209	8	7	2.738	2.829
Total purchase of electricity	653,272	646,517	19,259	18,573	3.392	3.481

Source: EMEB's published accounts for 1983-84.

APPENDIX 5.5
(referred to in paragraph 5.3)

**South Western Electricity Board: Electricity Supply Account for
the year ended 31 March 1984**

	1983-84			1982-83		
	<i>Units sold million</i>	<i>Pence per unit sold</i>	<i>£'000</i>	<i>Units sold million</i>	<i>Pence per unit sold</i>	<i>£'000</i>
<i>Turnover</i>						
Sales of electricity						
Domestic	4,646	5.138	238,659	4,544	5.204	236,493
Farms	406	5.056	20,495	406	5.163	20,929
Commercial	2,197	4.735	104,029	2,087	4.787	99,877
Combined domestic/commercial	147	5.408	7,971	145	5.514	7,997
Industrial	2,860	3.582	102,468	2,740	3.602	98,712
Public lighting	84	4.812	4,059	83	4.800	3,990
	<hr/>			<hr/>		
Total distribution sales	10,340	4.620	477,681	10,005	4.678	467,998
Sales to other area boards		4.730	3		4.730	3
	<hr/>			<hr/>		
	10,340	4.620	477,684	10,005	4.678	468,001
Other income			7,601			6,853
			<hr/>			<hr/>
			485,285			474,854
<i>Operating costs</i>						
Purchase of electricity		3.556	367,695		3.618	361,983
Generation		0.007	687		0.006	627
Distribution		0.552	57,129		0.543	54,348
Consumer service		0.119	12,334		0.117	11,667
Meter-reading, billing and collection		0.098	10,102		0.090	9,009
Administration and general expenses		0.134	13,894		0.135	13,464
Training and welfare		0.047	4,821		0.069	6,874
		<hr/>			<hr/>	
		4.513	466,662		4.578	457,972
<i>Operating profit</i>			18,623			16,882

Source: SWEB's published accounts for 1983-84.

APPENDIX 5.6

(referred to in paragraphs 5.8 and 5.9)

Cost breakdown for meter-reading, billing and collection as in the published accounts

	NEEB		SEEB		EMEB		SWEB		Total	
	1979-80	1983-84	1979-80	1983-84	1979-80	1983-84	1979-80	1983-84	1979-80	1983-84
Salaries and related costs:										
Meter-readers and pre-payment collectors	1,421	2,380	2,026	3,189	2,365	3,908	1,990	3,237	7,802	12,714
Billing and collection staff	3,230	3,936	2,933	4,895	3,584	6,157	2,786	4,047	12,533	19,035
Transport and travelling	364	481	413	643	529	661	512	653	1,818	2,438
Bad and doubtful debts	344	703	479	1,324	388	1,174	261	830	1,472	4,031
Other costs	1,546	2,739	1,102	1,543	1,308	2,017	534	1,335	4,490	7,634
Total	6,905	10,239	6,953	11,594	8,174	13,917	6,083	10,102	28,115	45,852

Percentage of total costs of each of the items in the above table

Salaries and related costs:										
Meter-readers and pre-payment collectors	20.5	23.2	29.1	27.5	28.9	28.1	32.7	32.0	27.8	27.7
Billing and collection staff	46.8	38.4	42.2	42.2	43.8	44.2	45.8	40.1	44.6	41.5
Transport and travelling	5.3	4.7	5.9	5.6	6.5	4.8	8.4	6.5	6.4	5.3
Bad and doubtful debts	5.0	6.9	6.9	11.4	4.8	8.4	4.3	8.2	5.2	8.8
Other costs	22.4	26.8	15.9	13.3	16.0	14.5	8.8	13.2	16.0	16.7
Total	100	100	100	100	100	100	100	100	100	100

Source: Published accounts of the four boards adjusted to comply with the Current Account Direction, EMEB also adjusted shop staff related costs referred to in 5.11b(i).

Cost containment and reduction programmes

1. North Eastern Electricity Board

- (a) Within the five years to March 1984 NEEB told us there were two major changes affecting the reference activities: the introduction of a new Consumer Accounting System and the reduction from seven to five districts as part of streamlining the board's organisation.

Consumer Accounting System (CAS)

- (b) At the beginning of the period NEEB told us that it had outdated consumer accounting systems. Plans were well advanced for the introduction of a comprehensive system designed to provide a fast, accurate and economical service to consumers. Objectives included minimising reading to billing time; elimination of paper records; having consumer information available to staff via video terminals enabling enquiries and requests to be dealt with immediately.
- (c) NEEB has told us that Phase I of CAS was introduced in September 1981 and the continuing enhancement of the system has enabled NEEB to reduce clerical staff engaged on the activity. From 1979-80 to 1983-84 CAS has enabled savings of over £1 million a year in salaries and associated costs to be made. There has been a marked improvement in outstanding debt. Applying the improved ratio in April 1984 compared with the pre-CAS figure in March 1981 gives a reduction of £10 million in debtors.
- (d) NEEB has also told us that with information technology and fewer clerical staff it has been possible to increase the number of consumers dealt with by one district office.

2. South Eastern Electricity Board

- (a) SEEB told us that in 1981 the reorganisation of the Central Accounting Office produced estimated savings of £100,000 per annum.
- (b) Changes at district offices for customers' queries and following up of debts since 1978-79 from microfiche to visual display terminals resulted in estimated salary savings of £800,000 per annum in 1984.
- (c) Over the last five years steps have been taken to counter the growing amount of meter fraud. In 1983-84 the amount of restitution billed as a result of detecting meter tampering was £250k.
- (d) SEEB in 1984 introduced a new bank giro account voucher and joint processing and coding line, together with remittance processing equipment which will save £114k per annum.

3. East Midlands Electricity Board

EMEB told us that the main cost reduction programmes related to all activities within the board's organisation and not exclusively to the reference activities. Examples were given as follows:

- (a) Restructuring of District Organisation (referred to as 'The Organisational Blueprint for the early 1980s'). An agreement was reached between the Board and staff representatives for a reduction in the establishment of 89 senior administrative and clerical posts effective from 1 November 1983. By 31 March 1984 employment had ceased for 39 of the staff involved.
- (b) Merger of six districts into three new larger districts with effect from 1 April 1984. The Board estimated savings of approximately £4 million for the five years to 1988-89.
- (c) Revenue Expenditure Cost Reduction Programme:

	<i>£ million</i>
Target for 1983-84	1.1
Achievement	1.5
Target for 1984-85	1.2

The degree of analysis necessary to identify all expenditure savings appropriate to the reference activities is not available but the following examples of savings specifically associated with the reference activities were provided.

- (d) Computerisation of Prepayment Accounting.
Estimated savings at 1983-84 prices £0.3 million
- (e) Introduction of Interim Monthly Billing System.
Estimated savings at 1983-84 prices £0.4 million

4. South Western Electricity Board

SWEB told us that its cost containment and reduction measures over the past five years had resulted in significant savings, including approximately £1 million per annum in salaries (134 equivalent staff) on the meter-reading, billing and collection activity. These reductions had occurred as a result of a number of major initiatives:

- (a) Organisational changes—major reorganisations took place in 1980-81 (when 13 districts and 4 groups were replaced by 4 areas) and 1982-83 (when all Headquarters structures were reviewed). Staff numbers were reduced across all activities, an example in relation to meter-reading, billing and collection being a reduction in costs of £55,000 (equivalent of eight staff) at the Central Accounting Office.
- (b) Closure of offices, shops and depots—throughout the period the board has kept under review the number of offices, shops and depots in the board. As a result of the reviews 4 local offices and 23 shops have been closed as well as some commercial, engineering and other depots. The local office and shop closures reduced salary costs on meter-reading, billing and collection by over £140,000 per annum (equivalent of 18.6 staff) as well as leading to one-off benefits through the sale of the properties concerned.

- (c) Systems and procedural changes—one of the major system changes affecting the reference activities was the introduction of an 'on-line' interactive VDU-based 'Customer Service System' between 1980 and 1984, which (in relation to the reference activities) is used by Consumer Records Sections in areas and local offices. The reduction of staff employed on Consumer Records work was 49 up to March 1984 of which 27 (£200,000 per annum) related to meter-reading, billing and collection of accounts. Another example was procedural changes made following a comparison of Severnside Area and EEB's Thameside Area which resulted in a reduction of 8.3 equivalent staff (£60,000 per annum) on the reference activities.
- (d) Improvements in manpower productivity—initiatives and changes introduced at local level have been instrumental in reducing costs including savings of £180,000 per annum (23 equivalent staff) in industrial staff costs in the meter-reading activity.

APPENDIX 7.1
(referred to in paragraph 7.3)

Details of NEEB's performance information systems

1. The 15 monthly reports on which actual results are set alongside AOP targets are as follows:

- (a) Variation in the date of obtaining actual quarterly meter-readings from nominal reading date. The report covers one month. It shows for each of the five districts, and for the board as a whole, the number of meter-readings, and their timing from six plus working days early to six plus working days late, in nine time periods. For 1984-85 the AOP target is 80 per cent readings taken on time or early and 95 per cent early, on time or no more than one day late. The report shows the proportion of readings on time and in each of four time periods early and late. It does not show directly the proportion of readings on time or early, though this is shown on the following report.
- (b) Twelve-month summary of variations between actual and nominal meter-reading dates. The report covers each of the last 12 months, the five districts, and the board as a whole. AOP targets are given for the proportion of readings early or on time, and the proportion early, on time, or up to one day late. For all districts in 1984-85 the first target was 80 per cent and the second target 95 per cent.
- (c) Number of days between meter-reading and the input of readings for computer processing. Data shown for one month, all districts and the board as a whole. Each day up to 11 days, and over 11 days. AOP target for 1984-85: 98 per cent of readings to be input within one day of reading being taken.
- (d) Percentage of readings input for processing more than one day after reading. Monthly for each of the last 12 months. All districts and the board as a whole. AOP target for 1984-85: maximum 2 per cent.
- (e) Meter-readings rejected at quarterly billing. Monthly for each of the last 12 months. All districts and the board as a whole. AOP target for 1984-85: maximum 1.5 per cent.
- (f) References not billed one calendar month after the nominal reading date. Monthly for each of the last 12 months. All districts and the board as a whole. Three time periods. AOP target for 1984-85: number of references not billed within six months of last account not to exceed 20 per district, and number over six months to be negligible, for example one may be acceptable under special circumstances.
- (g) References prevented from being billed due to the setting of the inhibit billing key. Monthly for each of the last 12 months. All districts and the board as a whole. Three time periods. AOP target: zero references more than one month old.

- (h) Analysis of quarterly accounts produced by type of reading. One month. All districts and the board as a whole. Primary division into 'firm board readings' and 'non-board readings'. The former divided into 'consumers' own readings' and 'consecutive estimated readings'. The latter shown from the first to the seventh consecutive estimated reading. AOP targets for 1984-85: the number of third or more estimated readings should not exceed 2 per cent; the number of fifth or more non-board readings should be zero.
- (i) Elapsed calendar days from the date of meter connection to the date of creating a computer record. Monthly for each of the last 12 months. All districts and the board as a whole. Three time periods. AOP minimum targets for 1984-85: 75 per cent in seven days or less; 90 per cent in 14 days or less; 98 per cent in 21 days or less.
- (j) Elapsed calendar days from the date of meter installation or removal to the date of updating the computer records. Monthly for each of the last 12 months. All districts and the board as a whole. Three time periods. AOP minimum targets for 1984-85: 75 per cent in seven days or less; 90 per cent in 14 days or less; 98 per cent in 21 days or less.
- (k) Elapsed calendar days from the date of reconnection to the date of updating the computer record. Monthly for each of the last 12 months. All districts and the board as a whole. Three time periods. AOP minimum targets for 1984-85: 80 per cent in seven days or less; 95 per cent in 14 days or less; 98 per cent in 21 days or less.
- (l) Elapsed calendar days from the date of termination meter-reading to the date of producing a termination account. Monthly for each of the last 12 months. All districts and the board as a whole. Three time periods. AOP minimum targets for 1984-85: 80 per cent in seven days or less; 95 per cent in 14 days or less; 98 per cent in 21 days or less.
- (m) Elapsed calendar days from the date of special meter-reading to the date of producing the account. Monthly for each of the last 12 months. All districts and the board as a whole. Three time periods. AOP minimum targets for 1984-85: 70 per cent in seven days or less; 85 per cent in 14 days or less; 90 per cent in 21 days or less.
- (n) Number of meter movement forms and consumer changes forms rejected at computer processing. Monthly for each of the last 12 months. All districts and the board as a whole. Number input in the most recent month; the number and percentage rejected in each of the last 12 months. AOP targets for 1984-85: number of forms rejected not to exceed 5 per cent of total number input.
- (o) Analysis of final accounts produced without forwarding addresses. Monthly for each of the last 12 months. All districts and the board as a whole. AOP target for 1984-85: maximum 4 per cent.

2. Thus, of the 15 monthly reports which include an AOP target, three cover a period of one month and 12 give monthly figures for each of the last 12 months. All the reports are based on non-financial data such as, for example, periods of time or numbers of meter-readings.

APPENDIX 7.2

(referred to in paragraphs 7.8 and 7.9)

Details of SEEB's performance information systems

1. Examples of the information contained in the 'Performance Statistics' booklet are as follows, in most cases for the year to date or position as at the quarter end:

- (a) Report Key Result Area (KRA)/A. For each district: meter-reading target and actual unit costs; pre-payment target and actual successful first calls and unit costs; hand delivery target and actual numbers and unit costs.
 - (b) KRA/B. For each district: target and actual arrears in relation to quarterly debt (excluding DHSS); target and actual debt for monthly-billed customers (£); target and actual rating authorities debt (£).
 - (c) Summary of Performance Indicators. Meter-reading and pre-payment collection: including days in advance or behind credit programme; accounts overdue for reading; cost per account delivered by hand (year to date); pre-payment items overdue (equivalent days' work). Debt collection: including quarterly energy debtors above or below target (£); monthly energy debtors over or below target (£).
 - (d) Number of days behind or in advance of programmed meter-reading; various 'must read' data. Number of accounts where meter-readings are overdue more than nine weeks.
 - (e) Target and actual total costs of hand delivery; cost per account hand delivered (year to date); savings made by use of hand delivery (£).
 - (f) Total number of pre-payment collections overdue, and expressed in terms of working days.
 - (g) For meter-reading, first call board readings, attendance hours, and readings per attendance hour; for pre-payment, number of routine collections, attendance hours, and collections per attendance hour; all for the financial year to date and for the most recent quarter.
 - (h) Current quarterly debts—notices of disconnection issued and arrangements to pay.
 - (i) Current quarterly energy debtors outstanding, including target and actual ratios. Non-consumer and trading debts outstanding.
 - (j) Closed account debtors outstanding by age.
 - (k) Debtors referred to the solicitor.
 - (l) Warrants of entry applied for and executed in current quarter and year to date; number of disconnections made in current quarter and total made in year to date, also total remaining disconnected; and creditworthiness checks.
 - (m) Debts written off.
- etc.

2. Although the 'Performance Statistics' booklet is issued quarterly, the following information is also published in the intermediate months:

- (a) quarterly-billed energy debtors outstanding;
- (b) monthly-billed accounts—other than rating authorities; and
- (c) monthly-billed accounts—rating authorities.

3. 125 copies of the 'Performance Statistics' booklet were issued quarterly, 69 to the (previously 11) districts, and the remainder within Headquarters.

4. The main changes from the previous format are as follows:

- most of KRA/A and KRA/B information is now included on other pages;
- the following reports are excluded: performance indicators summary, hand delivery, debts referred to the solicitor, creditworthiness checks, public lighting accounts, and deposits for supply;
- most of the pages that will be included have been altered in various ways;
- the following information will remain unchanged: summary of performance against targets, non-consumer debts outstanding, trading debts on consumer accounts.

Full statements for monthly-billed accounts will still be issued monthly.

APPENDIX 7.3

(referred to in paragraphs 7.15 and 7.20)

Details of EMEB's performance information systems

1. The Management Accounting Department of the board's Finance Division produces an 'Annual Analysis and Statistics' report. The relevant reports for the reference activities are:

- (a) Statement no 5.1: Meter-Reading, Billing and Collection of Electricity Accounts. This shows: salaries, sub-divided between meter-readers and pre-payment collectors, and billing and collecting staff; transport costs, under five headings, including board-owned vehicles and travelling expenses; agency charges; bad debts; proportion of general charges; and other costs. All data is financial, and is shown for each district, each group and for Headquarters, for the year recently ended and also for the previous year.
- (b) Statement no 5.2: Salaries of Meter-Readers and Pre-payment Collectors. Data is given for: credit customers, pre-payment customers, and the total of these two. Under each heading, and for each district and each group, the cost of salaries is given and also the cost per customer, for the current year. Total costs and the cost per consumer are given for each category, for the current and previous years.
- (c) Statement no 5.3: Salaries of Billing and Collection Staff. Salaries are shown under seven headings, of which the main ones are customer service, credit control, and special readings. For each district, each group and for Headquarters, figures for the year just ended are shown alongside those for the previous year.
- (d) Statement no 5.4: Meter-Reading, Billing etc. Cost per customer. For each district, group and Headquarters, the main headings are: salaries of readers/collectors, and billing and collecting staff; transport and travelling; bad/doubtful debts; and other costs.

Thus two of the four statements, 5.1 and 5.3, provide descriptive financial data but do not measure cost per customer. Statement 5.4 provides costs per customer, and for salaries of meter-readers and pre-payment collectors Statement 5.2 does so in more detail.

2. The District Situation Reports consist of eight forms, three of which cover the reference activities:

- (a) Form SR2, Consumer Service Section, shows, for example, number of meters changed, number of meters in stock, number of illegal reconnections;
- (b) Form SR3, Consumers' Accounts and Meter-Reading, shows, for example, the number of man-days and working days by which collection from pre-payment meters and meter-reading for credit customers is in arrears; additional information may be included by a district, for example, the total number of meters on the 'must read' list, the number of estimated

readings submitted to the computer centre in the review period, and the number of meter-readings rejected and not yet re-submitted, etc;

- (c) Form SR4, Credit Control, concentrates on numbers of disconnection orders and of right of entry warrants.

APPENDIX 7.4

(referred to in paragraphs 7.26 and 7.30)

Details of SWEB's performance information systems

1. Examples of AOP improvement targets in relation to the reference activities are:

- (a) total meter-reading, pre-payment collection and billing costs (£ million);
- (b) total meter-reading, pre-payment collection and billing costs expressed as £ per customer;
- (c) industrial staff salaries—meter-reading and billing expressed as £ per credit customer;
- (d) industrial staff salaries—pre-payment collection expressed as £ per pre-payment customer; and
- (e) non-industrial staff salaries—billing and collection expressed as £ per customer.

The improvement targets are not necessarily set on the basis of being achieved within one year. The achievement of the targets is controlled through the annual budgeting process which establishes the year by year improvement on each activity.

2. Examples of information included in the Management Information Booklet related to the reference activities include (for each area and the board as a whole):

- (a) actual performance compared with the AOP improvement targets;
- (b) for debts—bad debts written off (including actual compared with budget and income); analyses of debts for each consumer category (including graphs analysing the age of debts and debts over three months old as a percentage of total debt);
- (c) general statistics, including changes in the number of non-monthly billed customers and the number of customers paying by various payment methods; changes in the number of pre-payment customers; numbers of customers disconnected and the numbers who have been disconnected for more than one month; and
- (d) in relation to staff performance, summaries of work output by activity are included for industrial staff and non-industrial staff including output counts (for example, number of meters read per attendance hour for industrial staff; per member of staff for non-industrial staff) and percentage overtime worked. The industrial staff information also includes unit costs.

APPENDIX 7.5
(referred to in paragraph 7.39)

Examples of differences in performance information produced by the four boards

	Target specified	Frequency of issue	Inter-district data	Measurement is	For action by	No. of copies circulated	No. of reports covering this topic	
<i>Pre-payment meters</i>								
NEEB	N	M	Y	N/F	D/HO	24/24	2	Installations/removals. Applications
SEEB	Y/N	Q	Y	B	HO	125	1	Unit costs. Successful first calls. Number of collections. Number of customers.
EMEB	N	M	Y/N	B	D/HO/B	24/4/17/18/18/18	6	Installations/removals. Thefts.
SWEB	N	M	Y/N	B	D/HO/B	50/30/50/5	4	Installations/removals and net changes in number of pre-payment meters. Output per attendance hour, unit costs and percentage overtime. Reasons for not meeting requests for pre-payments meters.
<i>Meter-reading, pre-payment collection and billing costs</i>								
NEEB	N	M	Y	F	HO	24	1	
SEEB	Y	M/Q/A	Y/N	F	HO/B	125/15	2	Unit costs. Costs per customer.
EMEB	Y	A	Y	F	D/HO	150	1	Total costs for meter-readers, pre-payment collectors, billing and collection staff, transport, bad debts, and other costs per customer.
SWEB	Y/N	M/Q/A	Y/N	F	D/HO/B	50/50/50/30/50	5	Total costs. £ per customer (total and net of bad debts, industrial staff costs per credit customer and per pre-payment customer; non-industrial staff costs per customer). Unit costs.
<i>Meter reading performance</i>								
NEEB	Y	M	Y	N/F	D/HO	24 of each	5	Number of readings made early, on time, late. Number of meter readings rejected.
SEEB	N	Q	Y	N/F	HO	125	1	Number of readings on first call. Number of readings made early, on time, late. Attendance hours. Readings/attendance hour.
EMEB	N	M	Y	N/F	D	4	1	Number of readings in arrears. Number of meter-readings rejected.
SWEB	Y/N	W/M/A	Y	F	D/HO	50 of each	4	Number of readings not attempted. Number of meters not read. Output per attendance hour, unit cost and percentage overtime. Completed work against programme.

	Target specified	Frequency of issue	Inter-district data	Measurement is	For action by	No. of copies circulated	No. of reports covering this topic	
<i>Debts written off</i>								
NEEB	N	M	Y	B	HO	24	1	Value and number of debts written off. Analysis by category of debt.
SEEB	N	Q	Y	B	HO	125	1	Value and number of debts written off. By type of account. Analysis of authority for write-off. Average value per debt.
EMEB	N	M	N	B	D/HO/B	24/17/18	3	Value and number of debts written off; by class and category of debt.
SWEB	Y/N	M/Q	Y	B	D/HO/B	50/30/50/20	4	Value of bad debts written off compared with budget. Quarterly analysis showing debts written off in quarter compared with budget, as a percentage of income this year and last year. Analysed by category (energy, contracting, etc). Analysis of debts written off by authority for write-off and by reasons for write-off.

Source: MMC study of data provided by the boards.

Key: Target specified: Y=yes; N=no; Y/N=yes for some and no for others.
 Frequency of issue: W=weekly; M=monthly; Q=quarterly; A=annually.
 Inter-district data: Y=yes; N=no; Y/N=yes for some and no for others.
 Measurement is: F=financial; N/F=non-financial; B=both.
 For action by: D=district; HO=Head Office; B=the Board.

APPENDIX 8.1
(referred to in paragraph 8.13)

Proposed description of the costs of the reference activities

Meter-reading

Costs of staff engaged upon meter-reading activities by district/area in respect of:

- quarterly-read customers (including special readings);
- monthly-read customers; and
- pre-payment customers;

together with the number of customers in each class.

Billing

Costs of staff engaged upon the production and despatch of bills to customers together with the associated computer staff and equipment costs, and the cost of delivering such bills.

Normal collection

Costs of staff engaged on the collection of amounts due from customers, divided between those costs incurred in the board's shops and those incurred in other offices, together with the costs of other 'agency' charges.

Overdue collection

Costs of staff engaged upon the follow-up of accounts considered to be overdue, and, where applicable, the costs of disconnection.

Bad debts

The charges in respect of amounts written off as bad debts together with the movements in the provision for bad debts.

Unallocated costs

Costs appropriate to the reference activities as a whole for which no comparable analysis between the above activities could be produced by all the four boards. These comprise:

- transport and travelling costs;
- proportion of general charges; and
- miscellaneous costs.

Source: MMC study.

(referred to in paragraphs 8.13 and 8.30)

Analysis of meter-reading, billing and collection of accounts costs for the five years to 31 March 1984

		£'000																				
		1979-80				1980-81				1981-82				1982-83				1983-84				
Table ref		NEEB	SEEB	EMEB	SWEB	NEEB	SEEB	EMEB	SWEB	NEEB	SEEB	EMEB	SWEB	NEEB	SEEB	EMEB	SWEB	NEEB	SEEB	EMEB	SWEB	
	No of customers '000	1,311	1,714	1,885	1,092	1,321	1,731	1,908	1,103	1,328	1,745	1,930	1,111	1,328	1,758	1,951	1,120	1,337	1,775	1,974	1,132	
	Customer density per sq km	89	214	116	76	90	216	117	77	91	218	118	77	91	219	120	78	86	221	121	79	
<i>Meter-reading</i>																						
	Quarterly	8-3	1,135	1,501	1,644	1,116	1,401	1,891	2,048	1,428	1,595	2,173	2,478	1,683	1,705	2,246	2,672	1,759	1,874	2,333	2,841	1,945
	Monthly	8-5	38	110	107	104	44	136	142	133	59	104	174	167	53	181	187	164	53	196	185	178
	Pre-payment	8-8	248	413	639	770	312	500	745	924	363	570	845	1,034	408	604	821	989	453	611	904	1,114
	Sub-total	8-11	1,421	2,024	2,390	1,990	1,757	2,527	2,935	2,485	2,017	2,907	3,497	2,884	2,166	3,031	3,680	2,912	2,380	3,190	3,930	3,237
<i>Billing</i>																						
	Staff - non-industrial	8-17	1,256	1,087	1,487	949	1,510	1,331	1,854	1,205	1,581	1,192	2,082	1,236	1,401	1,218	2,132	1,240	1,347	1,247	2,328	1,284
	- EDP	8-15	758	255	198	301	915	334	252	400	875	353	206	442	856	314	352	562	841	382	413	544
	EDP - other	8-15	675	354	284	136	662	1,029	385	191	901	618	477	343	1,040	435	460	445	914	557	416	754
	Delivery	8-19	282	605	595	256	368	864	818	309	459	930	939	368	488	907	1,030	387	474	898	1,049	387
	Sub-total	8-13	2,971	2,301	2,564	1,642	3,455	3,558	3,309	2,105	3,816	3,093	3,704	2,389	3,785	2,874	3,974	2,634	3,576	3,084	4,206	2,969
<i>Normal collection</i>																						
	Staff - shops	8-23	274	334	636	669	351	571	812	832	437	711	912	871	485	780	1,003	853	536	894	1,124	936
	- other		363	133	145	280	454	177	179	372	548	190	197	309	523	219	212	341	563	243	220	374
	Agency charges		21	16	2	-	33	27	4	60	35	6	13	67	38	7	17	92	30	10	19	
	Sub-total	8-21	657	483	783	949	838	775	995	1,204	1,045	936	1,115	1,193	1,075	1,037	1,222	1,211	1,191	1,167	1,354	1,329
<i>Overdue collection</i>																						
	Staff Sub-total	8-25	610	993	1,065	547	770	1,302	1,380	641	876	1,535	1,632	673	949	1,567	1,836	667	1,031	1,668	2,051	667
<i>Normal and overdue collection</i>																						
	Sub-total	8-27	1,267	1,476	1,848	1,496	1,608	2,077	2,375	1,845	1,921	2,471	2,747	1,866	2,024	2,604	3,058	1,878	2,222	2,835	3,405	1,996
<i>Bad debts</i>																						
	Amounts written off		384	397	388	242	432	507	438	303	557	615	561	438	645	826	705	534	703	1,074	954	649
	Movement in provisions		(40)	82	-	19	-	77	100	61	-	79	150	18	-	290	250	14	-	250	220	181
	Sub-total	8-29	344	479	388	261	432	584	538	364	557	694	711	456	645	1,116	955	548	703	1,324	1,174	830
<i>Unallocated</i>																						
	Transport Sub-total	8-34	364	413	529	512	447	450	601	587	463	517	669	631	484	579	642	661	480	643	661	652
	General charges		290	150	417	107	405	194	559	117	540	212	450	261	653	264	183	257	629	171	464	267
	Miscellaneous		248	110	38	75	306	107	28	91	264	106	64	103	252	214	37	117	249	347	77	151
	Sub-total		538	260	455	182	711	301	587	208	804	318	514	364	905	478	220	374	878	518	541	418
	Total	8-1	6,905	6,953	8,174	6,083	8,410	9,497	10,345	7,594	9,578	10,000	11,842	8,590	10,009	10,682	12,529	9,007	10,239	11,594	13,917	10,102

Source: MMC study.

APPENDIX 8.3(a)
(referred to in paragraphs 8.49 and 8.50)

Quarterly meter-readings: cost per customer

Column no	Average annual cost per customer in £ (at 1983-84 constant prices)					Cost trend 1983-84 on 1979-80 (per cent)	Number of customers in 1983-84	Customer density (no per sq km) in 1983-84	Customer number growth rate 1983-84 on 1979-80 (per cent)
	1979-80	1980-81	1981-82	1982-83	1983-84	6	7	8	9
NEEB board total	1.31	1.37	1.40	1.40	1.46	11.45	1,280,672	87	1.7
Districts:									
East Northumberland	1.56	1.56	1.64						
North Tyne	1.71	1.70	1.73						
South Tyne	0.99	1.04	1.03						
Sunderland	1.08	1.10	1.12						
Durham	1.25	1.39	1.39	1.38	1.43	14.40	266,396	110	14.9
Cleveland	1.08	1.12	1.18	1.09	1.12	3.70	217,227	266	5.5
North Yorkshire	1.47	1.64	1.65	1.64	1.64	11.56	224,072	37	5.4
EMEB board total	1.37	1.44	1.55	1.54	1.55	13.14	1,838,900	113	5.2
Districts:									
Ilkeston	1.21	1.27	1.39	1.40	1.35	11.57	124,000	337	3.2
Chatsworth	1.41	1.50	1.67	1.61	1.57	11.35	102,900	93	3.4
Derby	1.29	1.37	1.42	1.47	1.45	12.40	107,000	185	5.1
Burton	1.32	1.42	1.55	1.58	1.65	25.00	44,000	137	5.0
Charnwood	1.58	1.66	1.86	1.76	1.72	8.86	84,100	126	4.7
Leicester	1.31	1.39	1.49	1.41	1.52	16.03	165,600	287	5.0
East Lines	1.63	1.75	1.86	1.87	1.93	18.40	77,700	40	5.4
West Lines	1.76	1.77	1.83	1.74	1.74	-1.14	82,100	36	2.9
Lincoln	1.47	1.55	1.67	1.61	1.66	12.93	67,400	53	5.8
Mansfield	1.32	1.39	1.49	1.43	1.41	6.82	96,700	232	3.4
Nottingham	1.32	1.40	1.49	1.71	1.77	34.09	194,200	310	5.0
Retford	1.34	1.44	1.54	1.50	1.47	9.70	62,300	63	6.5
Milton Keynes	1.50	1.66	1.82	1.64	1.63	8.67	84,300	70	16.3
Coventry	1.25	1.32	1.37	1.33	1.35	8.00	125,300	674	5.1
Kettering	1.15	1.24	1.34	1.31	1.25	8.70	104,600	99	2.4
Northampton	1.42	1.45	1.50	1.50	1.46	2.82	95,500	113	7.9
South Warwickshire	1.51	1.50	1.63	1.66	1.80	19.21	91,500	99	5.3
Hinckley	1.22	1.27	1.38	1.40	1.32	8.20	129,700	141	5.2
SWEB board total	1.69	1.82	1.91	1.85	1.92	13.61	1,011,000	70	5.0
Districts:									
Sevenside	1.44	1.56	1.65	1.62	1.66	15.28	335,000	224	5.0
Somerset	1.68	1.84	1.91	1.88	1.93	14.88	172,000	42	6.8
Devon	1.68	1.84	1.92	1.83	1.94	15.48	335,000	61	4.7
Cornwall	2.17	2.30	2.40	2.28	2.40	10.60	169,000	52	3.7

Comparable data not available due to district reorganisation

Because of its reorganisation of districts, the data below for SEEB (except for the board totals) covers only the years 1981-82 to 1983-84

Districts:	1979-80	1980-81	1981-82	1982-83	1983-84	1983-84 on		1983-84 on	
						1981-82	1983-84	1983-84	1981-82
SEEB board total	1.33	1.43	1.47	1.40	1.38	3.76*	1,688,570	211	3.5
Kingston	Comparable data not available due to district reorganisation		1.39	1.36	1.37	-1.44	186,320	981	1.5
West Surrey			1.50	1.40	1.42	-5.33	132,120	185	2.6
Croydon			1.52	1.45	1.43	-5.92	210,610	928	0.5
Medway			1.40	1.35	1.29	-7.86	157,930	285	1.2
East Kent			1.48	1.41	1.38	-6.76	108,220	188	1.3
South Kent			1.55	1.51	1.48	-4.52	109,000	96	1.4
Maidstone			1.44	1.33	1.32	-8.33	109,210	115	1.5
Tunbridge Wells			1.48	1.45	1.43	-8.38	158,500	115	1.3
South-East Sussex			1.39	1.32	1.34	-3.60	158,750	152	2.0
Crawley			1.59	1.48	1.40	-11.95	147,740	165	2.5
South-West Sussex			1.42	1.38	1.35	-4.93	210,170	402	1.4

Source: MMC study.

*This figure applies to the five-year period 1979-80 to 1983-84.

APPENDIX 8.3(b)
(referred to in paragraph 8.49)
Monthly meter-readings: cost per customer

Column no	Average annual cost per customer in £ (at 1983-84 constant prices)					Cost trend 1983-84 on 1979-80 (per cent)	Number of monthly customers in		Customer number growth rate 1983-84 on 1970-80 (per cent)
	1979-80	1980-81	1981-82	1982-83	1983-84	6	1979-80	1983-84	9
NEEB board total	22-15	22-08	26-59	22-55	22-21	0-27	2,492	2,386	-4-3
Districts:									
East Northumberland	15-74	18-04	28-12						
North Tyne	16-26	18-86	21-63	Comparable data not available due to district reorganisation					
South Tyne	16-45	18-86	16-91						
Sunderland	13-09	11-41	10-38						
Durham	17-44	14-81	15-47	17-41	19-42	11-35	500	515	3-0
Cleveland	15-97	16-47	17-35	16-32	16-09	0-75	455	435	-4-4
North Yorkshire	14-39	12-42	13-24	10-40	12-17	-15-43	505	493	-2-3
EMEB board total	12-37	12-82	13-22	13-76	14-25	15-20	12,577	12,980	3-2
Districts:									
Ilkeston	10-03	10-82	11-86	13-34	14-95	49-05	768	776	1-0
Chatsworth	11-76	11-68	12-84	13-97	14-96	27-21	556	575	3-4
Derby	11-07	12-66	11-67	13-67	13-12	18-52	630	663	5-2
Burton	11-91	12-23	10-07	11-71	12-46	4-62	293	289	-1-4
Charnwood	14-07	14-78	13-95	13-64	14-57	3-55	620	604	-2-6
Leicester	12-27	12-33	12-87	13-91	15-14	23-39	1,505	1,585	5-3
East Lines	12-71	14-05	16-55	14-91	17-36	36-59	469	576	22-8
West Lines	12-93	14-77	14-20	12-25	15-20	17-56	461	500	8-5
Lincoln	13-46	14-66	16-69	16-48	17-38	29-12	475	535	12-6
Mansfield	10-36	10-68	10-78	10-81	11-72	13-13	519	546	5-2
Nottingham	13-33	13-49	13-15	14-42	14-13	6-00	1,450	1,352	-6-8
Retford	11-74	11-24	12-80	11-95	13-44	14-48	359	372	3-6
Milton Keynes	11-69	11-94	12-50	13-24	13-29	13-69	485	587	21-0
Coventry	13-91	14-71	14-81	15-73	14-27	2-59	972	897	-7-7
Kettering	12-59	13-79	13-90	14-77	15-37	22-08	785	787	0-3
Northampton	13-69	13-62	14-01	13-66	12-50	-8-69	743	784	5-5
South Warwickshire	11-47	10-79	12-20	13-00	12-43	8-37	697	700	0-4
Hinckley	11-59	11-53	12-22	12-85	13-38	15-44	790	852	7-8
SWEB board total	11-28	12-03	13-67	13-23	14-28	26-60	13,403	12,463	-7-0
Districts:									
Sevenside	11-37	12-47	14-90	14-59	15-20	33-69	5,368	4,870	-9-3
Somerset	12-25	12-76	13-73	14-02	14-58	19-02	1,898	1,783	-6-1
Devon	10-17	10-72	12-11	11-08	13-02	28-02	4,289	4,070	-5-1
Cornwall	12-58	13-08	13-76	13-65	14-37	14-23	1,848	1,740	-5-8

Because of its reorganisation of districts, the data below for SEEB (except for the board totals) covers only the years 1981-82 to 1983-4

	1979-80	1980-81	1981-82	1982-83	1983-84	1981-82	1983-84	1983-84	1981-82
SEEB board total	12-87	13-40	14-14	14-26	14-49	12-59*	12,420	13,530	8-9
Districts:									
Kingston	Comparable data not available due to district reorganisation		14-33	14-10	14-20	-0-91	1,270	1,340	5-5
West Surrey			11-74	12-27	12-20	3-92	1,190	1,280	7-6
Croydon			12-42	12-62	13-02	4-83	1,530	1,610	5-2
Medway			16-37	15-36	16-38	0-06	1,010	1,040	3-0
East Kent			13-43	14-14	14-26	6-18	790	780	-1-3
South Kent			14-57	14-64	15-22	4-46	800	810	1-3
Maidstone			14-38	14-29	14-52	0-97	1,050	1,080	2-9
Tunbridge Wells			12-79	13-40	13-16	2-89	1,260	1,310	4-0
South-East Sussex			14-29	14-34	14-50	1-47	1,140	1,160	1-8
Crawley			13-42	13-61	13-70	2-09	1,440	1,520	5-6
South-West Sussex			17-65	17-50	18-22	3-23	1,520	1,600	5-3

Source: MMC study.

*This figure applies to the five-year period 1979-80 to 1983-84.

APPENDIX 8.3(c)
(referred to in paragraph 8.49)

Pre-payment meter-readings: cost per customer

Column no	Average annual cost per customer in £ (at 1983-84 constant prices)					Cost trend 1983-84 on 1979-80 (per cent)	Number of customers in 1979-80 1983-84		Customer number growth rate 1983-84 on 1979-80 (per cent)
	1979-80	1980-81	1981-82	1982-83	1983-84	6	7	8	9
NEEB board total	7.38	8.01	8.15	8.21	8.46	14.63	48,817	53,563	9.7
Districts:									
East Northumberland	7.11	7.60	7.97						
North Tyne	7.70	8.01	8.61						
South Tyne	7.34	7.46	7.97						
Sunderland	8.72	8.61	7.87						
Durham	7.48	8.47	7.90	7.79	8.50	13.64	3,878	6,003	54.8
Cleveland	6.47	7.22	7.17	6.77	6.83	5.56	12,588	12,890	2.4
North Yorkshire	8.01	8.73	8.90	9.35	9.40	17.35	16,880	15,639	-7.4
EMEB board total	7.47	7.75	8.07	7.34	7.43	-0.54	124,442	121,592	-2.3
Districts:									
Ilkeston	7.26	7.75	7.32	6.46	7.30	0.55	6,047	6,877	13.7
Chatsworth	6.51	8.18	7.86	6.63	7.58	16.44	7,256	7,059	-2.7
Derby	8.04	8.04	8.17	7.72	7.52	-6.47	6,547	6,194	-5.4
Burton	7.35	6.96	6.59	5.73	6.15	-16.33	4,706	4,360	-7.4
Charnwood	9.44	9.21	8.29	7.56	7.09	-24.89	3,263	3,369	3.3
Leicester	6.79	7.44	7.87	7.16	7.99	17.67	10,147	8,707	-14.2
East Lincs	8.09	8.60	8.93	7.82	7.62	-5.81	5,426	5,812	7.1
West Lincs	6.57	7.59	8.22	6.92	7.12	8.37	5,711	5,743	0.6
Lincoln	6.83	7.23	7.30	6.12	6.96	1.90	5,848	5,118	-12.5
Mansfield	6.88	6.60	7.39	6.77	6.98	1.45	6,948	7,368	6.0
Nottingham	7.02	7.18	7.58	7.52	7.58	7.98	17,216	15,534	-9.8
Retford	6.62	7.10	7.30	7.08	7.30	10.27	4,742	4,455	-6.1
Milton Keynes	8.58	9.00	9.18	8.68	8.59	0.12	2,508	4,074	62.4
Coventry	8.35	8.93	10.03	9.12	8.59	2.87	11,696	8,781	-24.9
Kettering	7.35	7.30	8.31	7.33	7.05	-4.08	5,715	6,515	14.0
Northampton	8.89	8.88	9.30	8.16	7.84	-11.81	7,770	8,231	5.9
South Warwickshire	7.35	7.82	8.38	7.84	7.49	-1.90	6,291	5,838	-7.0
Hinckley	8.03	6.99	7.07	6.49	6.14	-23.54	6,605	7,557	14.4
SWEB board total	9.69	10.44	10.74	9.63	10.35	6.81	115,550	107,631	-6.9
Districts:									
Sevenside	8.83	9.63	10.08	9.29	10.73	21.52	37,363	33,358	-10.7
Somerset	10.16	10.91	11.52	10.44	10.95	7.78	16,888	15,980	-5.3
Devon	9.24	10.10	10.47	9.16	9.80	6.06	39,973	36,825	-7.9
Cornwall	11.65	12.07	11.70	10.37	10.25	-12.02	21,326	21,468	0.7

Because of its reorganisation of districts, the data below for SEEB (except for the board totals) covers only the years 1981-82 to 1983-84

SEEB board total	1979-80	1980-81	1981-82	1982-83	1983-84	1983-84 on 1981-82	1983-84	1983-84	1983-84 on 1981-82
	8.49	9.05	9.38	9.07	9.08	6.95*	70,500	72,800	3.3
Districts:									
Kingston	Comparable data not available due to district reorganisation		12.12	10.16	8.45	-30.28	3,850	4,240	10.1
West Surrey			9.28	9.16	9.12	-1.72	3,220	3,750	16.5
Croydon			8.62	7.67	7.57	-12.18	6,440	7,600	18.0
Medway			8.50	7.57	8.07	-5.06	6,690	7,410	10.8
East Kent			7.64	8.12	8.73	14.27	4,940	5,190	5.1
South Kent			7.34	7.15	8.34	13.62	3,880	4,570	17.8
Maidstone			9.18	-8.89	8.55	-6.86	5,210	5,550	6.5
Tunbridge Wells			8.49	8.16	8.51	0.24	8,870	9,010	1.6
South-East Sussex			8.28	9.03	8.78	6.04	6,220	6,380	2.6
Crawley			10.47	10.63	11.30	7.93	5,100	5,490	7.6
South-West Sussex			11.23	11.01	10.89	-3.03	13,900	13,610	-2.1

Source: MMC study.

*This figure applies to the five-year period 1979-80 to 1983-84.

APPENDIX 10.1
(referred to in paragraph 10.2)

**Capital expenditure: incurred by the four boards, 1974-75
to 1983-84; forecasts 1984-85 to 1990-91 (all at 1983-84
prices)**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	<i>Meters £'000</i>	<i>(1) as % of (7) %</i>	<i>Other reference invest- ments £'000</i>	<i>(3) as % of (7) %</i>	<i>All reference invest- ments £'000</i>	<i>(5) as % of (7) %</i>	<i>Total capital expen- diture £'000</i>
1974-75	7.8	7	4.5	4	13.3	12	112.2
1975-76	6.9	6	5.1	4	12.0	10	123.4
1976-77	5.2	6	1.2	1	6.4	7	94.5
1977-78	4.2	5	1.3	2	5.5	7	84.6
1978-79	5.8	6	3.6	4	9.4	10	91.2
1979-80	4.3	5	6.5	8	10.8	13	85.3
1980-81	3.7	4	3.6	4	7.0	8	88.6
1981-82	11.1	11	6.7	7	18.0	18	97.9
1982-83	14.5	14	5.9	6	20.5	20	104.0
1983-84	11.6	10	9.4	8	21.0	18	119.8
1984-85	11.4	10	8.4	7	19.7	17	116.4
1985-86	14.1	12	8.8	7	22.8	19	122.2
1986-87	13.1	11	5.5	5	18.5	15	120.2
1987-88	11.9	10	7.6	6	19.8	16	122.0
1988-89	11.9	10	5.4	5	17.3	14	119.8
1989-90	11.9	10	5.5	5	17.4	15	117.3
1990-91	11.9	10	6.3	5	18.2	15	117.6

Sources: EMEB, NEEB, SEEB and SWEB.

Notes: 1. Reference investments comprise capital expenditure on meters and time switches; computers; office machinery; and shops.
2. The capital value of any leased items is included in the figures.

APPENDIX 10.2

(referred to in paragraph 10.16)

Investment appraisal case studies

(a) Meters

1. In 1981 the Deputy Chairman of NEEB authorised the expenditure of £27,000 for field studies of magnetic tape recording equipment to replace its increasingly unreliable paper chart half-hourly demand recording equipment for large customers and sub-stations. If the field studies were successful additional capital expenditure of £180,000 would be incurred up to 1986, with an unspecified further amount incurred thereafter. The decision followed an investment appraisal which showed that this type of replacement had a lower net present cost (£173,000) than had replacement with meters of the current type (£247,000) when costs over 20 years were discounted at 10 per cent. For an extra net present cost of £12,000 computer software could be added to the magnetic tapes to provide full analysis and billing facilities. Another considered option involved the use of magnetic tape equipment, a mini-computer and software for only those customers on load management terms, with existing equipment retained for other customers; but this had a net present cost of £228,000 and was rejected.

2. None of the boards had completed any other appraisal although all are carrying out field trials for load management devices for the domestic market (see Chapter 13); and EMEB is and NEEB, SEEB and SWEB will be conducting field trials for token meters to replace coin-operated pre-payment meters, which are vulnerable to being broken into by customers or third parties.

3. In 1980, after previous trials of token meters in 1977, the Electricity Council had doubted whether the relevant customers would be prepared to pay the economic cost of a fully secure token meter system. EMEB told us that, following four years' further development work, British manufacturers should be producing commercially acceptable token meters by April 1985; it had asked them to aim at a price equal to that of a coin-operated meter. The surcharge to be paid by customers using token meters would then be lower than that for coin-operated meters as the tokens would be destroyed on use, avoiding the labour costs of emptying coin-operated pre-payment meters. An emergency override could give customers who ran out of tokens at the weekend sufficient electricity until the following Monday morning. Customers would be able to purchase tokens from vending machines in convenient and safe places such as local authority rent offices as well as from the board.

4. In October 1981 EMEB's Chief Technical Services Engineer approved a prototype token meter pre-production design and subsequently EMEB started field trials in three districts. A total of 385 token meters had been installed by March 1984, when a progress report presented to the Executive Meeting stated that the trial districts were still obtaining very satisfactory results and that customer reaction was good. An additional order of 200 token meters was

therefore authorised, bringing the number on trial to 800. EMEB told us that it has now spent approximately £140,000 on 1,000 token meters, an amount well within the authorisation limits of the Chairman and Deputy Chairman.

5. EMEB said it would carry out a full appraisal when it had completed its field trials and received manufacturers' bid details for a bulk order of token meters. The appraisal would include the cost of the vending machines and the benefits to the board of the earlier cash flow from customers who switched from coin-operated to token meters. Meanwhile, preliminary studies had indicated significant net benefit to the board as well as the advantage of meeting many customers' budgeting needs. The key factor was confirmed to be the mass production price of the meters, assuming continued satisfactory progress with the trials and the availability when required of suitable vending machines.

6. SEEB, whose number of pre-payment meters has risen from a low of 68,123 in 1981 to 74,225 in 1984 following the issue of a revised Code of Practice (see paragraph 9.20), is reviewing the new token meters in order to select a format for a field trial later in 1984. This would cover around 100 customers in one district, concentrating on those with a history of meter break-ins.

(b) Computing processors

7. EMEB, NEEB, SEEB and SWEB carried out respectively four, four, three and two investment appraisals for computing processors during the five-year period ending March 1984. We looked at their penultimate appraisal papers, each of which was presented to the appropriate Board between March 1981 and January 1982.

8. The Boards of EMEB, NEEB and SWEB approved capital expenditures of respectively £1.0 million, £0.5 million and £1.5 million for replacements largely of one computing processor by another. The Board of EMEB delegated the negotiation of the financial arrangements (ie lease or purchase) to the Director of Finance. The Board of SEEB approved replacing one computing processor by another on the financing arrangement most advantageous to the board at the time of completing the transaction.

9. SEEB's appraisal papers did not state a capital expenditure but did give estimates of additional annual operating costs (including leasing rentals) and indications of how these could be met by staff savings. EMEB's appraisal papers specified the annual maintenance costs involved but did not quantify any other costs or benefits. NEEB's paper noted a £0.2 million trade-in-value of its existing processor and estimated staff and other savings at some £1.0 million per annum. It also stated that the new computer was required partly to deal with the greater than expected demands of the new Consumer Accounting System (see paragraph 10.24) which itself was well on the way to achieving the expected savings resulting from shorter delays between meter-reading and billing and from lower staffing levels. SWEB's paper compared the capital and operating costs of two broadly similar processors made by different manufacturers. Alternative configurations or suppliers were considered by EMEB but not by NEEB. (NEEB told us that it did consider alternative suppliers and configura-

tions whenever practicable.) SEEB's paper considered alternative configurations offered by one supplier. (SEEB subsequently looked for an alternative supplier when the first could not deliver by the expected time; this was the subject of its last appraisal.)

10. No appraisal paper noted the use of a TDR or a NPV, although the NPV of NEEB's proposal is easily seen to be positive and SEEB's costs and benefits were clearly stated in constant annual cash flows. No paper presented any quantitative sensitivity or risk analysis although SWEB's paper noted that other, less measurable but nonetheless significant, factors had also to be recognised; for example one supplier had a more developed engineering and back-up service than another. In addition both EMEB's and SWEB's papers took into account the ease with which further enhancements could be made using one supplier rather than another.

(c) Shops

11. EMEB, SEEB and SWEB carried out respectively 18, 41 and 46 shop appraisals for expansions, resittings, closures or reviews of rents or leases in the five-year period ending March 1984. In NEEB the Board considered no appraisals for expansions, resittings or closures in this period, following a major review of its shops in the previous decade.

12. For EMEB, SEEB and SWEB the shop appraisals that we looked at had each been made since the issue of the latest relevant board's instructions on shop appraisals. In each case the appraisal followed the relevant instructions, which allowed for variations in practice between the boards. For example, as regards TDRs, EMEB used 5 per cent and SEEB 10 per cent; SWEB required IRRs of at least 10 per cent for retail trading and at least 5 per cent for the business as a whole. As regards sensitivity analysis, EMEB did none for its appraisal in July 1983 for the resiting of its shop in Melton Mowbray because its instructions state that sensitivity analysis should be used only if the level of business were a critical factor. SEEB tested the effects on the NPV of three different assumptions for the initial level of turnover in its appraisal for the rent review in March 1984 for its shop in Whitgift Centre, Croydon. SWEB considered the effects on the IRR of different assumptions for the initial increase in turnover, from zero up to 30 per cent, in its appraisal in May 1984 for the enlargement or resiting of its shop in Truro.

(d) Electronic receipting machines

13. EMEB, NEEB and SEEB has each appraised the use of electronic receipting machines in its shops. In SWEB a management working party is looking at their possible use.

14. In 1982 EMEB considered capital expenditure of £134,500, partly to replace its rubber stamps. Using a 5 per cent TDR it estimated there to be significant negative NPVs for installing the equipment in varying numbers of its largest shops, whereas there was a NPV of £272,000 for computerising only the financial controls. The Deputy Chairman decided to computerise the financial controls, delaying the other expenditure until technological improvements lowered costs.

15. In 1980 the Board of NEEB approved expenditure of £257,000 to replace its electro-mechanical cash registers. The paper presented to the Board reported entirely satisfactory results from a pilot study; that account stubs need no longer be retained; and that savings would be approximately equal to the annual leasing charges.

16. NEEB told us that annual savings of £110,000 would recoup the capital outlay in 2.5 to 3 years, the equipment's expected life being seven years; there was thus no need to compute NPVs. The capital and maintenance costs of equipment supplied by three manufacturers had been found not to be significantly different so that there was no need to compute net present costs. The choice between the three manufacturers was therefore made on other factors such as experience in the market and special features of their equipment.

17. In 1983 the Board of SEEB approved expenditure of £780,000. There was an annual net benefit of £35,000, this being the annual equivalent of the NPV, using a 5 per cent TDR for capital charges over seven years. Of the few possible suppliers, the one whose system was operating successfully in the Merseyside and North Wales Electricity Board was preferred.

(e) Remittance processing systems

18. EMEB and SEEB has each appraised and NEEB is appraising a remittance processing system which, for example, through encoding and sorting cheques, would enable the board to qualify for a discount on bank charges and to make staff savings. SWEB approached one supplier, following the report by Deloitte, Haskins and Sells in 1983, but went no further because the supplier was unwilling to travel to Plymouth to maintain its equipment properly.

19. In 1983 the Deputy Chairman of EMEB approved the expenditure of £93,774, the NPV of which, using a 5 per cent TDR, was around £130,000. The best alternative, another supplier's system, had a NPV of around £119,000. Other factors taken into account included that the chosen system had a shorter delivery period, had cheaper and more flexible software, required less space, and had less risk associated with the supplier.

20. In 1984 the Board of SEEB approved expenditure of £177,700. It was presented with the average annual costs spread over five years of four products manufactured by different suppliers. The Board was recommended to choose the system with the highest annual average costs (£55,322) rather than the technically next best one which had the lowest annual average costs (£49,320). This was mainly because the preferred system was faster so that 'from the point of view of productivity and acceptability there would be an advantage of several thousand pounds per annum'. The productivity improvements were in addition to the savings in bank charges which, at £114,000 per annum, far exceeded the annual average costs of any system. A financial appraisal showing the NPVs of the four options (eg £250,000 for the preferred system), using a 5 per cent TDR, was available at the Board meeting.

21. At present NEEB and SWEB have machines, donated by their banks, from which they produce some cheque data in return for a lower discount on bank charges. EMEB and SEEB each told us that it had considered fairly thoroughly but rejected such simpler options, as the discounts were not large enough.

APPENDIX 11.1
(referred to in paragraph 11.26)

Reference activities on which advice is provided

1. Meter-reading

- (a) Organisation of special readings; ie for change of tenancy.
- (b) Correction of errors; ie a difference between a board reading or estimate, and that of a customer.
- (c) Meter change.

2. Billing

- (a) Explanation of consumption.
- (b) Explanations required when tariffs change.
- (c) Accounts.

3. Payment

- (a) Follow-up on unpaid bills.
- (b) Where to pay bills.
- (c) Alternative payment methods.
- (d) Revised tariffs.

4. Choice of tariff

- (a) General enquiry.
- (b) A change in equipment being used.

APPENDIX 11.2

(referred to in paragraphs 11.28 and 11.31)

Quantitative data provided on communications with customers and advice

	NEEB	SEEB	EMEB	SWEB
1. Number of customers ('000)	1,342	1,784	1,985	1,139
2. Staff equivalents giving advice on reference activities				
(a) Office-based commercial staff		23.2†		20*
(b) Shops		35.0†	61	31*
(c) Office-based administrative staff		14.9†		90*
(d) Total		73.1†		141*
3. Staff on reference activities‡	709	1,030	1,233	811
4. Number of shops	47	77	75	78
5. Shops to office telephone links (inquiries per day)		500		
6. Number of local offices	5	10	15	10
7. Number of telephone calls ('000/yr)				
(a) Customer movements	333.8			
(b) Energy account queries	260.3			
(c) Meter changes	87.6			
(d) Customers' readings	48.9			
8. Written communication ('000/day)				
(a) Computer produced		2.3		
(b) Non-standard, typed		1.3		
9. Number of customers inquiries about accounts ('000/day)		1.2 to 2.5		
10. Visits by sales staff ('000/yr)	4.8			
11. Visits by board staff per day		50 to 90		
12. Enquiry visits by customers to board offices per day		5 to 55		
13. Leaflets issued ('000)				
(a) Tariffs	71			
(b) General advice	80			
14. Computer support number of desk VDUs	95	287	317	
15. Number of customer service tasks (m) 1983-84		1.81		

Sources: NEEB, SEEB, EMEB and SWEB.

*Includes advice on meter-reading, billing, collection and appropriate tariffs.

†Generally concerns advice on tariffs or ways of economising.

‡See also Table 6.4.

APPENDIX 11.3
(referred to in paragraph 11.28)

SEEB: estimates of staff units employed on giving advice

Class of customer	Number of customers at 31.3.84	District commercial staff at 30.4.84			District administrative staff at 30.4.84			NJIC meter-readers advice component (c)
		Full-time advice	Office Part-time advice (a)	Shops advice component	Debt collection advice component (b)	Meter-reading advice component (b)	Customer records advice component (b)	
Domestic	1,623,695	18	4.25	35	} 7.4	} 3.9	} 3.6	422.5
Commercial and other	152,065	—	0.5	—				
Industrial	8,531	—	0.5	—				

(a) 5 per cent of staff involved in reference activities.

(b) 5 per cent of staff involved. Less than 5 per cent of the time of these staff would be involved in giving incidental advice on tariffs or ways or economising.

(c) 28.7 meter-reading NJIC staff are engaged on visiting customers to obtain payment of bills before disconnection of supply. They would not be giving advice on tariffs or utilisation, however.

APPENDIX 11.4
(referred to in paragraph 11.28)

**SWEB: approximate assessment of current staff involvement in
advice on meter-reading, billing and collection (MBC) and
appropriate tariffs (T)**

Customer class	No. of customers	Full-time equivalent staff							
		Shops		Commercial areas		Customer units		Central Accounting Office	
		MBC	T	MBC	T	MBC	T	MBC	T
Domestic	998,059	17*	14*	—	8	65	7	10	—
Commercial/combined	101,769	—	—	—	5	}	7	1	—
Industrial	8,278	—	—	—	5				—
Agriculture	31,309	—	—	—	2				—
		31		20		80		10	

Source: SWEB.

*Small proportion on non-domestic.

APPENDIX 11.5
(referred to in paragraph 11.29)

EMEB: advice to customers: ranking of staff involvement

<i>Rank</i>	<i>Establishment post</i>	
1	Shop Assistant	
2	Customer Contact Representative	
3	Supply Engineer	
4	Customer Service Section Assistant	
5	Credit Control Assistant	
6	Disconnecter	
7	Domestic Energy Sales Representative	
8	Meter Operative	
9	Meter Attendant	
10	Telephone Operator/Receptionist	
11	Customer Service Manager	
12	District Manager	
—	Foreman	} involvement not significant
—	Typist	
—	Board HQ staff	

Source: EMEB.

APPENDIX 11.6

(referred to in paragraph 11.29)

NEEB: main sections/groups of staff within NEEB which have opportunity, means and motive to offer advice to customers

	<i>Total no. of staff</i>	<i>Comment</i>
District commercial staff	86	Visit customers to clear disputes and advise on supply matters
Headquarters commercial staff	4	Contact with large customers
Shop staff	404	Deal with the whole range of queries from customers coming into shops
Consumer Service Enquiry Units	62	Answer all customers telephone calls
Headquarters Debt Control Unit	48	Control debts including the negotiation of arrangements to clear debts
Arrears Collection	64	Visit customers to make arrangements to clear debts or disconnect. Also traces customers

Source: NEEB.

APPENDIX 11.7

(referred to in paragraphs 11.34, 11.35 and 11.36)

Quantitative data on complaints

		<i>NEEB</i>	<i>SEEB</i>	<i>EMEB</i>	<i>SWEB</i>
1. Board analysis of complaints received direct from customers on electricity accounts:					
	1979-80		316	267	135*
	1980-81		295	295	134*
	1981-82	174	230	277	132*
	1982-83	161	156	365	116*
	1983-84	151	183	384	92*
2. Complaints to Consultative Council:					
(a) Accounts	1981-82	433	386	186	442
	1982-83	354	383	246	446
	1983-84	458	661	333	399
(b) Tariffs	1981-82	45	4	16	82
	1982-83	35	9	30	58
	1983-84	37	20	32	40

Sources: 1. NEEB, SEEB, EMEB and SWEB.
2. NEECC, SEECC, EMECC and SWECC.

*Analysis of written complaints to board Headquarters.