

Admin report of the
Electricity Dept.

1947-48

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GOVERNMENT OF MADRAS

ADMINISTRATION REPORT

OF THE

ELECTRICITY DEPARTMENT
FOR 1947-48

PRINTED BY THE SUPERINTENDENT
GOVERNMENT PRESS
MADRAS
1949

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GOVERNMENT OF MADRAS

ADMINISTRATION REPORT

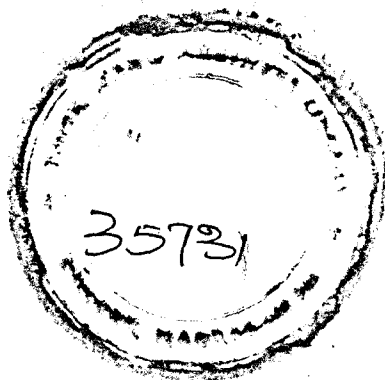
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CONTENTS

SECTION I—GENERAL REVIEW.

PARA.	PAGE
1 Introductory	1
2 Salient features	1
3 Load development	2
4 Financial results	3
5 Number of consumers	3
6 Transmission lines and sub-stations	4
7 Agricultural development	4
8 Firka development	5
9 Construction activities	5
10 Programme for 1948-49	6
11 The Madras Electrical Undertaking	6
12 Electrical Inspectorate and licensees	6
13 Electricity buildings	7
13-A Electricity Department Journal	8
14 Foreign training	8
15 Nationalization	8
16 Electricity (Supply) Bill, 1948	8
17 Power demand	8
18 Investigations	9
19 Organization	9
20 Administration	9

SECTION II—DETAILED REPORT.

Power Development Branch.

21 General	10
22 Schemes in progress	10
23 New sanctioned schemes	13
24 Programme for 1948-49	14
25 Investigations	15
26 Accidents	16
27 Organization	16

Hydro-Electric Surveys and Investigations Branch.

28 Investigations and surveys	16
---------------------------------------	----

Technical Branch.

29 Technical branch	17
-----------------------------	----

Operating Systems Branch.

30 General	19
30-A Accidents	20

Pykara System.

31 General	20
32 Water conditions	21
33 Load development	21
34 Financial results	22
35 Connected load	22
36 Power-house	22
37 Penstocks, civil and hydraulic works and camps	23
38 Glenmorgan Power-house	23
39 Transmission lines	23
40 Extra high tension sub-stations	23
41 Coimbatore Receiving Station	24
42 Distributions	24
43 Mills and mill lines	24
43-A Extensions	24
44 Textile mills	25
45 Cement works	25
46 Tea factories	25
46-A Other industries	25
47 Commercial activities	25

PARA.	PAGE
48 Agricultural services	26
49 Rural industries	26
50 Firka development	26
51 Conversion fund	26
52 Meter and relay tests and special maintenance	26
53 Kollegal Scheme	27
54 Interruptions and breakdowns	27
55 Stores, accounts, audit and Central Office	27
56 Administration	27
57 Programme for 1948-49	28
<i>Mettur System.</i>	
58 General	28
59 Water conditions	28
60 Mettur Power-house	29
61 Load development	30
62 Financial results	30
63 Connected load	30
64 Transmission lines	30
65 E.H.T. Sub-stations	31
66 Distributions	32
67 Commercial activity	32
68 Agricultural services	32
69 Rural industries	32
70 Firka development schemes	32
71 Conversion fund	33
72 Meter relay tests and special maintenance	33
73 Interruptions and breakdowns	33
74 Stores	33
75 Workshops	33
76 Civil Works	33
77 Administration	34
78 Programme for 1948-49	34
<i>Papanasam System.</i>	
79 General	34
80 Water conditions	35
81 Power-house, dam and civil works	35
82 Load development	36
83 Financial results	36
84 Connected load	36
85 Transmission lines	36
86 Power transformer stations	37
87 Distributions	37
88 Extensions	37
89 Agricultural services	38
90 Rural industries	38
91 Firka development	38
92 Meter relay tests and special maintenance	38
93 Audit, accounts and stores	38
94 Programme of work for 1948-49	39
<i>Madras System.</i>	
95 General	39
96 Load development	39
97 Financial results	39
98 Connected load and number of consumers	40
99 Power-house	40
100 Transmission lines, sub-stations and distributions	40
101 Extensions	41
102 Commercial activity	42
103 Agricultural development	42
104 Stores	42
105 Transportable Power Station	42
106 Cuddapah Electrical Undertaking	43
107 33 K.V. line from Kodambakkam to Trivellore and Kadamattur	43
108 Madras Plant Extensions	43
109 Programme for 1948-49	44
110 Administration	44
<i>Andhra System.</i>	
111 General	45

PARA.	PAGE
<i>Vizagapatam System.</i>	
112 General	45
113 Power-house	45
114 Load development	46
115 Financial results	46
116 Connected load	46
117 Transmission lines, extra high tension sub-stations and distributions	47
118 Extensions	47
119 Agricultural services	47
120 Rural industries	47
<i>Bezwada System.</i>	
121 General	47
122 Power-house	47
123 Load development	48
124 Financial results	48
125 Connected load	48
126 Transmission lines, extra high tension sub-stations and distributions	49
127 Extensions	49
128 Agricultural services	49
129 Rural industries	49
<i>Cocanada System.</i>	
130 General	49
131 Power-house	50
132 Load development	50
133 Financial results	50
134 Connected load	50
135 Transmission lines, sub-stations and distributions	50
136 Agricultural services	51
137 Rural industries	51
138 11 K.V. line to Ramapadasagar dam site	51
139 Extensions	51
<i>Kurnool System.</i>	
140 General	51
141 Power-house	51
142 Load development	51
143 Financial results	51
144 Connected load	51
145 Transmission lines and distributions	52
146 Agricultural services	52
147 Rural industries	52
148 Firka development schemes in Andhra System	52
149 Administration	52
150 Audit, accounts and stores	52
<i>Electrical Inspectorate and Licensee Electric Supply Undertaking.</i>	
151 Electrical undertakings	52
152 Indian Electricity Act and Rules	53
153 Accounts	53
154 Tariffs	53
155 Restrictions and control order in licensees' areas	53
156 Freezing orders	54
157 Peakload restrictions	54
158 Priority schemes	54
159 Committee for Madras	54
160 Rationing of electricity	54
161 Supply position in licensees' areas	55
162 Diesel oil control	55
163 Assistance to licensees regarding plant, poles, etc.	55
164 Unmetered supply	56
165 Strikes	56
166 Surcharges	56
167 Laboratory	56
168 Local authorities electrical undertakings	56
169 Cinematograph Act and Rules	57
170 Cinema operators licences	57
171 Madras Electricity Duty Act, 1939	57
172 Expenditure and revenue	58
173 Accidents	58
174 Staff	58
175 Acknowledgments	59

PAGE

APPENDICES.

APPENDIX A.

List of construction works undertaken with expenditure to end of 1947-48	60
--	----

APPENDIX B.

Budget provision for capital works in 1948-49	60
---	----

APPENDIX C.

Establishment charges and fees earned during 1947-48 and estimated during 1948-49	62
---	----

APPENDIX D.

1 Electric supply undertakings in service	64
2 Licensees under construction	64
3 New applications for licence received	64
4 List of undertakings put into service	64
5 List of licensees who reduced the tariffs	65
6 List of licensees who increased the tariffs	65
7 List of licensees charging more than 6 annas per unit for lighting and fans	65

APPENDIX E.

Total capacities of plants installed in electric supply undertakings in the Province ..	65
---	----

APPENDIX F.

1 Table of electric supply costs and records of company licensees	66
2 Table of electric supply costs and records of local authority licensees	72
3 Statistical data regarding units generated or purchased, sold, connected load, etc., for the year ending 31st March 1948—Company licensees	76
4 Statistical data regarding units generated or purchased, sold, connected load, etc., for the year ending 31st March 1948—Local authority licensees	80

APPENDIX G.

1 List of high tension consumers supplied by the Electricity department—Pykara System	82
2 Do.	83
3 Do.	83
4 Do.	84
5 Do.	84
6 List of Textile mills, Tea factories and other high tension consumers in licensees' areas	84

APPENDIX H.

1 List of villages and townships supplied with electrical energy in the Government Power Systems.	86
2 List of villages and towns supplied with electrical energy by licensee undertakings	91

APPENDIX I.

List of power-house, extra high tension, high tension and distribution, transformer stations—	
Pykara System	99
Mettur System	100
Papanasam System	101
Andhra System	102

LIST OF ILLUSTRATIONS.

1 Map of the Madras grid	FRONTISPIECE
	FACING
	PAGE
2 Chart showing the growth of power demand and revenue during 1927-48	1
3 Basin Bridge Power-house, Madras	6
4 Transportable Power Station at Basin Bridge, Madras	7
5 West Coast 66 K.V. tower line erected departmentally	10
6 Machkund Hydro-Electric Scheme—Duduma falls	10
7 Moyar Hydro-Electric Scheme—Maravakandi Dam site	12
8 Mettur Power-house—Interior view inclusive of the IV Unit	28
9 Kurnool Power-house—Inside view	51

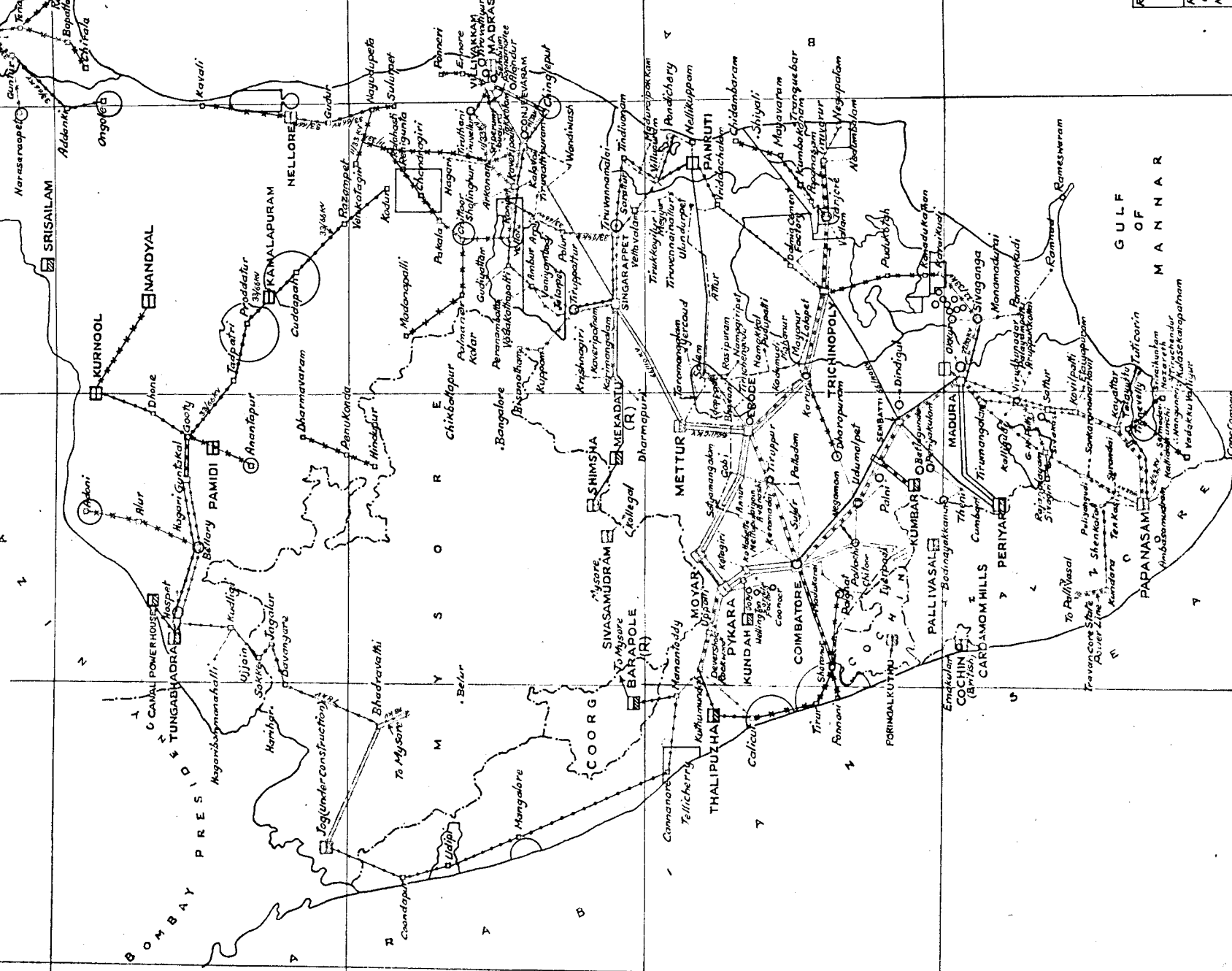
THE MADRAS GRID

SCALE: 1"=6.4 MILES

No	NAME OF POWER STATION	INSTALLED CAPACITY INCLUDING STAND BY PLANT	
		K.W. PRESENT	K.W. ULTIMATE
1	A. EXISTING		
2	Pikara	43,000	71,000
3	Metur	40,000	40,000
4	Papanasam	21,000	28,000
5	Madras	38,500	60,000
6	Bezawada	6,000	12,000
7	Vizagapatnam	3,750	6,000
8	Cocanada	760	15,000
9	Kurnool	190	
10	B. UNDER CONSTRUCTION		
11	Machkund	51,750	103,000
12	Mayar	24,000	36,000
13	Madura	12,000	60,000
14	Nellore	5,000	8,000
15	C. FUTURE		
16	Periyar	Not yet decided	
17	Rampasagar	"	
18	Tungabhadra	"	
19	Cuddabach	"	
20	Pannur	"	
21	Mekadatu	"	

* At Mettur the capacity is limited by the head and the maximum limit of 1500 cusecs of water discharge allowed at present. The minimum capacity mentioned for this station corresponds to 70 feet head and unlimited water discharge and will get further reduced to 7000 cusecs if the discharge is limited to 1500 cusecs.

+ The primary capacity of the Papanasam station is only about 14,000 kw being limited by water storage.



REFERENCE:-

- Hydro-Electric Power House
- Thermo-Electric " "
- Sub-Station

Metering or Distribution Transformer Station

110 KV Transmission Line Single Circuit

- 110 KV. " " Double "
- 66 KV. " " Single "
- 66 KV. " " Double "
- 33 KV. " " Single "
- 33 KV. " " Double "
- 22 KV. " " Single "
- 22 KV. " " Double "
- 11 KV. " " Single "
- 11 KV. " " Double "

Red Existing and Sanctioned System

* Blue Likely to be Completed by 1953

Black Possible Extensions after 1953

Green Existing (or under construction) foreign lines & stations

Future Foreign lines & Stations

Licensee's areas

Local Authority or private Licensee's area of supply

(R) Regional Station

NOTE:-

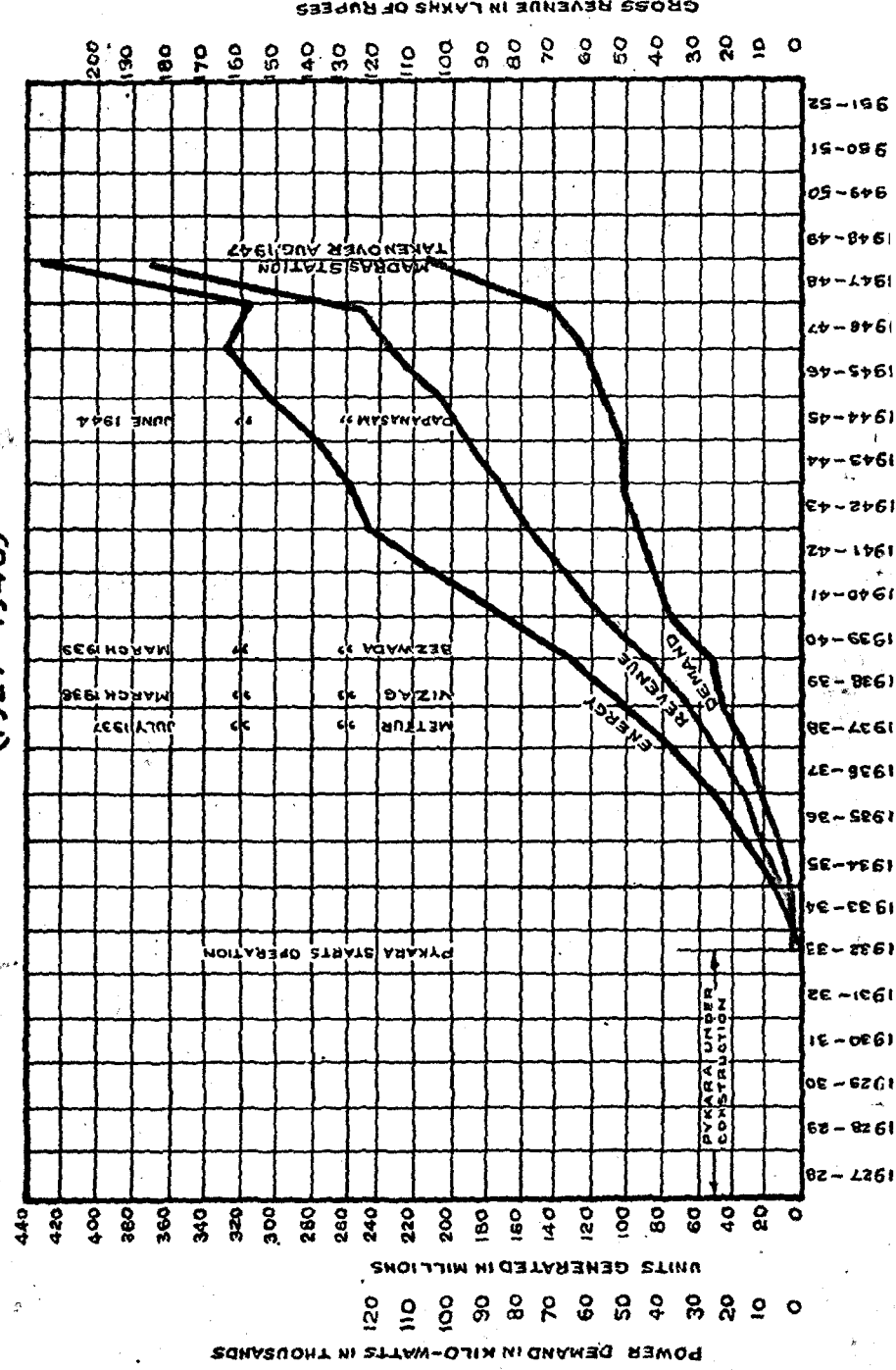
- The same symbols as used for 110, 66, 33 & 22 KV. lines are used for 66/110, 33/66, 22/33, 11/33 and 11/22 KV. lines but actual voltage of the lines is marked on the lines.
- Unimportant 11 & 22 KV. lines are not shown as also licensee's lines.
- This plan is subject to modifications later on to suit unanticipated load trends.

* In blue print copies white is adopted instead of blue.

Reference	Drawn	Checked	GOVT. OF MADRAS ELECTRICITY DEPT	ME G.I.R.9
	K.B.	K.B.		D.I.
Revision of Plan	Traced	Approved		Scale: 1"=6.4 Miles
ME G.I.R.8.	K.B.	ME G.I.R.9.		Date: 10.8.47
	ME G.I.R.9.		THE MADRAS GRID	

Chief Engineer

MADRAS ELECTRICITY DEPT. GROWTH OF POWER DEMAND & REVENUE (1927-1948)



ADMINISTRATION REPORT OF THE ELECTRICITY DEPARTMENT FOR 1947-48.

SECTION I—GENERAL REVIEW.

1. *Introductory.*—This is the twenty-first annual report of the Electricity department covering the year ended 31st March 1948. A brief review of the past history may not be out of place here.

The department was formed in 1927 with Major (later Sir Henry) Howard as Chief Engineer. The first scheme undertaken by the department was the Pykara Hydro-Electric Scheme which was brought to operation in 1933. The next one was the Mettur Hydro-Electric Scheme which began supply in 1937. The Vizagapatam and Bezwada Thermal Schemes soon followed in 1938 and 1939, respectively. The Papanasam Hydro-Electric Scheme was commenced in 1939 but, due to the outbreak of the war, construction work was impeded and it was not until 1944 that the Papanasam Station commenced supply. With the ending of the War a five-year plan for construction of new schemes and extensions was drawn up and approved by the Government and the department entered into a period of considerable expansion activity.

The total capital investment to the end of the year 1947-48 was Rs. 15.42 crores.

Four hundred and thirty-four million units were generated by the department during 1947-48, with the sum of demands totalling 105,630 K.W. The department generated over 99 per cent of all the power produced in the Province in 1947-48 and earned a gross revenue of Rs. 1.87 crores.

A graph showing the growth of energy, demand and revenue, since the commencement of the Department faces this page.

An additional investment of about Rs. 15 crores would be made in completing the five-year plan under execution.

2. *Salient features.*—Salient features in the administration of the department during the year 1947-48 were—

(1) The acquisition of the largest thermal undertaking in the Province, namely, the one at Madras, from the licensee, the Madras Electric Supply Corporation, Limited, on 29th August 1947 on the expiry of the licences granted to the Company.

(2) Expansion of construction activities on several major projects and extensions resulting in an expenditure of Rs. 2.7 crores, the highest recorded so far in any year in this department.

(3) Sanction of the balance of schemes put forward by the department for Post-War Reconstruction was accorded and among the major ones sanctioned this year were—

(a) The Nellore Thermal Scheme estimated to cost Rs. 59.71 lakhs initially rising to Rs. 101 lakhs in ten years;

(b) The West Godavari Distribution Scheme estimated to cost Rs. 29.55 lakhs initially rising to Rs. 36.6 lakhs in five years;

(c) Tanjore-Mayavaram-Chidambaram extensions estimated to cost Rs. 24.74 lakhs initially rising to Rs. 27 lakhs in eight years;

(d) Papanasam-Tinnevely-Kayattar 66 K.V. extensions estimated to cost Rs. 17.67 lakhs initially rising to Rs. 18.17 lakhs in ten years;

(e) Nagamam-Pollachi 66 K.V. extensions estimated to cost Rs. 16.36 lakhs initially rising to Rs. 21 lakhs in eight years;

(f) Advance construction of the Satyamangalam sub-station on the Erode-Moyar 110 K.V. line, at an estimated cost of Rs. 15.7 lakhs;

(g) Mettur Workshop Expansion Scheme at an estimated cost of Rs. 15.266 lakhs;

(h) Acquisition of the Cuddapah electrical undertaking and improvements thereto at an estimated cost of Rs. 7.78 lakhs initially rising to Rs. 8.77 lakhs in three years;

(4) The installation of two—2,500 K.W. transportable power sets at Basin Bridge, Madras, and their initial testing.

(5) The extension of 66 K.V. supply to the Calicut and Cannanore areas from Pykara.

(6) Extension of electric supply to 146 new villages and to 1,793 additional pump-sets during the year.

(7) The gross revenue earned by the department during the year was Rs. 186.7 lakhs registering a rise of nearly 50 per cent over the previous year; this was partly attributable to the acquisition of the Madras undertaking; and

(8) Proposals for the nationalization of all electrical undertakings, including local authority ones, were formulated.

3. *Load development.*—Additions to loads during the year were confined generally to agricultural pump-sets and small industries.

The aggregate of power demands on the Government power systems was 105,630 K.W. and the units generated totalled 434.36 million units as shown below against 71,683 K.W. and 317.65 million units, respectively, last year:—

Name of Government system.	Demand in K.W.	Total generation in millions of units.
Hydro-electric—		
Pykara	32,050	155.90
Mettur	29,700	135.70
Papanasam	15,000	64.62
Thermal—		
Madras	21,900	54.95 (From 29th Aug. 1947 to 31st March 1948).
Vizagapatam	2,500	7.40
Bezwada	3,900	14.00
Cocanada	440	1.46
Kurnool	140	0.33
Total	105,630	434.36

For the Province, figures for power generation from all sources were as follows:—

	Generation in millions of units.
Government—	
Hydro-electric stations	356.22
Thermal stations	78.14
Licencees—	
Madras Electric Supply Corporation (up to 28th August 1947).	28.47
Other licencees' stations	4.45
Total	467.28

The total generation showed an increase of 15 per cent over that of 1946-47. This department was responsible for 93 per cent of the power output in the Province, the Madras Electric Supply Corporation for 6 per cent (up to 28th August 1947) and other licencees for the rest. With the acquisition of the Madras Electric Supply Corporation, generation of electricity in this Province is almost fully nationalized.

4. *Financial results.*—The gross revenue earned by Government undertakings during 1947-48 was Rs. 186.7 lakhs as against Rs. 124.95 lakhs last year, representing an increase of nearly 50 per cent. Details were as follows:—

Name of Government system.	Year of operation.	Total capital outlay. RUPEES IN LAKHS.	Gross revenue. RUPEES IN LAKHS.	Working expenses. RUPEES IN LAKHS.	Net revenue. RUPEES IN LAKHS.
Hydro-electric—					
Pykara	Fifteenth.	379.733			
Mettur	Eleventh ..	281.787	130.71	62.15	68.56
Papanasam	Fourth ..	194.738			
Thermal—					
Madras	First ..	163.210*			
Vizagapatam	Ninth ..	37.671			
Bezwada	Ninth ..	42.570	55.99 †	40.20 †	15.79 †
Cocanada	Eighth ..	6.327			
Kurnool	Second ..	1.215 ‡			
Total		1,107.251	186.70	102.35	84.35

* Tentative subject to modification when the valuation of the Madras Electric Supply Corporation undertaking is finally settled.

† In respect of the Madras Electricity System the figures under gross revenue and working expenses and net revenue relate to the partial year from 29th August 1947 to 31st March 1948.

‡ Tentative as it does not include the purchase price for the undertaking payable to the municipality which is not finally settled yet.

The receipts through the inspectorate amounted to Rs. 14.37 lakhs made up of Rs. 10.57 lakhs from electricity duty, Rs. 0.99 lakh from inspections under the Indian Electricity Act and Rules, and Rs. 2.61 lakhs from penalty for excess consumption of electricity and Rs. 0.20 lakh from royalty for use of Government water for generation of electricity.

5. *Number of consumers.*—The total number of consumers served by the electrical undertakings in this Province, including Government ones, was 186,527 as on 31st March 1948. Of these 175,240 were in the area covered by the Government undertakings—53,565 served directly by the Electricity department and 121,675 by licencees distributing Government power. The remaining 11,287 consumers were served by the self-generating licencees. Details are as under:—

Name of system.	Number of consumers.			Total.
	Served by the Electricity Department.	Served through distributing licencees in Government area.	Served by other licencees.	
Hydro-electric—				
Pykara	10,806	22,705	..	..
Mettur	11,518	59,833	..	..
Papanasam	5,221	28,560	..	..
Thermal—				
Madras	22,411	958	..	..
Vizagapatam	1,561	2,790	..	..
Bezwada	783	7,714	..	..
Cocanada	600	1,115	..	..
Kurnool	665	..	..	..
Total	53,565	121,675	..	175,240
Other licencees	..	..	11,287	11,287
Total				186,527

One hundred and forty-six new villages were connected up to receive electric supply in the course of the year—71 of them by the Government Electricity department and the balance of 75 by licencees. The total number of villages and towns having electric supply at the end of the year

was 1,257. Of these 582 were served directly by the Electricity department, 642 by licensees distributing Government power and the remaining 33 by the other licensees in the Province. Appendix H (1) and (2) gives the names of villages and towns.

6. *Transmission lines and sub-stations.*—The Government transmission and distribution net work included 6,304 miles of lines against 5,296 miles in the previous year, recording an increase of 1,008 miles of which 519 miles accrued through the acquisition of the Madras system and the balance of 489 miles through new construction. Details of lines under high and low tension in each system were as under:—

Name of system.	Number of route miles of lines.	
	H.T.	L.T.
Pykara	1,482	1,139
Mettur	1,419	641
Papanasam	424	141
Andhra	384	155
Madras	137	382
Total	3,846	2,458

E.H.T. and H.T. transformer stations.

System.	66 and 110 K.V.		22 and 33 K.V.	
	Number.	Capacity. K.V.A.	Number.	Capacity. K.V.A.
Pykara	7	76,750	3	2,500
Mettur	14	46,850	10	8,150
Papanasam	5	23,500	3	2,850
Andhra	..	..	8	4,700
Madras	..	..	7	3,600
Total	26	147,100	31	21,850

Not:—Does not include transformers in power-houses.

7. *Agricultural development.*—As in the previous year a large part of the new load connected up during 1947-48 was for agricultural pumping. High priority was given to the execution of schemes covering supply to pump-sets and in spite of the difficulty in obtaining materials work was speeded up and as many agricultural services as possible were given. One thousand one hundred and fifty-eight fresh agricultural services were connected up by the Government Electricity department and 635 by the licensees during the year. The following table gives details of the agricultural services in the different areas:—

Name of the undertaking.	Number of services connected during 1947-48.	Connected load in K.W.	Total number of agricultural services at the end of 1947-48.	Total connected load in K.W. of the agricultural services at the end of 1947-48.
Pykara system	518	2,256	3,803	17,300
Mettur system	455	1,803	1,943	7,821
Papanasam system	90	342	300	1,093
Madras system	..	..	..	..
Vizagapatam system	1	6	13	71
Bezwada system	92	346	282	1,306
Cocanada system	1	4	3	19
Kurnool system	1	2	1	2
	1,158	4,759	6,354	27,612
Licensees distributing Government power.	623	2,694	2,543	11,503
Total	1,781	7,453	8,897	39,115
Other licensees	12	25	40	144
Total in all areas	1,793	7,478	8,937	39,259

In the case of 135 agricultural services in the Mettur and Papanasam areas the lines were completed by the department but the consumers were not ready to take supply due to want of pump-sets and fittings. The Agricultural department was assisting the ryots in obtaining pump-sets and other materials. Every effort was made to obtain more line materials, engage the requisite additional staff and accelerate agricultural load development so essential under the present food shortage conditions.

8. *Firka Development Schemes.*—Electrification of firkas under the scheme of intense rural reconstruction of selected firkas continued to receive special attention in the department. Proposals costing about Rs. 9.6 lakhs were sanctioned during the year bringing the total value of such schemes so far sanctioned to nearly Rs. 20 lakhs.

Execution of the above schemes was given priority over other extension schemes, but much headway could not be made due to want of line materials. Every effort was made to complete the sanctioned schemes early.

A proposal for supplying the Kambla firka in the South Kanara district by installing an oil engine station at Kasaragod at an estimated cost of Rs. 9.77 lakhs initially and rising to Rs. 13.57 lakhs in five years is under the consideration of the Government.

Regarding supply to the firkas in the licensees' areas, reports from the licensees and the Chief Electrical Inspector to Government indicate that the licensees are shy of investing capital on these schemes on account of their poor return and the impending nationalization of licensees' electrical undertakings. Requests to subsidize the entire capital on such schemes, besides assistance in procuring the materials required therefor, were made by the licensees.

9. *Construction activities.*—Construction work was largely expanded during the year and a capital expenditure of Rs. 2.67 crores was incurred on new works and extensions. This was exclusive of Rs. 1.33 crores paid as advance for the Madras undertaking. The outlay constitutes a record for the department in any year, the largest previously incurred being Rs. 1.05 crores in 1938-39.

Considering the handicaps under which works have to be carried out, viz., shortage of steel and cement, shortage in civil engineering technical personnel, delays in delivery of imported plant, delays in transport and lack of petrol, the progress made may be deemed satisfactory.

Work on the following major projects was on during the year:—

- (1) Machkund Hydro-Electric Scheme.
- (2) Vizagapatam Power-House Extension.
- (3) Bezwada-Rajahmundry-Samalkot Extensions.
- (4) Madras Thermal Station Extensions.
- (5) Madras-Mettur Inter-connexion Scheme.
- (6) Ceded Districts Scheme.
- (7) Moyar Hydro-Electric Scheme.
- (8) Pykara III Stage Extensions.
- (9) Papanasam II Stage Extensions.
- (10) Madura Thermal Scheme.

Full reports on the work done on each scheme are given in Section II. Besides, a heavy programme of main and branch line construction and distribution extensions was carried through, resulting in an addition of nearly 500

miles of high tension and low tension lines to the departmental power net work.

10. *Programme for 1948-49.*—Programme for 1948-49 will be as follows :—

(a) Work on all the schemes in paragraph 9 above will continue.

(b) The Nellore Thermal Scheme will be pushed through.

(c) Work on the following major extensions will be in active progress :—

(i) West Godavari.

(ii) Erode-Trichinopoly-Dalmiapuram 66 K.V. 110 K.V.

(iii) Erode-Salem 66 K.V.

(iv) Madura-Rajapalayam-Tenkasi 66 K.V.

(v) Papanasam-Tinnevely-Kayattar.

(vi) Tanjore-Mayavaram-Chidambaram.

(vii) Negamam-Pollachi.

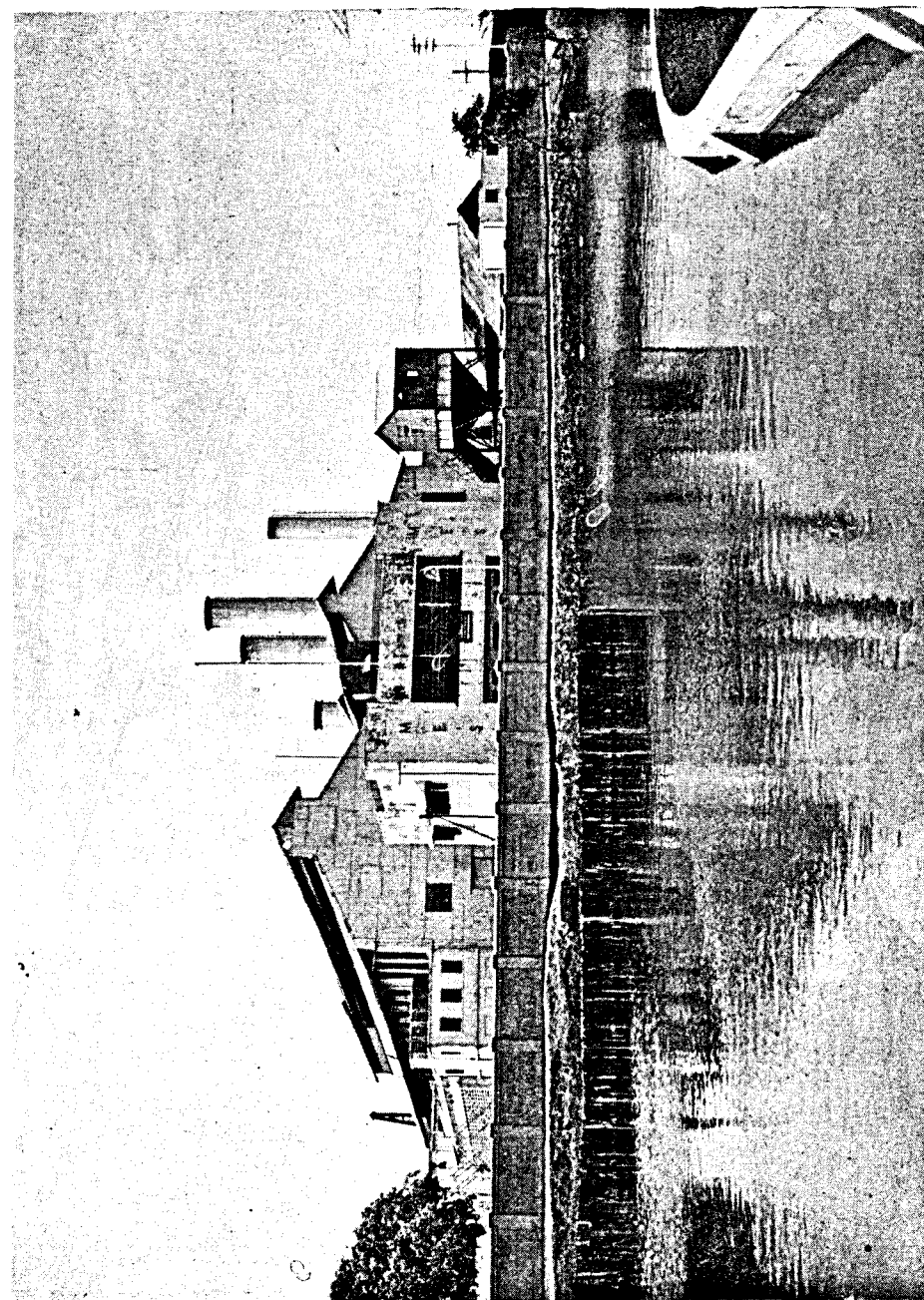
(d) Hindupur and Kollegal will be got ready to receive Mysore power.

(e) Cuddapah Thermal Station will be acquired and improved, also Anantapur undertaking if sanctioned by Government.

Budget for capital expenditure during 1948-49 is Rs. 5.5 crores.

11. *The Madras Electrical Undertaking.*—On the expiry of the licences granted to the Madras Electric Supply Corporation the undertaking was taken over by the department on 29th August 1947 and added to the Operation Branch as a new system under a separate Superintending Engineer. Messrs. Merz and McLellan (India) have been engaged by the Government and the Madras Electric Supply Corporation as common valuers of the assets of the undertaking and pending receipt of their valuation, which is now in progress, a payment of Rs. 1,33,33,333-5-0 was made to the Madras Electric Supply Corporation on 29th August 1947, on account. Almost all the Indian employees and five of the European officers under the Madras Electric Supply Corporation have been taken into Government service on a provisional basis for a period of one year from 29th August 1947, in the first instance, on terms and conditions the same as those under the Madras Electric Supply Corporation. Commercial methods of billing and accounting in vogue under the company management are being continued with minimum modifications required to meet Government audit and budget rules and regulations. Steps to augment the plant capacity have already been taken and work on the Madras Plant Extensions is in progress. The erection of the transportable power sets has been completed, the first set commissioned during the first week of April 1948 and the second one in the first week of June 1948. There has been heavy rush of applications for power supply, and with the commissioning of the transportable power sets a large number of small power loads have been sanctioned to be connected and domestic services are being liberally permitted. Supplies to larger power loads will have to await the erection of one of the 80,000 lb. hour boiler ordered already under the extensions scheme.

12. *Electrical Inspectorate and licensees.*—The year under review continued to be a difficult year to licensees in many ways. The anticipated improvement in the availability of plant and equipment and stores did not materialize nor did prices show any downward trend. The demand for power from the public all over the Province continued to be heavy and it could not be met fully. Restrictions on the supply of electricity were relaxed to the



MADRAS ELECTRICITY SYSTEM, BASIN BRIDGE, POWER-HOUSE

extent possible with the available power and materials. At the close of the year 17 licensees were levying war costs surcharge.

The number of licensed electric supply undertakings at the close of the year was 78, of which 35 were managed by local bodies and 43 by private companies. The decrease in the number was due to the acquisition of the Madras Electric Supply Corporation by Government on the expiry of the Madras Electric Licence, Madras Port Licence and Madras Cantonment Licence and the cancellation of the licence under section 28 for Tiruchendur.

The Hindupur and Kollegal undertakings would be taken over by Government during 1948-49. The acquisition of Cuddapah and Valparai undertakings already sanctioned by Government will be completed. The electrical undertakings at Villivakkam, Alandur, Sembiam, Tiruvottiyur, Bellary, Hospet, Anantapur and Tirupati are also expected to be taken over by Government in 1948-49.

Government approved the acquisition of the Kumbakonam, Mangalore, Okkur, Tinnevely-Tuticorin and Salem-Erode electrical undertakings in 1950-51 on the expiry of the licences granted to them under the Indian Electricity Act and statutory notices to these undertakings under section 7 (4) of the Indian Electricity Act have also been issued by Government. The Ponnani licensee has not yet commenced construction work in his area and the question of revocation of the licence is under consideration of Government.

The East Coast Licensee's works are still under construction. No new licence under the Indian Electricity Act was issued during the year. There was, however, an application from Messrs. Kanara Ceramics, Limited, Kasaragod, for sanction under section 28 to afford supply in the area of the Kasaragod Panchayat Board. The application has been sanctioned.

Accounts of 71 licensees were scrutinized during the year.

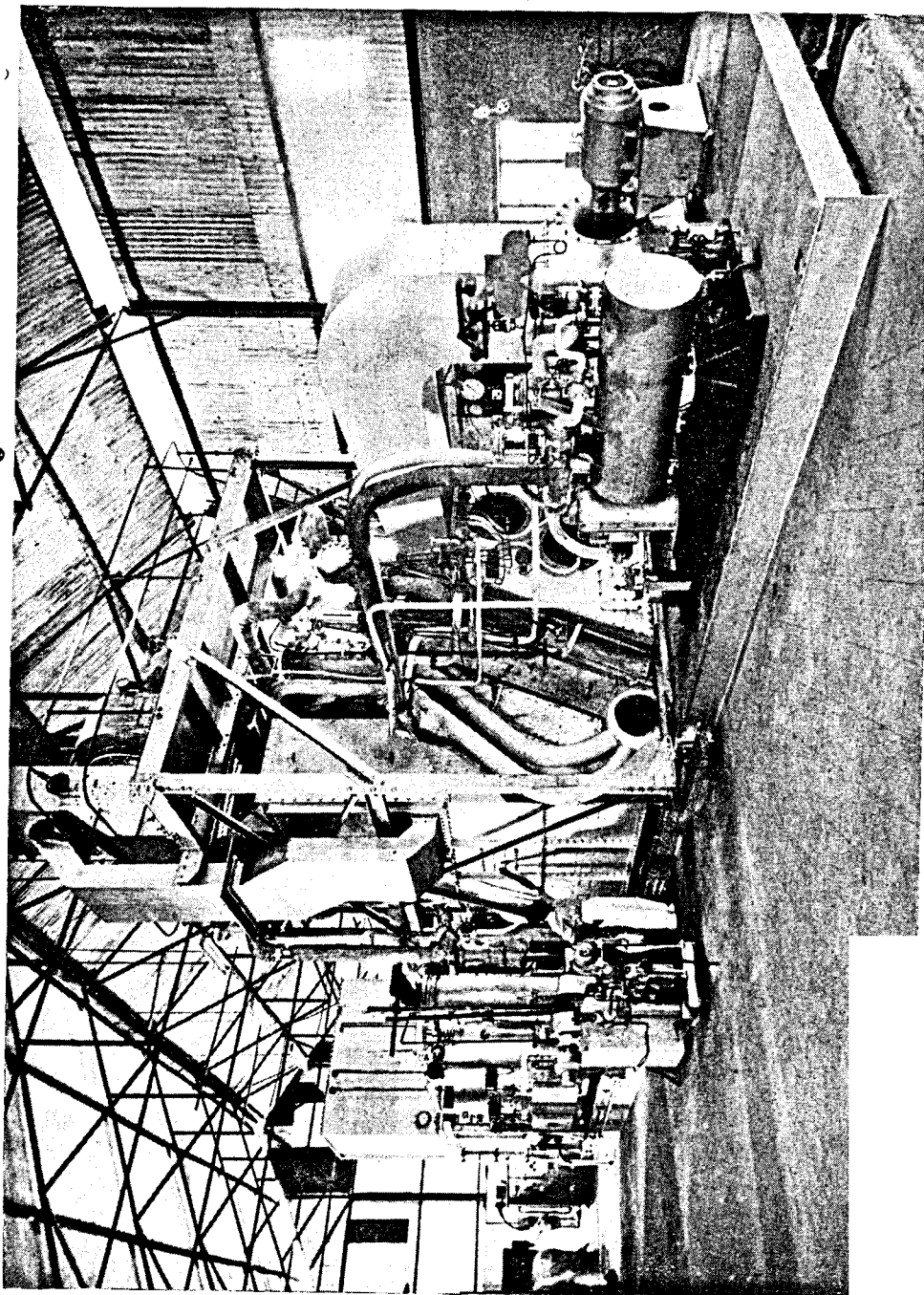
Seven hundred and ninety-nine cinemas were functioning at the end of the year under report.

The total number of electrical accidents, including those on lines owned and operated by Government and one accident in the Power Development Branch was 160 of which 54 were fatal.

The Advisory Board constituted by the Government of India to examine the principles for the control of Public Utility Finance drafted by the Electrical Commissioner have submitted their report and it is now under the consideration of the Government of India.

Proposals submitted to Government for revision of the war costs surcharge orders for licensees' undertakings and Government undertakings were still under the consideration of Government.

13. *Electricity buildings.*—The proposal for the construction of a separate building for the departmental headquarters has been deferred by Government in view apparently of the cost involved under present conditions. The existing unsatisfactory state of accommodation for the offices and the need for a separate building were, however, recognized and the Army Clothing Factory buildings at Mount Road rendered available by the close of the Military Department establishment there, have been allotted to this Department. The buildings require extensive repairs and improvements to render them suitable for Government offices. A portion still under occupation by the Ordnance department is expected to be vacated by the end of June 1948. The offices of the Superintending Engineer, Madras System, Superintending Engineer, General Construction, and Executive Engineer, Electrical and



TRANSPORTABLE POWER STATION AT BASIN BRIDGE

Mechanical (Operating Systems) have moved to these buildings and the movement of the other offices, as soon as the repairs and improvements are completed, is expected to be completed about the end of September 1948. The accommodation problem has thus been solved for the time being, but the Mount Road buildings are by no means suited or convenient for the permanent purposes of the department. It is proposed to raise again the question of a new modern building for the headquarters at an early opportunity.

13-A. *Electricity Department Journal*.—This useful publication is being continued.

14. *Foreign training*.—Sri C. S. Avadhani completed his training under Messrs. English Electric Company and Boving and Company and returned to India at the end of May 1948. Mr. Mohammed Ali Sahib was undergoing training in the English Electric Company's works at the end of the year under review. Sri R. Ramachandran Pillai, deputed for training for a period of two years in the manufacture and assembly of the 15,000 K.W. turbo-alternator set for the Basin Bridge Power Station, commenced his training at the English Electric Company's works at the beginning of 1948.

Messrs. Merz and McLellan, Consulting Engineers for the Madras Plant Extensions, have arranged for the training of a departmental engineer in the manufacture and assembly of the boilers ordered of Messrs. Babcock and Wilcox for the Basin Bridge Power Station. Approval of Government for the deputation of an engineer for a period of two years has been applied for.

In view of the delay in the training of engineers under the Government of India foreign training scheme and the expeditious manner in which this department can itself arrange for such training in view of its contacts with manufacturing firms, Government have been requested to proceed with the training of engineers of this department under a Provincial Government scheme.

15. *Nationalization*.—The nationalization of all electrical undertakings, including those operated by local authorities, has been decided by Government and proposals formulated by the department are under their consideration. With the acquisition of the Madras Electric Supply Corporation it may be taken that nationalization of generation has been almost completed. Notices of purchase have already been given to the Kumbakonam, Salem-Erode, Tinnevely-Tuticorin, Mangalore and Okkur licensees. Proposals for the acquisition of the Anantapur, Hospet, Villivakkam, Sembium, Tiruvottiyur, Alandur and Tirumalai-Tirupati undertakings are under the consideration of Government. Suitable administrative machinery for taking over and operating distribution undertakings taken over under the nationalization scheme has to be created.

16. *Electricity (Supply) Bill, 1948*.—This Bill of the Government of India was reported on by the Select Committee appointed by the Constituent Assembly. Comments on the Select Committee's report were submitted to Government.

17. *Power demand*.—The utility of electricity is being increasingly recognized by the domestic consumer, agriculturist and the industrialist, and the demand on the department for power supply is consequently ever increasing. The present installed capacity of the power stations in this Province will be doubled by 1951-52 on completion of the schemes already

taken up and power forecasts indicate that the available capacity in 1951-52 will just be sufficient to meet the demand then. The execution of the sanctioned schemes is being speeded to the extent possible, but unless new projects are taken up in the near future we may be faced with power shortage in the coming years. The development of the Tungabhadra, Kundah, Mekadatu and Pericard Projects is therefore important. Investigations are being made on the practicability of mining the lignite deposits in South Arcot district and if the results are satisfactory, the installation of the large thermal station contemplated there will have to be given urgent consideration. In view of the periodical anxiety caused by water shortage conditions in the hydro-area it is essential to increase the thermal plant capacity in the Province as a standby to draw upon in emergencies. The question of installing an additional set of 8,000 K.W. capacity in the Madura Thermal Station and one of 15,000 K.W. at Basin Bridge Power Station is already under active consideration.

18. *Investigations*.—The Special Officer for Hydro-Electric Surveys engaged from July 1947 for recommending new schemes for development has inspected several power sites and reported on some of them. Further investigations have been started and are continuing.

19. *Organization*.—The organization during 1947-48 was almost the same as that in the previous year. On the acquisition of the Madras Electric Supply Corporation Undertaking in August 1947 the special circle formed in connection with the acquisition was closed and an Operating System in charge of a Superintending Engineer created for the administration of the newly formed Madras Electricity System. The Superintending Engineer, Madras System, was also placed in charge of the acquisition of the Cuddapah electrical undertaking and improvements thereto.

Sir Henry Howard, Consulting Engineer to Government, proceeded on leave from 15th April 1948 until which date his contract was extended.

Living conditions continued to be difficult and more so with the lifting of controls and the shooting up of prices. Threats of strike from the work-charged establishment of the Operation and Power Development branches were received. Strikes of the work-charged establishment of operation branch did not materialise. Government passed orders provincializing the work-charged establishment engaged on Operation and Maintenance work, for a period of two years from 1st January 1948 and framed the rules therefor. There were some strikes by the work-charged staff in the Power Development branch but these were settled by negotiation and liberalization of the service conditions where necessary. The provincialization of the work-charged establishment engaged on construction works was under consideration.

20. *Administration*.—Proposals for the further reorganization of the Department referred to in the last report, were under the consideration of Government. These included the creation of a second post of General Superintendent, Operating Systems. The work of this officer was already heavy and the addition of the Madras System resulted in considerable strain. Relief is urgently required and it is hoped that the second General Superintendent, Operating Systems, will be sanctioned before long. The creation of a division for commercial and construction work was sanctioned. The creation of another division is under consideration. If the thousands of applications on hand are to receive adequate attention early sanction of another division is essential. The reorganization of the Accounts Branch on

modern commercial lines is being drawn up by the Chief Controller of Accounts and will be submitted to Government shortly. A draft bill for the nationalization of electrical undertakings has been submitted to Government. If the scheme is to be a success, the Secretariat procedure in respect of the administration of his Public Utility department has to be radically changed to accord more with commercial standards and if this is not feasible the formation of a semi-autonomous Electricity Board appears the only solution.

Detailed report on the activities of the different branches of the Department is given in Section II.

SECTION II—DETAILED REPORT.

POWER DEVELOPMENT BRANCH.

21. *General.*—The activities of the Power Development Branch continued to expand despite handicaps on account of restrictions imposed on transport of materials by rail, restrictions in issue of petrol, delay in obtaining machinery from abroad and acquisition of materials from army surplus stores, shortage of cement and steel, and limited availability of civil engineering staff. The implementation of the programme for 1948-49 is subject to the availability of sufficient civil engineers, materials and transport facilities. The requirements of civil engineering staff are met from the Public Works Department and it is hoped that the requisite staff would be allotted by that Department.

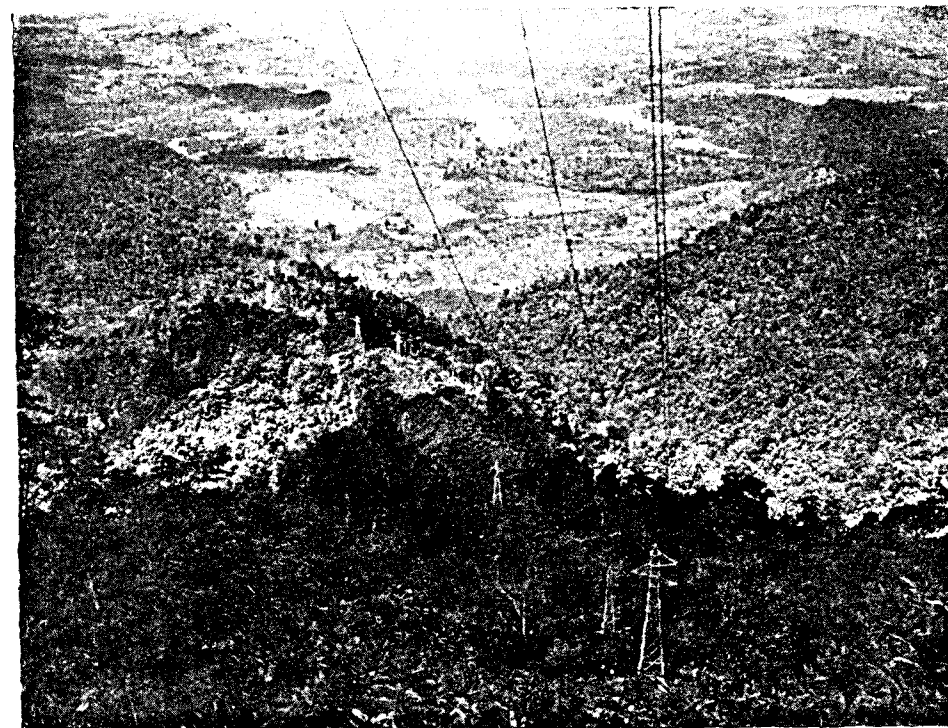
The following works were completed and handed over to Operation in the year :—

- (i) Kuthumunda-Cannanore 66 K.V. transmission line.
- (ii) Madura-Koilpatti 66 K.V. second circuit line.

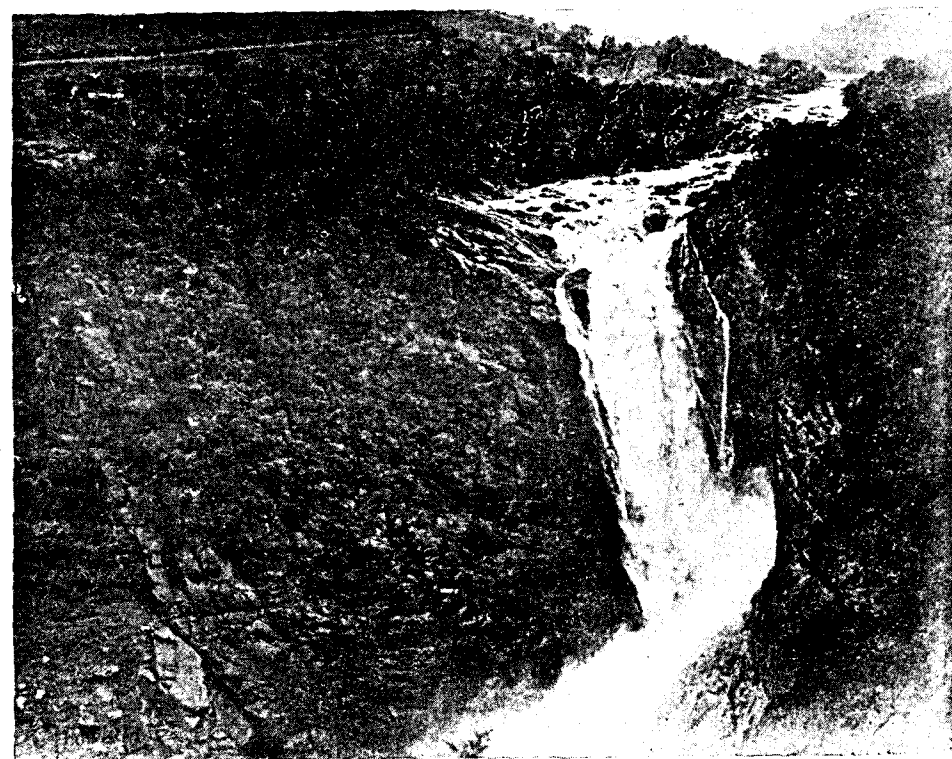
22. *Schemes in progress.*—The following major construction works which were sanctioned in previous years were in progress :—

- (1) Machkund Hydro-Electric Scheme.
- (2) Bezwada-Rajahmundry-Samalkot Extensions.
- (3) Vizagapatam Power-house Extensions.
- (4) Moyar Hydro-Electric Scheme.
- (5) Pykara Plant Extensions III stage.
- (6) Papanasam II Stage Extensions.
- (7) Madura Thermal Scheme.
- (8) Ceded Districts Scheme.
- (9) Madras-Mettur Inter-connection Scheme.
- (10) Conjeevaram-Arkonam Extensions.
- (11) Erode-Trichinopoly-Dalmiapuram Extensions.
- (12) Erode-Salem line.
- (13) Madura-Tirumangalam-Rajapalayam-Tenkasi Extensions.

(1) *Machkund Hydro-Electric Scheme.*—This is a joint enterprise of the Madras and Orissa Provinces, sanctioned in April 1946. The work was actually commenced only in September 1946. The scheme when completed would supply power to the areas now served by the Bezwada and Vizagapatam Thermal Stations, as also to new load centres in the Andhra districts. In advance of this main scheme, the capacity of the Bezwada



WEST COAST 66 KV TOWER LINE ERECTED DEPARTMENTALLY



MACHKUND HYDRO-ELECTRIC SCHEME—DUDUMA FALLS

Thermal Station would be increased by about 6,000 K.W. by the installation of 2 Nos. 3,000 K.W. sets and necessary boilers, etc., and a H.T. transmission line from the Bezwada Power-house to Rajahmundry and Samalkot was under construction to cater to the immediate power demands en route. The capacity of the Vizagapatam Power-house would also be increased by the installation of additional turbo-sets and boilers. Ultimately, all these would be connected up to the Machkund Power-house by suitable transmission line thus forming the Andhra Power Grid.

Demarcation of boundary for acquisition of land required for the project was completed and survey of villages for land acquisition was in progress. Construction of temporary hutments was completed in all respects and electrification of quarters was in hand. Construction of regular camp buildings was in progress. Works on water-supply, construction power-house, anti-malarial measures foundation exploration in Diversion Dam, exploration of soil along the Flume Channel, etc., were in progress.

A 22 K.W. set for initial construction power and camp was installed and power-supply given. For the full needs of construction power, one number 170 K.W. set and 1 No. 345 K.W. set have already been received and receipt of 2 more sets of 170 K.W. on order is awaited. The erection of the construction power-house was in progress. The survey of the transmission line from Vizagapatam to Rajahmundry was completed and that from Machkund to Vizagapatam was in progress.

Specifications were issued for penstock, haulage track, tunnel and surge shaft for the Scheme.

(2) *Bezwada-Rajahmundry-Samalkot Extensions.*—Major portion of the land acquisition proceedings and construction of sub-station quarters were completed. The foundation work for towers for Godavari river crossing and the erection work of the 110 K.V. line from Bezwada to Rajahmundry by the contractors were in progress. Two numbers 3,000 K.V.A. and 2 numbers 5,000 K.V.A. transformers for Bezwada Thermal Station and Hydro Station respectively were received. The construction of quarters in different sub-stations were in various stages of progress. Contract for the construction of foundations for the Power-house building has been let and work would be begun shortly. Contracts were also let for the additional switchgear at Bezwada Power-house and for the sub-station equipment. Specification was issued for the structural steel work for the Bezwada Power-house Extensions. The turbo alternators and boilers ordered for the station are expected to be received during 1948-49.

(3) *Vizagapatam Power-house Extensions.*—The work is being carried out departmentally. Most of the pressure piles for boiler foundation were driven and a portion of the raft with ash-pit extension was completed. A portion of the precast piles was being cast at site. The boiler is already at site and the additional turbo alternator is expected to be received in the middle of 1948.

(4) *The Moyar Hydro-Electric Scheme.*—The Moyar Hydro-Electric Scheme is intended to meet as early as possible the rapid increase in power demand in the area at present served by the Pykara System and supplement supplies in the Mettur System. The Scheme envisages installation of three generating sets of capacity 12,500 K.W. each at Moyar and the construction of a 110 K.V. Line from Pykara to Erode via Moyar.

Camp buildings at Masinigudi and Moyar were completed and the quarters were occupied during the year. Some more additional buildings

found necessary were under construction. Works on flumes, Maravakandi Dam, Forebay, Headworks, grading penstock, etc., were in progress. Most of the construction equipment was received at site and erected. The circle office was shifted to Moyar camp during the year. Orders were placed for the winch for the haulage track, the gates for Maravakandi Dam, generating sets, transformers crane, valves and meters for penstock, etc., and they are expected to be received in about a year.

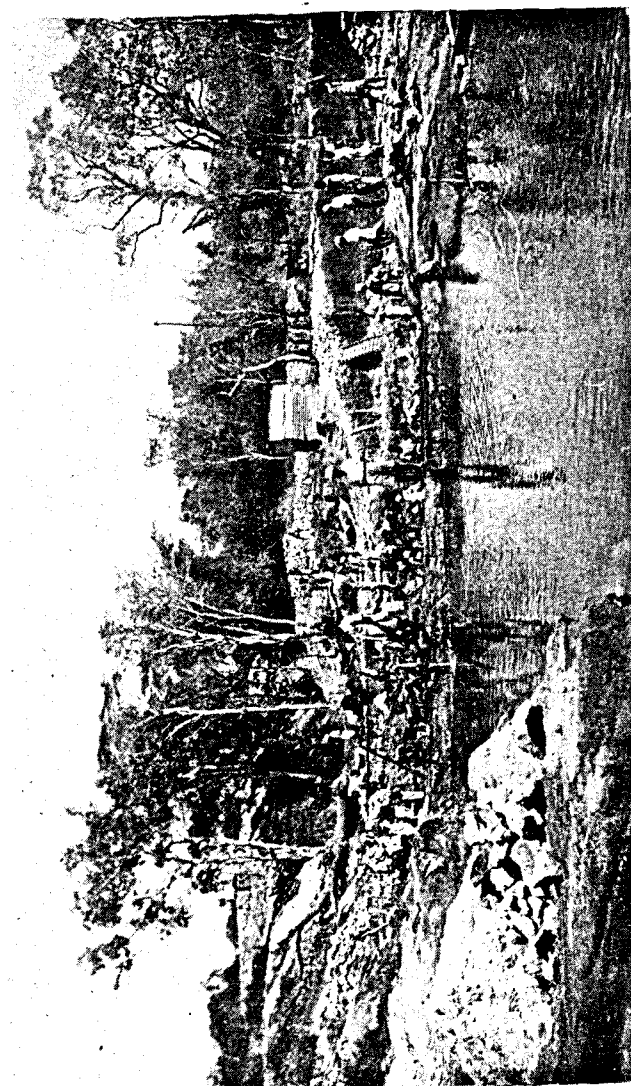
Messrs. Indian Hume Pipe Company, contractors for pipe line, completed erection of their factory and will be starting fabrication as soon as sufficient steel is received at site. Considerable difficulty is being experienced in getting steel deliveries for the penstocks. Contract was awarded for structural steel work for the Moyar Power-house. The survey of the Pykara-Moyar-Erode 110 K.V. line was completed. The line erection contractors have started their work. Supply of towers required for the line was almost completed. Construction of staff quarters at Erode sub-station was in progress.

(5) *Pykara Plant Extensions III Stage—Pykara Dam.*—Construction of most of the camp buildings was completed and the quarters occupied. The construction of coffer dam was almost completed and the excavation work on Dam was in progress. Two of the crushers were erected, at site and put into commission. Erection of mixers, air compressors, etc., was taken up. A workshop to serve the needs of construction was erected. The fourth penstock was ordered from Messrs. Ferrums of Poland who supplied the third penstock. Their engineers visited Pykara early in 1948 to finalise the programme of erection. Specifications for the generating plant, transformers and switchgear were issued. Design for the spillway gates was finalised and tenders for their supply would be called for shortly. Specification for the sub-station equipment at Satyamangalam was issued.

(6) *Papanasam II Stage.*—The masonry of the surplus weir of the Tambaraparni Reservoir and piers for the surplus gates were completed. The Re-inforced Cement Concrete Deck bridge over the spillway was taken up and completed. All the gate parts were received and erection of two out of the total six gates was completed and the erection work of the remaining four gates was in various stages of progress. The manufacture of low pressure pipe line and penstock pipes of Messrs. Indian Hume Pipe was in progress. All preliminaries for starting work on the foundation of generating sets for IV Unit were completed. The erection of penstock pipes in the fourth penstock was almost done. Erection of low pressure pipe line has to be taken up. The fourth water turbine and alternator for the station is expected to be received in September 1948. The fourth 7,250 K.V.A. transformer already received was under erection.

(7) *Madura Thermal Scheme.*—Construction of quarters at Samayanallur was completed. Arrangements for water-supply and drainage were being made. Pile driving for power-house foundation was completed. The 4,000 K.W. turbo-generator and boiler parts from All-India Reserve Pool were being received at site. Construction of the 33 K.V. tie line connecting the Hydro Station at Pasumalai and the Thermal Station at Samayanallur was in progress. The laying of lay bye line at Samayanallur Railway Station was completed by the Railway authorities and the station opened for full wagon loads. The work on the laying of siding to power-house was in progress.

(8) *Ceded Districts Scheme.*—The survey work for Transmission lines was completed and the contractors started excavation for the foundations



MOYAR HYDRO-ELECTRIC SCHEME—MARAVAKANDI DAM SITE

Tungabhadra
 and stub setting in the Sokke to ~~Dam~~ site and Dam site to Bellary sections. Copper conductors ordered for the line were received. Sample towers of different types supplied by the contractors were sent to Mettur Dam for testing. Construction of the telephone line by the Posts and Telegraphs Department is being arranged, and survey of this line in the reach between Mysore border and Dam site was completed. Most of the land required for the various sub-stations was acquired and for the rest, acquisition proceedings were in progress. The contract for the supply and erection of switchgear at all sub-stations was awarded to Messrs. Crompton Engineering Company. Power transformers ordered through the Director-General, India Store Department, are expected before the end of 1948. The line from Mysore border to Tungabhadra Dam is expected to be completed before 1st January 1949 so as to be ready for taking power from Mysore from 1st January 1949 as per terms of the power agreement with them.

Investigations were made for the location of forebay and penstock for the canal power-station of the Tungabhadra Scheme near Kamalapuram.

(9) *The Madras-Mettur Inter-connection Scheme.*—Stub setting and erection of the 110 K.V. towers for the major portion of the route were completed. Work on foundation of towers from Palar and Vegavathi river crossing is yet to be taken up. The design for special foundation at these locations has been finalised and the work would be taken up shortly. The route of Villivakkam, Basin Bridge line is being finalised. Power transformers ordered for the various sub-stations are awaited. Construction of staff quarters at Mambakkam and Nemmelli was completed and similar work was in various stages of progress at Singarapet, Nagapadi, Polur and Conjeeveram sub-stations. Contract for supply and erection of sub-station plant and equipment was awarded and delivery is expected in March 1950.

(10) *Conjeeveram-Arkonam Extensions.*—The route profile and tower schedules for the 33 K.V. feeder line were finalised. Layouts for sub-station structures and quarters were approved and land acquisition was in progress. Contracts for power transformers and sub-station equipment were awarded.

(11) *Erode-Trichinopoly-Dalmiapuram Extensions.*—These extensions were sanctioned to meet the increasing demand for power in the area more particularly the extensions to the Dalmia Cement Factory. Survey of the line was in progress. Land acquisition proposals for Trichinopoly and Dalmianagar sub-stations were being finalised. Specifications for the transformer lines and sub-stations equipment were issued. Orders for power transformers were placed.

(12) *Erode-Salem Extensions.*—Survey of the line was completed up to 27 miles and land acquisition proposals for sub-station at Salem were being finalised. Specifications for the transformer line and sub-station equipment were issued. Orders for power transformers were placed.

(13) *Madura-Tirumangalam-Rajapalayam-Tenkasi 66 K.V. line.*—The work was sanctioned in May 1947 as part of the II stage development of the Papanasam Hydro-Thermal Electric Project. It is intended to cater to the power needs around Tenkasi and Rajapalayam for agricultural and industrial purposes. A large area is involved and considerable agricultural supplies are expected in this area.

23. *New sanctioned schemes.*—The following schemes were sanctioned during the year :—

(a) Nellore Thermal Scheme.

(b) Tanjore-Mayavaram-Chidambaram Extensions.

- (c) Papanasam-Tinnevelly-Kayattar 66 K.V. Extensions.
- (d) Pollachi-Negamam 66 K.V. Extensions.
- (e) Advance construction of the Satyamangalam sub-station.

(a) *Nellore Thermal Scheme*.—The scheme sanctioned recently by Government is intended to cater to the power needs of the important industrial, railway and other concerns in the Nellore district. A thermal power station with two 2,500 K.W. sets is contemplated with immediate line extension to Gudur and later to other places. As the site originally selected for the power station was considered unsuitable for the provision of a railway siding, alternative sites were examined and a convenient one near Padugapadu has been finalised.

The generating sets had already been ordered and parts were received and stored at Madras. Specification for the transformers for the scheme were issued.

(b) *Tanjore-Mayavaram-Chidambaram Extensions*.—This scheme sanctioned during the year is intended to cater to new and special loads expected in Tanjore and South Arcot districts and to ensure satisfactory voltage regulation in these parts of the Mettur Hydro-Electric System. Specification for the transmission line was issued. The work will be taken up in 1948-49.

(c) *Papanasam-Tinnevelly-Kayattar 66 K.V. Extensions*.—This line is intended mainly to cater to Cement and Chemical factories contemplated in the Tinnevelly area. Specification for the transmission line was issued.

(d) & (e) *Pollachi-Negamam Extensions and Satyamangalam sub-station*.—Work will be taken up in 1948-49.

24. *Programme for 1948-49*.—The progress of works on the schemes will be generally as follows:—

(1) *Machkund Hydro-Electric Scheme*.—Construction of regular camps would be in progress and most of the buildings would be completed and occupied. The Superintending Engineer's office would have moved to site. Water-supply arrangement to camps would have been completed. Formation of the road from Lambadaput to Surge tank would be completed. The Construction Power-house would have been completed and 3 numbers 170 K.W. set and 1 number 345 K.W. set would have been erected. The distribution lines would be completed. Cofferdams for the Diversion weir would have been completed and excavation of foundation taken up. Excavation of flume channel would be taken up and construction of the tunnel would have been commenced. Preliminary works on the tunnel pond dam would be in progress. Exploration would be made for the Power-house foundations, etc. Anti-malarial operations would be continued.

(2) *Bezwada-Rajahmundry-Samalkot Extensions*.—Subject to timely deliveries of transmission line and sub-station materials as also other controlled articles like cement and steel, it is hoped to complete the transmission line between Rajahmundry and Bezwada before the end of the year. Work on Godavari crossing is expected to be completed by June 1949. Construction of the low-level cooling pond in Bezwada Power-house will be completed. Pile foundations will be finished and construction of the power-house will be in progress. The turbo sets and boilers are expected to be received during the year.

(3) *Vizagapatam Power-house Extensions*.—The work is expected to be completed in the year.

(4) *Moyar Hydro-Electric Scheme*.—Most of the Civil Works on the flume channel, Maravakani Dam and the Moyar forebay are expected to be completed by the end of this year. The structure for anchors and the piers for penstock are expected to be completed and erection would have been taken up in some sections, provided steel deliveries are satisfactory. Construction of Power-house would have just started. One of the three generating sets is expected to be received before the end of this year. Erection work on Pykara-Moyar-Erode line by the contractor and the construction of sub-station buildings will be in progress. The erection of the telephone line to be done by the Posts and Telegraphs Department is expected to be completed.

(5) *Pykara Plant Extensions III Stage*.—(a) *Pykara Dam*.—Excavation will be in full swing and masonry work in the right flank of the river will be started during the dry season.

(b) *Pipe-line and Power-house*.—Works on the clearance and grading of the penstock slope for taking the fourth pipe-line will be in progress. Penstock pipes will start arriving at site before the end of the year. Preliminary works will be in progress at Power-house. Orders for the supply of generators and transformers will be placed.

(6) *Papanasam II Stage*.—Work on the erection of the surplus gates, manufacture and erection of the low pressure pipe and surge tank, and the construction of some additional quarters are expected to be completed in the year. The turbine parts for the fourth unit are expected to be received by the close of the year. The erection of the fourth transformer will be completed.

(7) *Madura Thermal Scheme*.—All works connected with the first stage, i.e., installation of the 4,000 K.W. set from the Reserve Pool and other equipment are expected to be nearly completed by the end of the year. Orders for the supply of the 8,000 K.W. set and connected equipment will be placed during the year.

(8) *The Ceded Districts Scheme*.—The line between Mysore border to Hospet is expected to be completed and power obtained from Mysore Government by the end of the year. The construction of the line from Hospet to Bellary and the 33 K.V. and 11 K.V. line beyond Bellary will be in progress. Proposals for first and second stage development of Tungabhadra Hydro-Electric Project will be finalised.

(9) *The Madras-Mettur Inter-connection Scheme*.—The construction of the line is expected to be completed and the erection of the sub-stations will be in progress.

(10) *Madura-Tirumangalam-Rajapatayam, Erode-Tiruchirappalli-Dalmeipuram, Erode-Salem, Tanjore-Mayavaram-Chidambaram, Papanasam-Kayattar-Tinnevelly and Negamam-Pollachi Extensions*.—The survey and other preliminary works will be completed and contracts for the supply and erection of the lines will be awarded and a start made on the erection of the lines.

(11) *Nellore Thermal Scheme*.—The site for Power-house will be fixed and construction of camp buildings will be completed. The construction of the Power-house will be in progress. The generating sets now stored at Madras are expected to be transported to site and the erection of the sets and of transmission lines will be in progress.

25. *Investigations—Sileru Scheme*.—The investigation of the scheme which has been deferred due to the dearth of Civil Engineering staff is expected to be taken up during 1948-49.

and get them in complete before doing final
arrangement for the same for supply of electricity

See page 15 for details
 Power sites in South Kanara.—The investigation has been deferred in view of the likelihood of the area getting power from Jog, negotiations regarding which are proceeding with Mysore Government.

26. *Accidents.*—There was one electrical accident in the Moyar Circle in which, due to non-compliance with safety rules, a departmental employee sustained a non-fatal accident. There were 21 non-electrical accidents, mostly to coolies—3 in the Machkund Circle, 11 in Moyar Circle and 7 in the General Construction Circle. The total compensation paid was about Rs. 4,400. All the accidents except one were of a minor nature causing temporary injury. The one serious case, in which the compensation paid was Rs. 4,200, resulted in loss of both eyes due to misfire during charging a blast hole.

27. *Organization.*—The Branch continued to be in charge of all major constructions, civil and electrical. With new schemes being sanctioned and taken up for execution, the office of the General Superintendent, Power Development, was further enlarged. There were three circles attached to this branch with 13 divisions—five under Superintending Engineer, General Construction Circle, three under Superintending Engineer, Moyar, and five under Superintending Engineer, Machkund.

A fourth circle is expected to be formed in the course of 1948-49 with headquarters at Bezwada to be in charge of some of the works now under Superintending Engineer, Machkund, and Superintending Engineer, General Construction Circle. The difficulty in obtaining adequate number of Civil Engineers, particularly Supervisors, for the several construction works continued throughout the year and commencement of works on new schemes and progress on schemes under execution were seriously handicapped by dearth of civil engineering staff and delay in obtaining materials locally and from abroad.

HYDRO-ELECTRIC SURVEYS AND INVESTIGATIONS BRANCH.

28. *Investigations and surveys.*—The hydro-metric subdivision was revived in July 1947 for bringing under hydro-metric observations more basins as a pre-requisite to further investigations and power development. A second subdivision was formed in March 1948 for conducting preliminary investigations of some schemes. During the year under review, the following schemes were examined by the Special Officer for Hydro-Electric Surveys:—

(1) *Kundah Hydro-Electric Scheme.*—A high-head scheme of great promise. Investigation is on.

(2) *Cauvery Hydro-Electric Scheme.*—Low head schemes on the Cauvery river were reconnoitered.

(3) *Kumbar Hydro-Electric Scheme, Palnis.*—The old investigations were reviewed and fresh surveys are being made.

(4) *Cholapuzha Hydro-Electric Scheme, Malabar.*—The original proposals for this scheme prepared in 1937 were re-examined.

(5) *Lammasinghi Hydro-Electric Scheme, Vizagapatam.*—Proposals for further gauging have been submitted.

(6) *Porandalar and Thevankariar Hydro-Electric Schemes, Palnis.*—These two new basins were reconnoitered and preliminary studies made.

(7) *Upper Moyar and Kedarihalla Hydro-Electric Schemes, Nilgiris.*—These two schemes were reconnoitered. Gaugings and preliminary survey work will be taken up as soon as staff is available.

(8) *Kolkombe, Coonoor-Kateri and Kutaharahalla Schemes.*—These were reconnoitered. Detailed study will have to be taken up after completing the investigations of the Kundah Scheme.

(9) *Punnapuzha Scheme, Malabar.*—Preliminary studies indicated feasibility of a development of 30,000 K.W. continuous. Further investigations are necessary.

(10) *Barapole Hydro-Electric Scheme, Coorg.*—Revised estimate for the installation of rainfall and riverflow gauges was forwarded to the Coorg Administration for acceptance.

(11) *Pericard Scheme.*—The conference with the Travancore Government has not taken place yet.

(12) *Lower Bhavani, Malampuzha, Palar and South Pennar Schemes.*—These irrigation-cum-hydro-electric schemes were examined.

Preliminary works were completed for the installation of rainfall stations and construction of measuring weirs in Porandalar and Thevankariar basins in Palnis, Kundah and Bhavani basins in Nilgiris and Punnapuzha in Malabar. Rainfall and riverflow observations were continued and statistics collected.

TECHNICAL BRANCH.

29. *Technical branch.*—This branch, consisting of three Electrical and Mechanical and one Civil and Hydraulic Divisions, continued to be very busy with the preparation of reports and estimates for new schemes and extensions, post-war schemes, issue of specifications and tender sets, placing of contracts for sanctioned works, correspondence with the contractors, Director-General of Industries and Supplies, Director-General of Disposals, India Supply Mission, Washington, Director-General, India Store Department, London, Electrical Commissioner with the Government of India, Iron and Steel Controller, other Government Departments, Railway and Telegraph authorities, Messrs. Merz and McLellan (India) in regard to the Madras Plant Extensions, and in dealing with the operation and maintenance problems of all the Operating systems.

Proposals and analysis of tenders for a major portion of the machinery and plant connected with extensions to Basin Bridge Power Station were scrutinized, commented upon or approved, and contracts awarded. Electrical installation estimates and tenders received from the Electrical Engineer (General) were scrutinized and technical sanction accorded where necessary. Orders were placed for spares, transformers, line materials required for operation and maintenance of power systems and extensions. Specifications, estimates, etc., in respect of civil works of the sanctioned schemes, buildings, bridges, weirs, tunnels, etc., and scrutiny of tenders connected therewith were done by the Civil and Hydraulic Division.

The following are the more important of the schemes for which reports and estimates were prepared:—

Nellore Thermal Scheme (Revised).

Satyamangalam Sub-station.

Thermal Station at Tadpatri.

Thermal Station at Kasaragod.

Acquisition of the Proddatur, Ongole, Cuddapah and Anantapur undertakings.

Report on extension of supply to Mangalore, Udipi and Coondapoor from Jog Power-house was finalized and estimates prepared. Two hundred and

fifty extension estimates in Pykara, Mettur, Papanasam, Andhra and Madras Systems, of a total estimated cost of Rs. 81.1 lakhs were scrutinized.

The following were the more important specifications issued during the year :—

Generating plant, transformers and switchgear for Pykara Plant Extensions.

Erode-Salem and Erode-Tiruchirappalli 110 K.V. transmission lines.

Tiruchirappalli-Dalmiapuram, Tanjore-Mayavaram and Papanasam-Tirunelveli-Kayattar 66 K.V. transmission lines.

Telephone equipments for post-war schemes.

Sub-station equipment relating to Erode-Salem, Erode-Tiruchirappalli and Satyamangalam Extensions.

Transformers for Nellore Thermal Scheme.

Additional switchgear at Vijayavada Power-house.

Penstock, haulage track, tunnel and surge shaft for Machkund Scheme.

Structural steel works for Moyar Power-house and Vijayavada Power-house Extensions.

Discharge pipes and controls at Pykara Dam.

The following contracts were awarded during the year :—

Telephone equipment for post-war schemes.

Power transformers for Chingleput-Arkonam Extensions, West Coast Extensions, Erode-Salem and Erode-Tiruchirappalli-Dalmiapuram Extensions.

Sub-station equipment for Madras-Mettur Inter-connection Scheme, Vijayavada-Rajahmundry-Samalkot Extensions, Ceded Districts Scheme, Kancheepuram-Arkonam Extensions and West Coast Extensions.

Most of the plant and equipment for Basin Bridge Power-house Extensions.

Additional switchgear at Vijayavada Power-house.

Special foundations for Godavari River Crossing towers.

Gates for Maravakandi Dam, flume, forebay, haulage winches, valves and meters for penstock, crane, and structural steel for power-house relating to Moyar Scheme.

Discharge pipes and controls at Pykara Dam, fourth penstock, valves meters, etc., for penstock and discharge valves at Pykara Dam relating to Pykara Plant III Stage Extensions.

Materials for operation and maintenance and for small extensions to the value of about Rs. 218 lakhs were ordered. Estimates for thirteen extensions relating to Firka Development Schemes costing Rs. 14.35 lakhs were scrutinized. A number of diesel generating sets were ordered.

Preliminary study was made of the Hydro-Electric Scheme under Ramapadasagar Project and a report with drawings and estimates covering the following aspects was prepared :—

(a) Layout of the Hydro-Electric Power Station.

(b) Possible power output, size and number of generating units to be installed.

(c) Load survey based on present trends of load development.

(d) Scheme estimates.

Preliminary study of the Hydro-Electric Scheme under the Tungabhadra Project was made and a report on the possible power output, number and size of generating units to be installed, size of distribution pipe to be embedded in the dam, a tentative layout of the power-station and a specification for pipes, gates and trash racks were prepared.

Study was also made of the Periyar-Vaigai Reservoir Scheme.

The stock verification work in general charge of a Stores Superintendent was continued under the administrative control of this Branch. The Stores Superintendent was also attending to placing of indents on the Disposals Directorate for war surplus materials.

OPERATING SYSTEMS BRANCH.

30. *General.*—The operation and maintenance of the hydro and thermal systems was generally satisfactory. With the acquisition of the Madras Electric Supply Corporation undertaking a new Operating System—The Madras Electricity System—was added to this Branch. Increase in demand on the power systems and in revenue earned was recorded. All restrictions were relaxed in the hydro area but want of line materials limited the number of new connections. Besides the north-east monsoon was a failure and water conditions gave anxiety about the end of 1947 and it was feared that restrictions might have to be imposed. Fortunately due to some rains early in 1948 the Department was able to manage without imposing restrictions. The unfortunate textile strike in the Coimbatore area also helped. It is hoped that with the onset of the south-west monsoon about the middle of June 1948 water conditions will sufficiently improve not to cause further anxiety. The water position in the different systems is being regularly watched and reviewed and suitable inter-system transfers of load arranged so that the maximum benefit is obtained. Rationing of electricity continued in the Madras, Vijayavada, Vizagapatam and Kakinada Systems. The war costs surcharge of 10 per cent in the hydro area and 20 per cent in the thermal area continued during 1947-48. In the Madras System area the war costs surcharge was not operative. Its introduction was under consideration. Besides the war costs surcharge, a 10 per cent surcharge on industrial supplies was also levied in the hydro area. The revision of the war costs surcharge order so as to enable levy of fuel surcharge in the Andhra System area in view of the abnormal increase in fuel costs was under the consideration of the Government at the close of the year.

In accordance with an agreement reached with the licensee, improvements have been effected to the Cuddapah electrical undertaking. The undertaking will be taken over from the licensee in 1948-49 on completion of the agreements. Other undertakings expected to be taken over by this Branch from the respective licensees during 1948-49 are those at Valparai, Kollegal, Hindupur, Anantapur, Hospet, Villivakkam, Sembium, Tiruvottiyur and Alandur. The Salem-Erode, Kumbakonam, Mangalore, Tinnevely-Tuticorin and Okkur licensees have been given notice by Government of their option to purchase the undertakings on the expiry of the licences. These acquisitions commence from 1950.

The work-charged establishment of the Operation Branch was provincialized from 1st January 1948 for a period of two years in the first instance. This, with revision of pay and liberalization of the terms of service already made, should create contentment and avoid unnecessary agitation. It is hoped that the staff will appreciate the generous treatment accorded by Government and respond to it by realizing their responsibilities and increasing their efficiency and output.

The addition of the Madras System to the Operation Branch has considerably increased the already heavy work of the General Superintendent. The implementation of the Nationalization Scheme will naturally throw

further work on this Branch. To meet the situation satisfactorily, suitable reinforcement and reorganization will be necessary.

The existing commercial organization would appear to be inadequate considering the huge demand for power supply for all services. Although it may not be immediately possible to accommodate the entire demand, it is necessary to investigate and formulate proposals for systematic load development as and when power position improves. This would also aid in assessing the probable load growth in the Province to a greater degree of accuracy and to tap new services of power in good time. Thus the need for more commercial staff is urgent.

It is also to be observed that schemes sanctioned so long back as 1946 are yet to be executed and this is mainly due to the poor supply position of line materials and transformers. It is, therefore, necessary to arrange for quick and early flow of materials and then to augment the construction staff suitably to keep pace with the pressing load development so as to avoid a feeling of disappointment to the public at large who are eagerly awaiting supply of electricity.

30-A. *Accidents.*—The total number of electrical accidents during the year in the area served by Government was 107 of which 30 were fatal. These could be broadly classified as follows based on the nature and cause of the accidents. It may be seen that a major number of the accidents was caused to non-employees who climbed up the towers either out of curiosity or with deliberate intention to commit suicide.

Analysis of electrical accidents caused in Government areas during 1947-48.

Name of system.	Departmental employees.			Non-departmental.			Consumers equipment.		Total.
	Unauthorized working.	Non-compliance safety rules.	Other causes.	Snapped conductor.	Inquisitive climbing of tower or suicide.	Other causes.	Careless handling.	Faulty equipment or wiring.	
Pykara	..	5	11	1	24	1	2	3	44
Mettur	..	5	..	..	26	2	..	..	33
Papanasam	..	1	3	..	13	1	1	..	19
Andhra	1	..	8	..	1	1	..	..	11
									107
<i>Fatal cases of the above.</i>									
Pykara	..	1	1	1	6	1	1	3	13
Mettur	..	1	..	..	8	..	..	..	9
Papanasam	..	..	..	..	..	..	1	..	1
Andhra	..	..	..	..	..	..	..	..	..
									30

Detailed report on the activities of the different operating systems follows.

PYKARA SYSTEM.

31. *General.*—The year under review was the fifteenth year of operation of the Pykara System. The peak load of the system reached 32,050 K.W. as against 27,700 K.W. in the last year. The Pykara Power-house peak reached 38,600 K.W. with the Pykara and Mettur Power-houses in parallel, with Pykara giving relief to Mettur and to Madura-Koilpatti areas.

The units generated during the year amounted to 155.9 millions against 145.0 millions in the previous year.

The units distributed and sold were 143.36 millions compared to 133.18 millions last year.

The revenue earned was Rs. 57.77 lakhs as against Rs. 52.6 lakhs in the previous year showing an increase of Rs. 5.17 lakhs.

Thirty-three new villages were electrified and 518 pump sets connected up.

The total connected load on the system was 82,976 K.W. against 74,254 K.W. during the last year representing an increase of more than 10 per cent.

Sixty-six K.V. supply was given to the Calicut and Cannanore areas during the year from 15th September 1947 and 25th December 1947 respectively.

Additional supply of 100 K.W. to Chittoor (Cochin) was sanctioned.

Purchase of Valparai Township distribution by Government was finalized. It is expected to be taken over from 1st July 1948.

The Government have sanctioned supply up to 400 K.W. of power to Cochin Government for the construction requirements of Poringalkuthu Hydro-Electric Scheme and the work of extension of line for the purpose was in progress.

Cordite Factory did not take power supply for the greater part of the year and availed supply only as a standby during certain months.

Works connected with the changeover of Kollegal Distribution to Mysore supply were in progress.

32. *Water conditions.*—The rainfall figures for the year and the preceding year are given below :—

	1946-47.	1947-48.
	INCHES.	INCHES.
Mukurti	115.9	71.41
Glen-Morgan	142.60	65.64

Water conditions at Mukurti were satisfactory. Due to the failure of the north-east monsoon there was acute power shortage at Mettur and Papanasam. The Pykara Power House afforded necessary relief and necessity for restricting loads in those systems did not arise.

33. *Load development.*—During the year almost all the mills suffered from strikes at intervals due to labour trouble and all the mills except Gnanambika of Coimbatore and Soundararaja of Dindigul were on lock-out from last week of January 1948 to the end of March 1948. Madukarai Cement Works were not working due to strikes and lock-outs on account of labour trouble—for two occasions aggregating to about four weeks in the period February to April.

The following statement shows the growth of load and revenue earned since the commencement of operation :—

Year.	Peak load in K.W.	Energy generated in millions of units.	Gross receipts (including miscellaneous receipts) IN LAKHS.
1933-34	3,150	10.9	4.4
1934-35	6,600	30.0	10.5
1935-36	10,100	50.3	16.3
1936-37	14,900	75.6	24.0
1937-38	17,200	82.4	27.6
1938-39	17,900	84.3 plus 16.18*	31.0
1939-40	24,900	114.7 ..	38.5
1940-41	26,200	136.13 ..	42.7

* Represents units purchased from Mettur.

		Peak load in K.W.	Energy generated in millions of units.	Gross receipt (including miscellaneous receipts), RS. IN LAKHS.
1941-42	.. ..	28,900	156.57 plus	0.025* 49.4
1942-43	.. ..	30,600	165.14 "	2.38* 52.2
1943-44	.. ..	31,000	165.74 "	7.78† 56.6
1944-45	.. ..	30,300†		
			158.59 "	2.86* 49.7
		26,600†		
1945-46	.. ..	38,300†		
			173.11 "	1.27*
		27,150†		3.58§ 53.0
1946-47	.. ..	37,800†	145.00 "	3.4 52.6
				2.1§
		27,700†		
1947-48	.. ..	38,600†	155.09 "	7.2* 57.77
				1.2§
		32,050†		

* Represents units purchased from Mettur.
† Represents units purchased from Papanasam.
‡ Represents the peak for system loads only.
§ Represents the station peak while giving relief to other systems.

Units sold to Papanasam	.. ..	12.6 millions
Units sold to Mettur	.. ..	13.8 "

34. *Financial results.*—The following figures show the financial working of the system for 1947-48 :—

Particulars.	Amount. RS.
1 Capital outlay including arrears of interest	3,79,73,354
2 Gross revenue	57,77,319
3 Operation and maintenance excluding suspense.	16,16,916
4 Depreciation Reserve fund	8,61,638
5 Special Reserve fund	3,44,655
6 Total expenses (items 3 plus 4 plus 5 above)	28,23,209
7 Net revenue (items 2—6)..	29,54,110

35. *Connected load.*—The connected load on the system at the end of the year under different categories was as follows :—

Serial number and description of load.	Connected load in K.W. on 31st March 1948.
I Industrial high voltage supplies—	
(a) Textiles	23,773
(b) Cement	4,495
(c) Mines	227
(d) Oil and other industries	1,406
(e) Cordite Factory	1,088
(f) Tea estates	4,350
(g) Licensees and municipalities	21,285
II Industrial L.T. supplies	5,700
III Irrigation and agriculture	17,300
IV Domestic heat power and light	2,966
V Commercial heat power and light	154
VI Public water-works and sewage pumping	5
VII Street lighting	121
VIII Miscellaneous	106
Total	82,976

36. *Power House.*—The total number of units generated during 1947-48 was 155.9 millions as against 145 millions in last year. This figure is exclusive of 7.2 millions of units purchased from Mettur System and 1.2 millions of units from Papanasam System, units sold to Mettur and Papanasam being 26.4 millions. The units distributed and sold during the year were 143.36 millions as against 133.18 millions of last year.

The following important works were carried out :—

Detailed examination and overhaul of 2,000 K.V.A. transformer No. 1 at Singara.

Erection of two Nos. 5,000 K.V.A. 11/66 K.V. transformers and associated switchgear and energising them. Erection of two Nos. 66 K.V.O.C.B. to feed Calicut and Cannanore lines and energising them.

37. *Penstock, civil and hydraulic works and camps.*—Increased wear on runners of turbines of 2, 4 and 5 machine have been noticed and the renewal of the runners will be taken up after Mettur emergency is over.

The fifth winch rope in the haulage was replaced by a new one.

The maintenance of camps at Glenmorgan and Singara were attended to satisfactorily and the general health and sanitation of camp was satisfactory.

38. *Glenmorgan Power House* was maintained in good condition.

39. *Transmission lines.*—Transmission and distribution lines constructed during the year and the total mileages at the end of 1947-48 were as below :—

Voltage.	Constructed during 1947-48.		Total at the end of 1947-48.	
	Single circuit in miles.	Double circuit in miles.	Single circuit in miles.	Double circuit in miles.
110 K.V.				49
66 K.V.			93	215
33 K.V.				
22 K.V.		4.478	281.698	95.77
11 K.V.		40.705	606.795	43.00

* Represents 66 K.V. line from Kuthumunda to Cannanore (West Coast).

The route length of L.T. lines in service at the end of 1947-48 is 1,139.345 miles, as compared to 1,064.054 in 1946-47.

40. *E.H.T. sub-stations.*—The H.T. sub-stations commissioned during the year were (1) Calicut Sub-station and (2) Cannanore Sub-station. Trunk telephone connections were given to them.

The number of E.H.T. sub-stations including the Power House in the system and the aggregate transformer capacity in each are given below :—

Serial number and name of sub-station.	Aggregate transformer capacity. K.V.A.
(1) Singara	58,430
(2) Kattabettu	2,000
(3) Coimbatore	53,000
(4) Tiruppur	5,250
(5) Udampalpet	5,250
(6) Sembatti	5,250
(7) Calicut	4,000
(8) Cannanore	2,000
Total	135,180

The two 1,000 K.V.A. transformers at Kattabettu and their bushings were completely overhauled, reconditioned and filled with B grade oil. The 500 K.V.A. transformer 22/11 K.V. released from Mankavoo was transferred to Madukkarai and energised to work in parallel during the peak load hours with the existing 500 K.V.A. transformer. One 1,000 K.V.A. 5 per cent booster was erected and commissioned at Cambodia structure to improve the regulation on the Palladam feeder. The 22 K.V. changeover of the Bodinayakanur-Periakulam and Cumbum-Seepalakottai lines was effected in

October 1947 and the 10 per cent boosters at Theni and Batlagundu released. The Kodaikanal Municipality was not ready with their equipment for change-over. Hence a departmental 150 K.V.A. transformer 22/11 K.V. has been used to give 11 K.V. supply to the municipality.

41. *Coimbatore Receiving Station.*—The station peak was 32,560 K.W. on 10th December 1947 when relief was being given to Mettur and Papanasam systems. The peak load at Coimbatore was 28,300 K.W. on December 9th. The 11, 22 and 66 K.V. peak at Coimbatore were—

11 K.V. 16,650 on December 9th.

22 K.V. 7,900 K.W. on December 31st.

66 K.V. 20,400 K.W. on March 11th with relief to Papanasam and Mettur.

Necessary lattice structures, including A.B. Switch and Plinth, for the eighth 5,000 K.V.A. transformer and its 22 K.V. kiosks were constructed in readiness for its erection. The transformer has arrived in Madras and arrangements are being made for railing it to Coimbatore.

On 5th February 1948 unusual noise was heard in the Auto-Transformer No. 3 in service. The transformer was moved to the repair shed, the core lifted and examined. Two studs found loose were tightened and the transformer recommissioned on 11th February 1948.

The "Ascu" and "Creosote" plants were erected and the treatment of poles was in full swing.

42. *Distributions.*—The number of distribution Transformers erected during the year and the total aggregate capacity is given below:—

Number of new distribution transformers erected during the year.	Aggregate capacity of transformers in column (1) including increase in capacity.	Total number of distribution transformers in service at the end of 1947-48.	Aggregate capacity in service.
33 Nos.	3,077.5 K.V.A.	459 Nos.	25,542.5 K.V.A.

43. *Mills and mill lines.*—No new textile mill was electrified during the year.

The work of giving H.T. supply to Messrs. Argus Engineering Company was almost completed.

The following mills are under construction and they are expected to take Departmental supply as soon as ready:—

- (1) Premier Mills, Pulankinar.
- (2) Asher Industries, Tiruppur.
- (3) Karthikeya Mills, Coimbatore.
- (4) Kadiri Mills, Odderpalayam.

43-A. *Extensions.*—Work on bridging the gaps between Somanur and Punalur and between Tiruppur and Palladam was in progress. Several extensions for supplying power to agricultural and industrial loads and estimates for erecting new transformers or replacing existing ones by higher capacity ones were sanctioned and work was in progress to the extent possible with the available materials.

Of the following H.T. extensions sanctioned during the year work has been taken up in a few cases. In others work will be taken up according to the priority list:—

- (1) Argus Engineering Works.
- (2) National Manure Works, Bodipatti.
- (3) Radhakrishna Mills (Pollachi), Limited.

(4) Ramakrishna Industries.

(5) Abbasiya Oil Mills, Dindigul.

(6) M. M. Kadar Mohideen Oil Mills, Dindigul.

(7) Devashola Estates, Nilgiris.

(8) Naduvar Estates, Anamalais.

(9) Kotada Estates, Nilgiris.

(10) Craigmore, Nilgiris.

(11) Waverly Estates, Anamalais.

(12) Mailoor Estates.

(13) Coimbatore Oil Mills, Coimbatore.

(14) Jaya Oil Products, Pollachi.

(15) Agro Industries.

(16) Ambrampalayam Water Works, Pollachi.

44. *Textile mills.*—There were sporadic strikes during the earlier months of the year due to frequent labour troubles in the textile mills in Coimbatore district. From the 3rd week of January 1948 there was a general lock-out by the mills following the implementation of the Labour Tribunal Award. All the Mills served in this system except Messrs. Gnanambika Mills of Coimbatore and Soundararaja of Dindigul were affected by these strikes and lock-outs. The lock-out was lifted by the 3rd week of March 1948 and all the Mills have resumed normal work in stages and a number of Mills have also begun to work the third shift.

As in last year small increases in maximum demand were permitted in the case of few mills. Applications from mills are being received for considerable increased in maximum demand in view of additional allotment of spindles. These are being recommended subject to improvement of water conditions.

Messrs. Jayalakshmi Mills have stopped taking power for industrial activities since October 1947. They only utilize power for lighting, etc., from that date.

45. *Cement works.*—The Madukkarai Cement Works continued to be the largest individual consumer. There was a strike lock-out at Cement works on two occasions, viz., between the period 15th January 1948 to 20th January 1948 and 28th February 1948 to 19th March 1948. An increase in demand by 1,400 K.V.A. was sanctioned to the Cement works raising the maximum demand limit to 4,000 K.V.A. The full increased local permitted was not utilized by the works.

46. *Tea factories.*—Farm Tea Estates, Kotagiri, was connected up on 7th May 1947.

Mukothumudi Estate was disconnected during the year (20th October 1947) on transfer to Thaimudi Group.

46-A. *Other industries.*—The following are the industries connected up under H.T. during the year:—

(1) Bharath Oil Mills, Pollachi (30th August 1947).

(2) G. Ramaswami & Co., Perianaickenpalayam (7th September 1947).

Messrs. Industrial Chemicals were disconnected on 30th July 1947 on their request as they are transferring the works to Thalavuthu in Tinnevely district, Papanasam System.

47. *Commercial activity.*—With the formation of four Commercial-cum-Construction Subdivisions with a band of Junior Engineers, Supervisors and lead surveyors, the commercial activity is in full swing, and when normal

supplies were not possible, restricted supplies, during off-peak hours were being extensively given to meet urgent demands of consumers, pending permanent reinforcement of lines and transformer capacities. The Coimbatore Receiving Station with the commissioning of the 8th 5,000 K.V.A. will reach its capacity and hence to meet the growing demand of industries and agricultural load, a 66 K.V. sub-station at Pollachi has recently been sanctioned.

48. *Agricultural services.*—Five hundred and eighteen numbers agricultural pumpsets with a connected load of 2,255 K.W. were connected up during the year bringing the total as on 31st March 1948 to 3,803 numbers with a total connected load of 17,300 K.W.

49. *Rural industries.*—Seventy-seven small industrial services with a connected load of 831 K.W. were connected up during the year bringing the total as on 31st March 1948 to 362 numbers with a total connected load of 5,701 K.W. respectively.

50. *Firka development.*—The following firka schemes have been sanctioned and work on some of the schemes have been completed. Others are in progress :—

Palladam firka.—Supply to Nanapuram, Samalapuram, Ichipatti, Vadugapalayam, Chittambalam, Rangasamudram, Pulimpatti, Krishnapuram, Annuppatti, Kodangipalayam, Sukkampalayam, Semmiapalayam, Ganapathipalayam, Karaiputhur, Puruvai, Muthugoundenpalayam and Velampalayam.

Avanashi firka.—Supply to Rakkiapalayam.

Besides the above the following schemes are under investigation :—

- (1) Karadi bavi.
- (2) Uppilipalayam.
- (3) Cheyyur.
- (4) Ithalur.

51. *Conversion fund.*—No hire purchase loan was availed of during the year by any consumer.

	RS.
1. Hire-purchase loans sanctioned during 1947-48 ..	Nil.
2. Hire-purchase loans disbursed	Nil.
3. Advance from commencement	12,75,338
4. Recoveries during the year	404
5. Recoveries since commencement of the system ..	12,64,726

52. *Meter, relay tests and special maintenance.*—The year under review was a difficult one for M.R.T. laboratory with increasing work, inadequate staff and insufficiency of equipments.

A special feature of the year was the record number of defective meters made serviceable. Almost all the defective meters lying idle at Stores and with the field have been repaired—the total being 1,241. A large number of special tests were carried out. The Special Maintenance Subdivision and the Telephone section continued to be busy as usual.

The following works may be specially mentioned :—

(1) The three number 750 K.V.A. transformers released from Sembatti sub-station were transported to Dindigul and then despatched to Mettur System by rail.

(2) The overhaul of the E.H.T. bushings of 1, 2 and 3—1,250 K.V.A. transformers of Udamalpet was completed.

(3) The 1,000 K.V.A. 5 per cent booster released from Theni was reconditioned before erection at Cambodia.

(4) One spring operated quick break H.T. fuse unit for use in 66 K.V. and 110 K.V. circuits was built up and tested O.K. The unit was sent to Mettur for manufacture of a complete set for trial purpose.

53. *Kollegal Scheme.*—Load survey of Kollegal taluk was completed. Construction work for availing Mysore supply was in progress. The change-over of the panchayat distribution to Mysore supply was delayed by the non-supply of the requisite transformers by the Government Electric Factory, Bangalore, as per promised delivery dates.

54. *Interruptions and breakdowns.*—There were 24 major interruptions and outages. But none was however of any serious consequence and supplies were resumed in the quickest time possible.

There was no failure of major equipment during the year except the following distribution transformers :—

	NOS.
75 K.V.A.	1
50 K.V.A.	2
25 K.V.A.	4

55. *Stores, Accounts and Audit and Central office.*—There were ten stores in the system during the year including the Central Stores at Coimbatore. New stores were opened at Kollegal, Dindigul and Palladam. The opening and closing balances for 1947-48 were Rs. 17,20,110 and Rupees 62,35,402. Proposals for raising the reserve limit to Rs. 61,00,000 were submitted as the present limit is only Rs. 18,50,000.

The working of the stores was generally satisfactory. Periodical inspection of divisional and sub-stores were conducted by the Stores Superintendent with beneficial results while the stock verifier verified the following stores :—

- | | |
|-----------------|----------------|
| (1) Glenmorgan. | (4) Palni. |
| (2) Singara | (5) Udamalpet. |
| (3) Tiruppur. | (6) Theni. |

The Coimbatore Stores has partly been verified.

Audit.—The work connected with the primary audit and compilation of accounts has also increased considerably with the increasing number of section officers and numerous extensions besides the normal growth of the operating system. The volume of work on the pre-audit of purchase bill has increased considerably, bills over Rs. 50,00,000 having been passed during the year under review. The need for reinforcing the compilation branch of the system is imminent so that the functions of primary audit may not get much relaxed and more effective control over accounts and review of suspense items can be ensured.

Central office.—With the growth of the system all round the work in Central office has increased abnormally without corresponding increase in staff. Proposals for reorganization of Central office and Divisional office staff have been forwarded. Due to understaff and appointment of emergency and unqualified staff during war period, several items of work have fallen in arrears.

56. *Administration.*—A new subdivision was formed with headquarters at Gudalur for the West Coast Extension works and lines. An Assistant Engineer (Electrical) (Technical) was appointed in the Central office in February 1948. A new post of an Assistant Engineer (Electrical) for a period of four months for the work connected with the transport, erection and commissioning of the eighth 5,000 K.V.A. transformer at Coimbatore Receiving Station was sanctioned.

The headquarters of the Assistant Engineer, Kollegal, have been shifted to Annur in May 1948 to be in charge of Koilpalayam and Mettupalaiyam sections in addition and to be more centrally located. The headquarters of Assistant Engineer, Glenmorgan, have been shifted to Aravankadu in May 1948 necessitated by the reallocation of jurisdiction between Assistant Engineer, Gudalur, and Assistant Engineer, Aravankadu.

For carrying out both commercial and construction works in Coimbatore and Udumalpet Divisions, four subdivisions have been formed at Coimbatore, Pollachi, Palladam and Dindigul by reviving the old construction subdivision and by new sanctions. The work in the Nilgiris Division is attended to by territorial Assistant Engineers. The Commercial and Construction works have been taken up in right earnest and are being executed as expeditiously as possible keeping pace with the availability of materials.

57. *Programme for 1948-49.*—(1) The eighth 5,000 K.V.A. transformer with its 22 K.V. kiosk will be commissioned during the year.

(2) The target for new pump-set connexion for the year is 1,000 and it is expected to keep up to the target.

(3) The bridging of gap between Somanur and Punalur and between Tiruppur and Palladam will be completed.

(4) The additional quarters at Nedumboyal and Dindigul and two stores and garage at Coimbatore will be completed.

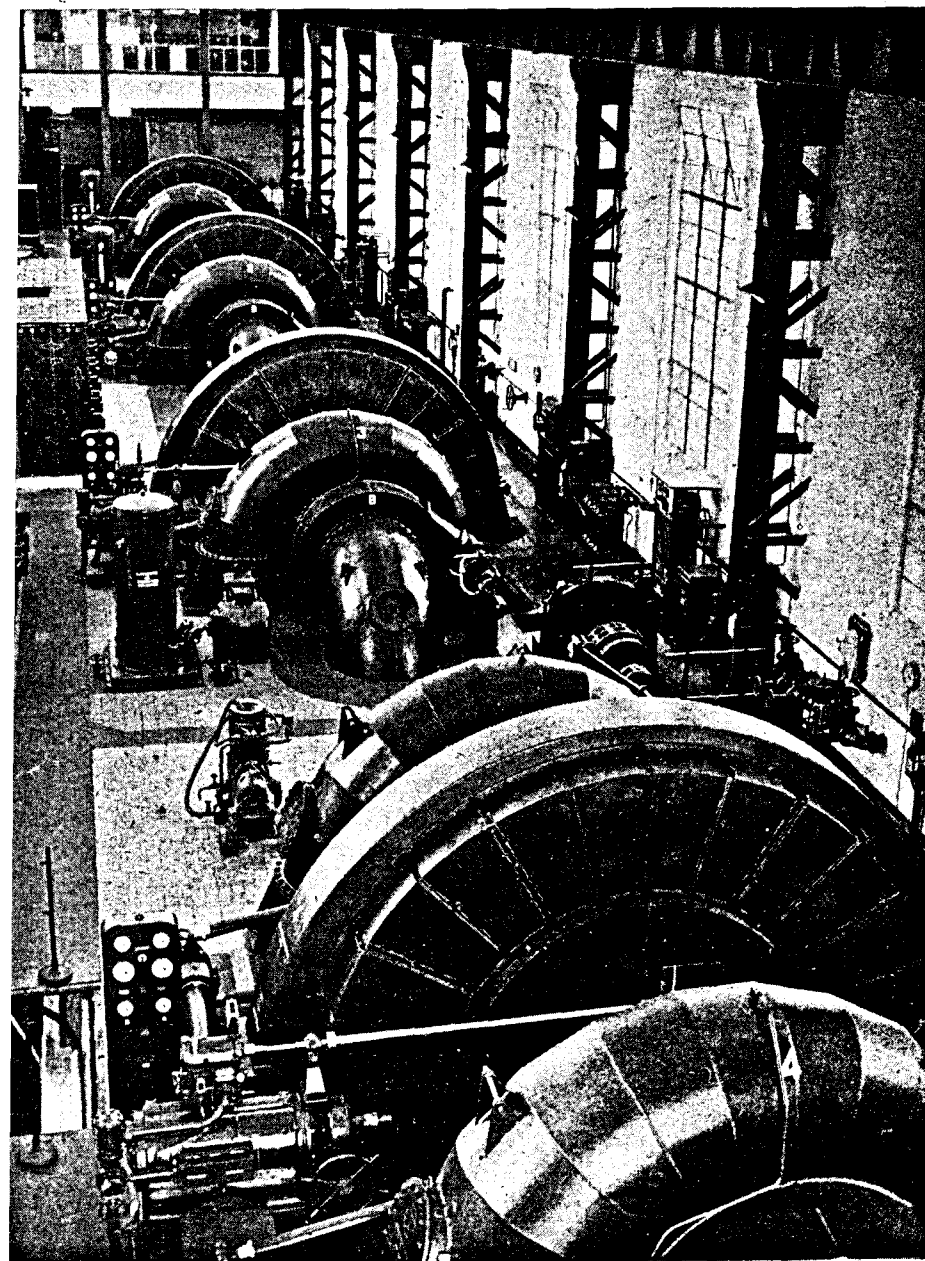
(5) Cordite Factory feeder will be operated at 11 K.V. By this arrangement, 2 numbers 1,000 K.V.A. transformers and one number 2,000 K.V.A. transformer will be released for use elsewhere.

METTUR SYSTEM.

58. *General.*—The year under review was the 11th year of operation of the system. During this year a substantial increase in load and revenue was recorded. Though the load development was retarded to an appreciable extent by the inadequate power transformer capacities at various sub-stations and also due to shortage of line materials for extensions good progress was maintained by availing the existing transformer capacities to the full without leaving spare capacity at many sub-stations and also by permitting new connexions under restricted hours of working so as not to increase the maximum demand.

The peak-load of the system reached 29,700 K.W. and the units generated 135.70 millions as against 23,850 K.W. and 96.24 millions in the previous year. 18.8 millions units were purchased from Pykara during the year. The number of units distributed and sold was 149.5 against 100.5 millions in the last year. The station peak reached 36,000 K.W. during the year under review inclusive of relief to Pykara. The revenue earned was Rs. 48.14 lakhs as against Rs. 39.47 lakhs in the previous year. Twenty-two villages were electrified and 455 pump-sets were connected up during the year. The total connected load on the system was 96,601 K.W. against 76,732 K.W. during the last year, representing an increase of over 25 per cent.

59. *Water conditions.*—The Mettur Reservoir level was satisfactory at the commencement of the year having been at 779.3 feet on 31st March 1947. But it dropped by 23.1 feet in the month of June due to the commencement of the irrigation discharge on 1st June 1947 and due to the late on-set of the south-west monsoon. However, the lake level increased gradually thereafter and was full on 15th September and continued at this F.R.L. throughout October 1947. The north-east monsoon, however, was a



METTUR POWER-HOUSE—INTERIOR VIEW INCLUSIVE OF THE FOURTH UNIT

total failure resulting in the rapid depletion of the lake during November and December 1947. Water conditions became unsatisfactory and gave some anxiety just prior to the irrigation closure season especially in view of parallel water shortage at Papanasam as well. But fortunately due to some rains in the delta during January 1948 and consequential limited discharge by the Public Works Department, we were left with a reservoir level of 721.05 feet on the irrigation closure date (28th January 1948). With this level, it has just been possible to manage to cater to the full system needs obtaining the maximum relief from Pykara, where water conditions were satisfactory.

The inflows into the lake during these summer months so far have been as per expectations and supply in the system has been kept up without resort to restrictions. It is hoped that water conditions will not deteriorate further and that no restriction in loads will be necessitated.

60. *Mettur Power House.*—The operation and maintenance of the power house was satisfactory during the year. The water conditions which were very satisfactory at the commencement of the year deteriorated at the end due to the failure of the north-east monsoon and with the low head of water all the four units had to be run daily during the peak load hours. The system was in parallel with the Pykara system during December 1947 and January 1948 to utilize the increased irrigation discharge to generate additional power and afford relief to Pykara system with a view to conserve the water at Mukurti. Since the commencement of the irrigation closure the maximum possible relief was being obtained from Pykara by running the system in parallel.

Although the water conditions in December indicated the need for restrictions in load during the irrigation closure season, and all preparatory measures were taken to introduce them at short notice, no restrictions have been enforced so far, as it has become possible just to meet the system needs with the available relief from Pykara and adjusting generation at Mettur to cope with the balance of demand.

Supply from the power house was maintained satisfactorily except on two occasions of station supply failure on 9th December 1947 and 11th February 1948, the former due to bursting of the main 11 K.V. industrial feeder cable and the latter due to the failure of 11 K.V. chemical feeder cable developing into a 11 K.V. bus fault. There was, however, no serious interruption to supply on the main lines, as Pykara was then running in parallel with Mettur station.

In view of the damage done to the chemical feeder truck-gear and 11 K.V. bus during the abovementioned incident and in view of possible greater damage under similar fault conditions, a control cubicle is being provided for the Industrial Service Feeder take-off so that faults of similar nature could be cleared in the incipient stages. Besides, the chemical feeder truck-gear, after being rigged up afresh, was erected on the western side of the 11 K.V. bus by the side of the spare feeder cubicle with a view to obtain an even distribution of 11 K.V. and 22 K.V. loads off Mettur Power House on either side of the 11 K.V. bus. Arrangements to have spare feed from the eastern half of the 11 K.V. bus for the chemical and mill feeders have also been made by providing 150/5C.Ts. in the mill feeder truck-cubicle and jointing both the chemical and mill feeder cables. The servicing of the third 11/22 K.V. 2,000 K.V.A. transformer is nearing completion.

The fourth generating set completed one year of satisfactory operation.

The five-yearly overhaul work on 2,000 K.V.A. transformer No. 1 at Mettur Power House was completed.

61. *Load development.*—The following statement shows the growth of load and revenue since the beginning of operation of the Mettur System:—

Year.	Peak load in K.Ws. of the system.	Units generated in millions.	Gross revenue. RS. IN LAKHS.
1937-38 (five months)	5,700	17.40	3.45
1938-39	7,700	44.00	11.03
1939-40	10,900	46.49	13.34
1940-41	12,300	60.42	18.19
1941-42	14,000	71.67	21.75
1942-43	15,300 *	81.45	24.00
1943-44	16,000 †	97.32	27.27
1944-45	18,915 ‡	104.92	30.78
1945-46	19,400	88.80 plus 23.68||	34.39
1946-47	23,850	96.24 plus 17.85||	39.47
1947-48	29,700 §	135.70 plus 13.81||	48.14
* 23,400 with relief to Pykara.			
† 25,200 do.			
‡ 26,120 do.			
§ 30,700 with relief to Pykara.			
|| Purchased from Pykara.			

The Dalmia Cement Factory continued to be the biggest industrial load in the system closely followed by the Mettur Industries and Chemicals.

62. *Financial results.*—The table below gives the financial working of the system for the accounting year:—

	RS. IN LAKHS.
Capital outlay including arrears of interest up to the end of the year	2,81,78,667
Gross revenue	48,14,232
Operation and maintenance expenditure	16,20,958
Depreciation Fund	5,86,793
Special Reserve Fund	2,37,917
Total expenses	24,45,668
Net revenue	23,68,564

63. *Connected load.*—The connected load in the system at the end of the year under different categories was as follows:—

Serial number and description of load.	Connected load in K.W.
I. Industrial H.T. supplies—	
(a) Textiles	6,315
(b) Cement	2,270
(c) Chemicals	1,718
(d) Steel rolling mills	2,407
(e) Metal	243
(f) Oil and other industries	335
(g) Sugar	353
(h) Municipalities	5,581
II. Industrial L.T. supplies	27,884
III. Irrigation and agriculture	17,927
IV. Domestic heat and power	18,948
V. Commercial heat and power	4,750
VI. Public water-works and sewage pumping	720
VII. Street lighting	1,154
VIII. Miscellaneous (Railways and Military Engineering Service Supplies including Government departments)	5,896
Total	96,501

Note.—The above figures include the connected load of the concerned categories in licensee areas also.

64. *Transmission lines.*—About 17.7 miles of 11 K.V., 10.084 miles of 22 K.V. and 0.50 mile of 33 K.V. were added during the year bringing the total number of miles of transmission line up to the following:—

	Single circuit total. MILES.	Double circuit total. MILES.
66 K.V.	188.5	228.5
33 K.V.	178.7	..
22 K.V.	375.159	..
11 K.V.	446.02	1.75
L.T. lines	640.82	..

The permanent deviation of the Mettur Singarapet line between T. 114 and T. 122 consequent to the collapse of T. 115 in November 1946 was completed.

With a view to avoid any possible failure of similarly located towers on Vadakhipatti-Vellore section of the Mettur-Singarapet 66 K.V. line, a diversion of the tower line from T. 22 to T. 25 was taken up and completed.

Reinforcement of Mettur-Singarapet 66 K.V. line to 110 K.V. was completed, while that of the Mettur-Erode 66 K.V. line is nearing completion. The diversion of the telephone line was in progress.

The extension work in respect of 33 K.V. supply to Kuppam Gold Mines was delayed partly due to want of materials and partly later on due to diversion of the collected 33 K.V. insulators to the more urgent work of erecting Kodambakkam-Kadambattur 33 K.V. lines. The Kuppam Mines will, however, be supplied at 11 K.V. to start with and work in this respect is in progress.

About 30 miles of 33 K.V. line are being constructed under special priority conditions between Kodambakkam and Kadambattur. This work was initiated in February and when completed, will relieve to some extent the overload on Vellore sub-station by supplying Tiruvallur and Kadambattur loads from the Madras end.

About 12 miles of 22 K.V. line were constructed off Vriddhachalam in connexion with supply to Lignite Deposits Investigation at Neiveli. The work was almost completed. L.T. supply was given on 1st June 1948. H.T. supply at 22 K.V. is expected to be made available early. The sanctioned estimate for Rs. 89,000 provided for supply to a load of 86 K.W. initially rising to 750 K.W. in five years.

65. *E.H.T. sub-stations.*—There were 25 E.H.T. sub-stations with an aggregate transformer capacity of K.V.A. as follows:—

Serial number and name of sub-station.	Available transfor- mers.		Aggregate capacity. K.V.A.
	NOS.	K.V.A.	
1 Erode	3	1,000	3,000
2 Karur	3	750	2,250
3 Trichinopoly	3	2,500	11,500
	2	2,000	
4 Tanjore	4	750	3,000
5 Papanasam	3	500	1,500
6 Tiruvarur	2	2,500	5,000
7 Negapatam	2	2,500	5,000
8 Singarapet	2	500	1,000
9 Kariamangalam	2	250	500
10 Tiruppattur	2	250	1,000
	1	500	
11 Ambur	2	500	1,000
12 Vadakathipatti	3	500	1,500
13 Vellore	2	1,250	4,250
	1	750	
	2	500	500
14 Chittoor	2	250	
15 Pakala	2	250	500
16 Ranipet	2	250	500
17 Kaveripauk	2	250	600
	1	100	
18 Conjeeveram	5	250	1,250
19 Arkonam	2	500	1,250
	1	250	
20 Tiruvannamalai	2	500	1,250
	1	250	
21 Polur	2	250	500
22 Arni	2	500	1,000
23 Vettavalam	2	250	600
	1	100	
24 Villupuram	4	1,750	7,000
25 Mettur P.H.	3	2,000	6,000

Voltage regulators were installed and commissioned in the following places of the system to improve the voltage conditions :—

Salem sub-station	..	2,500 K.V.A. (22 K.V.) for improvement of voltage on Rasipuram-Attur feeder.
Pondicherry	..	2,500 K.V.A. (22 K.V.) Hired to French Government.
Mohanur	..	1,000 K.V.A (11 K.V.) for improvement of voltage, Namakkal area.

66. *Distributions.*—Fifty-seven numbers distribution transformers totalling to 2,825 K.V.A. capacity were energised during the year bringing the total number of transformers in service to 307 numbers.

67. *Commercial activity.*—A second Commercial subdivision was sanctioned and located at Vellore in November 1947 to deal exclusively with the commercial work of the northern area. The other at Mettur dealt with that of the Trichinopoly and Mettur Division areas.

The number of schemes scrutinized and sent up for sanction and the number of minor schemes sanctioned by the Superintending Engineer are furnished below :—

Name.	Number of schemes sent up.	Number of services.			Load (in H.P.)			Estimate.	
		Agricultural.	Industrial.	House service connections.	Agricultural.	Industrial.	House service connections.	Amount.	RS.
Major	..	16	568	16	2,923.0	7 3 00	..	14.73	
Minor	..	58	41	17	233.0	300 00	22 0	1.08	
									IN LAKHS.

A good number of schemes had to be deferred, pending improvement of transformer capacity at sub-stations from which they are to be fed and reinforcement of lines.

A priority list of applications is being maintained and investigation of scheme is being taken up in the strict order.

68. *Agricultural services.*—Four hundred and fifty-five agricultural services with a connected load of 2,404 h.p. were added to the system during the year bringing the total number of services to 1,943 and connected load to 10,428 h.p. Besides these, supply has been extended to 391 wells but parties are not ready to take supply.

One hundred and seventy-six agricultural services totalling 1,091 h.p. were sanctioned during the year under review.

69. *Rural industries.*—Seventy-seven industrial loads totalling to 1,375 h.p. were connected up during the year.

70. *Firka Development Schemes.*—Of the seven places selected for Firka Development within this system, proposals for extension of supply to two firkas have been completed while a restricted scheme of supply for a third place has been sent up. Investigations are proceeding in respect of others as detailed under :—

Fir as.	Remarks.
1. Kalasapakkam	Proposals completed and sent up.
2. Kadambuliur	Do.
3. Tituvallur	Restricted scheme sent up
4. Nagari	Proposal for a small portion submitted and for the balance improvements in lines and transformers capacity off Arkonam are necessary.

Firkas	Remarks.
5. Veerapandi	Investigated in full. Scheme is being finalized but supply cannot be effected until 66 K.V. station materializes at Salem.
6. Vellakoil	Investigation of nine villages (balance of villages being dealt with in Pykara system) in Karur taluk completed.
7. Puliankurichi (investigation under progress).	Scheme is being finalized but supply cannot be effected until transformer capacity is increased and line reinforced.

71. *Conversion fund.*—No hire-purchase loan was sanctioned during the year though applications were received from 46 prospective consumers of which 23 subsequently withdrew their applications.

72. *Meter and relay tests and special maintenance.*—The M.R.T. subdivision continued to be busy throughout the year. A large number of meters and relays were tested.

A sample insulating transformer for the use in H.T. telephone circuit was rigged up successfully and is being finalized with a view to undertake mass manufacture to supply the future needs of the department.

Following are the main items of work handled in the Special Maintenance subdivision during the year :—

(1) Thirty numbers power transformers and other heavy equipments hauled or assembled and commissioned.

(2) Road transport of two numbers 500 K.V.A. transformers from Gur to Arni done.

(3) Fourteen numbers distribution transformers—new, old and sick ones hauled.

(4) Two thousand one hundred and nineteen L.T. meters replaced at e.

73. *Interruption and breakdowns.*—There were no major breakdowns of any of the transmission lines during the year under review. The few minor breakdowns to the equipments have been mentioned earlier.

74. *Stores.*—A Stores Superintendent in lieu of the Chief Store-keeper was appointed in August 1947.

The third cycle of stock verification of sub-stores and Central stores was taken up and in this connexion a second stock verifier was posted to the system.

Consequent to the increase in the system stock at various sub-stores, the need for more staff has been felt and proposals in this respect have been sent up.

75. *Workshops.*—The total outturn of the workshops during the year under review was Rs. 9.52 lakhs as against Rs. 10.45 lakhs during the previous year. The outturn for the current year might have been more, if the raw materials for towers on order had been received in time. The number of employees was 405 men with an average attendance of 371. The food canteen functioning for the benefit of workshop employees was run by the department on no profit basis until December 1947. Since then, it is being run on co-operative basis by the workmen themselves.

The workshop expansion scheme has been sanctioned for Rs. 15.266 lakhs in addition to Rs. 1.531 lakhs advance sanction. The expenditure will be distributed during the years 1948-49 and 1949-50.

76. *Civil works.*—The following important works were completed :—

- (1) Extension to Central office;
- (2) Construction of staff quarters at Mettur (90 per cent completed);

(3) Construction of compound wall round the workshops and stores (90 per cent completed).

(4) Construction of stores at Trichinopoly.

The total value of work done in the Civil subdivision was Rs. 2.54 lakhs.

77. *Administration.*—With the energising of new schemes during the past few years, the work in each section of the system has increased considerably with consequent increase of work in the Central office also. There is immediate need to reorganize the system by increasing the number of subdivisions.

78. *Programme for 1948-49*—The following works are programmed :—

- (1) Workshop expansion;
- (2) Raising of the bus insulation of power-house structure at Mettur;
- (3) Erection of A.C.C.Bs. at Erode for trial;
- (4) Transport and erection of 6,000 K.V.A. autos at Erode and Singarapatt;
- (5) Commissioning of I.S.F. and S.T.F. cubicles at Mettur Power-house;
- (6) Erection of Mulsifyre fire protection;
- (7) Double circuit of 22 K.V. line from Salem to Rasipuram;
- (8) Raising of Conjeeveram-Chingleput line to 33 K.V. insulation;
- (9) Effecting supply to Kuppam mines; and
- (10) Increasing transformer capacity at various sub-stations.

PAPANASAM SYSTEM.

79. *General.*—The year under review was the fourth year of operation of the Papanasam System. All the three generating units at the power-house were working satisfactorily. The Madura-Koilpatti second circuit 66 K.V. line was completed and taken over for operation.

The peak load of the system reached 15,000 K.W. in October 1947 slightly above the full load of the station. During the first half of the year, the system was catering to its own needs, giving relief to Pykara during periods of irrigation discharge from the Tambraparni lake. During the latter half, when the system load rose above the capacity of the station, relief from Pykara during peak load hours was resorted to. The north-east monsoon having failed almost completely the storage in the Tambraparni lake was considerably depleted and Pykara had to assist to a large extent, by taking over some of the loads normally fed by the Papanasam station. Similar shortage in the Mettur lake and demand on the Pykara station for relief to the Mettur power station also called for temporary restriction of new connexions for industrial loads and this was imposed in the area supplied both by Government, private and municipal undertakings. These restrictions were relaxed as soon as the water position became more satisfactory. Agricultural and domestic services were, however, being permitted to be connected up all along. Though the water position at the end of this year was not satisfactory at Papanasam, it is expected that all the three hydro-electric systems can jointly cater to the loads of the three systems up to middle of June 1948, i.e., the onset of south-west monsoon, without any need for imposition of restrictions. The Travancore Government was taking a total load of 4,000 K.W. maximum during the season, comprising of 3,000 K.W. of firm power to Travancore Government, 200 K.W. to British Cochin water-supply and 800 K.W. of seasonal power to Travancore Government. Due to low water conditions, this seasonal power was stopped after 24th December 1947 and the total load on the feeder was limited to 2,600 K.W. by negotiation. Similarly, the peak demand in most of the stations was brought down. By these reductions in loads and staggering, the system peak load came down to 13,000 K.W. from 15,000 K.W. Entire Madura loads

and loads up to Koilpatti were transferred to the Pykara system so as to limit generation at Papanasam to the extent limited by the water position and thus keep Papanasam Power-house running through the crucial summer months, till the onset of the south-west monsoon. This year's water position was worse than that of 1946.

The number of units generated during the year was 64.62 millions as against 56.62 millions last year. 12.62 million units were purchased from Pykara during the year. The total units distributed and sold were 70.777 millions. (This includes 1.2 million units transferred to Pykara.)

The gross revenue earned during the year was Rs. 24.8 lakhs as against 19.5 lakhs in the year 1946-47. During the year, 13 villages were electrified and 88 agricultural pump-sets connected up.

80. *Water conditions.*—The highest water level reached on 28th August 1947 was 843.15 feet corresponding to a capacity of 4,028 m.c.ft. The south-west monsoon had been very favourable and there was every possibility of surplus during the period. However, the level was not allowed to rise up above 843.15 feet in order that construction works at the surplus section could go on without any hindrance. The north-east monsoon on the contrary was a thorough failure and the total rainfall was the lowest, for the eight years 1940-47 for the period October to December 1947. The average seasonal rainfall at Dam camp for these months over the eight years period was 42.02 inches whereas the rainfall for the period during this year was only 7.81 inches.

In spite of the failure of the monsoon, water was let down to help irrigation requirements on a number of occasions as and when demanded by the Irrigation branch in view of the critical food situation. There were some showers in February 1948 and March 1948 and the inflows were fairly satisfactory and it is expected that the early advent of the south-west monsoon will avert a crisis.

The average daily consumption of water at power-house for the year 1947-48 was 32.20 m.c.ft.

The following table shows the lake level, storage and rainfall in the catchment area :—

Area.	Rainfall in inches.	
	1946-47.	1947-48.
(a) Rainfall—		
(i) Dam camp	91.47	45.15
(ii) Papanasam camp	75.26	39.54
	31st March 1947.	31st March 1948.
(b) Papanasam Reservoir—		
Lake level	840.74	788.10
Capacity	3,893.44	1,343.9 m.c.ft.

81. *Power-house dam and civil works.*—The operation of the machines and other equipment was satisfactory. Improvements to turbine bearing to prevent oil leakage due to splash was carried out on all the three machines by providing a cylindrical baffle around the antilift collar and a cork packing around the shaft on the top cover of the carbon gland housing. This has resulted in considerable improvement in the consumption of oil in the turbine steady bearing.

A general shutdown of the power-house was arranged on the night of 12th and 13th April 1947 for about 15 hours, to empty the low pressure pipe line for general inspection. The butterfly valves were also inspected and found in good condition.

The peak load of the station reached was 15,000 K.W. in October 1947 and an instantaneous peak of 15,600 K.W. was registered on 22nd November 1947 with the Papanasam and Pykara systems running in parallel.

There was no major breakdown during the year except for the failure of the main field in No. 2 machine while in service due to one of the pole^{1e} pole connexions in the rotor giving way. The fault was rectified and the machine put in service without affecting supply.

82. *Load development.*—The development of load and revenue since the commencement of operation of the system was as follows:—

Year.	Peak load.	Units generated in millions.	Gross revenue.
	K.W.	K.W.H.	RS. IN LAKHS.
1944-45	8,700	21·265 plus 21·979 *	13·05
1945-46	9,800	47·212 plus 7·783 *	17·00
1946-47	14,000	56·62 plus 5·491 *	19·50
1947-48	15,000	64·62 plus 12·62 *	23·40

* Purchased from Pykara.

83. Financial results.—

	RS.		RS.
Capital outlay	1,94,73,808	Depreciation fund	95,784
Gross revenue	24,79,584	Special reserve fund	38,314
Operation and maintenance expenses	8,11,898	Total expenses	9,45,996
		Net revenue	15,33,588

84. *Connected load.*—The connected load in the system as on 31st March 1948 under different categories was as follows:—

	K.W.		K.W.
1. Industrial high voltage—		2. Industrial low voltage—cont.	
(a) Textiles	5,191	(d) Ginning	358
(b) Oil mills	364·9	(e) Small workshops	224
(c) Supplies in bulk to distributing licensees—		(f) Other industries (cinemas)	152
(1) Municipal	7,705	3. Agriculturo	1,093
(2) Other than municipal	19,688	4. Domestic (lights and fans)	2,337
2. Industrial low voltage—		Domestic (heat and power).	86
(a) Rice hulling	1,223	5. Public water works and sewage	60
(b) Coffee grinding and flour milling	51	6. Street lighting	75
(c) Pump-set (water)	...	7. Miscellaneous	..
		Total connected load	32,611

85. *Transmission lines.*—The total length of the transmission and distribution lines in the system was as shown below:—

Voltage.	Constructed during 1947-48.		Total at the end of 1947-48.	
	Single circuit line in miles.	Double circuit line in miles.	Single circuit line in miles.	Double circuit line in miles.
66 K.V. lines ..	*	† 55	48·081	125·43
33 K.V. lines ..	..	..	28·0	..
22 K.V. lines ..	..	..	40·28	..
11 K.V. lines ..	22·61	..	149·86	9·85
	22·61	55	266·221	135·28

The total length of L.T. lines was 140·59 miles.

* Fifty-five miles of service connexion line were constructed. This and the existing 54·5 miles Madura Koilpatti service connexion line shown as 55 miles direct connexion line in the next column.
† Madura-Koilpatti line.

86. *Power transformer stations.*—The following table gives details of the 66, 33 and 22 K.V. power transformer stations in the system:—

Sub-stations.	Transformers.	Total capacity.
		K.V.A.
1 Tuticorin sub-station	3 Nos. 1,250 K.V.A.	3,750
2 Koilpatti sub-station	3 Nos. 1,000 K.V.A.	3,000
3 Sattur sub-station	2 Nos. 250 K.V.A.	500
4 Virudunagar sub-station	3 Nos. 1,000 K.V.A.	4,250
	1 No. 1,250 K.V.A.	
5 G.N. Patti sub-station.	2 Nos. 250 K.V.A.	600
	1 No. 100 K.V.A.	
6 Rajapalayam substation	3 Nos. 500 K.V.A.	1,500
7 Madura sub-station	3 Nos. 3,000 K.V.A.	12,000
	1 No. 3,000 K.V.A.	
8 Sivaganga sub-station	3 Nos. 250 K.V.A.	750
Total		26,350

87. *Distributions.*—The total number of distribution transformers were 94 and their aggregate capacity 5,070 K.V.A.

The following important works were carried out during the year in addition to routine maintenance works:—

(1) The 66 K.V. B.T.H. oil circuit breaker transferred from Coimbatore was installed at Madura sub-station and commissioned to control the second 66 K.V. line to Koilpatti.

(2) The 66 K.V. bus coupler oil circuit breaker at Madura sub-station was installed and put into commission.

(3) The erection of the additional structure bus bars and sub-stations equipment for the second circuit at Sattur sub-station was completed.

(4) The 1,250 K.V.A. transformer transferred from Villupuram was installed at Virudhunagar and commissioned on the 11 K.V. side.

(5) A large number of power transformers and distribution transformers were overhauled.

(6) The air outlets of the condensers Nos. 1 and 2 at Madura were interconnected with a shut off device in between so that hot air passing out from the working condensor may be allowed to circulate through the idle condensor if required.

(7) Eleven K.V. station type lightning arresters were provided for the 11 K.V. bus at Virudhunagar.

(8) The reinforcement of conductors on the 11 K. V. feeders 2 and 3 at Madura was completed except for the cable crossing near the municipal power-house.

88. *Extensions.*—The following extensions were completed during the year:—

	Estimated amount.
	RS.
1 Sulakkarai extensions	60,500
2 H.T. supply to Messrs. Dorairaj Nadar, Sivakasi	10,360
3 Extension of lines to agricultural and industrial services at Aruppukkottai	14,000
4 Extension of lines to three numbers industrial loads and redistribution of loads at Aruppukkottai	10,200
5 Extension of supply to Kennimangalam	57,300
6 Do. Kokkalanjeri	31,100

Besides the above, small extensions to Pavali Valliyur, Chinnamooppampatti, Muthuramanpatti, Vadagarai, M.S.G. Engineering works and 11 extensions costing about Rs. 2·21 lakhs in all for industrial purposes at Ettaiyapuram, Vilacheri, Mudaliarpatti, Alwarkurichi Rice Mill, Vallam, Kilapuliyur, Mathalanparai, Pattamadai, Melacheval, etc., Kalakad road, Seniapuram and Vellangudi were also completed.

During the year, the following major extensions were investigated on a ten-year basis and proposals were sent up for sanction :—

		Capital outlay in lakhs at the end of	
		First year.	Tenth year.
		RS.	RS.
1. East Tinnevely extension	.. ..	14.60	21.69
2. West Tirumangalam extension	.. ..	17.14	26.36
3. North-west Tinnevely extension	.. ..	24.22	61.81
4. Nanguneri extensions	.. ..	30.78	53.87
5. Surundai Sundarapandiapuram	.. ..	4.00	7.74

The first three were deferred as being unremunerative at the present costs of line materials and the remaining two are under scrutiny.

Preliminary investigation of Natham extensions on a ten-year basis has been made and the scheme is being worked out.

The number of other extension proposals investigated and sent up for sanction during the year was 118 numbers with a total capital outlay of Rs. 24.71 lakhs, the loads comprising 3,027 H.P. industrial, 2,536.5 H.P. agricultural and 943.738 K.W. lighting. Of the above sanctions were received for 88 extensions involving a capital expenditure of Rs. 8.58 lakhs and sanctions for the rest were awaited.

89. *Agricultural services.*—Ninety agricultural pump-sets with a connected load of 342 K.W. were connected up during the year bringing the total as on 31st March 1948 to 309 numbers with a total connected load of 1,093 K.W.

90. *Rural industries.*—Forty-two industrial services with a connected load of 596 K.W. were connected up during the year bringing the total as on 31st March 1948 to 175 Nos. with a connected load of 2,088 K.W.

91. *Firka development.*—Of the extension proposals mentioned above, eight numbers are in respect of extension of supply in Shermadevi and Tirumangalam firkas under the Firka Development Scheme. The capital outlay involved on these schemes is Rs. 6.79 lakhs and the loads covered by them are 112 H.P. industrial, 958 H.P. agricultural and 209 K.W. lighting. Of these, five extensions with a capital outlay of Rs. 3.48 lakhs were sanctioned and the rest are either awaiting sanction, deferred or are under revision on account of high deficits in revenue to be met from the Firka Development Fund.

The total estimated cost of the extensions in the firkas so far sanctioned is Rs. 4.04 lakhs. Of these, schemes to the extent of Rs. 0.17 lakh are under execution and are expected to be completed during 1948-49 and the remaining are expected to be taken up for execution as soon as materials are collected. The progress has been slow mainly due to non-availability of line materials required for the extensions.

92. *Meter and relay tests and special maintenance.*—The meter and relay test and special maintenance sections were busy throughout the year.

93. *Audit, accounts and stores.*—The annual inspection and audit for 1946-47 was conducted by Accountant-General's staff from 2nd August to 13th August 1947. The accounts relating to the operation stores at Pasumalai, Virudhunagar, Papanasam and Kallidaikurichi were maintained properly. The physical verification of stock was conducted by stock verifier from 9th December 1947 onwards in this system. Verification has been completed in respect of the Pasumalai and Virudhunagar stores and that in respect of the Papanasam stores was in progress.

94. *Programme for 1948-49.*—Twenty-two major works including temporary supply to India Cement are in progress, and they are expected to be completed during 1948-49.

Twenty extensions are expected to be investigated during 1948-49 for rural load development in the system.

MADRAS ELECTRICITY SYSTEM.

95. *General.*—To carry out the preliminary studies and works prior to the taking over of the electrical undertaking at Madras from the Madras Electric Supply Corporation, Limited, a Special Circle with a Superintending Engineer and a skeleton staff was formed in April 1947. The undertaking was acquired by Government on 29th August 1947. Since then it is being run as an Operation System of this Department. The Superintending Engineer, Madras Electricity System, is in charge of—

(i) the operation and maintenance of the electrical undertaking taken over from the Madras Electric Supply Corporation;

(ii) the installation of the two 2,500 K.W. transportable power sets sanctioned for immediate improvement of the power supply position in the City;

(iii) the Madras Power Station extensions sanctioned for expanding the ultimate capacity of the station by the installation of additional generating plant; and

(iv) the improvement of supply position in the Cuddapah area immediately, and the eventual taking over of the undertaking from the licensee.

The peak load of the Madras System since its acquisition was 21,900 K.W. generation 54.95 million units and gross revenue Rs. 40.75 lakhs. The demand for additional power in the system is expected to be of the order of 6,000 K.W. in the course of the next two years. With the commissioning of the transportable sets and the advance construction of one of the 80,000 lb./hr. boiler already ordered, the demands can be met as they arise without difficulty.

96. *Load development.*—The load details of the station for the first year of operation from 29th August 1947 to 31st March 1948 were as under:—

	Peak load in K.W.	Units generated in millions.
Basin Bridge	20,400	54.03
Villivakkam	1,500	.92
Total	21,900	54.95

97. *Financial results.*—Since the assets of the electrical undertaking taken over from the Madras Electric Supply Corporation are under valuation by Messrs. Merz and McLellan (India) and only a payment 'on account' has been made the financial results cannot be worked out to exactitude, but the position may be tentatively assumed to be as follows:—

	RS. LAKHS.
(1) Total capital invested (payment on account made to the Madras Electric Supply Corporation plus expenditure on transportable sets plus capital expenditure incurred up to 31st March 1948	163.21
(2) Opening and maintenance expenditure from 29th August 1947 to 31st March 1948	23.57
(3) Gross revenue earned during the period 29th August 1947 to 31st March 1948	40.75
(4) Net revenue during the period 29th August 1947 to 31st March 1948	17.18

98. *Connected load and number of consumers.*—The total connected load on the system was 41,137 K.W. as under:—

Serial number and description of load.						Connected load in K.W.
1.	Municipal	..	..	..	..	703
2.	Industrial	..	..	..	..	5,570
3.	Small industries	..	..	..	..	10,715
4.	Railways	..	..	..	..	2,410
5.	Panchayat boards	..	..	..	..	400
6.	Domestic lighting and power	..	..	..	..	20,339
7.	Tramways	..	..	..	..	1,000
Total ..						41,137

The number of consumers served by this system was 22,411 classified as under:—

						Nos.
H.T. industrial	..	..	..	..	..	19
Other H.T. consumers	..	..	..	..	..	12
L.T. industrial	..	..	..	..	..	5,595
L.T. domestic	..	..	..	..	..	16,256
Other L.T.	..	..	..	..	..	529
						22,411

99. *Power-house.*—The installed capacity of the Generating Plant is 41,500 K.W. at Basin Bridge Station and 1,500 K.W. at the Villivakkam Station. The boiler capacities of the two stations are 320,000 lb./hr. at Basin Bridge and 40,000 lb./hr. at Villivakkam. The first transportable set was put into commercial operation from the first week of April 1948 and the second set from the first week of June 1948. Inclusive of the transportable sets, the total installed capacity is 48,000 K.W. The effective capacity of the station is about 25,000 K.W. The routine maintenance of the power station equipment and auxiliaries was carried out regularly and the plants maintained satisfactorily.

The safe maximum capacity of the main station being only 18,500 K.W. the Villivakkam Emergency Station had to be run for about 4 hours almost every day both during the morning and evening peak load hours giving a relief of 1,500 K.W. maximum. With the commissioning of one of the 2,500 K.W. transportable sets a further relief of about 2,300 K.W. was available for the main station. To improve the cooling water system of the Power Station the following works were undertaken:—

- (i) Construction of new filter beds;
- (ii) reconstruction of the forced draught cooling tower No. 1; and
- (iii) erection of a fourth 130 h.p. cooling water pump to enable all the three cooling towers to be worked simultaneously.

The coal supply from Singarani and Bengal was satisfactory. The allotment of Singarani coal was increased as the boilers were more suitable for use of this type of coal.

100. *Transmission lines, sub-stations and distributions.*—Generation at Power-house is at 5 K.V. both at Basin Bridge and Villivakkam and the various sub-stations are connected to the Power-house through 5 K.V. lines. Thirty-three K.V. transmission lines run from the Kilpauk 5 K.V./33 K.V. step-up station to Tambaram with 5 Nos. 33/5 K.V. sub-stations en route to supply this area.

The L.T. distribution can be divided into two areas: (i) Central areas of city with D.C. supply 450 v./225 v. and (ii) outlying areas of Madras with A.C. supply at 440 v./250 v.

The supply to tramways is at 500 volts D.C.

There are six rotary converter stations and four Mercury Arc Rectifier Stations serving the D.C. areas of the City. Fifteen Kiosk sub-stations and 39 numbers Pole Mounted Transformer Stations supply the A.C. load as on 29th August 1947.

Four Pole Mounted Transformer Stations were erected during the year with an aggregate capacity of 220 K.V.A.

A new rectifier sub-station is under erection at Westcott road and it is proposed to install an additional rectifier station at Pantheon road to relieve the overloaded sub-stations feeding the area. Arrangements are being made to order an additional bank of mercury arc rectifiers at Nungambakkam sub-station. All the above three schemes were sanctioned by Government during the Madras Electric Supply Corporation period. As the load of Mylapore sub-station has grown up to such an extent that there is no spare convertor unit, one 250 K.W. rotary convertor set has been shifted from Egmore sub-station and is under erection at the Mylapore sub-station.

Proposals for introduction of A.C. supply (at 400 volts the standard voltage of distribution in this department) in areas surrounding convertor and rectifier stations where equipments and feeders are generally overloaded were prepared.

The entire distribution system was maintained satisfactorily. There were certain minor interruptions due to defects developing in old underground cables (the feeders in certain locations being as old as over 40 years). In all cases supply was restored expeditiously.

Particulars of transmission lines, distributors and sub-stations in the Madras system as on 29th August 1947 and 31st March 1948 are as under:—

Transmission lines and distributors.

Particulars of lines.	Length of lines as on 29th August 1947.	Extensions from 29th August 1947 to 31st March 1948.	Total as on 31st March 1948.
	IN MILES.	IN MILES.	IN MILES.
33 K.V. lines—			
Overhead	13.65	..	13.65
Underground	1.997	..	1.997
5 K.V. lines—			
Overhead	9.9	..	9.9
Underground	111.9	0.09	111.99
L.T. distributors—			
Overhead	114.4	0.8	115.2
Underground	167.83	0.02	167.85

Sub-stations.

Particulars of the station.	Number in service as on 29th August 1947.	Installed capacity as on 29th August 1947.	Number in service as on 31st March 1948.	Installed capacity as on 31st March 1948.
33 K.V. sub-stations	7	3,650 K.V.A.	7	3,650 K.V.A.
Rotary convertor stations	6	13,500 K.W.	6	13,500 K.W.
Rectifier stations	4	2,750 K.W.	4	2,750 K.W.
5 K.V. sub-stations, (including pole mounted transformers).	54	5,448 K.V.A.	58	5,668 K.V.A.

101. *Extensions.*—The number of extensions sanctioned from 29th August 1947 to 31st March 1948 was as follows:—

	Number.	Total cost: Rs.
(1) Estimates costing over Rs. 2,000	7	75,000
(2) Estimates costing below Rs. 2,000	19	27,000
	26	1,02,000

The more important of these were (1) extensions to agricultural pumps at Tirumangalam village and (2) extensions to the military pumping stations at Anakaputhur.

102. *Commercial activity.*—In view of the extra generating capacity available with the commissioning of the transportable sets, the pace of effecting service connexions was considerably accelerated. For this purpose intense procurement of materials was arranged, the labour force was increased and sub-stores were opened at various centres. The number of services effected from 29th August 1947 to 31st March 1948 was—

	Nos.
Domestic	1,155
Power	35
Temporary	30

The increase in demand is likely to be of the order of 6,000 K.W. in the course of the next two years. With the commissioning of the two transportable sets a relief of about 4,000 K.W. would be obtained. When the 6.6 K.V./5 K.V. transformers on order are received and erected, the transportable sets will afford relief to the full extent of 5,000 K.W.

The Madras and Southern Mahratta Railway has been permitted additional load of 400 K.W. The South Indian Railway has been permitted an additional load of 600 K.W.

At the time of taking over the undertaking on 29th August 1947, there were 4,950 applications on roll for domestic supply. Two thousand five hundred of these were permitted cases of which Madras Electric Supply Corporation had connected up 1,500 cases. Applications for supply continued to pour in at an average rate of about 300 per month. In view of the large demand for domestic supply, the programme of effecting service connexions was accelerated to the utmost possible extent and all the old pending feasible cases were connected up by the end of the year in addition to new cases considered special by the Committee for fixing priority of service connexions. This committee was reconstituted with the General Superintendent, Operating Systems, Chief Electrical Inspector to Government and Superintending Engineer, Madras Electricity System as members and the conditions for according special priority were clearly outlined. Conditions for supply to industrial services were liberalized.

103. *Agricultural development.*—There were no agricultural service connexions at the time of taking over. A major scheme for supply to agricultural pumpsets at Tirumangalam village was sanctioned and work was in progress. A number of schemes for supply to agricultural loads in outlying areas of the City, such as, Chromepet, Pallavaram, Rajakilpakkam, Tambaram, Vyasarpadi, Ambattur and other villages were under investigation. A proposal for supply to agricultural and rural industries in the Poonamallee area was being finalised.

104. *Stores.*—All the stores of the Madras Electric Supply Corporation were taken over along with their outstanding orders against which materials were being received from time to time. Sanction of Government for a reserve stock limit of Rs. 60 lakhs was awaited. To expedite progress on new services, new sub-stores were opened at a number of places in the City.

105. *Transportable power station.*—The installation of two 2,500 K.W. transportable sets at Basin Bridge at an estimated cost of Rs. 32.92 lakhs was sanctioned by Government. The sets were ordered on Messrs. Easun

Engineering Company. The turbo set assemblies were received in May and June 1947, transported to site near Basin Bridge Power Station and erected on firm foundations suitably covered by two T.G. sheds. The electrical and water cooling systems were connected with those of the Main Power Station. The first set was put into commercial operation in the first week of April 1948 and the second one in the first week of June 1948. The total capital expenditure on the scheme to the end of 31st March 1948 was Rs. 27.11 lakhs.

106. *Cuddapah electrical undertaking.*—The electric supply position at Cuddapah was precarious for several months and there was almost complete breakdown of supply in the beginning of the year 1948, all the engines of the licensee having failed.

After some negotiations the licensee agreed to hand over the undertaking to Government and it was decided to make an initial payment on account, of a sum of Rs. 1.5 lakhs to the licensee for the transfer of all the assets to Government subject to the valuation being determined as may be provided for in the nationalization scheme now under the consideration of Government.

To afford emergency supply to the waterworks and meet the essential needs of the town, 4 numbers small diesel sets of 21.9 K.V.A. each were rushed, erected, and supply to waterworks and town-lighting given on 24th March 1948. One 170 K.W. set loaned from the Public Works Department for the Cuddapah station is under erection. Besides, one 75 K.V.A. set and one 375 K.V.A. set have been procured from the military surplus and arrangements are being made to despatch them to Cuddapah. An inventory of the assets is under preparation and as soon as the agreements are completed, the undertaking will be taken over and run as a Government concern. A scheme costing Rs. 7.78 lakhs initially rising to Rs. 8.77 lakhs in three years has been sanctioned for the above purpose. An Assistant Engineer has been posted at Cuddapah.

107. *Thirty-three K.V. line from Kodambakkam to Trivellore and Kadambattur.*—The erection of the line has been completed. The expected relief to the Mettur System will be afforded after the erection of the step-down transformers at Kadambattur, Trivellore, etc.

108. *Madras plant extensions.*—The Madras Plant Extensions sanctioned by Government at an estimated cost of Rs. 112 lakhs initially rising to Rs. 243 lakhs in 10 years, provides for the erection of a new Power-house adjoining existing station at Basin Bridge with one 15,000 K.W. generating set and 3 numbers 80,000 lb./hr. boilers in the initial stage. Work was commenced in July 1946.

Specifications for the various items of work were finalized by the Consulting Engineers, Messrs. Merz and McLellan (India). Tenders were called for and contracts awarded for piling work for foundations and for the supply and erection of boilers, turbo-sets, switchgears, transformers, C.W. pumps and piping equipments, mechanical coal and ash handling plant, etc.

The proposed station site has been cleared by shifting the blow down tank, drain tank, etc., and diverting the route of the L.T. cables in this area and the mulsifyre main of the existing station.

The piling work has just been commenced by the contractors and is in progress. The construction of the concrete approach road to the new

house site is also in progress. The Railway have commenced the work of laying the new railway siding to the new Power station site.

The boiler parts are being received and are stored near the power station site.

109. *Programme for 1948-49.*—The following is the programme of construction works of the system for 1948-49 :—

- (i) Completion of the balance works of construction of filter beds;
- (ii) Completion of the reconstruction of force draught cooling tower No. 1;
- (iii) Revetment to western bank of the cooling pond;
- (iv) Completion of the building for Westcott Road sub-station;
- (v) Special repairs to the natural draft cooling tower;
- (vi) Reconstruction of the forced draught cooling tower No. 2;
- (vii) Erection of fourth 130 H.P. cooling water pump; and
- (viii) Repairs to chimney of No. 9 boiler.

Extensions.

- (i) Completion of extensions to Tirumangalam;
- (ii) Extension of supply to military pumping station at Anakaputhar;
- (iii) Extension of supply to East Asiatic Company;
- (iv) Relaying of cable to Kilpauk Waterworks;
- (v) Providing a 11 K.V. Ring Main in the North Madras area;
- (vi) Additional plants to Mylapore and Nungambakkam sub-stations;
- (vii) Introduction of A.C. supply in selected areas such as Mylapore, Nungambakkam, Bells Road, etc., where the existing D.C. equipment at sub-stations and feeders are overloaded;
- (viii) East Tambaram Extension Scheme;
- (ix) Supply to Poonamallee and adjoining areas for agricultural loads; and
- (x) Extension of supply to T.V.S. Workshops, Subodhaya Publications, Addition and Company, and Indian Express.

110. *Administration.*—When the Madras Electric Supply Corporation Undertaking was taken over, practically all the Indian employees and five European officers employed under the Company were taken into Government service for a period of one year from 29th August 1947, provisionally, in the first instance on practically the same terms of service as under the Madras Electric Supply Corporation. At the end of this provisional period, their further continuance and terms and conditions therefor, absorption into the regular Government cadres and allied matters will be considered by Government and orders issued. The system was placed in charge of a departmental Superintending Engineer assisted on the accounting side by a Chief Accounts Officer of the rank of Assistant Accountant-General. Requisite supervisory technical and ministerial staff were also sanctioned to ensure satisfactory operation and maintenance, budgeting, accounting and administration and to ensure compliance with the budget and financial rules and regulations. As far as possible, company methods of accounting, billing, collection, etc., were continued with minimum modifications necessary to satisfy audit requirements. Mr. Beardsell, an European officer of the Madras Electric Supply Corporation taken over in Government service, resigned his appointment in March 1948 and permanent substitute arrangement in his place is under the consideration of Government. The system

is the largest thermal electrical undertaking in the Province and with the old and semi-obsolete plant and equipment therein the system charge is heavy. It has over 22,000 consumers on its rolls and with the rush for demand for supply of electricity for domestic industrial and other requirements the volume of correspondence passing through is ever on the increase. The Madras Plant Extensions, the transportable power station, work connected with the acquisition of the Cuddapah Electrical Undertaking, all these have resulted in additional duties and responsibilities. The valuation of the undertaking is being done by Messrs. Merz and McLellan (India). The Madras Electric Supply Corporation have recently furnished revised inventories in the form acceptable to the valuers. These are being checked by special staff and observations on the inventories are being sent to the valuers.

ANDHRA SYSTEM.

111. *General.*—The Andhra System comprises the steam stations at Vizagapatam and Bezwada and the oil engine stations at Cocanada and Kurnool with their respective lines and distributions. The progress in the four thermal stations continued to be satisfactory in spite of the adverse conditions such as limited plant capacity at Cocanada and unsatisfactory coal supplies to Bezwada and Vizagapatam Power-houses. Preliminary arrangements for obtaining bulk supply from Mysore and taking over of the Hindupur Municipal Distribution Scheme were in progress during the year.

During the year 95 agricultural loads with an aggregate capacity of 370.5 H.P. and 16 numbers low tension industrial loads with aggregate capacity of 281 H.P. were connected up. Three new villages were electrified.

The following was the progress of commercial activities in the system in respect of agricultural and industrial loads :—

Particulars.	Number of extensions.	Cost. RS. IN LAKHS.	Number of services.		Total K.W.
			Agricultural.	Industrial.	
Major scheme sent up ..	8	49	103	105	4,240
Major sanctioned extensions ..	2	31.82	..	2	6,450
Minor extensions sent up ..	28	6.48	156	34	2,200
Minor extensions sanctioned ..	70	2.31	32	38	780

Load surveys.—Extensive load surveys were undertaken in the Narasapur and Ongole areas and proposals were finalised. Load surveys in Ceded Districts (Hindupur area) were in progress.

VIZAGAPATAM SYSTEM.

112. *General.*—This was the ninth year of operation. The peak load at the station was 2,500 K.W. during the year and the generation 7.40 millions units against 2,140 K.W. and 7.26 millions units respectively in the previous year. The generation figure would have improved further but for the strike situation in Scindia Workshop which dragged on for three months. The gross revenue earned during the year was Rs. 5.80 lakhs as against Rs. 5.28 lakhs in 1946-47. The total connected load on the system was 7,433 K.W.

113. *Power-house.*—The operation and maintenance of the power-house during the year was satisfactory. The power transformer capacity of the Vizagapatam Power-house step-up transformer station was increased during the year by adding 1 number 1,500 K.V.A.-3.3/11 K.V. transformer to feed the 11 K.V. loads and releasing a 750 K.V.A. transformer. The released transformer was connected up on the 33 K.V. side in parallel with

existing transformer (750 K.V.A.) supplying 33 K.V. loads. Two more 1,500 K.V.A. 3-3/11 K.V. transformers have been received for Vizagapatam Power-house one of which was put on plinth reconditioned and ready to go into service. Two 11 K.V. outdoor control kiosks were erected in the Power-house transformer yard.

The coal supply during the year was satisfactory except during the month of September, when the ground balance touched the figure of 720 tons. Extensions to the power-house plant and switchgear are in progress. Most of the materials for the fifth 22,000 lb./hr. boiler have been received at site. The 2 numbers 75 K.V.A. station transformers were replaced by 2 numbers 150 K.V.A. capacity transformers. The third station transformer of 150 K.V.A. capacity was erected with its necessary high tension and low tension switchgear and will be commissioned shortly.

The turbine rotor of the 1,500 K.V.A. No. 3 set was found to have suffered the following damage:—

(1) Stripping of shrouding over the first stage velocity wheel blades; and

(2) pitting of blades of first and second stage velocity wheels and intermediate stationary blades.

The machine was, however, found fit for service on careful examination and kept as standby.

114. *Load development.*—The following table shows the development of load and revenue since the commencement of operation of the system:—

Year.	Peak load in K.W.	Units generated in millions.	Units sold in millions.	Gross revenue (Including miscellaneous).
				RS.
				IN LAKHS.
1938-39	820	1.78	..	0.85
1939-40	1,010	2.49	2.09	1.37
1940-41	1,000	3.00	2.43	1.77
1941-42	980	3.09	2.44	1.91
1942-43	840	2.91	2.32	2.09
1943-44	960	3.64	2.97	2.31
1944-45	1,160	4.77	3.86	3.36
1945-46	1,600	6.55	5.78	4.47
1946-47	2,140	7.36	6.52	5.28
1947-48	2,500	7.40	6.32	5.80

115. Financial results.—

	RS.
1 Total capital including arrears of interest	37,67,136
2 Gross revenue	5,70,195
3 Working expenses excluding interest and depreciation	5,48,952
4 Total expenses	5,48,952
5 Net revenue	21,243

116. *Connected load.*—The connected load at the end of the year ^{on} under different categories was as follows:—

Number and category.	Connected load in K.W. as on 31st March 1948.
I. Industrial High Tension supply—	
(a) Textiles	..
(b) Cement	..
(c) Chemicals	..
(d) Gold mining	..
(e) Oil and other industries	2,703
(f) Tea estates	..
(g) Licensees	2,384
(h) Municipalities	..
II. Industrial Low Tension supplies	669
III. Irrigation and agriculture	71
IV. Domestic heat and power light, etc	778

Number and category.	Connected load in K.W. as on 31st March 1948.
V. Commercial heat power and light	18
VI. Public water works and sewage pumping	20
VII. Street lighting	790
VIII. Miscellaneous (Railways and Madras Electric System High Tension and Low Tension Supplies).	
Total	7,433

117. Transmission lines, extra high tension sub-stations and distributions.—

Voltage.	Constructed during the year 1947-48.		Total in service.	
	Single circuit lines. MILES.	Double circuit lines. MILES.	Single circuit lines. MILES.	Double circuit lines. MILES.
33 K.V.	..	..	48.5	10.7
11 K.V.	..	..	81.5	..

The number of power transformer stations was 7 with an aggregate capacity of 2,200 K.V.A. during the year. The number of distributions transformers in service was 29 with a total capacity of 1,580 K.V.A.

118. *Extensions.*—The following extensions were carried out during the year and the lines energised:—

- (1) Extension of supply to Thumpala Sugar Factory .. 3 miles of 11 K.V. line.
- (2) Extension of supply to Chittivalasa Jute Mills .. 1½ miles of 11 K.V. line.
- (3) Extension of supply to Sri P. Subramaniam's mill in Bhimlipatam. .. 1 mile of 11 K.V. line.
- (4) Extension to oil mills in Vizinagaram .. 3 miles of 11 K.V. line.

119. *Agricultural services.*—One agricultural service with a connected load of 6 K.W. was connected up during the year bringing the total to 13 and 71 K.W.

120. *Rural industries.*—Five rural industries were connected up with a connected load of 100 K.W. bringing the total to 43 numbers and 669 K.W.

BEZWADA SYSTEM.

121. *General.*—This was the ninth year of operation. The peakload on the station was, while giving relief to Krishna Cement Company 3,900 K.W. and the units generated 14.0 millions units against 3,520 and 11.23 millions units during 1946-47.

The purchase of energy from Krishna Cement Company was continued during the year as and when necessary and aggregated to 1.3 lakhs of units.

The gross revenue earned during the year was Rs. 7.30 lakhs against Rs. 6.53 lakhs in the previous year, showing an increase of Rs. 0.77 lakh. The total connected load was 7,998 K.W. against 7,255 K.W. last year.

122. *Power house.*—The operation and maintenance of the power house was satisfactory. The alternator of the 1,500 K.W. turbo alternator set No. 2 suffered a damage due to the end damper bar on one of the pole shoe of the rotor opening out and rubbing against the stator windings. The repairs to the stator windings and rotor was taken up immediately and was completed.

A 11 K.V. control kiosk was erected in the power house transformer yard for controlling one of the 11 K.V. feeders; consequent to the addition of a rural 11 K.V. feeder two additional bays were added to the yard and necessary re-arrangement of feeders completed. One 1,500 K.V.A. 3-3/11-33 K.V. transformer received under Bezwada-Rajahmundry-Samalkot extensions for

Bezwada stop-up transformer station, was examined and filled partly with oil. The work could not be complete due to non-availability of transformer 'B' oil. Two Nos. 3,000 K.V.A. 3.3/11-33 K.V. transformers have also arrived.

Due to irregular coal supplies from Singareni Collieries during February 1948 the Ground balance of Coal at Bezwada Power House reached a low figure of about 1,000 tons necessitating imposition of restrictions to conserve coal. The situation towards the end of March 1948 eased slightly due to the prompt action taken by the Electrical Commissioner with the Government of India to despatch coal from Bengal Coal fields.

123. *Load development.*—The following table shows the development of load and revenue since the commencement of operation of the system :—

Year.	Peak load in K.W.	Units generated in millions.	Units purchased from Krishna Cement Company in akhs.	Units sold in millions.	Gross revenue (including miscellaneous)
					RS. IN LAKHS.
1938-39	530	..	..	..	1.89
1939-40	1,540	4.68	..	3.92	2.84
1940-41	2,000	6.61	..	5.65	3.68
1941-42	2,300	9.12	..	7.94	4.11
1942-43	2,080	8.99	4.32	7.72	6.25
1943-44	2,420	10.49	3.01	9.07	4.88
1944-45	2,400	10.53	0.77	8.99	5.80
1945-46	2,500	10.38	0.63	8.76	6.53
1946-47	3,520	11.23	1.02	10.09	7.30
1947-48	3,900	14.00	1.30	12.05	

* Larger amount due to miscellaneous revenue from sale of materials.

124. *Financial results.*—

	RS.
1. Total capital outlay including arrears of interest	42,56,985
2. Gross revenue	7,43,734
3. Working expenses excluding interest and depreciation	7,54,425
4. Depreciation and Special Reserve Funds	88,000
5. Total expenses	8,42,425
6. Net revenue	— 98,691

125. *Connected load.*—The connected load at the end of the year under the different categories was as follows :—

Number and category.	Connected load in K.W. as on 31st March 1948.
I. Industrial high tension supply—	
(a) Textiles	880
(b) Cement	164
(c) Chemicals	
(d) Gold mining	487
(e) Oil and other industries	
(f) Cordite Factory	
(g) Tea estates	2,251
(h) Licensees	2,147
(i) Municipalities	562
II. Industrial low tension suppliers	1,306
III. Irrigation and agriculture	182
IV. Domestic heat and power lights, etc.	2
V. Commercial heat and power lights, etc.	
VI. Public water works and sewage pumping	5
VII. Street lighting	0
VIII. Miscellaneous (Railways and Madras Electricity System high tension and low tension supplies).	
Total	7,998

126. *Transmission lines, extra high tension sub-stations and distributions.*—About 2.5 miles of double circuit 33 K.V. line and 5.763 miles of single circuit 11 K.V. line were constructed during the year bringing the total mileage of transmission lines to the following :—

Voltage.	Constructed during the year.		Total as on 31st March 1948.	
	Single circuit.	Double circuit.	Single circuit.	Double circuit.
	MILES.	MILES.	MILES.	MILES.
33 K.V.	0.028	2.5*	96.328	5.8
11 K.V.	5.763	..	82.163	..
L.T. lines	17.899	..	76.699	..

* At present unregistered at 11 K.V.

There was no addition to the power transformer capacity of the E.H.T. sub-stations during the year, which remained at 2,500 K.V.A. This figure does not include the standby transformer capacity one 250 K.V.A. 33/11 K.V. transformer at Sitanagaram and 2,500 K.V.A. 3.3/11 K.V. transformers at Krishna Cement Company.

Paralleling arrangements were completed at Nuzvid Junction and Gudivada Sub-station during the year. Similar arrangements at Masulipatam Sub-station were in progress and proposals for the arrangements at Ellore Sub-station were submitted for sanction. Thirteen Numbers distribution transformers were added during the year and the aggregate transformer capacity increased to 2,115 K.V.A. The total number of distribution transformers in service at the end of March 1948 were 52.

127. *Extensions.*—The following extensions were completed during the year :—

- (1) Panamalur Agricultural Extensions.
- (2) Ramannaguram Agricultural Extensions.
- (3) Extension of supply Low Tension to N. Anjaneyalu.
- (4) Pedagirala Agricultural Extensions.
- (5) Supply to Polasanapalli.
- (6) Supply to Mill at Bapalapadu.
- (7) Supply to Ramagopal Rice and Oil Mill, Patamata.
- (8) Extension of supply to Gosala and Vanukur.
- (9) Extension of supply to Chinnaogirala and Gandikunta.

Bezwada-Guntur 33 K.V. line.—Preliminary surveys to land acquisition proposals were completed during the year. Progress was held up due to non-receipt of approval, for the separation distance to be maintained from trunk telephone lines, from the Engineer in Chief of Telegraphs. Supply position of essential line materials also was not satisfactory.

Two major extensions—the West Godavari distribution scheme and the 33 K.V. line from Gudivada to Vuyyur via Pamarru were sanctioned by Government and work will be taken up in 1948-49.

128. *Agricultural services.*—Ninety-two agricultural services with a connected load of 346 K.W. were connected during the year bringing the total to 282 Nos. and 1306 K.W.

129. *Rural industries.*—8 Nos. low tension industrial loads with a connected load of 206 K.W. were added during the year bringing the total to 25 and 562 K.W.

Three new villages were electrified during the year.

COCANADA THERMAL SCHEME.

130. *General.*—This was the eighth year of operation of the system. The peak load on the generating station was 440 K.W. and the units generated 1.46 millions units against 380 K.W. and 1.4 millions units last year. The gross revenue earned during the year was Rs. 1.42 lakhs against Rs. 1.23 lakhs last year. The load development in this area was almost at a standstill due

to the restricted plant capacity available. The total connected load was 1,379 K.W. as against 1,260 K.W. last year. Steps are being taken to add one 170 K.W. set to the Cocanada Power House. Work on the Power House extensions has been taken up and the new set will be commissioned in 1948-49.

131. *Power house.*—Arrangements have been completed for utilizing the 50 K.W. set in the station effectively by feeding the Cocanada Municipal Water Works and Ramaraopet feeder loads of the Cocanada Municipal distribution directly from the above set.

132. *Load development.*—The following table shows the development of load and revenue yearwar :—

Year.	Peak load in K.W.	Units generated in millions.	Units sold in millions.	Gross revenue (including miscellaneous). RS. IN LAKHS.
1940-41 ..	325	0.77	0.75	0.47
1941-42 ..	360	0.94	0.73	0.76
1942-43 ..	341	0.92	0.84	0.81
1943-44 ..	314	0.86	0.77	0.91
1944-45 ..	350	0.96	0.96	1.19
1945-46 ..	420	1.40	1.27	1.62
1946-47 ..	380	1.25	1.14	1.23
1947-48 ..	460	1.46	1.34	1.42

133. *Financial results.*—

Total capital including arrears of interest	RS. 6,32,741
Gross revenue	1,43,156
Working expenses excluding interest and depreciation	1,92,243
Net revenue	— 49,087

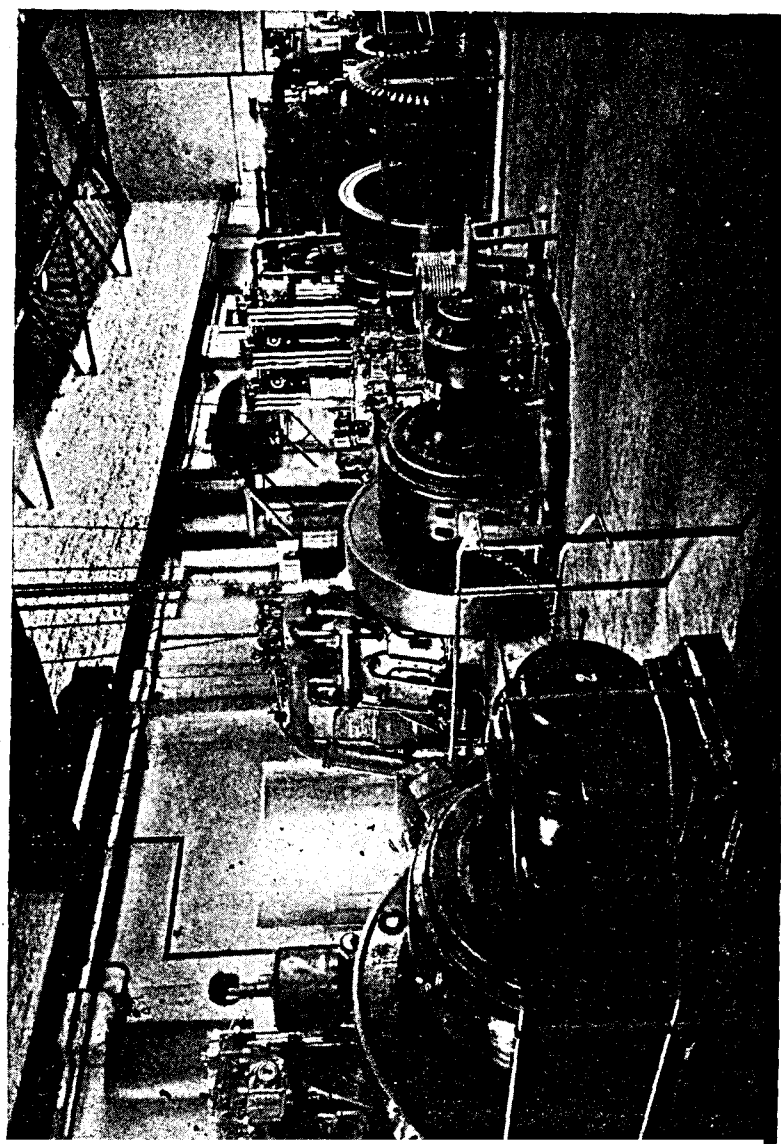
134. *Connected load.*—The connected load at the end of the year under the different categories was as follows :—

Number and category.	Connected load in K.W. as on 31st March 1948.
I. Industrial High Tension supplies—	
(a) Textiles	..
(b) Cement	..
(c) Chemicals	..
(d) Gold mining	..
(e) Oil and other industries	..
(f) Cordite Factory	..
(g) Tea estates	..
(h) Licensees	..
(i) Municipalities	837
II. Industrial Low Tension supplies	158
III. Irrigation and agriculture	19
IV. Domestic heat and power lights	230
V. Commercial (Heat and power lights)	6
VI. Public water works and sewage pumping	..
VII. Street lighting	51
VIII. Miscellaneous (Railways and Madras Electric Supply High Tension and Low Tension Supplies.)	78
Total	1,379

135. *Transmission lines, substations and distributions.*—One span of 60 feet length 11 K.V. line was constructed during the year for giving low tension supply to A.C.E. Industries, Madhapatnam. The total length of transmission lines as on 31st March 1948 as below :—

Voltage.	Constructed during the year—Miles—Single circuit.	Total in service—Miles—Single circuit.
11,000	0.01	55.41
Low Tension Lines	..	29.8

The number of high tension substations was nil. The number of distribution transformer stations was 14 with a total capacity of 440 K.V.A.



KURNOOL POWER-HOUSE—INSIDE VIEW

136. *Agricultural services.*—One agricultural service of 4 K.W. was connected up during the year. The total number in the system as on 31st March 1948 was three with a connected load of 19 K.W.

137. *Rural industries.*—One rural industry with a connected load of 22 K.W. was connected during the year, bringing the total number as on 31st March 1948 to 16 Nos. with aggregate connected load of 150 K.W.

138. *11 K.V. line to Ramapadasagar Dam site.*—Supply from Andhra Paper Mills to the Ramapadasagar Dam site was discontinued from 21st May 1947 when the Paper Mills went into liquidation.

139. *Extensions.*—The construction of the following lines was in progress during the year. The progress was slow due to the non-availability of line materials—

- (1) 33 K.V. line from Hydro substation to Dwarapudi.
- (2) 33/11 K.V. line from Dwarapudi to Tapeswaram.
- (3) 11 K.V. line from Paper Mills to Hydro substation.
- (4) 11 K.V. line from Tapeswaram to Mandapeta.
- (5) 11 K.V. line from Hydro substation to R.E.S. Company.

KURNOOL SYSTEM.

140. *General.*—This was the first complete year of operation since the power house and distribution were taken over by the department.

The peak load on the station during the year was 140 K.W. and the units generated 3.26 lakhs. The total connected load during the year was 337 K.W. The gross revenue earned during the year was 0.68 lakh.

141. *Power house.*—The working of the Kurnool Power House was increased to 21 hours per day. During the last part of March, 24 hours supply was being maintained to enable the Kurnool Municipality to pump water from the canal before the canals were closed for summer.

The plant capacity of the power house was increased by adding one 150 K.W. set.

One 200 K.V.A.—400 V./3.3 step-up transformer was installed to step-up the generated voltage of the 150 K.W. set to 3.3 K.V.

142. *Load development.*—

Connected load at the end of the year	337 K.W.
Peak load	140 "
Number of units generated	3.26 lakhs.
Number of units sold	3.84 "
Gross revenue	0.52 "

143. *Financial results.*—

Total capital outlay including arrears of interest	1,14,462 *
Gross revenue	67,785
Working expenses excluding interest and depreciation	79,686
Total expenses	79,686
Provision for Depreciation and Special Reserve Fund	11,901
Net revenue	— 11,901

* Does not include the purchase price payable to the Municipality, as the purchase price has not been finally settled yet.

144. *Connected load.*—The connected load at the end of the year under the different categories was as follows:—

	IN K.W.
I. Industrial L.T. supplies	17
II. Irrigation and agriculture	2
III. Miscellaneous (Railways and M.E.S.), H.T. and L.T. supplies	318
Total	337

145. *Transmission lines and distribution.*—The table below gives the length of transmission and distribution lines as taken over from the Kurnool Municipality :—

Voltage.	Construction during the year in miles.	Total single circuit line mile.
33 K.V.	..	3.46
L.T. Lines	0.6	14.90

There are four distribution transformer stations with an aggregate capacity of 230 K.V.A.

146. *Agricultural services.*—One agricultural service with a connected load of 2 K.W. was connected up during the year.

147. *Rural industries.*—Two numbers L.T. industrial loads with the connected load of 6 K.W. were connected during the year bringing the total to 5 Nos. with a total connected load of 17 K.W.

148. *Firka development schemes in Andhra systems.*—There are 10 areas marked out for Firka Development Schemes by the Government within the jurisdiction of this system and Electrification Schemes for the following six firkas were submitted in 1946-47 :—

- | | |
|---------------------|----------------------------|
| (1) Bezwada firka, | (4) Kurnool firka, |
| (2) Dendulur firka, | (5) Rajahmundry firka, and |
| (3) Pendurti firka, | (6) Gara firka. |

Of the above six, the schemes for Rajahmundry firka have been deferred by the Government due to inadequacy of power. The schemes for the remaining four firkas have been asked to be revised. The Bezwada firka scheme has been revised and sent up for sanction. Dendulur firka scheme is being finalized. The revision of the Pendurti and Kurnool scheme is to be taken up after completion of Dendulur firka scheme.

149. *Administration.*—The construction subdivision was closed on 1st April 1948 and the balance of the construction works were transferred to Assistant Engineer, Cocanada. Two construction subdivisions have been formed during the year one at Vizagapatam and the other at Bezwada.

150. *Audit accounts and stores.*—All the stores in the system were verified by the Stock Verifier during 1947-48 and his report indicated that the maintenance of stores and accounts was satisfactory. The inspection of Accountant-General's staff indicated that the maintenance of accounts was satisfactory.

ELECTRICAL INSPECTORATE AND LICENSEE ELECTRIC SUPPLY UNDERTAKINGS.

151. *Electrical undertakings.*—The number of Electric Supply Undertakings under the Indian Electricity Act, including three (Rameswaram, Valparai Township and Sembiam) operating under section 28 of the Indian Electricity Act was 78 at the close of the year, out of which 35 were managed by local bodies and the rest by private Companies. The decrease of 4 licences during the year is due to (1) taking over of the Madras Electric Supply Corporation by the Government on the expiry of the Madras Electric Licence, Madras Port Licence and the Madras Cantonment Licence and the cancellation of the licence under section 28 for Tiruchendur. The conditions of supply in the licensed undertakings were normal except for major interruptions and unsatisfactory supply due to engine trouble in the generating stations at Cuddapah, Proddatur, Ongole and Kollegal.

Applications from the following licensees for extension of area of supply were considered during the year :—

- | | |
|-----------------------|-------------------|
| (1) Okkur, | (3) Sivakasi, and |
| (2) Nattarasankottai, | (4) Bezwada. |

The application from Okkur was turned down and the rest were under consideration of Government at the close of the year.

The details of the plant at the Generating Stations of the licensees and Government are given in Appendix E.

152. *Indian Electricity Act and Rules.*—Government are considering the proposals for the enforcement of the provisions of the Indian Electricity Rule, 1948, in this Province and also the licensing of wiring contractors. Relaxation up to 31st March 1949 has been recommended in respect of the provisions of Indian Electricity Rule, 49 (5) to (8).

Most of the licensees have not yet provided linked switches as required in Rule 60 (1) (d) of the Indian Electricity Rules and have asked for relaxation of the rule for varying periods. A general relaxation of this rule up to 31st March 1949 was recommended in the case of all licensees.

Certain amendments to the Indian Electricity Rules have been proposed by the Central Government and were examined by the Central Electricity Board.

153. *Accounts.*—During the year under report, 36 Accounts of Company Managed Undertakings and 35 Accounts of Local Authority Undertakings were scrutinized and remarks submitted to Government. The applications of South Arcot Licensee and the South Madras Electric Supply Corporation for additional debentures were sanctioned by Government.

154. *Tariffs.*—The accounts of all Undertakings are being scrutinized with special reference to profits earned above the percentage specified in the power agreements and the licensees are addressed to reduce their rates wherever their profits exceeded the stipulated limits. Proposals for reduction of tariffs at Dindigul, Pollachi, Devakottah, Chittoor, Ootacamund, Vellore, Tiruppur, Calicut, Salem-Erode, Karur and Kanadukathan are under examination.

155. *Restriction and control orders in the licensees areas.*—The year 1947-48 witnessed a large demand for power from the public all over the Province, but the licensees were not able to cope with the demand fully.

In September 1947 Government directed that supply of Electricity to the following categories of loads in the areas served by the licensees in the Hydro-Electric Systems be excluded from the operation of the Electricity Restriction and Control Orders :—

- (1) Domestic services.
- (2) Agricultural loads.
- (3) Industrial loads up to 10 H.P.

The relaxation was subject to the condition that the additional loads to be permitted consequent upon such relaxations, should not increase the Maximum Demand limit fixed by the Government Electricity Department for each licensee.

In September 1947, the Chief Electrical Inspector to Government was authorized to issue permits for temporary supplies up to four months in all the thermal areas except Cocanada thermal system.

The ban on the issue of licences to new rice mills imposed in January 1947 was lifted in the areas of the Province outside the firkas selected for intensive rural reconstruction, in September 1947.

In September 1947, the monetary limit up to which the Chief Electrical Inspector to Government was empowered to sanction supply of power was raised to Rs. 2,000.

156. *Freezing orders.*—The freezing orders served on the licensees taking supply from the Government Electricity Department continued to be in force during the year.

In April 1947 the Chief Electrical Inspector to Government was authorized to deal finally with all applications for permit under freezing orders involving a maximum demand of 50 K.W. and below, in each case, in the areas of licensees receiving bulk supply from the Government Electricity Department.

157. *Peak load restrictions.*—The peak load restrictions were continued in the following places during the year :—

- | | |
|----------------|--------------------|
| (1) Cuddapah, | (4) Mangalore, and |
| (2) Hindupur, | (5) Rajahmundry. |
| (3) Proddatur, | |

During the year, the generating plants at the following licensees were declared to be fully loaded during peak load hours :—

- (1) Kollegal, and
- (2) Nellore.

158. *Priority schemes for electric supply.*—The schemes to cut off load in a pre-arranged order of priority in cases of breakdown of plant in the power stations were continued at Cuddapah, Ongole, Kollegal and Proddatur.

159. *Committee for Madras.*—The Committee that was set up last year to deal with the applications for supply of energy in the areas of the Madras Electric Supply Corporation and the four electrical undertakings taking supply from the Madras Electric Supply Corporation was dissolved with the taking over of the Madras Electric Supply Corporation by the Government and a Departmental Committee consisting of the General Superintendent, Operating Systems, Superintending Engineer, Madras Electricity System and the Chief Electrical Inspector to Government was constituted to take its place. Regarding the applications for supply of energy in the electrical undertakings taking supply from the Madras Electricity System, the Chief Electrical Inspector to Government was authorized to sanction supply up to 15 H.P. in each case and all applications above 15 H.P. were being dealt with by the Committee.

160. *Rationing of electricity.*—The restrictions imposed in the preceding years on the working hours of oil engine generating stations continued to be in force during the year.

Retail rationing of electricity continued to be in force in the areas of the following licensees : (1) Nellore, (2) The Panchayat areas taking supply from the Madras Electricity System, (3) The areas of the five licensees taking bulk supply from Government thermal station at Bezwada, and (4) Cocanada Municipality.

In February 1948, maximum number of shows which each cinema theatre may have under the Electricity Rationing Order, was increased to 21 shows per week and each theatre was permitted to exhibit not more than 12 commercial slides per show. The restriction imposed in the Rationing Order that all lights and fans in Public rooms, Hotels, Restaurants and Clubs in these areas should be cut off not later than 10 p.m. was also cancelled.

The penalty free consumption in the areas of licensees taking supply from Madras Electricity System was raised to 100 units per month per service.

Street lighting in the areas of licensees taking supply from Bezwada thermal station was permitted to be restored to pre-war level.

161. *Supply position in the licensee's areas.*—(1) *Hydro-electric areas.*—The supply position in the licensee's areas taking supply from Hydro-Electric Systems was satisfactory in the beginning of the year under review, but by about the end of December 1947, the water level in Mettur and Papanasam reservoirs fell down rapidly, resulting in power shortage and restrictions had to be imposed on fresh industrial loads and other supplies.

(2) *Government thermal stations—Bezwada-Vizagapatam area.*—In the beginning of the year under review, the coal stock at the power houses (Bezwada and Vizagapatam) considerably deteriorated and the licensees served by the above power houses were directed to stop connecting up new loads and no new loads were permitted.

There was an improvement in the coal position by about August 1947 and all restrictions imposed due to coal position were removed.

In the Bezwada area, however, due to power shortage only agricultural and domestic loads were being freely permitted from August 1947.

Due to irregular supply of coal from Hyderabad, from February 1948 and low stocks on hand further restrictions on the supply of energy in the licensee's areas in the Bezwada thermal area were being imposed.

Cocanada.—The supply position in the area of this licensee continued to be unsatisfactory. However, by staggering the existing loads, a small margin of power was available and about 100 domestic connexions were permitted.

(3) *Self-generating stations.*—Though the diesel oil control had been lifted, the supply position in the areas of the licensees having Diesel oil generating stations was not satisfactory.

(4) *Mangalore.*—This licensee has ordered for two additional generating sets of 267 K.W. each. One of them has already arrived and is being erected and with the addition of these sets the supply position is expected to improve.

(5) *Cuddapah.*—The supply position continued to be very unsatisfactory during the year and deteriorated so much that the Government had to step in to effect improvements in supply.

162. *Diesel oil control.*—During the year under review, 4 of the self-generating licensees using diesel oil were having 24 hours of supply one having 22 hours of supply, three having 20 hours of supply and nine stations having less than 20 hours of supply.

The average aggregate monthly oil consumption of different undertakings for 12 months from March 1947 to February 1948 (both inclusive) was 213.2 tons. This represents an increase of 9.4 per cent on the consumption prior to introduction of diesel oil control.

163. *Assistance to licensees regarding plant, poles, etc.*—Assistance to licensees to improve their plant position was continued to be given.

The question of supply of wood poles was taken up with the Forest Utilization Officer and it was arranged that the Government Electricity Department should acquire all available wood poles from the Forest Department and such numbers as could be spared would be released to the licensees who should indent through this office to the Government Electricity Department. A large quantity of second hand rails was imported by Government from America. Out of these about 8,000 poles were made available by the Chief Engineer for Electricity for the use of the licensees. These were proportionately allotted to the licensees, who had placed indents for the poles already. The poles began to arrive in India in November 1947.

The supply of G.I. pipes and fittings was continued to be controlled.

164. *Unmetered supply.*—It was found that many licensees were not able to give service connexions for want of meters even in cases where permits under Restriction and Control Orders were issued. To overcome this stallmate, Government, in June 1947, approved proposals for giving unmetered supply except in respect of industrial services.

165. *Strikes in licensees' areas—Proddatur.*—A strike notice was issued by the employees of the Proddatur Licensee for commencing the strike on 13th October 1947 but the strike was averted by the management and employees coming to a settlement before the strike could materialize.

Nellore.—A strike notice to commence from 22nd May 1947 was issued by the labourers' union but was averted by the intervention of the Commissioner of Labour.

166. *Surcharges.*—The total number of licensees who sent their declarations of war costs surcharge during 1947-48 were 62. Out of these, 24 licensees sent nil declarations. Of the remaining 38 licensees, 11 licensees were found not entitled to levy any surcharge during the year and 10 licensees were permitted to levy surcharge for a part of the year. In the case of rest, viz., 17 licensees, surcharge was ordered to be continued up to 31st March 1948.

167. *Laboratory.*—During the year under review supply pressure and meter tests of 28 licensees were carried out. In most of the licensees areas the supply pressure was found to be varying beyond the permissible limits.

The tests carried out in the Laboratory of Madras and at site in licensees' areas were as follows:—

Laboratory—					
Rotating sub-standard meters	..	..	..	..	123
Commercial meters and other instruments	..	..	..	..	272
Transformer oil tests	..	..	..	..	118
Fire extinguishers	..	..	..	..	897
Laboratory sub-standard meters	..	..	..	..	108
Site test—					
Voltage tests	..	..	..	..	211
Meter tests	..	..	..	..	506
Total tests					2,235

Out of 123 rotating substandard meters 61 were from licensees and the rest from Government Systems.

Total revenue realized during this year as testing fees was Rs. 13,620 including the contribution from the systems.

Instruments and furniture costing Rs. 5,638 were purchased for the laboratory.

168. *Local authorities electrical undertakings.*—The number of Local Authorities Electric Supply Undertakings in the Presidency during the year was 32 against 33 in the previous year. The reduction in the number was due to the taking over of the Kurnool Municipal Undertaking by Government at the request of the Municipal Council.

A systematic inspection was carried out by the Inspectorate of the Local Authorities Undertakings and an improvement in the standard of administration and efficiency of the undertakings was noticed.

The Local Authorities Electric Supply Undertakings were last reclassified on 1st April 1946. The growth during the past two years owing to

relaxation of Restriction and Controls of the following undertakings have been so phenomenal that they have passed the minimum requirements for upgrading:—

Name of undertaking.	Existing grade.	Suitable for upgrading.
Tanjore	II	I
Coonoor	III	II
Masulipatam	III	II
Pollachi	III	II
Karur	III	II
Sivakasi	IV	III
Tiruvannamalai	IV	III
Dharmapuram	IV	III
Periyakulam	IV	III

The Government in February 1947 revised the scales of pay of members of this service, and except the first grade, the minimum has been raised and the increments for all cases made annual.

Loan applications for sums amounting to Rs. 4,11,000 were received during the year under review from various local bodies for the improvement of their electrical undertakings and after scrutiny, a total sum of Rs. 1,86,000 was recommended to Government for disbursement during the year 1948-49.

During the year, technical sanction was accorded to estimates to the extent of Rs. 1,41,500. Tenders to the value of Rs. 2,52,018 were scrutinized and advice given.

169. *Cinematograph Act and Rules.*—The total number of cinemas at the end of the year under review was 799, out of which 308 were permanent and the rest 491 touring. The table below gives a comparative list of the number of cinemas for the last seven years:—

Cinemas.				Cinemas.			
Year.	Permanent.	Touring.	Total.	Year.	Permanent.	Touring.	Total.
1942 ..	236	168	404	1946 ..	250	160	410
1943 ..	239	150	389	1947 ..	270	286	556
1944 ..	234	125	359	1948 ..	308	491	799
1945 ..	236	131	367				

Inspection of all the cinemas was carried out during the year and there was no prosecution for the infringement of Madras Cinematograph Rules.

170. *Cinema operators' licences.*—One examination was held during the year at Madras. Out of 267 candidates who sat for the examination, 175 candidates came out successful. Since the inception of the examination, a total of 1,797 candidates have come out successful. Three hundred and fourteen licences were issued during the year and the total number of licences issued to end of 31st March 1948 is 1,520.

171. *Administration of the Madras Electricity Duty Act, 1939.*—The year under review was the ninth year of working of the Madras Electricity Duty Act and the Rules. The actual revenue realized from this source since the Act came into force is given below:—

Year.	Amount.	Year.	Amount.
	RS.		RS.
	IN LAKHS.		IN LAKHS.
1939-40	5.07	1944-45	7.13
1940-41	6.54	1945-46	8.04
1941-42	6.58	1946-47	9.83
1942-43	5.64	1947-48	10.57
1943-44	5.82		

The Madura and Trichinopoly-Srirangam Electrical undertakings continued during the year under report also to top the list of duty paying licensees, the payments made by them from 1st April 1947 to 31st January 1948 being Rs. 69,194 and Rs. 60,438 respectively.

The number of licensees paying duty during 1947-48 was 62 as against 61 in 1946-47. The Gudivada Electric Licensee commenced paying duty during 1947-48. The Madras Electric Supply Corporation was taken over by Government on 29th August 1947 and thereafter it ceased to pay duty.

The books of accounts of 30 electrical undertakings were inspected during 1947-48 under the Madras Electricity Duty Act and Rules.

172. *Expenditure and revenue.*—The total revenue realized by the Inspectorate under the different heads of account for 1947-48 is as given below :—

Revenue.	RS.
1 From inspections under the Indian Electricity Act, Cinematograph Act and miscellaneous receipts	98,646
2 From penalty for excess consumption of electricity	2,61,432
3 From Madras Electricity Duty Act, 1939	10,57,473
4 From use of Government water for generation of electricity	20,321
Total	14,37,872

The total expenditure during the year to end of March 1948 preliminary is Rs. 1,70,484.

173. *Accidents.*—Return of electrical accidents in Madras Province during 1947-48 :—

	Departmental employees.			Non-departmental employees.			Consumers' equipment.			Total.
	Unauthorized working.	Non-compliance with safety rules.	Other causes.	Strapped conductor.	Inquisitive tower climbing or suicide.	Other causes.	Careless handling.	Faulty equipment or wiring.		
I. Government Systems—Non-fatal—										
(i) Madras Electricity System	..	..	..	..	..	..	..	..	..	..
(ii) Papanasam System	..	..	..	..	..	..	..	..	..	..
(iii) Pykara System	..	..	..	..	..	..	..	..	..	..
(iv) Andhra Power System	..	..	..	..	..	..	..	..	..	..
(v) Mettur System	..	..	..	..	..	..	..	..	..	..
Fatal—										
(i) Madras Electricity System	..	..	..	..	..	..	..	..	..	..
(ii) Papanasam System	..	..	..	..	..	..	..	..	..	..
(iii) Pykara System	..	..	..	..	..	..	..	..	..	..
(iv) Andhra Power System	..	..	..	..	..	..	..	..	..	..
(v) Mettur System	..	..	..	..	..	..	..	..	..	..
II. Company Licensees—										
(a) Non-fatal	..	..	..	..	..	..	..	..	..	..
(b) Fatal	..	..	..	..	..	..	..	..	..	..
III. Local Administration undertakings—										
(a) Non-fatal	..	..	..	..	..	..	..	..	..	..
(b) Fatal	..	..	..	..	..	..	..	..	..	..
IV. Non-licensees—										
(a) Non-fatal	..	..	..	..	..	..	..	..	..	..
(b) Fatal	..	..	..	..	..	..	..	..	..	..
Total										159

174. *Staff.*—Sri Rao Bahadur G. Sundaram, Chief Engineer (Electricity) was on leave for two months from 1st October 1947. During this period, Mr. J. Kuriyan, General Superintending, Operating Systems, and Sri Rao Bahadur S. R. Krishnamurthi, General Superintendent, Power Development were appointed to hold additional charge of the "Electrical Operation and Development" and "Civil Construction and Development" spheres respectively of the post of Chief Engineer (Electricity).

Mr. J. Kuriyan was on leave for three months from early December 1947 and Sri Rao Bahadur B. R. Somayajulu was promoted and posted as General Superintendent, Operating Systems.

Consequent on Sri Rao Sahib A. R. Narayana Rao proceeding on leave, Mr. K. M. Kuruvilla, Divisional Electrical Engineer, was promoted as Superintending Engineer and posted as Superintending Engineer, Pykara Electricity System.

Sri Rao Bahadur S. R. Krishnamurthi, General Superintendent, Power Development, was on leave for four months from early May 1947 and Sri Rao Sahib N. Krishnamurthi was promoted and posted as General Superintendent, Power Development. Sri G. Venkataraman, Executive Engineer, Civil, was promoted as Superintending Engineer in the resulting vacancy.

The following promotions were made during the year under review :—

Number and name of officer.	Post to which promoted.
1 Sri N. Nagappa Nayak	Divisional Electrical Engineer.
2 „ S. V. Chellam	Do.
3 „ T. Ramaswami	Do.
4 „ K. Srinivasaraghavan	Do.
5 „ P. K. Narayana Rao	Do.
6 „ S. Krishnaswami	Do.
7 „ H. R. Alasingarachar	Executive Engineer, Civil.
8 „ N. Muthukumaraswami	Do.

The department regrets to record the untimely death, during the year, of Sri Rao Bahadur G. Yoganandam, Superintending Engineer, of this Department.

Sri Rao Sahib N. Krishnamurthi, Superintending Engineer (Civil), proceeded on leave from early January 1948 preparatory to retirement from 25th April 1948 *a.n.* Sri K. S. Doraiswami Ayyar, Chief Accountant, proceeded on leave preparatory to retirement on 15th January 1948.

175. *Acknowledgment.*—The thanks of the Department are due to the Director-General, India Store Department, London, Electrical Commissioner with the Government of India, and other control authorities for their valued help during the year. Thanks are also due to the Posts and Telegraphs Department and the several contracting firms who assisted the Department in its various activities and to Messrs. Binny & Co. (Madras), Ltd., Managing Agents of the Madras Electric Supply Corporation for the satisfactory negotiations leading to the smooth transfer of the undertaking to Government.

The Department is greatly indebted to Sir Henry Howard, Consulting Engineer to Government, for the ready and valuable advice given by him on all matters referred to him.

Appreciation of the hard and willing work put in by the whole staff of the Department notwithstanding difficult living conditions is hereby recorded.

G. SUNDARAM,
Chief Engineer for Electricity.

APPENDICES.

APPENDIX A.

List of construction works undertaken with expenditure to end of 1947-48.

Name of scheme.	Expenditure during 1947-48 up to March.	Total expenditure to end of 1947-48.
	RS.	RS.
I. Government schemes—		
1. Hydro-Electric Schemes—		
(1) Pykara Hydro-Electric Scheme	16,97,972	3,62,07,571
(2) Mettur Hydro-Electric Scheme	19,88,696	2,60,17,182
(3) Papanasam Hydro-Thermal Scheme	4,09,462	1,83,48,368
(4) Kollegal Scheme	25,524	25,524
2. Thermal Electric Schemes—		
(1) Vizagapatam Electric Scheme	1,60,799	27,80,796
(2) Bezwada Thermal Station	3,01,385	40,44,490
(3) Cocanada Thermal Station	12,876	6,10,074
(4) West Godavari District Electrification Scheme	5,970	1,95,425
(5) Kurnool Scheme	7,571	1,19,490
3. Hydro-Electric Schemes—Post-War Reconstruction—		
(1) Moyar Scheme	29,57,245	54,34,549
(2) Pykara III Stage Extensions	13,39,644	15,56,405
(3) Madras-Mettur Interconnection	19,46,497	26,25,230
(4) Extensions to Kuppam	51,205	2,60,111
(5) Papanasam Plant Extensions II Stage	8,40,701	16,30,411
(6) Madura Thermal Scheme	4,38,912	4,53,991
(7) Machkund Scheme	15,01,353	17,40,07
(8) Ceded Districts Scheme	9,93,490	10,48,371
4. Thermal Electric Schemes—Post-War Reconstruction—		
(1) Vizagapatam Power House Extensions	3,88,000	8,94,780
(2) Madras Power Station Extensions	29,79,434	31,19,914
(3) Rajahmundry-Samalkot Extensions	16,35,831	24,61,053
(4) Nellore Thermal Scheme	12,411	12,411

APPENDIX B.

Budget provision for Capital Works in 1948-49.

Serial number and Capital Expenditure.	Budget, 1948-49.
	RS.
I. HYDRO-ELECTRIC SCHEMES.	
81. A. I. A. Pykara Hydro-Electric Scheme—	
(1) Pykara Hydro-Electric Scheme	5,75,100
(2) Distribution of power in the Pykara System	8,31,900
(3) Supply of power to West Coast	9,13,700
(4) Construction of transmission lines and other works for supply of power to intending consumers	10,00,000
(5) Pension charges	9,600
Total, 81. A. I. A. Pykara Hydro-Electric Scheme ..	33,30,300
81. A. I. B. Mettur Hydro-Electric Scheme—	
(1) Mettur Main Scheme	93,600
(2) Distribution of power in the Mettur System	22,40,500
(3) Construction of transmission lines and other works for supply of power to intending consumers	20,00,000
(4) Minor works	14,300
(5) Construction of additional quarters at Mettur Dam	6,88,000
(6) Chingleput-Conjeeveram-Arconam Extensions	8,59,900
(7) Pension charges	21,500
Total, 81. A. I. B. Mettur Hydro-Electric Scheme ..	59,18,300

APPENDIX B—cont.

Budget provision for Capital Works in 1948-49—cont.

Serial number and Capital Expenditure.	Budget, 1948-49.
	RS.
81. A. I. C. Papanasam Hydro-Thermal Scheme—	
(1) Papanasam Hydro-Thermal Scheme	4,27,700
(2) Distribution of power in the Papanasam System	6,08,000
(3) Supply of power to Travancore State	400
(4) Supply of power to Virudunagar and Rajapalayam	1,74,100
(5) Supply of power to Madura	100
(6) Supply of power to Ramnad district	100
(7) Construction of Madura-Kovilatti Second circuit transmission line	41,900
(8) Construction of quarters at Kayattar and other places	64,200
(9) Pension charges	9,100
Total—81. A. I. C. Papanasam Hydro-Thermal Project ..	13,25,600
81. A. I. D. Kollegal Hydro-Electric Scheme—	
Kollegal Hydro-Electric Scheme	1,15,000
Total, 81. A. I. D. Kollegal Hydro-Electric Scheme ..	1,15,000
II. THERMAL ELECTRIC SCHEMES.	
81. A. II. A. Vizagapatam Thermal Station—	
(1) Vizagapatam Thermal Station	100
(2) Distribution of power in the Vizagapatam Thermal area	5,00,000
(3) Third generating set at Vizagapatam	22,700
(4) Construction of quarters for operation staff	2,900
(5) Pension charges	4,700
Total, 81. A. II. A. Vizagapatam Thermal Station ..	5,30,400
POST-WAR RECONSTRUCTION SCHEMES.	
I. Hydro-Electric Schemes—	
(1) Moyar Scheme	1,23,77,600
(2) Pykara Plant Extensions III and Final Stage	30,93,100
(3) Mettur-Madras Interconnection	12,29,400
(4) Extension to Kuppam	1,48,000
(5) Extensions of supply from Erode to Trichinopoly and Dalmiapuram	100
(6) 66/110, K. W. Extension from Erode to Salem	100
(7) Papanasam Plant Extensions II Stage	15,21,600
(8) Madura Thermal Scheme	11,28,000
(9) 66 K.V. Line from Madura to Tirumangalam-Rajapalayam and Tenkasi	4,51,200
(10) Machkund Hydro-Electric Scheme	50,67,600
(11) Ceded Districts Scheme	24,27,500
II. Thermal Electric Schemes—	
(1) Vizagapatam Power House Extensions	1,54,300
(2) Madras Power Station Extensions	84,39,400
(3) Rajahmundry-Samalkot Extensions	32,18,000
81. A. II. B. Bezwada Thermal Station—	
(1) Bezwada Thermal Station	90,200
(2) Distribution of power in the Bezwada area	5,00,000
(3) Third Generation set at Bezwada	56,000
(4) Construction of quarters for operation staff	23,000
(5) Pension charges	5,900
Total, 81. A. II. B. Bezwada Thermal Station ..	6,75,100
81. A. II. C. Cocanada Thermal Scheme—	
(1) Cocanada Thermal Station	3,09,600
(2) Distribution of power in the Cocanada area	1,11,100
(3) Pension charges	1,700
Total, 81. A. II. C. Cocanada Thermal Station ..	4,22,400

APPENDIX B—cont.

Budget provision for Capital Works in 1948-49—cont.

Serial number and Capital Expenditure.	Budget, 1948-49. RS.
81. A. II. D. West Godavari District Electrification Scheme—	
(1) West Godavari District Electrification Scheme	2,01,800
(2) Pension charges	300
Total, 81. A. II. D. West Godavari District Electrification Scheme ..	2,02,100
81. A. II. E. Kurnool Scheme—	
(1) Kurnool Thermal Station	2,40,500
(2) Distribution of power in Kurnool	35,500
(3) Pension charges	900
Total, 81. A. II. E. Kurnool Scheme ..	2,76,900
81. A. II. F. Madras Thermal Station Scheme—	
(1) Madras Thermal Station	300
(2) Pension charges	100
Total, 81. A. II. F. Madras Thermal Station ..	400

APPENDIX C.

Details of the establishment charges of the department and the fees earned on them during 1947-48 and estimated for 1948-49.

	Expenditure in 1947-48. RS.	Budget, 1948-49. RS.
Chief Engineer, General Superintendent, Operating Systems and General Superintendent, Power Development's offices including Technical Branch—		
Salaries, allowances, works, etc.	6,41,573	6,71,100
Less charges recoverable from Governments and Departments	(—) 2,04,573	(—) 6,77,000
Net salaries and allowances	4,37,000	(—) 5,900
Pykara Hydro-Electric Scheme—		
Salaries, allowances, etc.	5,98,319	6,03,200
Less charges payable to or recoverable from Governments and Departments	(—) 88,100	(—) 1,28,704
Net salaries and allowances	5,10,219	4,74,500
Operation and Maintenance expenses	23,12,990	22,93,500
Total ..	28,23,209	27,68,000
Revenue ..	57,77,319	66,02,300
Net surplus ..	29,54,110	38,34,300
Mettur Hydro-Electric Scheme—		
Salaries, allowances, etc.	6,55,048	7,02,200
Less charges payable to or recoverable from Governments and Departments	(—) 59,067	(—) 3,89,000
Net salaries and allowances	5,95,981	3,13,200
Operation and Maintenance expenses	18,49,687	21,35,600
Total ..	24,45,668	24,48,800
Revenue ..	48,14,232	53,20,200
Net surplus ..	23,68,564	28,77,400

APPENDIX C—cont.

Details of the establishment charges of the department and the fees earned on them during 1947-48 and estimated for 1948-49—cont.

	Expenditure in 1947-48. RS.	Budget, 1948-49. RS.
Papanasam Hydro-Thermal Scheme—		
Salaries, allowances, etc.	3,25,567	3,53,700
Less charges payable to or recoverable from Governments and Departments	15,560	(—) 55,000
Net salaries and allowances	3,41,127	(—) 2,98,700
Operation and Maintenance expenses	6,04,869	6,13,200
Total ..	9,45,996	9,11,900
Revenue ..	24,79,584	26,00,000
Net surplus ..	15,33,588	16,88,100
Vizagapatam Thermal Scheme—		
Salaries, allowances, etc.	1,39,143	1,31,000
Less charges payable to or recoverable from Governments and Departments	(—) 10,612	(—) 35,500
Net salaries and allowances	1,28,531	95,500
Operation and Maintenance expenses	4,20,421	4,35,200
Total ..	5,48,952	5,30,700
Revenue ..	5,70,195	9,49,000
Net surplus ..	21,243	4,18,300
Bezwada Thermal Scheme—		
Salaries, allowances, etc.	1,64,717	1,46,400
Less charges payable to or recoverable from Governments and Departments	(—) 19,150	(—) 40,500
Net salaries and allowances	1,45,567	1,06,200
Operation and Maintenance expenses	6,96,858	7,32,500
Total ..	8,42,425	8,38,400
Revenue ..	7,43,734	11,51,800
Net surplus ..	(—) 98,691	3,13,400
Cocanada Thermal Scheme—		
Salaries, allowances, etc.	49,695	44,000
Less charges payable to or recoverable from Governments and Departments	(—) 2,136	(—) 13,900
Net salaries and allowances	47,559	30,100
Operation and Maintenance expenditure	1,44,684	1,39,500
Total ..	1,92,243	1,69,600
Revenue ..	1,43,156	1,80,600
Net surplus ..	(—) 40,087	11,000
Kurnool Scheme—		
Salaries, allowances, etc.	20,644	19,200
Less charges payable to or recoverable from Governments and Departments	(—) 887	(—) 7,300
Net salaries and allowances	19,757	11,900
Operation and Maintenance expenses	59,929	56,700
Total ..	79,686	68,600
Revenue ..	67,785	76,900
Net surplus ..	(—) 11,901	8,300

APPENDIX C—cont.

APPENDIX

Details of the establishment charges of the department and the fees earned, costs and on them during 1947-48 and estimated for 1948-49—cont.

	Expenditure in 1947-48. RS.	Budget, 1948-49. RS.
Madras Scheme—		
Salaries, allowances, etc.	2,07,358	6,72,000
Less charges payable to, etc.	22,294	1,00,300
Net salaries and allowances	2,29,652	5,71,700
Operation and Maintenance expenditure	21,27,440	44,51,800
Total	23,57,101	50,23,500
Revenue	40,75,000	63,24,900
Net surplus	17,17,899	13,01,400

	1947. Revenue. RS.	Expenditure. RS.
Chief Electrical Inspector to Government—		
(i) From provision under the Indian Electricity Act, Cinematograph Act, telegraphic and miscellaneous receipts.	98,646	..
(ii) From rate of electricity for excess consumption of electricity ..	2,61,432	..
(iii) From Madras Electricity Duty Act, 1937 ..	10,57,473	..
(iv) From use of Government water for generation of electricity ..	20,321	..
Total	14,37,872	1,70,484

APPENDIX D-1.

Licensee electric supply undertakings in service at the end of the year.

(a) Local authorities.	(a) Local authorities—cont.	(b) Companies—cont.
1 Anantapur	28 Tiruvottiyur	17 Kanadukathan
2 Alandur	29 Tiruvannamalai	18 Kumbakonam
3 Bellary	30 Tiruvallur	19 Karakkudi
4 Bezwada	31 Tirupattur	20 Mangalore
5 Bodinayakanur	32 Udumalpet	21 Mayavaram-Mannargudi-Tiruvarur
6 Cocanada	33 Virudunagar	22 Nattarasankottai
7 Coimbatore	34 Villivakkam	23 Nellore
8 Conjeevaram	35 Wellington (Cantonment)	24 Narasaraopet
9 Coonoor		25 Nicipattam
10 Dindigul		26 Nellikuppam
11 Dharapuram		27 Okkur
12 Hospet		28 Ongole
13 Hindupur		29 Palghat
14 Karur		30 Proddatur
15 Kollegal		31 Rajahmundry
16 Kodalkanal		32 South Arcot
17 Masulipatam		33 Salem-Erode
18 Madurai		34 Srivilliputtur
19 Ootacamund		35 Salur-Parvatipur
20 Palni		36 Trichinopoly-Srirangam
21 Pollachi		37 Tirumalai-Tirupati
22 Periyakulam		38 Tirunelveli-Tuticorin-Palamcottai
23 Rameswaram (Section 28)		39 Tellicherry-Cannanore
24 Sembiam (Section 28)		40 Udipi
25 Sivakasi		41 Vizagapatam
26 Tiruppur		42 Vellore
27 Tanjore		43 Valparai (township) (Section 28)

APPENDIX D-2.

Licensees under construction.

One East Coast Licensee.

APPENDIX D-3.

New applications for licence received.

One for Kasaragod (under section 28).

APPENDIX D-4.

List of undertakings put into service during 1947-48—Nil.

F-1.

APPENDIX D-5.

records—Cor Licensees who reduced the tariff during the year 1947-48—Nil.

APPENDIX D-6.

Licensees who increased the tariffs during the year 1947-48—Nil.

APPENDIX D-7.

Licensees who charge more than 6 annas per unit for lighting and fans.

1 Adoni.

2 Cuddapah.

APPENDIX E.

Total capacities of plants installed of electric supply undertakings in service in the Province.

Serial number and name of undertaking.	Total installed capacity of plant in generating station.	Details of plant installed.	Type of prime mover.	Voltage of generation.
(1)	(2)	(3)	(4)	(4)
<i>I.—Licensee undertakings.</i>				
1 Adoni ..	436 K.V.A. ..	2 × 100 + 1 × 50 K.V.A. ..	Oil engine	3.3 K.V. (A.C.)
2 Anantapur ..	152.6 K.W. ..	2 × 63 + 1 × 26.5 K.W. ..	Do.	400 V. (A.C.)
3 Chicacole ..	150.75 K.V.A. ..	1 × 112 + 1 × 20 K.V.A. + 1 × 18.75 K.V.A. ..	Do.	400 V. (A.C.)
4 Bellary ..	380 K.W. (A.C.) ..	2 × 100 K.V. (A.C.) ..	Do.	460/500 V. (D.C.) and 400 V. (A.C.)
5 British Cochin ..	163 K.W. (D.C.) ..	1 × 98 + 1 × 67 K.W. (D.C.) ..	Do.	2.2 K.V. (A.C.)
6 Cuddapah ..	147.4 K.V.A. ..	2 × 46.2 + 1 × 55 K.V.A. ..	Do.	400 V. (A.C.)
7 Hindupur ..	357 K.V.A. ..	1 × 250 + 2 × 53.5 K.V.A. ..	Do.	484 V. (D.C.)
8 Hospet ..	60 K.W. ..	2 × 25 + 1 × 10 K.W. ..	Do.	400 V. (A.C.)
9 Kollegal ..	125 K.V.A. ..	1 × 50 + 1 × 75 K.V.A. ..	Do.	400 V. (A.C.)
10 Mangalore ..	100 K.V.A. ..	2 × 50 K.V.A. ..	Do.	400 V. (A.C.)
11 Narasaraopet ..	750 K.W. ..	3 × 250 K.W. ..	Do.	3.3 K.V. (A.C.)
12 Nellore ..	200 K.V.A. ..	2 × 100 K.V.A. ..	Do.	420/243 V. (A.C.)
13 Ongole ..	490 K.V.A. ..	1 × 64 + 2 × 133 + 1 × 160 K.V.A. ..	Do.	400 V. (A.C.)
14 Proddatur ..	116.6 K.V.A. ..	1 × 66.6 + 1 × 50 K.V.A. ..	Do.	3.3 K.V. and 400 V. (A.C.)
15 Rajahmundry ..	96 K.W. ..	2 × 48 K.W. ..	Do.	400 V. (A.C.)
16 Salur-Parvatipur ..	500 K.V.A. ..	2 × 132 + 1 × 294 K.V.A. ..	Do.	3.3 K.V. (A.C.)
17 Udipi ..	20 K.W. ..	1 × 20 K.W. ..	Do.	400/440 V. (A.C.)
	184 K.V.A. ..	1 × 144 + 1 × 40 K.V.A. ..	Do.	400 V. (A.C.)
	2,866.75 K.V.A. ..			
	1,621.5 K.W. ..			
	or			
	3,915 K.W. ..			

II.—Government undertakings.

1 Pykara ..	43,000 K.W. ..	3 × 7,810 K.V.A. ..	..	104,000 K.W.
2 Mettur ..	40,000 " ..	2 × 12,500 " ..	..	..
3 Papanasam ..	21,000 " ..	4 × 12,500 " ..	..	..
4 Madras ..	48,000 " ..	3 × 7,250 " ..	..	..
		2 × 1,875 K.V.A. + 1 × 6,250 K.V.A. + 1 × 7,500 K.V.A. + 1 × 15,625 K.V.A. + 1 × 18,750 K.V.A. = 51,875 K.V.A. or 41,500 K.W. + 1,500 K.W. (Villivakkam + 2 × 2,500 K.W. (Transporta- tion).	..	48,000 K.W.
5 Vizagapatam ..	3,750 " ..	2 × 1,500 " ..	..	..
6 Bezwada ..	6,000 " ..	+ 1 × 750 " ..	..	..
7 Cocanada ..	760 " ..	2 × 1,500 " ..	..	10,700 K.W.
8 Kurnool ..	190 " ..	+ 1 × 3,000 " ..	..	..
		2 × 100 K.V.A. + 1 × 312 K.V.A. + 1 × 375 K.V.A. + 1 × 62.5 K.V.A. ..	..	..

Total installed generating capacity of electrical
undertakings in the Province 162,700 K.W.
Total .. 168,615 K.W.

APPENDIX

Table of electric supply costs and

Serial number and name of undertaking.	Year of operation.	Year of accounts to which the figures refer.	System and supply of voltage.	Total generation or purchase cost per unit.	Working cost per unit sold. (See Note 2.)	Revenue per-	
						Lights and fans.	Power.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
				AS.	AS.	AS.	AS.
1 Adoni	9th ..	31st Dec. 1946.	A.C. 400/230 V, 50 cycles.	1.54	4.64	6.84	2.02
2 Ambur-Vaniambadi ..	10th ..	1946-47 ..	Do. ..	0.66	2.10	4.57	1.00
3 Anakapalle	9th ..	1946-47 ..	Do. ..	1.45	3.30	4.87	1.42
4 British Cochin	23rd ..	1946-47 ..	Do. ..	1.98	4.71	5.40	4.48
5 Bobbili	9th ..	1946-47 ..	Do. ..	1.39	2.49	4.09	1.22
6 Calicut	18th ..	1946-47 ..	Do. ..	0.77	2.65	4.75	1.85
7 Chittoor	13th ..	1946-47 ..	Do. ..	0.76	2.24	4.59	1.22
8 Cuddapah	10th ..	1946-47 ..	Do. ..	3.08	5.50	6.25	1.59
9 Chingleput	9th ..	1946-47 ..	Do. ..	0.68	1.59	4.43	1.18
10 Cannanore-Tellicherry.	9th ..	1946-47 ..	Do. ..	2.28	5.17	5.61	1.30
11 Chlacoole	9th ..	1946-47 ..	Do. ..	2.88	5.50	5.86	1.60
12 Devakottai	23rd ..	1946-47 ..	Do. ..	0.69	2.75	8.35	1.56
13 East Tanjore	13th ..	1946-47 ..	Do. ..	0.52	1.67	3.91	0.04
14 East Ramnad	9th ..	1946-47 ..	Do. ..	0.53	1.12	4.76	0.75
15 East Coast	Supply not yet commenced—No audited statements of accounts for 1946-47.						
16 Ellore	10th ..	1946-47 ..	Do. ..	1.16	3.26	6.03	1.13
17 Guntur	15th ..	1946-47 ..	Do. ..	0.84	2.20	5.16	.29
18 Gudiyattam	10th ..	1946-47 ..	Do. ..	0.62	1.10	3.46	1.39
19 Gudivada	10th ..	1946-47 ..	Do. ..	1.31	3.82	6.80	.09
20 Kanadukathan	23rd ..	1946-47 ..	Do. ..	0.69	2.39	4.69	1.54
21 Kumbakonam	15th ..	31st Dec. 1946.	Do. ..	0.57	1.96	4.34	1.08
22 Karalkudi	17th ..	1946-47 ..	Do. ..	0.71	2.35	4.21	1.24
23 Madras	30th ..	31st Dec. 1946.	D.C. 450/225 V, A.C. 440/250 V, 50 cycles.	0.58	1.23	2.00	1.07
24 Mangalore	14th ..	1946-47 ..	A.C. 400/230 V, 50 cycles.	0.94	2.71	5.61	1.93
25 Nellore	13th ..	1946-47 ..	Do. ..	1.40	3.50	6.21	4.65
26 Negapatam	12th ..	31st Dec. 1946.	Do. ..	0.71	1.38	3.64	1.23
27 Nattarasankottai ..	14th ..	1946-47 ..	Do. ..	0.77	2.40	5.30	1.27
28 Narasaraopet	9th ..	1946-47 ..	Do. ..	3.32	5.25	5.51	1.05
29 Nelkuppai	8th ..	1946-47 ..	Do. ..	0.81	2.46	5.46	1.32
30 Okkur	12th ..	1946-47 ..	Do. ..	0.74	3.45	5.48	1.40
31 Ongole	9th ..	1946-47 ..	Do. ..	3.70	6.83	7.53	1.86
32 Ponnani	Supply not yet commenced—No audited statements of accounts for 1946-47.						
33 Palghat	14th ..	1946-47 ..	Do. ..	0.73	2.67	3.78	1.07
34 Proddatur	11th ..	1946-47 ..	Do. ..	5.1	10.67	6.04	1.96
35 Rajahmundry	19th ..	1946-47 ..	Do. ..	1.47	2.91	4.94	1.41
36 Salem-Erode	15th ..	1946-47 ..	Do. ..	0.53	1.25	5.25	.86
37 South Arcot	12th ..	31st Dec. 1946.	Do. ..	0.50	1.32	4.13	1.03
38 Salur-Parvathipur ..	8th ..	1946-47 ..	Do. ..	S. 1.07 P. 2.36	6.09	5.30	1.60
39 Srivilliputtur	9th ..	31st Dec. 1946.	Do. ..	0.51	0.92	4.33	.65
40 Tiruchirappalli-Srirangam.	19th ..	1946-47 ..	Do. ..	0.34	0.74	3.15	.54
41 Tinnevely-Tuticorin.	14th ..	1946-47 ..	Do. ..	0.53	2.33	3.23	1.44
42 Tirumalai Tirupati ..							
43 Udipi	8th ..	1946-47 ..	Do. ..	1.98	4.35	5.62	2.21
44 Vellore	16th ..	1946-47 ..	Do. ..	0.64	1.51	4.01	1.15
45 Vizagapatam	13th ..	1946-47 ..	Do. ..	1.07	2.06	3.53	1.30
46 Valparai	No accounts.						

F.1.

records—Company licensees.

Unit sold.	Special contract.	Street lighting.	Total—(See Note 3.)	Total—Expenditure against revenue. (See Note 2.)	Total revenue from electric supply.	Total revenue from workings. (See note 2.)	Net profit (+) or — up to the end of the year as per general balance sheet. (15)	Total capital expenditure up to the end of the year. (16)	Serial number.
(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
AS.	AS.	AS.	RS.	RS.	RS.	RS.	RS.	RS.	
..	6.47	6.02	46,008	49,507	59,697	11,252	2,35,573	1	
..	2.00	2.24	95,921	89,342	1,10,062	10,071	2,08,174	2	
..	4.12	3.97	46,729	47,940	54,798	4,969	97,744	3	
..	3.70	5.28	43,334	46,512	48,630	703	1,21,970	4	
..	3.32	2.56	31,650	26,402	32,462	(—) 10,437	49,680	5	
..	3.63	3.96	2,27,326	2,10,852	3,44,098	65,607	11,29,768	6	
..	3.25	3.05	59,967	76,299	81,784	6,979	1,93,025	7	
..	3.47	4.36	86,023	49,701	68,267	(—) 16,804	2,39,376	8	
..	2.00	1.85	54,535	57,511	64,010	7,732	1,58,689	9	
..	4.18	5.12	1,15,150	86,405	1,14,188	14,844	4,53,365	10	
..	3.69	5.86	42,101	33,175	45,459	8,580	1,81,804	11	
..	1.62	3.20	73,464	75,614	88,294	16,889	2,58,416	12	
3.17	1.82	1.77	5,50,968	5,24,579	5,93,245	(—) 1,27,990	23,00,260	13	
2.80	1.90	1.27	2,61,170	2,71,004	3,01,454	(—) 3,628	8,41,678	14	
Supply not yet commenced—No audited statements of accounts for 1946-47.									
..	6.17	4.30	70,230	75,172	94,086	18,891	2,87,870	16	
..	1.77	2.39	3,14,418	3,00,135	3,45,576	24,524	7,61,880	17	
.64	3.30	1.26	1,24,061	1,37,003	1,43,395	19,469	2,42,103	18	
2.02	3.16	4.01	35,515	30,001	38,488	6,041	1,00,897	19	
.75	1.01	2.72	1,20,843	1,17,136	1,38,342	(—) 19,492	6,34,429	20	
2.21	1.93	2.40	2,64,492	3,03,097	3,30,177	29,216	9,63,070	21	
4.81	1.65	2.89	1,06,666	1,22,866	1,33,253	40,868	4,17,971	22	
0.87	1.04	1.43	52,58,822	55,55,429	62,58,507	9,99,679	2,32,06,407	23	
..	2.05	3.62	2,67,833	3,31,054	3,60,693	41,428	9,02,515	24	
.94	1.85	3.04	1,44,182	1,19,500	1,62,360	15,577	4,69,347	25	
.74	2.08	1.63	1,44,120	1,54,828	1,71,250	16,746	3,62,248	26	
..	1.98	3.34	39,593	48,099	55,752	16,159	1,66,679	27	
2.76	2.75	5.27	44,545	28,566	45,378	2,306	1,26,672	28	
.75	1.65	2.61	22,653	17,231	22,701	138	92,688	29	
..	1.84	3.25	68,994	56,114	66,959	(—) 2,844	2,22,410	30	
2.76	1.46	6.50	29,901	21,452	27,550	(—) 21,254	1,13,770	31	
Supply not yet commenced—No audited statements of accounts for 1946-47.									
..	1.72	2.91	1,08,444	1,09,804	1,18,387	9,567	2,71,415	33	
2.65	3.29	5.88	39,183	15,662	22,918	(—) 75,975	1,40,118	34	
..	3.79	3.31	1,89,143	2,04,954	2,15,867	16,404	5,83,542	35	
.68	1.84	1.29	7,71,408	7,98,985	8,04,852	(—) 30,579	12,05,484	36	
.79	2.00	1.43	5,79,861	5,80,802	6,37,108	62,677	16,59,733	37	
..	3.15	6.14	26,477	18,752	26,772	341	1,12,281	38	
2.14	3.29	1.09	1,50,088	1,72,013	1,80,632	34,094	2,85,957	39	
.05	1.67	.81	10,23,125	10,52,337	11,30,493	2,74,596	32,18,169	40	
3.59	2.00	2.55	5,39,860	5,23,529	5,96,676	23,150	13,80,852	41	
1.89	3.46	4.75	50,528	46,775	55,629	5,347	2,43,120	42	
..	2.42	2.32	2,27,455	3,34,807	3,76,916	43,144	5,92,175	44	
1.62	1.84	2.07	2,74,573	3,01,046	3,26,551	30,877	5,10,238	45	

APPENDIX

Table of electric supply costs and

Serial number and name of undertaking.	Year of operation.	Year of accounts to which the figures refer.	Depreciation for the year.	Depreciation fund at the end of the year.	Other reserves, special reserve at the end of the year.	Total capacity.	Maximum load on the feeders.
			(17)	(18)	(19)	(20)	(21)
			RS.	RS.	RS.		
1 Adoni ..	9th	31-12-1946.	10,000	34,899	...	346 K.W.	145 K.W.
2 Ambur-Yanlambadi.	10th	1946-47 ..	15,788	59,538	...	625 K.W.	288.75 K.W.
3 Anakapalle ..	9th	1946-47 ..	3,797	28,171	...	140 K.W.	110 K.W.
4 British Cochin ..	23rd	1946-47 ..	4,521	23,582	...	105 K.W.	64 K.W.
5 Bobbili ..	9th	1946-47 ..	2,210	15,351	...	200 K.V.A.	109 K.W.
6 Calicut ..	18th	1946-47 ..	51,500	3,53,000	...	820 K.W.	480 K.W.
7 Chittoor ..	13th	1946-47 ..	7,116	49,673	...	375 K.V.A.	180 K.W.
8 Cuddapah ..	10th	1946-47 ..	...	51,338	...	230 K.W.	130 K.W.
9 Chingleput ..	9th	1946-47 ..	6,833	31,049	...	400 K.V.A.	185 K.W.
10 Cannanore-Tellicherry.	9th	1946-47 ..	15,500	89,672	...	486 K.W.	220 K.W.
11 Chicacole ..	9th	1946-47 ..	...	20,000	...	117 K.W.	Narasannapet, 19.25 K.W. Chicacole, 85 K.W.
12 Devakottai ..	23rd	1946-47 ..	7,912	95,038	21,359	285 K.V.A.	230.72 K.V.A.
13 East Tanjore ..	13th	1946-47 ..	62,849	4,95,629	...	5,644 K.W.	Tiruvavur, 1.665 K.W. Vallam, 81 K.W. Arantangi, 102 K.W.
14 East Ramnad ..	9th	1946-47 ..	24,021	1,66,120	...	2,460 K.W.	Sivaganga, 1,220 K.W. Singampuneri 45 K.V.A.
15 East Coast ..	...	Supply not yet commenced—No audited statements of accounts for 1946-47.	...	...	...	...	...
16 Ellore ..	10th	1946-47 ..	10,082	86,802	...	...	161 K.W.
17 Guntur ..	15th	1946-47 ..	20,000	1,73,500	...	...	First point of supply 725 K.V.A. Second point of supply 132 K.W. Sitana-garam. 555 K.W.
18 Gudiyattam ..	10th	1946-47 ..	13,747	62,650	...	...	...
19 Gudivada ..	10th	1946-47 ..	3,641	24,024	...	218 K.V.A.	82 K.W.
20 Kanadukathan ..	23rd	1946-47 ..	10,463	2,05,987	...	...	372.86 K.V.A.
21 Kumbakonam ..	15th	31-12-1946.	39,438	2,80,487	...	2,118 K.V.A.	1,000 K.V.A.
22 Karaikudi ..	17th	1946-47 ..	13,453	1,68,947	...	1254 K.V.A.	305 K.W.
23 Madras ..	30th	31-12-1946.	...	96,18,293	...	43,000 K.W.	18,400 K.W.
24 Mangalore ..	14th	1946-47 ..	42,377	4,57,576	...	750 K.W.	574 K.W.
25 Nellore ..	13th	1946-47 ..	14,000	64,000	...	376 K.W.	272 K.W.
26 Negapatam ..	12th	31-12-1946.	12,684	1,05,339	...	...	1,000 K.W.
27 Nattarasankottai ..	14th	1946-47 ..	6,152	53,104	...	275 K.V.A.	133 K.V.A.
28 Narasaraopet ..	9th	1946-47 ..	...	9,000	...	160 K.W.	70 K.W.
29 Naikuppai ..	8th	1946-47 ..	4,025	28,271	...	...	80 K.W.
30 Okkur ..	12th	1946-47 ..	10,296	50,435	...	...	132 K.W.
31 Ongole ..	9th	1946-47 ..	...	6,000	...	90 K.W.	50 K.W.
32 Ponnani ..	...	Supply not yet commenced—No audited statements of accounts for 1946-47.	...	...	...	...	...
33 Palghat ..	14th	1946-47 ..	10,253	13,804	13,601	500 K.V.A.	257 K.W.
34 Proddattur ..	11th	1946-47 ..	...	...	...	96 K.W.	58 K.W.
35 Rajahmundry ..	10th	1946-47 ..	18,591	2,43,851	...	435 K.W.	345 K.W.
36 Salem-Erod ..	15th	1946-47 ..	56,905	5,54,422	...	11,140 K.V.A.	Salem, 1,800 K.W. Erode, 536 K.W. Villages, 405 K.W.

F-1—cont.

records—Company licensees—cont.

Total units generated for the year.	Total units purchased for the year.	Load factor, per cent.	Total number of units sold for the year.	Total number of consumers at the end of the year.	Dividend declared on ordinary shares for the year.	Serial number.
(22)	(23)	(24)	(25)	(26)	(27)	
192,325	...	12.45	158,644	430	4 per cent tax free.	1
...	844,440	23.11	737,464	1,205	5 A. 6 P. per share.	2
...	268,396	23.53	226,528	347	3 per cent tax free.	3
7,150	150,610	26.26	147,204	332	...	4
...	240,060	21.27	203,118	210	...	5
...	1,582,559	32.66	1,373,416	2,540	2½ per cent.	6
...	511,642	27.21	429,026	769	6 per cent.	7
313,616	...	21.92	249,684	628	...	8
...	593,740	33.92	549,873	467	5 per cent tax free.	9
404,293	...	18.50	356,576	1,241	2½ per cent.	10
147,211	...	Chicacole, 13.64 Narasannapet, 14.58	122,368	552	...	11
...	591,833	21.16	428,441	973	5 per cent.	12
6,877,411	...	Tiruvavur, 34.45 Vallam, 23.72 Arantangi, 9.09	5,281,184	8,991	5½ per cent tax free. †	13
4,173,784	...	Sivaganga, 37.53 Singampuneri, 16.01	3,753,801	2,531	Do. †	14
...	...	...	...	...	...	15
...	402,904	24.46	344,983	1,027	4 1/16 per cent tax free.	16
...	2,698,569	28.0 19	2,290,733	2,135	4 per cent tax free.	17
...	1,991,637	37.06	1,801,892	907	4½ per cent tax free.	18
...	157,134	20.72	148,854	456	5 per cent.	19
...	1,007,948	24.73	808,025	1,461	6 per cent tax free.	20
...	2,812,411	24.58	2,153,743	3,817	6 per cent.	21
...	875,370	27.15	725,375	1,228	8 per cent tax free.	22
82,269,460	...	42.41	68,355,507	16,459	5 per cent less tax.	23
1,872,405	...	31.39	1,578,450	2,199	...	24
797,196	...	27.65	658,891	1,056	4 per cent tax free.	25
...	1,847,020	18.04	1,675,687	1,457	5 per cent.	26
...	319,404	22.70	264,443	825	3 per cent tax free.	27
150,284	...	22.13	135,692	543	...	28
...	152,470	21	147,154	283	...	29
...	446,196	27.63	219,989	590	...	30
87,295	...	15.98	69,995	293	...	31
...	...	...	...	...	...	32
...	753,599	29.89	650,350	1,454	4½ per cent.	33
89,791	...	11.56	58,757	372	...	34
1,208,635	...	34.38	1,038,627	1,166	6 per cent tax free.	35
...	10,801,722	Salem, 44.58 Erode, 32.78 Villages, 36.70	9,870,079	5,032	7½ per cent tax free.	36

APPENDIX—

Table of electric supply costs and

Serial number and name of undertaking.	Year of operation.	Year of accounts to which the figures refer.	Depreciation for the year.	Depreciation fund at the end of the year.	Other reserves, special reserve at the end of the year.	Total capacity.	Maximum load on the feeders.
			(17) RS.	(18) RS.	(19) RS.	(20)	(21)
37 South Arcot ..	12th	31-12-1946.	72,702	2,97,934	..	..	Villupuram, 1,740 K.W. Chidambaram, 197.5 K.W.
38 Salur-Parvatipur ..	8th	1946-47 ..	2,500	7,467	..	50 K.V.A. .. Parvatipur, 20 K.W.	18 K.W. 37 K.W.
39 Srivilliputtur ..	9th	31-12-1946.	14,932	70,862	..	1,875 K.V.A.	690 K.W.
40 Tiruchirappalli-Srirangam.	19th	1946-47 ..	96,253	8,02,503	..	12,637 K.V.A.	Tiruchirappalli, 4,480 K.W. Mayanoor, 83 K.W.
41 Tinnevely-Tuticorin	14th	1946-47 ..	56,935	5,12,467	..	2,000 K.V.A.	960 K.W.
*42 Tirumalai-Tirupathi ..	..	..	..	..	..	..	..
43 Udipi ..	8th	1946-47 ..	..	13,500	..	160 K.W.	Udipi, 111 K.W. Karakala, 14 K.W.
				Udipi, 17.25 Karakala 14.78			
44 Vellore ..	16th	1946-47 ..	25,305	2,25,058	11,350	..	745 K.W.
45 Vizagapatam ..	13th	1946-47 ..	21,120	1,82,510	22,981	..	685 K.V.A.
46 Valparai ..	..	..	..	No accounts.	..	..	..

NOTES.—(1) All the figures have been calculated on a uniform basis according to standard practice.
 (2) Total expenditure including interest, income-tax paid, preference-dividends, less service connexion charges.
 (3) Excludes service connexion charges as given on the debtor side in No. IV
 * Figures will be furnished later on receipt of audited statement of accounts
 † Represents the dividend declared on ordinary shares for Tiruchirappalli.

F-1—cont.

records—Company licensees—cont.

Total units generated for the year.	Total units purchased for the year.	Load factor. per cent.	Total number of units sold for the year.	Total number of consumers at the end of the year.	Dividend declared on ordinary shares for the year.	Serial number.
(22)	(23)	(24)	(25)	(26)	(27)	
..	8,398,820	Villupuram, 42.06 Chidambaram, 35.11	7,019,979	3,698	5 per cent tax free.	37
20,625	56,042	Salur, 16.40 Parvatipur, 10.72	69,532	365	..	38
..	2,807,047	43.50	2,629,171	1,141	6 per cent.	39
..	24,668,736	23.57	22,167,227	10,841	5½ per cent tax free.†	40
..	4,228,655	44.14	3,711,996	4,900	6½ per cent tax free.	41
..	..	Udipi, 17.25	..	..	..	42
226,531	..	Karakala, 14.78	185,858	658	..	43
..	2,607,995	36.83	2,403,367	2,658	7½ per cent.	44
..	2,504,972	38.57	2,135,347	1,800	6 per cent tax free.	45
						46

practice.
 amounts written off towards preliminary expenses and interest paid on consumers' security deposits, etc., but Revenue Account.
 for 1946-47.
 Srirangam, East Tanjore and East Ramnad electrical undertakings.

APPENDIX

Table of electric supply costs and

Serial number and name of undertaking.	Year of operation.	Year of accounts to which the figures refer.	System and voltage of supply.	Total generation or purchases cost per unit.
(1)	(2)	(3)	(4)	(5)
				AS.
1 Alandur	12th	1946-47	{ A.C. 400/230 V. 50 cycles .. }	1.27
2 Anantapur	9th	Do.	Do.	1.88
3 Bellary	20th	Do.	{ D.C. 480/230 V. A.C. 400/230 V. 50 cycles .. }	1.48
4 Bezwada	17th	Do.	{ A.C. 400/230 V. 50 cycles .. }	0.80
5 Bodinayakanur	12th	Do.	Do.	0.82
6 Coimbatore	14th	Do.	Do.	0.55
7 Cocanada	18th	Do.	Do.	1.11
8 Conjeevaram	16th	Do.	Do.	0.60
9 Coonoor	18th	Do.	Do.	0.76
10 Dindigul	13th	Do.	Do.	0.63
11 Dharapuram	8th	Do.	Do.	0.77
12 Hindupur	17th	Do.	D.C. 460/230 V.	2.68
13 Hospet	12th	Do.	{ A.C. 400/230 V. 50 cycles .. }	5.79
14 Karur	11th	Do.	Do.	0.70
15 Kodalkanal	9th	Do.	Do.	0.83
16 Kollegal	7th	Do.	A.C. 400/230 V.	3.25
17 Madura	20th	Do.	{ A.C. 400/230 V. 50 cycles .. }	0.5
18 Masulipatam	14th	Do.	Do.	1.11
19 Ootacamund	24th	Do.	Do.	0.63
20 Pollachi	14th	Do.	Do.	0.64
21 Palni	12th	Do.	Do.	0.78
22 Periyakulam	12th	Do.	Do.	0.77
23 Rameswaram Panchayat Board	8th	Do.	Do.	3.52
24 Sembiam	17th	Do.	Do.	1.16
25 Sivakasi	11th	Do.	Do.	0.78
26 Trivellore	10th	Do.	Do.	0.73
27 Tiruppur	13th	Do.	Do.	0.73
28 Tanjore	19th	Do.	Do.	0.60
29 Tiruvottiyur	14th	Do.	Do.	1.10
30 Tiruppattur (North Arcot Dt.)	9th	Do.	Do.	0.81
31 Tiruvannamalai	9th	Do.	Do.	0.74
32 Udumalpet	12th	Do.	Do.	0.80
33 Virudunagar	13th	Do.	Do.	0.63
34 Villivakkam	10th	Do.	Do.	1.40
35 Wellington Cant.				

Figures not

F.2.

records—Local authority undertakings.

Working cost per unit sold. See Note (2).	Revenue per unit sold.					Total expenditure against revenue— See Note (2).	Revenue from electric supply.	Serial number.
	Lights and fans.	Power.	Special contract.	Street lighting.	Total— See Note (3).			
(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	
AS.	AS.	AS.	AS.	AS.	AS.	RS.	RS.	
2.84	4.00	1.53	2.79	2.91	3.09	26,392	21,491	1
4.52	5.27	1.14	NIL.	3.25	3.78	45,337	31,191	2
4.84	5.24	2.02	7.71	2.70	5.07	1,29,704	1,04,194	3
1.56	3.86	0.96	0.86	1.93	1.79	2,56,040	2,62,750	4
2.18	3.80	1.50	..	2.00	2.62	29,908	30,207	5
1.31	2.87	.95	.73	1.28	2.15	3,57,719	5,39,416	6
2.73	4.65	1.30	..	2.47	3.03	1,33,681	1,29,785	7
2.24	3.82	1.19	..	2.00	2.53	1,20,823	1,21,990	8
2.40	3.57	1.27	..	1.97	2.71	83,697	87,979	9
1.5	3.12	.93	.81	2	1.89	1,18,551	1,45,426	10
2.23	3.90	1.05	..	1.73	2.53	39,198	37,650	11
7.32	6.30	1.57	..	3.47	6.22	35,205	20,478	12
39.98	5.57	1.04	..	4.12	6.94	71,986	7,794	13
1.80	4.13	0.98	..	2.00	2.19	62,897	72,966	14
4.19	6.11	1.87	..	2.00	5.29	45,575	51,072	15
7.47	5.21	1.94	..	3.00	5.5	23,658	12,194	16
2.19	3.05	0.88	0.70	1.25	1.66	9,87,223	7,41,554	17
3.50	5.71	1.29	1.01	3.00	3.97	1,12,868	92,141	18
1.62	2.85	1.12	0.93	2.00	1.07	2,25,829	2,44,834	19
1.25	3.96	0.89	..	2.00	1.44	98,830	1,10,309	20
1.88	3.35	0.99	..	2.00	2.35	43,617	50,870	21
2.45	3.95	1.03	..	2.00	2.35	31,536	28,239	22
10.03	6.75	..	..	4.00	7.58	50,179	5,544	23
2.68	4.29	1.35	..	3.0	2.61	49,521	39,156	24
1.99	4.02	0.93	2.13	2.00	2.04	37,612	35,716	25
1.91	3.99	1.21	..	1.87	2.00	33,649	32,231	26
1.65	3.63	1.12	..	2.00	1.99	1,01,412	1,16,060	27
1.43	2.82	1.06	0.64	1.91	1.78	1,64,453	1,93,730	28
1.87	4.31	1.04	2.39	2.72	1.73	40,956	34,778	29
2.01	4.03	1.07	..	2.00	2.24	37,794	36,194	30
2.40	3.52	0.93	1.36	2.00	1.84	65,920	48,819	31
2.09	3.98	0.94	..	2.27	2.19	46,153	38,316	32
1.53	3.71	.90	..	1.90	1.81	91,776	1,01,922	33
3.21	4.30	1.41	..	3.00	3.52	10,858	8,513	34
available.								35

APPENDIX

Table of electric supply costs and

Serial number and name of undertaking.	Net profit (+) or (—) up to the end of the year as per General balance sheet.	Loans repaid during the year.	Total capital expenditure up to the end of the year.
	(14)	(15)	(16)
	RS.	RS.	RS.
1 Alandur	33,118	13,404	3,070
2 Anantapur	37,944	— 7,434	7,738
3 Bellary	1,34,301	23,000	24,991
4 Bezvada	2,94,172	41,561	25,440
5 Bodinayakanur	35,950	— 1,922	3,920
6 Coimbatore	5,89,408	..	33,516
7 Cocanada	1,49,811	— 15,170	18,342
8 Conjeevaram	1,36,577	81,079	22,076
9 Coonoor	94,793	5,256	8,936
10 Dindigul	1,49,903	85,661	11,794
11 Dharapuram	42,772	716	5,319
12 Hindupur	29,978	— 5,226	6,318
13 Hospet	12,486	— 55,409	Nil
14 Karur	76,857	11,038	6,951
15 Kodalkanal	57,881	14,933	10,132
16 Kollegal	24,075	Nil	4,079
17 Madura	7,54,252	2,92,711	4,98,115
18 Masulipatam	1,23,254	29,155	27,037
19 Ootacamund	2,50,724	Nil	26,789
20 Pollachi	1,14,082	21,126	9,716
21 Palni	54,764	23,832	3,832
22 Periyakulam	30,216	— 19,238	4,317
23 Rameswarain Panchayat Board	9,949	2,658	1,451
24 Sembiam	43,183	19,147	6,349
25 Sivakasi	38,441	4,105	3,284
26 Trivellore	35,152	1,942	4,866
27 Tiruppur	1,24,350	64,476	9,627
28 Tanjore	2,04,846	69,529	18,228
29 Tiruvottiyur	37,872	4,535	1,601
30 Tirupattur	38,511	— 16,800	5,762
31 Tiruvannamalai	50,651	— 10,720	6,928
32 Udumalpet	48,216	Nil	5,651
33 Virudunagar	1,10,251	15,275	10,061
34 Villivakkam	11,927	3,216	1,713
35 Wellington	..	..	..

Figures not

NOTES.—(1) All figures are calculated on a uniform basis according to standard practice.
 (2) Total expenditure including loan charges but less service connexion.
 (3) Excluding charges for service.

F-2—cont.

records—Local authority undertakings—cont.

Total capital expenditure up to the end of the year.	Total capacity.	Maximum load on the feeders.	Units generated.	Units purchased.	Load factor.	Total number of units sold.	Total number of consumers at the end of the year.	Serial number.
(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	
					PER CENT.			
66,788	200 KVA	92 KVA	..	1,74,621	18.31	1,48,812	201	1
1,78,113	125 KW	72 KW	1,94,325	..	25.44	1,60,455	365	2
3,78,901	542 KW	256 KW	6,49,837	Nil	19.60	4,29,169	987	3
4,63,182	1,200 KVA	795 KW	..	20,59,434	37.64	26,21,541	2,147	4
75,434	175 KVA	107 KVA	..	2,32,176	23.41	2,19,388	387	5
8,89,933	1,950 KVA	1,650 KW	..	48,69,746	30.24	43,70,205	5,314	6
3,73,770	450 KVA	287 KW	..	8,98,111	31.16	7,83,354	991	7
4,45,758	507 KVA	356 KVA	..	9,83,017	23.55	8,60,546	1,539	8
2,18,582	450 KVA	265 KW	..	6,50,250	24.07	5,58,789	921	9
2,69,572	735 KVA	552 KVA	..	14,27,890	30.44	12,66,472	1,342	10
1,16,886	150 KVA	100 KVA	..	3,00,601	32.11	2,81,304	491	11
1,36,813	60 KW	41 KW	82,470	..	21.43	76,979	263	12
2,17,093	100 KW	48 KW	31,751	..	6.85	28,804	350	13
1,99,623	300 KVA	215 KW	..	6,24,667	26.67	5,58,818	892	14
1,25,199	175 KVA	132 KW	..	1,94,805	15.02	1,73,684	419	15
99,400	80 KW	38 KW	60,521	..	15.22	50,666	200	16
11,21,962	3,275 KVA	2,280 KW	..	84,00,487	36	71,96,778	5,747	17
2,22,555	250 KVA	207 KVA	5,96,575	..	23.30	5,15,577	873	18
8,40,307	1,280 KW	980 KW	..	24,94,205	26.10	22,40,474	1,667	19
2,27,747	700 KVA	415 KW	..	14,28,789	34.77	12,63,557	849	20
86,459	225 KVA	156 KW	..	4,01,387	27.18	3,71,472	541	21
89,067	150 KVA	99 KVA	..	2,28,862	23.76	2,08,075	363	22
34,511	..	20 KW	..	14,800	8.03	14,631	113	23
1,58,084	140 KW	128 KW	..	3,52,979	30.13	2,95,567	253	24
1,06,532	150 KVA	111 KW	..	3,27,232	31.10	3,02,290	429	25
1,03,141	200 KVA	106 KW	..	3,25,170	28.68	2,81,624	295	26
2,76,933	1,125 KVA	515 KVA	..	11,49,064	21.78	9,82,382	1,074	27
5,04,265	1,050 KVA	530 KW	..	20,97,510	38.13	18,37,129	1,398	28
77,549	300 KVA	172 KVA	..	4,05,851	23.21	3,49,727	122	29
1,24,440	175 KVA	138 KW	..	3,01,099	22.65	2,73,801	614	30
1,49,623	150 KVA	182 KVA	..	4,69,742	27.61	4,40,145	449	..
1,20,438	275 KVA	147 KW	..	4,02,700	27.36	3,52,408	459	32
2,42,719	475 KVA	310 KVA	..	10,68,145	35.21	9,56,249	1,393	33
36,852	100 KVA	44 KVA	..	61,410	14.04	54,145	103	34
..	..	..	..	..	..	..	..	35

available. Exempted by Government from submitting the account in the prescribed form.

basis according to standard practice.
 charges but less service connexion.
 connexion as given on the Debtor side in No. III. Revenue Account.

APPENDIX

Statistical data for the administration report for the

Serial number and name of licensee.	Number of units generated.	Number of units purchased.	Number of units sold.	Maximum demand in K.W.
(1)	(2)	(3)	(4)	(5)
1 Adoni	2,21,140	Nil.	1,80,705	145 K.W.
2 Anakapalli	..	3,15,006	2,04,015	123 K.W.
3 Ambur-Vantiyambadi	..	12,55,467	10,73,013	467
4 British Cochin	2,100	1,92,180	1,85,028	85
5 Bobbili	..	2,32,899	1,99,475	103 K.W.
6 Calicut	..	25,18,507	20,78,384	820 K.W.
7 Chittoor	..	6,38,385	5,53,113	202 K.W.
8 Cuddapah	65,204	..	76,453	100 K.W.
9 Chingleput	..	8,36,141	7,54,445	209 K.W.
10 Cannanore-Tellicherry	54,801	7,33,270	7,51,262	410 K.W.
11 Chicacole	1,21,974	..	96,217	18 K.W.
12 Narasannapet	36,029	..	25,217	13 K.W.
13 Devakottai	..	7,15,102	5,01,688	261
13 East Tanjore	..	84,14,193	60,67,242	2,160 Tiruvarur.
14 East-Ramnad	..	52,27,006	45,01,345	116 Vallam.
15 East Coast	Supply not yet commenced.	..	..	79 Arantangi.
16 Ellore	..	6,06,369	5,33,770	1,418 Sivaganga.
17 Guntur	..	27,96,830	23,19,293	46 K.V.A. Singam-puneri.
18 Gudiyattam : a. Vadakathi-patti. b. Nariampet	..	18,40,220	16,39,854	206 K.V.A. Tenali.
19 Gudivada	..	4,18,236	3,36,413	44 K.W. Sitha-nagaram.
20 Kanadukathan	..	2,14,264	2,02,240	172
21 Kumbakonam	..	12,74,687	9,99,890	100 K.W.
22 Karakudi	..	36,16,460	27,52,781	466 K.V.A.
23 Madras (M)	2,84,73,030	10,38,950	8,54,591	1,120 K.W.
24 Mangalore	..	20,40,260	17,27,533	335 K.V.A.
25 Nellore	8,59,256	Nil.	7,06,361	Basin Bridge
26 Negapatam	..	23,23,381	21,78,929	19,600 K.W.
27 Nattarasankottai	..	4,03,713	3,40,976	1,200 K.W.
28 Narasaraopet	1,63,897	..	1,52,329	594 K.W.
29 Nelukuppai	Nil.	2,02,478	1,93,012	298 K.W.
30 Okkur	..	5,87,863	4,07,365	1,200 K.W.
31 Ongole	86,420	..	75,118	150 K.W.
32 Ponnai	Supply not yet commenced.	..	..	80 K.W.
33 Palghat	..	11,21,158	9,54,782	151 K.W.
34 Proddatur	90,703	..	54,456	50 K.W.
35 Rajahmundry	13,35,902	..	11,48,906	375 K.W.
36 Salem-Erode	..	1,14,44,530	1,02,53,637	63 K.W.
37 South Arcot	..	1,44,44,823	1,16,14,305	350 K.W.
38 Salur	..	79,310	67,403	Salem.
39 Parvathipur	20,912	..	16,708	2,080 K.W.
40 Trichinopoly-Srirangam	..	37,46,583	35,62,483	Erode.
41 Tinnevely-Tuticorin	..	2,69,61,026	2,41,46,902	535 K.W.
42 Tirumalai-Tirupathi	..	..	..	Sankari drug
43 Udipi Karakal	2,30,187	..	..	383 K.W.
44 Vellore	..	38,61,889	29,19,385	Pallipalayam
45 Vizagapatam	..	24,61,312	20,54,653	14 K.W.
46 Valparai	..	37,196	35,927	Villipuram

F-3.

year ending 31st March 1948 (Company licensees).

Total connected load at the end of 1947-48 in K.W.

Municipal.	Textiles.	Cement.	Chemicals.	Steel rolling mills.	Small industries.	Railways.	Serial number.
(6)	(7)	(8)	(9)	(10)	(11)	(12)	
17	..	..	..	..	118	..	1
11	..	..	..	..	152	..	2
14	..	..	..	..	502	..	3
15	..	..	..	..	36	..	4
..	..	..	..	..	323	..	5
41	..	..	..	..	1,089	54	6
18	..	..	..	..	427	2	7
82	..	..	..	..	96	..	8
25	..	..	..	..	301	20	9
22	800	..	..	..	74	..	10
12	..	..	..	..	59	..	11
57	..	..	..	..	7	..	12
58	..	..	..	..	189	..	13
..	..	..	..	..	4,229	65	14
..	..	..	..	..	728	19	15
..	..	..	..	..	..	..	16
81	..	..	2	..	206	..	17
11	300	80	..	..	728	20	18
..	..	..	..	..	..	..	19
19	455	..	..	..	467	..	20
..	..	..	..	..	104	..	21
..	..	..	..	..	68	..	22
..	..	..	..	..	264	..	23
..	..	..	..	..	1,484	10	24
58	1	..	..	..	130	7	25
703	..	..	..	..	16,285	2,410	26
..	..	..	..	..	..	..	27
60	..	..	..	..	1,651	2	28
100	..	..	..	..	93	82	29
34	..	..	..	2,107	1	12	30
..	..	..	..	..	159	..	31
16	..	..	..	..	96	1	32
..	..	..	..	..	63	..	33
12	..	..	..	..	29	..	34
..	..	..	..	..	..	..	35
23	..	..	..	..	544	..	36
14	..	..	..	..	35	..	37
126	8	..	..	..	225	31	38
100	1,731	..	..	..	4,505	36	39
..	..	..	..	..	..	..	40
..	..	..	..	..	..	..	41
..	..	..	..	..	..	..	42
..	..	..	..	..	..	..	43
..	..	..	..	..	..	..	44
..	..	..	..	..	..	..	45
..	..	..	..	..	..	..	46

Separate figures not available.

APPENDIX

Statistical data for the administration report for the

Serial number and name of licensee.	Total connected load at the end of 1947-48			
	Government departments.	Panchayat boards.	Agricultural.	Domestic lighting and power.
	(13)	(14)	(15)	(16)
1 Adoni	3	..	..	168
2 Anakapalli	..	..	3	200
3 Ambur-Vaniyambadi	1	15	315	585
4 British Cochin	..	..	..	185
5 Bobbili	..	3	2	106
6 Calicut	..	..	2	1,040
7 Chittoor	7	..	104	693
8 Cuddapah	..	..	52	173
9 Chingleput	36	..	131	173
.. .. .	..	..	..	..
10 Cannanore-Tellicherry	9	2	..	418
11 Chicacole	7	..	3	208
.. Narasannapet	..	2	..	50
12 Devakottai	1	..	28	1,000
13 East Tanjore	12	71	153	1,935
14 East Ramnad	6	37	43	1,114
15 East Coast	..	..	..	..
16 Ellore	10	..	6	416
17 Guntur	26	..	297	821
18 Gudiyattam	..	..	358	284
.. .. .	..	1	219	147
19 Gudivada	..	..	7	148
20 Kanadukathan	2	28	20	1,607
21 Kumbakonam	16	87	19	1,531
.. .. .	..	(Including Municipality.)	..	..
22 Karaikudi	3	..	6	1,170
23 Madras (M)	..	400	..	20,339
24 Mangalore	65	..	4	1,108
25 Nellore	29	..	3	151
26 Negapatam	10	1	..	1,250
27 Nattarasankottai	6	12	..	341
28 Narasaraopet	2	..	2	65
29 Nelkuppai	..	2	28	194
30 Okkur	..	8	41	1,095
31 Ongole	..	..	..	102
32 Ponnani	..	Supply not yet commenced.	..	..
33 Palghat	37	..	13	478
34 Proddatur	..	..	52	60
35 Rajahmundry	104	4	5	354
36 Salem-Erode	49	17	402	2,384
37 South Arcot	41	20	4,217	1,468
38 Sahur	..	3	..	60
.. Parvathipur	..	3	..	41
39 Srivilliputhur	2	..	50	519
40 Trichinopoly-Srirangam	52	58	650	4,843
41 Tinnevely-Tuticorin	Not separately classified.	3	38	2,386
42 Tirumalai-Tirupathi	7	1	313	298
43 Udipi {Karkal	..	2	..	23
.. Udipi	..	..	..	160
44 Vellore	66	40	119	1,837
45 Vizagapatam	738	..	..	928
46 Valparal	..	8	..	18

NOTE.—All the above figures are as furnished by the concerned licensees.
(M).—The particulars relate to the year

F-3—cont.

year ending 31st March 1948 (Company licensees)—cont.

in K.W.—cont.		Number of high-tension and low-tension consumers as on 31st March 1948.		Number of agricultural pump sets and total horse-power.				Population of area of supply.	Serial number.
Miscellaneous.	Total.	High-tension.	Low-tension.	As on 31st March 1948.		Connected during the year 1947-48.			
(17)	(18)	(19)	(20)	Number.	Horse-power.	Number.	Horse-power.	(25)	
2	308	..	501	..	..	..	..	40,000	1
..	336	..	446	1	5	1	5	40,000	2
24	1,456	..	1,660	75	423	19	98	51,500	3
52	288	..	337	..	..	..	..	30,000	4
40	438	..	244	1	2.5	1	2	14,469	5
79	2,305	..	2,796	2	4	1	4	1,25,000	6
..	1,251	..	1,088	20	104	11	66	40,000	7
..	403	..	628	9	92	..	..	35,000	8
30	716	..	614	33	175	17	91	60,000	9
20	1,345	2	1,540	..	..	..	..	(including Chingleput town and villages in the area of supply).	10
14	303	..	471	1	7	..	..	1,00,000 (about)	11
2	61	..	134	..	..	..	..	22,300	12
4	1,277	..	1,170	10	35	3	12	30,000	13
1,627	8,198	4	10,837	51	273	15	73	..	14
4,070	6,022	4	3,136	12	87	4	23	..	15
..	..	..	..	..	..	..	..	..	16
..	721	..	1,186	2	8	1	3	75,000	17
167	2,450	1	2,505	91	398	7	32	2,50,000	18
3	1,586	1	963	78	898	7	60	50,000	19
6	480	..	422	46	293	26	148	25,000	20
22	262	..	527	2	10	..	..	23,900	21
218	2,139	2	1,622	9	27	..	..	53,086	22
..	3,147	..	5,153	6	26	1	2	1,40,000	23
..	1,384	..	1,414	5	9	..	..	50,000	24
1,000 (Tramways)	41,137	..	..	..	..	..	..	18,22,000	25
140	3,039	..	2,497	1	5	1	5	99,000	26
98	556	..	1,055	1	5	..	..	60,000	27
635	4,362	1	1,874	..	..	..	..	55,000	28
11	529	..	848	..	..	..	..	25,000	29
18	200	..	693	1	3	..	..	19,000	30
42	329	1	498	9	38	2	10	12,823	31
10	1,163	..	644	11	55	2	10	15,000	32
7	150	..	314	..	..	..	..	30,000	33
..	..	..	..	..	..	..	..	..	34
..	1,095	..	1,818	4	24	1	10	60,000	35
5	166	6	307	11	51	6	11	29,000	36
63	920	1	1,189	2	6	1	5	82,000	37
..	9,224	5	7,057	73	536	18	83	2,24,272	38
677	8,410	4	5,056	1,260	3,725	320	1,858	1,60,000	39
12	94	..	268	..	..	..	..	20,600	40
1	45	..	135	..	..	..	..	19,300	41
..	2,287	5	2,001	19	80	10	42	90,000	42
2,506	15,695	6	12,908	225	866	35	205	17,96,703	43
18	5,801	5	5,944	10	38	5	15	2,50,000	44
603	1,246	..	1,654	95	410	42	153	20,500	45
..	25	..	102	..	..	..	..	8,000	46
8	242	1	612	..	..	..	..	18,000	47
..	3,491	..	3,940	32	145	14	54	1,62,188	48
48	2,121	3	1,839	..	..	..	..	2,00,000	49
..	19	..	17	..	..	..	..	600 (about)	50

by the concerned licensees.
from 1st April to 28th August 1944 only.

APPENDIX F-4.

Statistical data for the Administration Report for the year ending 31st March 1948 (Local authorities.)

Serial number and name of licensee.	Number of units generated.	Number of units purchased.	Number of units sold.	Maximum demand in K.W.	Total connected load at the end of the 1947-48.						
					Municipal.	Textiles.	Cement.	Chemicals.	Steel rolling mills.	Small Industries.	Railways.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
1 Alandur	179,744	2,08,969	1,78,597	120 K.V.A.	K.W.	K.W.	K.W.	K.W.	K.W.	K.W.	K.W.
2 Anantapur	7,22,545	...	1,54,221	79 K.W.	9	...	...	...	...	96	...
3 Bellary	...	...	5,83,318	315 K.W.	23	...	...	...	...	61	...
4 Bewara	...	33,46,276	29,46,272	907 K.W.	173	...	...	...	...	183	...
5 Bodinayakanur	...	2,87,844	2,76,292	101 K.V.A.	70	...	...	...	27	647	215
6 Colimbatore	...	59,91,074	49,09,190	2,040 K.W.	217	16	...	...	...	96	...
7 Cocanada	...	10,86,392	8,94,300	330 K.W.	194	14	...	...	...	1,554	50
8 Conjeevaram	...	12,64,432	11,28,347	424 K.W.	116	...	...	...	...	167	11
9 Coonoor	...	7,66,634	6,75,728	300 K.W.	46	...	...	...	...	352	...
10 Dindigul	...	15,06,260	13,37,701	510 K.W.	83	135	...	...	...	161	13
11 Dharapuram	...	...	70,123	116 K.W.	27	...	...	...	...	101	15
12 Hospet	1,12,376	...	1,01,347	41 K.W.	18	...	...	...	...	24	...
13 Karur	...	6,51,783	6,00,050	255 K.W.	3	...	...	...	...	60	2
14 Kodalkanal	...	1,91,218	1,78,441	131 K.W.	64	...	...	...	...	308	5
15 Kodalkanal	...	...	...	45 K.W.	13	...	...	...	...	14	...
16 Kollegal	84,684	...	69,705	2,610 K.W.	No separate figures available.	739	...	...	...	1,224	204
17 Madura	...	98,21,497	80,53,400	...	...	...	...	...	...	...	...
18 Masulipatam	...	6,53,383	5,76,282	225 K.W.	62	...	...	...	...	251	...
19 Otacamund	...	27,35,953	24,07,438	1,070 K.W.	721	...	...	...	...	300	6
20 Pollachi	...	15,52,481	13,70,471	430 K.W.	20	...	...	...	...	1,048	11
21 Palni	...	5,20,005	4,64,377	212 K.W.	17	...	...	...	...	182	4
22 Periyakulam	...	3,31,314	2,96,107	124 K.V.A.	32	...	...	...	...	148	...
23 Rameswaram Devasthanam	...	...	12,058	25 K.W.	...	...	...	...	...	...	...
24 Sembiam	...	4,16,752	3,53,441	160 K.W.	31	...	...	...	...	172	...
25 Sivakasi	...	4,61,816	4,24,600	154 K.W.	23	...	...	...	...	177	...
26 Tiruvellore	...	4,45,824	3,84,657	139 K.W.	11	...	...	...	...	82	...
27 Tiruppur	...	15,65,130	13,58,561	480 K.W.	57	740	299	...	...	45	3
28 Tanjore	...	23,09,995	20,69,643	620 K.W.	204	...	...	...	...	923	30
29 Tiruvotiyur (N.A.)	...	5,22,227	4,41,832	223 K.W.	...	36	...	...	...	272	...
30 Tirupattur (N.A.)	...	3,43,384	3,10,450	148 K.W.	12	...	...	...	...	154	...
31 Tiruvannamalai	...	5,82,387	4,87,363	214 K.W.	47	...	...	...	...	271	4
32 Udumalpet	...	5,10,028	4,48,115	150 K.W.	9	...	...	...	...	474	5
33 Villupattur	...	12,35,540	10,99,518	335 K.W.	61	...	...	...	...	27	...
34 Villupattur	...	67,186	67,176	44 K.V.A.	...	...	...	...	...	...	...
35 Wellington Cantonment	...	1,07,002	1,00,507	50 K.W.	...	...	...	...	...	...	...

Total connected load at the end of 1947-48—cont.

Government department.	Panchayat boards.	Agricultural.	Domestic lighting and power.	Miscellaneous.	Total.	Number of H.T. and L.T. consumers on 31st March 1948.				As on 31st March 1948.				Population of area of supply.
						H.T.	L.T.	(20)	(21)	H.P.	(22)	(23)	(24)	
(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)
K.W.	K.W.	K.W.	K.W.	K.W.	K.W.	K.W.	K.W.	K.W.	K.W.	K.W.	K.W.	K.W.	K.W.	K.W.
1 Alandur	...	10	2	111	210	...	259	7	16	...	...	...	...	13,213
2 Anantapur	...	108	108	16	244	...	431	...	...	...	...	...	...	21,482
3 Bellary	...	361	361	4	646	...	1,001	...	...	...	...	...	...	66,056
4 Bewara	...	824	824	1	1,833	...	2,406	15	80	...	...	...	...	92,731
5 Bodinayakanur	...	37	37	16	80	...	...	...	...	...	...	...	...	32,000
6 Colimbatore	...	435	3,385	36	6,005	...	6,335	89	583	...	...	...	...	1,30,354
7 Cocanada	...	4	857	48	1,461	...	1,002	...	...	...	...	...	...	75,146
8 Conjeevaram	...	154	839	1	1,739	...	2,006	34	188	...	...	...	...	92,000
9 Coonoor	...	19	739	14	1,530	...	1,019	...	...	...	...	...	...	18,731
10 Dindigul	...	28	28	...	400	...	1,472	...	...	...	...	...	...	20,668
11 Dharapuram	...	15	130	...	210	...	274	...	...	...	...	...	...	18,978
12 Hospet	...	3	504	...	889	...	1,001	1	5	...	...	...	...	26,012
13 Kodalkanal	...	...	406	...	538	...	627	...	...	...	...	...	...	27,514
14 Kodalkanal	...	...	171	...	177	...	183	...	...	...	...	...	...	9,124
15 Kollegal	...	15	3,944	746	6,872	13	6,814	5	21	...	...	...	...	15,060
16 Madura	...	...	...	...	...	...	...	...	...	...	...	...	...	2,36,162
17 Masulipatam	...	...	590	21	924	...	1,088	...	...	...	...	...	...	59,110
18 Otacamund	...	12	1,995	133	3,213	3	1,687	...	...	...	...	...	...	36,738
19 Pollachi	...	85	296	59	1,529	...	1,889	21	115	...	...	...	...	26,188
20 Palni	...	13	243	...	577	...	680	4	18	...	...	...	...	24,582
21 Periyakulam	...	23	243	...	444	...	598	6	30	...	...	...	...	25,682
22 Rameswaram Devasthanam	...	...	13	...	30	...	...	...	...	...	...	...	...	6,179
23 Sembiam	...	19	137	...	361	...	372	10	26	...	...	...	...	37,579
24 Sivakasi	...	42	326	...	573	...	671	11	55	...	...	...	...	37,627
25 Tiruvellore	...	11	184	...	427	...	360	20	133	...	...	...	...	13,360
26 Tiruppur	...	82	637	15	1,953	...	1,868	25	111	...	...	...	...	33,009
27 Tanjore	...	50	370	123	1,802	...	2,202	19	67	...	...	...	...	33,792
28 Tiruvotiyur (N.A.)	...	6	82	...	446	...	172	19	62	...	...	...	...	13,355
29 Tirupattur (N.A.)	...	19	294	...	843	...	843	5	25	...	...	...	...	13,357
30 Tiruvannamalai	...	46	257	...	491	...	663	14	62	...	...	...	...	32,475
31 Tiruvannamalai	...	17	271	...	722	...	603	25	175	...	...	...	...	30,000
32 Udumalpet	...	33	322	...	1,404	...	1,768	8	44	...	...	...	...	3,880
33 Villupattur	...	...	72	...	109	...	155	...	...	...	...	...	...	...
34 Villupattur	...	...	105	...	132	...	116	...	...	...	...	...	...	...
35 Wellington Cantonment	...	...	...	...	...	...	...	...	...	...	...	...	...	...

NOTE.—All the above figures are as furnished by the concerned licensee.

APPENDIX G-1.

*List of H.T. consumers supplied directly by the Electricity department—
Pykara System.*

INDUSTRIES.

(a) Cement.

- 1 The Associated Cement Co., Madukkarai.

(b) Textiles.

- 2 The Coimbatore Spinning and Weaving Mills Ltd., Coimbatore.
3 The Vasantha Mills, Ltd., Coimbatore.
4 The Cambodia Mills, Ltd., Coimbatore.
5 The Rajalakshmi Mills, Ltd., Coimbatore.
6 The Somasundara Mills, Ltd., Coimbatore.
7 The Kaleeswara Mills, Ltd., Coimbatore.
8 Ranga Vilas Mill, Ltd., Coimbatore.
9 The Pankaja Mills, Ltd., Coimbatore.
10 The Lakshmi Mills, Ltd., Coimbatore.
11 The Coimbatore Cotton Mills, Ltd., Coimbatore.
12 Sri Sarada Mills, Ltd., Coimbatore.
13 The Lotus Mills, Ltd., Coimbatore.
14 The Janardhana Mills, Ltd., Coimbatore.
15 Sri Palamalai Ranganathan Mills, Ltd., Coimbatore.
16 The Murugan Mills, Ltd., Coimbatore.
17 The Saroja Mills, Ltd., Coimbatore.
18 The Pioneer Mills, Ltd., Coimbatore.
19 The Radhakrishna Mills, Ltd., Coimbatore.
20 The Gnanambika Mills, Ltd., Coimbatore.
21 The Vijayalakshmi Mills, Ltd., Coimbatore.
22 The Kamala Mills, Ltd., Coimbatore.
23 Sri Balasubramania Mills, Ltd., Coimbatore.
24 The Kothari Textiles, Ltd., Coimbatore.
25 The Kuthuri Mills, Ltd., Coimbatore.
26 The Kumaran Mills, Ltd., Coimbatore.
27 The Jayalakshmi Mills, Ltd., Coimbatore.
28 The Soundararaja Mills, Ltd., Dindigul.
29 The Vinodha Ginning Factory, Ltd., Dindigul.
30 The Rathna Gin and Cotton Factory, Ltd., Dindigul.
31 The Dhanalakshmi Mills, Ltd., Tiruppur.
32 The Buckingham and Carnatic Mills, Ltd., Tiruppur.
33 Sri Ramalinga Choodambika Mills, Ltd., Tiruppur.
34 The Asher Textiles, Ltd., Tiruppur.
35 The Palani Andavar Mills, Ltd., Udumalpet.
36 The Venkatesa Mills, Ltd., Udumalpet.
37 The Thirumurthi Mills, Ltd., Udumalpet.

(d) Mines.

- 38 The Devala Mines, Nilambur.

(e) Others Industries.

- 39 The Cordite Factory, Aravankadu.
40 The General Manufacturing Corporation, Coimbatore.
41 The Brooke Bond Tea Company (India), Ltd.
42 The Barath Oil Mills, Ltd.
43 G. Ramaswamy and Company Oil Mills, Ltd.

TEA ESTATES.

Nilgiris.

- 44 Bengorani Estate.
45 The Devarshola Estate.
46 The Glendale Estate.
47 The Parkside Estate.
48 The Nonsuch Estate.
49 The Prospect Estate.
50 The Terrace Factory.

TEA ESTATES—cont.

Nilgiris—Cont.

- 51 The Kilkotagiri Estate.
52 The Thuttapallam Estate.
53 The Rousidamalai Factory.
54 The Kilmut Fort Factory.
55 The Dunsandle Estate.
56 The Thilashola Factory.
57 The Sussex Group Tea Estate.
58 The Sutton Estate.
59 The Terramia Estate.
60 The Farm Tea Estate.

Annamalais.

- 61 The Vellamalai Estate.
62 The Pachamalai Estates.
63 The Akkamalai Estate.
64 The Manicka Estate.
65 The Kallayar Estate.
66 The Iyerpadi Estate.
67 The Sheikalmudi Estate.
68 The Uralikkal Estate.
69 The Ropeway Company.
70 The Injiparai Estate.
71 The Stanemore Estate.
72 The Nallakattu Estate.
73 The Sri Kundra Estate.
74 The High Forest Estate.
75 The Valparai Township Committee.
76 The Karamalai Estate.
77 The Kadalapara Estate.
78 The Sellapara Estate.
79 The Mount Stuart Estate.
80 The Malikkipara Estate (Pannimadai).
81 The Thalmudi Estate.

Licensees.

- 82 Coimbatore Municipality.
83 Pollachi Municipality.
84 Tiruppur Municipality.
85 Udumalpet Municipality.
86 Ootacamund Municipality.
87 Palni Municipality.
88 Dharapuram Municipality.
89 Dindigul Municipality.
90 Periyakulam Municipality.
91 Bodinayakanur Municipality.
92 Kodakanal Municipality.
93 Palghat Electric Supply Corporation.
94 West Coast Electricity Supply Corporation—Calicut.
95 West Coast Electricity Supply Corporation—Cannanore—Tellicherry.

OTHERS.

- 96 Cochin Government—Supply near Chittoor within the Madras boundary.
97 Agricultural College, Coimbatore.
98 Central Jail, Coimbatore.
99 Forest College, Coimbatore.
100 Sugarcane Breeding Station, Coimbatore.
101 Government Malt Factory, Coimbatore.
102 Sular Aerodrome.
103 Royal Naval Air Station, Coimbatore.
104 Supply to Military Buildings and Workshops—I Point of Supply.
105 Ice and Cold Storage Installation, Coimbatore—II Point of Supply.

APPENDIX G-2.

*List of H.T. consumers supplied directly by the Electricity department—
Mettur System.*

INDUSTRIES.

(a) Textiles.

- 1 Mettur Industries, Ltd.

(b) Chemicals.

- 2 Mettur Chemical and Industrial Corporation, Ltd., Mettur Dam.

(c) Others.

- 3 Indian Metal and Metallurgical Corporation, Ltd., Mettur Dam.
4 The Deccan Sugar and Abkari Co., Ltd.
5 Dhanalakshmi Mills, Ltd., Pugalur.
6 Erode Water Works, Ltd.

LICENSEES.

- 7 Vellore Electric Supply Corporation, Ltd., Vellore.
8 Vellore Electric Supply Corporation, Ltd., Ranipet.
9 North Arcot District Electric Supply Corporation, Pernambut.
10 North Arcot District Electric Supply Corporation, Gudiyattam.
11 Chittoor Electric Supply Corporation, Ltd., Chittoor.
12 Carnatic Electric Supply Corporation, Ltd., Ambur.
13 Salem-Erode Electricity Distribution Co., Ltd., Salem.
14 Salem-Erode Electricity Distribution Co., Erode, I Point.
15 Salem-Erode Electricity Distribution Co., Ltd., Sankari, II Point.
16 Salem-Erode Electricity Distribution Co., Ltd., Pallapalayam.
17 South Madras Electric Supply Corporation, Ltd., Trichinopoly.

LICENSEES—cont.

- 18 South Madras Electric Supply Corporation, Ltd., Tiruvannur.
19 South Madras Electric Supply Corporation, Ltd., Mayanor.
20 South Madras Electric Supply Corporation, Ltd., Vallam.
21 Negapatam Electric Supply Corporation, Ltd., Negapatam.
22 Kumbakonam Electric Supply Corporation, Ltd., Kumbakonam.
23 South Arcot Electric Supply Corporation, Ltd., Villupuram.
24 Chingleput Electric Supply Corporation, Ltd., Chingleput.
25 Chingleput Electric Supply Corporation, Ltd., Reddipalayam.
26 Chingleput Electric Supply Corporation, Ltd., Villampakkam (Pole 341).
27 Tirumalai-Tirupati Devasthanam, Tirupati.
28 Tanjore Municipality.
29 Karur Municipality.
30 Tirupattur Municipality.
31 Conjeevaram Municipality.
32 Tiruvannamalai Municipality.
33 Trivellore Panchayat Board.

OTHERS.

- 34 French India Government, Pondicherry.
35 South Indian Railway at Trichinopoly.
36 South Indian Railway at Erode.
37 M. & S. M. Railway at Arkonam.
38 M. & S. M. Railway at Jalapet.
39 Executive Engineer, P.W.D., Salem Division, Mettur Dam.

APPENDIX G-3.

*List of H.T. consumers supplied directly by the Electricity department—
Papanasam System.*

INDUSTRIES.

(a) Textiles.

- 1 Meenakshi Mills, Ltd., Madura.
2 Pandian Mills, Madura.
3 The Loyal Mills, Kolpatti.
4 The Mahalakshmi Mills, Pasumalai.
5 Kothandaram Mills, Madura.
6 Lakshmi Mills, Kolpatti.
7 The Madura Mills Co., Ltd., Madura (Dunlop Yarn Plant).
8 Rajah Mills, Ltd., Madura.

(b) Oil Mills.

- 9 A. T. Parangiri Nadar & Co., Virudhunagar.
10 T. M. M. Madalai Nadar & Co., Virudhunagar.
T. M. S. Madalai Nadar & Co., Virudhunagar.
Southern Oil Mills, Virudhunagar.

LICENSEES.

- 13 Madura Municipality.
14 Virudhunagar Municipality, Virudhunagar.
15 Sivakasi Municipality, Sivakasi.
16 South Madras Electric Supply Corporation, East Ramnad.
17 West Ramnad Electric Distribution Co., Ltd., Rajapalayam.
18 Nattarasankottai Electric Supply Corporation, Nattarasankottai.
19 Rellance Electric Supply Corporation, Okkur.
20 Tinnevely-Tuticorin Electric Supply Corporation, Tuticorin.

OTHERS.

- 21 Government of Travancore.
22 Shencottah Electric Supply Co. (Licensee of Travancore State).
23 Virudhunagar Municipality Waterworks.
24 K.C.A.S. Dorairaj Nadar & Sons, Sivakasi.
25 Orient Products, Tirumangalam.

APPENDIX G-4.

List of H.T. consumers supplied directly by the Electricity department—
Madras System.

1 Buckingham and Carnatic Mills.	17 Villivakkam Panchayat Board.
2 Madras and Southern Mahratta Railway.	18 Richardson and Cruddas, Kasimode Works, Royapuram.
3 South Indian Railway—Main supply, Egmore.	19 Spencer and Co., Ltd., Mount Road.
4 Do. Emergency Supply, Beach.	20 South Indian Royal Ice Factory, Egmore.
5 Gordon Woodroffe Leather Manufacturing, Ltd., Pallavaram.	21 Theosophical Society, Adyar.
6 Government Medical Stores, Periamet.	22 Wireless Station, Fort St. George.
7 Government Press, Mint Street.	23 Madras Electric Tramways (1904), Ltd.
8 City Ice Factory, General Patters Road.	24 Corporation of Madras (Kilpauk Pumping Station).
9 Kasturi and Sons, Ltd. (Hindu), Mount Road.	25 Do. Street lighting.
10 Madras Christian College, Tambaram.	26 Engineering College, Guindy.
11 Madras Port Trust.	27 Mysore Vegetable Oil Products Ltd., Cochrane Basin Road.
12 Madras Race Club, Guindy.	28 R.N.A.S., Tambaram.
13 Massey and Co., Ltd., Royapuram.	29 Government Broadcasting Station, Guindy.
14 Alandur Panchayat Board.	30 The Indian Oxygen and Acetylene Co., Ltd., Tondiarpet.
15 Supply at Sembium.	
16 Tiruvottiyur Panchayat Board.	

APPENDIX G-5.

List of H.T. consumers supplied directly by the Electricity department—
Andhra System.

VIZAGAPATAM SYSTEM.	
<i>Industries.</i>	
1 Scindia Steam Navigation Company.	16 Chittivalasa Jute Mills.
2 Vizianagram Mining Company, Garbham Mines.	17 M. Seetharamayya and Sons.
3 Vizianagram Mining Company, Kodur Mines.	18 Vizagapatam Sugar and Refineries, Ltd.
<i>Licencees.</i>	
4 Vizagapatam Electric Supply Corporation—Town Supply.	19 P. Bashkara Rao.
5 Vizagapatam Electric Supply Corporation—Aerodrome Supply.	20 P. Lakshmana Swami.
6 Vizagapatam Electric Supply Corporation—Maklapuram Supply.	BEZWADA SYSTEM.
7 Anakapalle Electric Supply Corporation.	
8 Motors and General Stores, Ltd., Bobbili.	<i>Industries.</i>
9 Bobbili Licencee.	
10 Salar-Parvathipur Electricity Distribution Co.	21 Andhra Cement Company, Bezwada.
<i>Others.</i>	
11 Vizianagram Samasthanam.	22 K.C.P., Ltd., Vuyyur.
12 Royal Navy, Vizagapatam.	23 National Chemical Works, Ltd., Chalakalapudi.
13 Vizagapatam Port.	<i>Licencees.</i>
14 Biddu Paidanna and Sons (Oil Mills).	24 Bezwada Municipality.
15 Narayana Viyanadan and Sons.	25 Masulipatam Municipality.
	26 Gudivada Electric Supply Corporation.
	27 Ellore Electric Supply Corporation.
	28 Guntur Power and Light—Tenali Supply.
	29 Guntur Power and Light—Tadepalli Supply.
	COCANADA AREA.
	30 Cocanada Municipality.
	KURKOOAL AREA.
	Nil.

APPENDIX G-6.

List of textile mills, tea factories and other H.T. consumers in licensee areas.

Name of Electric Licensee.	Textile mills.	Tea factories.	Other H.T. consumers.
(1)	(2)	(3)	(4)
1 Coimbatore .. ..	....	..	South Indian Railway.
2 Cannanore-Telli-cherry.	Aaron Spinning and Weaving Mills, Ltd., Cannanore.	..	....
3 East Rammad .. ..	....	..	1 Sri Meenakshi Sundarwarar Electric Power Corporation, Ltd., Karakudi.
			2 Sri Meenakshi Electric Supply Corporation, Ltd., Devakottai.
			3 Kanadukathan Electric Supply Corporation, Ltd., Kanadukathan.
			4 Chief Mechanical Engineer, South Indian Railway, Golden Rock Supply to Manamadura Junction (load included in railways).
4 Guntur Power and Light, Ltd.	....	..	Krishna Cement Works.
5 Kanadukathan .. ..	....	..	South Madras Electric Supply Corporation, Ltd., Arantangi.
			Nelkuppai Electric Supply, Ltd., at Kanadukathan.

APPENDIX G-6—cont.

List of textile mills, tea factories and other H.T. consumers in licensee areas—cont.

Name of Electric Licensee.	Textile mills.	Tea factories.	Other H.T. Consumers.
(1)	(2)	(3)	(4)
6 Madura .. ..	....	..	W.F.P.M. Hospital, Chintamani Talkies, South Indian Railway, District Medical Officer, Oil Mills, K.L.N. Radhakrishna Ayyar and Company.
	Kothandaram Mills	..	Central Cinema.
	Balakrishna Mills	..	T.V.S. and Sons, Madura
	Madura Knitting Co.	..	Mills-Kochadi Mills, Bangalore. S. M. Sundaram Chettiar, Kochadal Water Works.
7 Negapatam .. ..	....	..	The Indian Steel Rolling Mills.
8 North Arcot District Electric Corporation.	M/S. Thirumagai Mills, Ltd. ...	..	....
9 Ootacamund .. ..	....	Bengal Tea Estate, Krinkadu Tea Estate, Ambikavally Tea Estate, Sogathoral Tea Estate, Raja Plantations Tea Estate, Neelamalal Tea Estate, Kakkattobben Tea Estate, Cairu Hills ..	Coonoor Municipality, Wellington Cantonment, St. George Home.
10 Srivilliputtur	Rajapalayam Mills, Ltd.; Rama Raju Surgical Cotton Mills; Jayaram Mills, Ltd.; Sri Janakham Mills, Ltd., and Sri Shanmugar Mills, Ltd.	..	....
11 (a) Salem-Erode	Sri Rajendra Mills, Salem; Javahar Mills, Ltd., Salem and Pullickar Mills, Ltd., Tiruchengode.	..	....
11 (b) Salem-Erode .. ..	....	..	Railways—Salem Junction (S.I.R.), Salem Market.
12 Tanjore (Municipality).	....	..	South Indian Railway Water Works Pumping Station.
13 East Tanjore .. ..	....	..	South Arcot Electricity Distribution Co., Ltd.; Karikal Electric Supply Co., Ltd., Trichinopoly (Supply at Thirumalrajapattanam), Karikal Electric Supply Co., Ltd., Trichinopoly (Supply at Agankannu Water Works); Chief Mechanical Engineer, Golden Rock (Supply at Mayavaram Junction load included in Railways).
14 Tinnevely-Tuticorin.	Madura Mills, Co. (Spinning) and Sankar Mills (Weaving).	..	Water Works, Tuticorin Municipality; Tuticorin S.I. Railway; Tinnevely S.I. Railway.
15 Trichinopoly-Srirangam.	Trichinopoly Mills, Ltd., Trichinopoly, Meenakshi Mills, Ltd., Uthlam-patti.	..	Dalmia Cement, Ltd., A.I.B. Trichinopoly Transmitting Station, Pudukottah Electric Supply Corporation, Ltd., Pudukottah Ponnamaravathi Electric Supply Co., Ponnamaravathi.

Note.—All the above particulars are as furnished by the concerned licensees.

APPENDIX H-1.

List of villages and townships supplied with electrical energy by the Government Electricity department as at the end of 1947-48.

(* Electrified during 1947-48.)

PYKARA ELECTRICITY SYSTEM.

COIMBATORE DISTRICT.

I. Avanashi taluk.

- 1 Agraharapudur.*
- 2 Angeripalayam.
- 3 Andipalayam.
- 4 Annur.
- 5 Avanashi.
- 6 Avanashipalayam.
- 7 Avanashilingampalayam.
- 8 Chikadasampalayam.
- 9 Chikkampalayam.
- 10 Chockampalayam.
- 11 Dasampalayam.
- 12 Kalingarayampalayam.
- 13 Kannampalayam.
- 14 Kadathur.
- 15 Karamadal.
- 16 Karumbampalayam.
- 17 Kattampatti.
- 18 Kariampalayam.
- 19 Krishnagoundenpudur.*
- 20 Kuppalalayam.
- 21 Kallar.
- 22 Maddampalayam.
- 23 Madathupalayam.
- 24 Mangalakaraipudur.
- 25 Masagounderchettipalayam.
- 26 Mettupalayam.
- 27 Muthanampalayam.
- 28 Nambampalayam.
- 29 Nellithoral.
- 30 Odenthoral.
- 31 Perumanallur.
- 32 Ponnalgoundenpudur.
- 33 Pumalur.
- 34 Rakkiapalayam.
- 35 Ranganathapuram.*
- 36 Thelungupalayam.
- 37 Thirumuruganpudi.
- 38 Thekkampatti.
- 39 Theampalayam.
- 40 Virugapalayam.
- 41 Vanaiyalayam.

II. Coimbatore taluk.

- 42 Ambillipudur.*
- 43 Agraharasamakulam.
- 44 Athinarayanapuram.*
- 45 Athipalayam.
- 46 Bodipalayam.
- 47 Chettipalayam.
- 48 Chinnamettupalayam.*
- 49 Chitrachavadi.
- 50 Edayapalayam.*
- 51 Ganapathi.
- 52 Govindanaickenpalayam.
- 53 Gudalur.
- 54 Idigarai.
- 55 Kalapatti.
- 56 Kallikanal-kenpalayam.*
- 57 Kallunadal.
- 58 Kandalgoundersalai.
- 59 Keeranatham.
- 60 Kondayampalayam.
- 61 Krishnarayanapuram.
- 62 Kumarapalayam.*
- 63 Kunjamuthur.
- 64 Kuppamur.*
- 65 Kuppakonandur.*
- 66 Kurichi.
- 67 Kurudampalayam.
- 68 Kurumbanur.*
- 69 Machampalayam.
- 70 Madukkarai.
- 71 Manikkampalayam.
- 72 Narasimhanal-kenpalayampudur.
- 73 Nanjundapuram.
- 74 Neelikonampalayam.
- 75 Ondiputhur.
- 76 Onnipalayam.
- 77 Pachampalayam.*
- 78 Palathoral.
- 79 Pallapalayam.*

COIMBATORE DISTRICT—cont.

II. Coimbatore taluk—cont.

- 80 Papanalckenpalayam.
- 81 Pannimadal.
- 82 Peelamedu.
- 83 Perlanalckenpalayam.
- 84 Perur.
- 85 Perurchettipalayam.
- 86 Podanur.
- 87 Pudupalayam.
- 88 Pudur.
- 89 Samakulam.
- 90 Satavanampatti.
- 91 Sengalipalayam.
- 92 Sengalur.*
- 93 Sengodalgoundenpudur.*
- 94 Siddinalckenpalayam.*
- 95 Sinnavadampatti.
- 96 Sircasamakulam.
- 97 Souripalayam.
- 98 Thattampudur.*
- 99 Thettipalayam.
- 100 Thondamuthur.
- 101 Tudiyalathur.
- 102 Udayampalayam.
- 103 Uppilipalayam.
- 104 Vadamathurai.
- 105 Velankurichi.
- 106 Vellalore.
- 107 Vellankinar.
- 108 Vellamadal.
- 109 Veerapandi.
- 110 Veerakeralam.
- 111 Venkita-uram.
- 112 Viyampalayam.
- 113 West Chitralchavadi.

III. Dharapuram taluk.

- 114 Dhalavalpatnam.
- 115 Periyakumarapalayam.

IV. Erode taluk.

- 116 Chennimalai.
- 117 Chengapalli.
- 118 Irugur.
- 119 Kavathampalayam.
- 120 Kunnathur.
- 121 Perundurai.
- 122 Reddipalayam.
- 123 Thalapatti.
- 124 Uthukkull.
- 125 Virumandampalayam.

V. Gobichettipalayam taluk.

- 126 Gobichettipalayam.
- 127 Kolappalur.
- 128 Siruvallur.

VI. Palladam taluk.

- 129 Anuppapalayam.
- 130 Appanalkenpatti.
- 131 Arasur.
- 132 Arugampalayam.
- 133 Athappagoundenpudur.
- 134 Audinaraayanapuram.
- 135 Bommalgoundenpatti.
- 136 Chandrakavi.
- 137 Chinnavadugapalayam.
- 138 Chinnayagoundenvalasu.
- 139 Irugur.
- 140 Kallapalayam.
- 141 Ganapathipalayam.*
- 142 Ichipatty.*
- 143 Kalangal.*
- 144 Kombakadu.*
- 145 Kallikanalckenpalayam.
- 146 Kantiyur.
- 147 Kannampalayam.
- 148 Karadibavi.

APPENDIX H-1—cont.

List of villages and townships supplied with electrical energy by the Government Electricity department as at the end of 1947-48—cont.

PYKARA ELECTRICITY SYSTEM—cont.

COIMBATORE DISTRICT—cont.

VI. Palladam taluk—cont.

- 149 Karavallimadapur.
- 150 Kosavampalayam.
- 151 Marlanallur.
- 152 Mallampatti.
- 153 Mudallipalayam.
- 154 Mangalam Vandipalayam.
- 155 Naranapuram.*
- 156 Neelambur.
- 157 Navakkadu.
- 158 Odderpalayam.
- 159 Palladam.
- 160 Pappampatti.
- 161 Patanam.
- 162 Peedampalli.
- 163 Paramasivampalayam.
- 164 Permaur.
- 165 Puruvai.*
- 166 Ranganamuthram.*
- 167 Rasipalayam.
- 168 Ravathur.
- 169 Samalapuram.
- 170 Selampalayam.*
- 171 Sengodalgoundenpudur.
- 172 Somanur.
- 173 Sulur.
- 174 Thottipalayam.
- 175 Uthupalayam.*
- 176 Vadugampalayam.*
- 177 Valayampalayam.*
- 178 Velampalayam.*

VII. Pollachi taluk.

- 179 Achipatti.
- 180 Angalakurichi.
- 181 Ambrampalayam.
- 182 Chittoor.
- 183 Erisinampatti.
- 184 Gomangalampudur.
- 185 Iyerpadi.
- 186 Kallapuram.
- 187 Kinathukadavu.
- 188 Kollipalayam.
- 189 Kottampatti.
- 190 Kottur.
- 191 Jekkarapalayam.
- 192 Lakshmanapuram.
- 193 Malayandiipattanam.
- 194 Muthur.
- 195 Naickanampatti.
- 196 Nallamparai.
- 197 Othakkalmandapam.
- 198 Okkulpalayam.
- 199 Perianegamam.
- 200 Ponnapuram.
- 201 Samathurai.
- 202 Samathoor.
- 203 Sethumadai.
- 204 Singanallur.
- 205 Sholavampalayam.
- 206 Subbiagoundenpudur.
- 207 Valparai.
- 208 Vettaikaranpudur.

VIII. Udumalpet taluk.

- 209 Anakkadavu.
- 210 Advelli.
- 211 Alampalayam.
- 212 Andiyur.
- 213 Bodinatham.
- 214 Bodipatti.
- 215 Chinnakumarapalayam.
- 216 Chinnavalavadi.
- 217 Dhali.
- 218 Gudimangalani.
- 219 Guruvappanalkenur.
- 220 Iluppanagaram.
- 221 Jellipatti.
- 222 Kulipalayam.
- 223 Kantiyur.
- 224 Karatholuvu.
- 225 Kadathur.
- 226 Kolumam.
- 227 Komaralingam.

COIMBATORE DISTRICT—cont.

VIII. Udumalpet taluk—cont.

- 228 Manupatti.
- 229 Murugapatti.
- 230 Nallampalli.
- 231 Peddapatti.
- 232 Periyapatti.
- 233 Periyavalavadi.
- 234 Pukkulam.
- 235 Pottayampalayam.
- 236 Raghavbavi.
- 237 Senjivady.
- 238 Sundakkampalayam.
- 239 Udukkampalayam.
- 240 Vanasapatti.
- 241 Virugalpattipudur.

MADURA DISTRICT.

I. Dindigul taluk.

- 242 Chinmalapatti.
- 243 Pittalappatti.
- 244 Sembatti.
- 245 Vakkampatti.

II. Kodaikanal taluk.

- 246 Kodaikanal.

III. Nilakkottai taluk.

- 247 Annamalaikenoor.
- 248 Athur.
- 249 Batlagundu.
- 250 Nilakkottai.
- 251 Pattiveerampatti.

IV. Palni taluk.

- 252 Akkamanaickenpudur.
- 253 Annarapudi.
- 254 Ayyakudi.
- 255 Chithiravu.
- 256 Eramanalaickenpatti.
- 257 Nalkarapatti.
- 258 Papampatti.
- 259 Vathagoundenvalasu.

V. Periyakulam taluk.

- 260 Alagapuri.
- 261 Aliagararam.
- 262 Chinnamanur.
- 263 Cumbum.
- 264 Nagalapuram.
- 265 Ranganathapuram.
- 266 Srirangapuram.
- 267 Theni.
- 268 Utanampalayam.
- 269 Veerapandi.
- 270 Venkatachalapuram.
- 271 Veppampatti.

NILGIRIS DISTRICT.

I. Coonoor taluk.

- 272 Aruvakadu.
- 273 Aravenu.
- 274 Ariadinty.
- 275 Bengalhattam.
- 276 Hoobathalai.
- 277 Hulikal.
- 278 Jazathala.
- 279 Kattabettu.
- 280 Kilkotagiri.
- 281 Kilkunda.
- 282 Konakarai.
- 283 Kondilikka.*
- 284 Kotagiri.
- 285 Manthanandy.*
- 286 Marikal.*
- 287 Thenery.*

APPENDIX H-1—cont.

*List of villages and townships supplied with electrical energy by the Government
Electricity department as at the end of 1947-48—cont.*

PYKARA ELECTRICITY SYSTEM—cont.

NILGIRIS DISTRICT—cont.

II. Gudalur taluk.

288 Devarshola.
289 Gudalur.

III. Ootacamund taluk.

290 Glen Morgan.

SALEM DISTRICT.

I. Omalur taluk.

1 Jalakantapuram.
2 Kolathur.
3 Mettur Dam.
4 Nangavalli.
5 Omalur.
6 Pachanampatti.
7 Taramangalam.
8 Verakkal.

II. Krishnagiri taluk.

9 Kaveripattanam.
10 Krishnagiri.

III. Dharmapuri taluk.

11 Arasampatti.
12 Dharmapuri.
13 Kariamangalam.

IV. Salem taluk.

14 Ayodiapattanam.
15 Ellampalli.
16 Kondalamatti.*
17 Kurumpatti.
18 Yercaud.

V. Attur taluk.

19 Attur.
20 Dalavaipatti.*
21 Ettanur.
22 Mettupatti.
23 Peddannaikanpalayam.
24 Seshanchavadi.
25 Velapadi.*

VI. Tiruchengode taluk.

26 Komaramangalam.
27 McDonald Choultry.

VII. Rasipuram taluk.

28 Chandrasekarapuram.*
29 Kakaveri.
30 Kalkurichi.
31 Koneripatti.
32 Koundanpalayam.*
33 Mallur.
34 Malayampatti.
35 Masakalipatti.
36 Namagripet.
37 Pudupatti.
38 Rasipuram.
39 Singalandapuram.
40 Thengalpalayam.
41 Valasu.
42 Vellalapatti.

VIII. Harur taluk.

43 Singarapet.
44 Uttangarai.

IX. Namakkal taluk.

45 Erumampatti.
46 Kondichettipatti.*
47 Kongalathur.*
48 Laddivadi-Pudupatti.
49 Mohanur.
50 Nallipalayam.
51 Namakkal.
52 Panlamangalam.
53 Pilikkalpalayam.*
54 Velur.
55 Vengarai.

MALABAR DISTRICT.

I. Palghat taluk.

291 Ellapulli.
292 Kanjikode.
293 Paral.

COIMBATORE DISTRICT.

I. Erode taluk.

56 Edayankattu Valasu.
57 Kamalaparappu.*
58 Kodumudi.
59 Valravanpalayam.
60 Veerappanchatram.

II. Bhavani taluk.

61 Ammapet.
62 Andiyur.
63 Bhavani.
64 Chittode.
65 Jambai.*
66 Kalbavi.
67 Kesarimangalam.
68 Nerinjipet.
69 Olagadam.
70 Pudupalayam.
71 Singampet.
72 Thalapalayam.
73 Thippichettipalayam.
74 Thottipalayam.*
75 Urachikottai.

TRICHINOPOLY DISTRICT.

I. Karur taluk.

76 Acraharam.*
77 Balaraipuram.*
78 Elagiri.*
79 Nadayanur.*
80 Nanaparappu.*
81 Punjal Pugalur.
82 Puliyur.*
83 Ranganathapuram.
84 Sambangi.*
85 Samudram Extensions.
86 Thattakurichi.*
87 Uppidamangalam.
88 Vennamalai.

CHITTOOR DISTRICT.

I. Chittoor taluk.

89 Kalroadpalli.
90 Pakala.

II. Tiruttani taluk.

91 Nagari.
92 Sholinghur.
93 Tiruttani.

SOUTH ARCOT DISTRICT.

I. Tirukkoyilur taluk.

94 Kalandal.
95 Meyyur.
96 Srirumadurai.
97 Tirukkoyilur.
98 T. Pudupalayam.*
99 Veerapandi.
100 Vettavalam.

II. Vriddhachalam taluk.

101 Mangalampet.
102 Semmanangur.
103 Ulundurpet.
104 Vriddhachalam.

III. Villupuram taluk.

105 Kandamanadhi.
106 Tiruvannainallur.

APPENDIX H-1—cont.

*List of villages and townships supplied with electrical energy by the Government
Electricity department as at the end of 1947-48—cont.*

METTUR ELECTRICITY SYSTEM—cont.

NORTH ARCOT DISTRICT.

I. Arkonam taluk.

107 Arkonam.
108 Aruhilwadi.
109 Asanalikuppam.
110 Attupakkam.
111 Kadambattur.
112 Nemili.
113 Puliamangalam.
114 Sayanavaram.
115 Takkolam.

II. Vellore taluk.

116 Shembakam.

III. Polur taluk.

117 Kunnathur.
118 Polur.

IV. Wallajah taluk.

119 Alilacheri.
120 Arumbakkam.
121 Kalaval.
122 Kaveripattuk.
123 Kadaperi.
124 Lokapuram.
125 Ocheri.
126 Ozghur.
127 Panappakkam.*
128 Sathampakkam.*
129 Sumalthangi.
130 Talangal.
131 Valluvambakkam.
132 Vangur.

NORTH ARCOT DISTRICT—cont.

V. Arni taluk.

133 Arni.
134 Kalambur.
135 Palanganoor.
136 Pennagar.
137 Satyaviljayanagaram.

VI. Cheyyar taluk.

138 Korakkal.
139 Tiruvettipuram.
140 Wandiwash.

VII. Tiruppattur taluk.

141 Annadanapatti.
142 Christukulashramam.
143 Four wells.
144 Jalarpet.
145 Pachalmitta.
146 Vaniyambadi.

VIII. Tiruvannamalai taluk.

147 Adalyur Devanandal.
148 Nallavampalayam.
149 T. Edayar.
150 Vengikal.

IX. Conjeeveram taluk.

151 Vayyavoor.
152 Wallajabad.

PAPANASAM ELECTRICITY SYSTEM.

MADURA DISTRICT.

I. Madura taluk.

1 Austipatti.
2 Avaniapuram.
3 Harveypatti.
4 Palanganatham.
5 Panayoor.
6 Pasumalai.
7 Tirupparankundram.
8 Veeramadayam.

II. Melur taluk.

9 Melur.

III. Tirumangalam taluk.

10 Bharmathupatti.
11 Kalligudi.
12 Kappalur.
13 Kinnimangalam.*
14 Maravankulam.
15 Melapatti.
16 Muthupatti.*
17 Palakkapudupatti.
18 Thenpalanji.*
Tirumangalam.
Vadagarai.*

RAMNAD DISTRICT

I. Sattur taluk.

21 Chinna mooppampatti.
22 Kattalapatti.
23 Kokkalanjeri.
24 Kooragundu.
25 Pavai.
26 Pullankulam.
27 Sattur.
28 Sivakasi.
29 Sulakkarai.
30 Thiruthangal.
31 Valliyur.

II. Aruppukottai taluk.

32 Aruppukottai.
33 Gopalapuram.
34 Palayampatti.

RAMNAD DISTRICT—cont.

III. Tiruvaduthurai taluk.

25 Tirumanjoli.

TINNEVELLY DISTRICT.

I. Koilpatti taluk.

36 Ettayapuram.
37 Kovilpatti.

II. Tenkasi taluk.

38 Courtallam.
39 Erappanai.
40 Ilanji.
41 Kadayam.
42 Kilakadayam.
43 Kilapuliyur.*
44 Madavaram.*
45 Mathalamparai.*
46 Mudaliarpatti.*
47 Perambattur.
48 Pottalpur.
49 Tenkasi.
50 Vallam.*

III. Ambasamudram taluk.

51 Ambasamudram.
52 Ariyanayagiapuram.
53 Kallidalkurichi.
54 Karalkurichi.
55 Mukkudal.
56 Mundantoral.
57 Papanasam.
58 Pattamadai.*
59 Pirancheri.*
60 Shermadevi.
61 Vaniankulam.*
62 Viravanallur.
63 Vellodal.*
64 Vikramasingapuram.

APPENDIX H-1—cont.

List of villages and townships supplied with electrical energy by the Government
Electricity department as at the end of 1947-48—cont.

MADRAS ELECTRICITY SYSTEM.

- 1 Chromepet.
- 2 Guindy.
- 3 Little Mount.
- 4 Madras City.

- 5 Meenambakkam.
- 6 Pammal.
- 7 Pallavaram.
- 8 Tambaram.

ANDHRA POWER SYSTEM.

BEZWADA SYSTEM.

WEST GODAVARI DISTRICT.

I. Ellore taluk.

- 1 Kalaparru.
- 2 Bapalapadu.*

KRISHNA DISTRICT.

I. Nuzvid taluk.

- 3 Gollapalli.
- 4 Moraspudi.
- 5 Nuzvid.
- 6 Polasanapalli.
- 7 Ramannagudem.
- 8 Vattigudipadu.

II. Gannavaram taluk.

- 9 Ampapuram.
- 10 China Ogirala.
- 11 Gannavaram.
- 12 Kanakavalli.
- 13 Kumamur.
- 14 Peda Ogirala.
- 15 Penamakur.
- 16 Vanukur.
- 17 Vuyyur.
- 18 Yenamalakuduru.
- 19 Sevarigudem.

III. Bandar taluk.

- 20 Chilakalapudi.
- 21 Pedana.

IV. Bezwada taluk.

- 22 Ambapuram.
- 23 Edupugallu.
- 24 Ekamur.*
- 25 Gandigunta.
- 26 Ganguru.
- 27 Garikeparuru.
- 28 Gunadala.
- 29 Gosala.
- 30 Mohalrajapuram.
- 31 Machavaram.
- 32 Palamata.
- 33 Penamalur.
- 34 Poranki.
- 35 Punadipadu.*
- 36 Ramavarapadu.
- 37 Tadigadapa.
- 38 Yenikepadu.

GUNTUR DISTRICT.

I. Guntur taluk.

- 39 Atmakur.
- 40 Chinnakani.
- 41 Kaza.
- 42 Kakanl.
- 43 Kolanukonda.

VIZAGAPATAM DISTRICT.

I. Anakapalle taluk.

- 44 Duvvada.

II. Bhimlipatam taluk.

- 45 Bhimlipatam.
- 46 Chittivalasa.
- 47 Tagarapavalasa.

III. Chipurupalle taluk.

- 48 Bripuram.
- 49 Chipurupalle.
- 50 Garividi.

IV. Vizagapatam taluk.

- 51 Simhachalam.

V. Vizianagram taluk.

- 52 Molda.
- 53 Nellimarla.
- 54 Penubarti.
- 55 Vizianagram.

EAST GODAVARI DISTRICT.

I. Cocanada taluk.

- 56 Cocanada.
- 57 Samalkot.

II. Peddapuram taluk.

- 58 Peddapuram.

III. Pithapuram taluk.

- 59 Gollaprolu.
- 60 Pithapuram.

IV. Ramachandrapuram taluk.

- 61 Mandapeta.
- 62 Pasalapudi.
- 63 Ramachandrapuram.
- 64 Velangi.

KURNOOL DISTRICT.

Kurnool taluk.

- 65 Kurnool.

APPENDIX H-2.

List of villages and townships supplied by licensee undertakings as at the end of
1947-48.

(* Electrified during 1947-48).

Serial number.	Name of licensee.	District.	Taluk.	Serial number.	Villages and townships.
1	Adoni	Bellary .. .. .	....	1	Adoni town and the area comprised within the circle whose radius is 5 miles.
2	Alandur	Chingleput	Saidapet	2	Alandur.
3	Anakapalle	Vizagapatam	Anakapalli	3	Anakapalle town.
4	Anantapur	Anantapur .. .. .	....	4	Anantapur.
5	Bellary	Bellary .. .. .	....	5	Bellary.
6	Bezwada	Kistna .. .. .	....	6	Bezwada.
7	British Cochin .. .. .	....	....	7	British Cochin.
8	Bodinayakanur	Madura	Periyakulam	8	Bodinayakanur.
9	Bobbili	Vizagapatam	Bobbili	9	Bobbili.
10	Coimbatore	Coimbatore .. .. .	....	10	Coimbatore.
11	Cocanada	East Godavari .. .. .	....	11	Cocanada.
12	Conjeevaram	Chingleput .. .. .	....	12	Kancheepuram
13	Coonoor	Nilgiris .. .. .	....	13	Coonoor.
14	Calicut	Malabar .. .. .	....	14	Calicut town.
15	Chittoor	Ernad .. .. .	....	15	Feroke town.
		Chittoor .. .. .	....	16	Chittoor town.
				17	Gramspet (all within the Municipality).*
				18	Iruvaram village (Outside).*
				19	Kattamanchi.
				20	Santhapet.
16	Cuddapah	Cuddapah .. .. .	....	21	Cuddapah town.
17	Chingleput	Chingleput	Chingleput	22	Ramanapalle village.
				23	Attur.
				24	Chingleput.
				25	Edayankadu.*
				26	Melamalaiyur.*
				27	Thimmaravaram.
				28	Thirumani village.
				29	Vadapathi.*
				30	Vembakkam.*
				31	Villambakkam.*
18	Cannanore-Tellicherry.	Malabar	Chirakkal Kottayam	32	Cannanore.
				33	Baliapatam.
				34	Cantonment.
				35	Chovva.
				36	Kakkat village.*
				37	Pallikulam.
				38	Pappinicherry.
				39	Tellicherry.
				40	Vallikunnu.
19	Chicacole	Vizagapatam .. .. .	....	41	Chicacole.
				42	Guzaratipeta.
				43	Narasannapeta.
20	Carnatic	North Arcot	Tirupattur	44	Chettappanur.
				45	Devasthanam.
				46	Old Vaniyambadi.
				47	Pudur.
				48	Vaniyambadi.
				49	Alankuppam.
				50	Ambur.
				51	Sanankuppam.
				52	Solur.
				53	Tharavelli.
21	Dindigul	Madura	Dindigul	54	Dindigul.
22	Devakottai	Ramnad .. .. .	....	55	Devakottai.
				56	Shanmuganathapuram.
				57	Thanchapoorani.
23	Dharapuram	Coimbatore	Dharapuram	58	Dharapuram.
24	East Tanjore	Tanjore	Arantangi Mannargudi	59	Arantangi.
				60	Alacheri.
				61	Athikadai.
				62	Avikottai.
				63	Budamangalam.
				64	Karnavar.
				65	Kamalapuram.
				66	Koradacheri.
				67	Kottaiyur.
				68	Kuthanallur town.
				69	Lakshmanagudi.
				70	Mannargudi town.

APPENDIX H-2—cont.

List of villages and townships supplied by licensee undertakings as at the end of
1947-48—cont.

Serial number.	Name of licensee.	District.	Tahuk.	Serial number.	Villages and townships.
				71	Mellavasal.
				72	Mulangudi.
				73	Nidamangalam.
				74	Pamini.
				75	Perambur.
				76	Puvanur.
				77	Serankulam.
				78	Ullikottai.
				79	Vadapathimangalam.*
				80	Velukudi.
				81	Akkur.
				82	Ambanathapuram.
				83	Ananthandavapuram.
				84	Anjaravathalai.
				85	Arivalur.
				86	Aryapuram.
				87	Chitrakadu.
				88	Elenthangudi.
				89	Eravancheri.
				90	Erukathancheri.
				91	Kadalangudi.
				92	Kaliappanallur.*
				93	Kalahastinapuram.*
				94	Kilayur.
				95	Kollumangudi.
				96	Komal.
				97	Konerirajapuram.
				98	Kothangudi.
				99	Kumaramangalam.
				100	Mappadugai.
				101	Kuttalam town.
				102	Manganallur.
				103	Mayavaram town.
				104	Melayur.
				105	Mezhalyur.*
				106	Muvalur.
				107	Nallathakudi.
				108	Nidur.
				109	Pallavarayanpet.*
				110	Perumalkoil (Therazandur).
				111	Porayar.
				112	Sembanarkoil.
				113	Cholachakkaranallur.
				114	Theruvizhandur.
				115	Tirukkadayur.
				116	Tirumthangudi.
				117	Tirumanjeri.
				118	Tranquebar town.
				119	Vadagarai (Arangadukil).
				120	Vandirajapuram.
				121	Achuthamangalam.
				122	Adaillyur.
				123	Ammayyappan.
				124	Anaikuppam.
				125	Arasavanangudi.
				126	Enangudi.
				127	Kadaganbadi.
				128	Kamalapuram.
				129	Kangalancheri.
				130	Keeranur.
				131	Kodakkudi.*
				132	Kodavasal.
				133	Kolthirunalam.
				134	Koothanur.
				135	Kothangudi.
				136	Kulikkara.
				137	Kuvalakkal.
				138	Manavanallur.
				139	Manavalanpettai.
				140	Marungur.
				141	Mappilaikuppam.
				142	Marudavancheri.
				143	Mudikondan.
				144	Mulangudi.
				145	Nallamangudi.
				146	Nannilam.
				147	Paithamanickam.
				148	Perunthuraikudi.
				149	Peralam.
				150	Poonthottam.
				151	Pragramam.
				152	Pattugaram.
				153	Semmangudi.
				154	Sennanallur.
				155	Sengalipuram.

APPENDIX H-2—cont.

List of villages and townships supplied by licensee undertakings as at the end of
1947-48—cont.

Serial number.	Name of licensee.	District.	Tahuk.	Serial number.	Villages and townships.
				156	Srivanchiyam.
				157	Thediyur.
				158	Thirumarugal.
				159	Tirukkanapuram.
				160	Tirukkannamangal.
				161	Tiruppugalur.
				162	Tirukondeswaram.
				163	Tirukkalambar (Sellur).
				164	Tiruvizhlmazhala.
				165	Tittacheri.
				166	Utharangudi.
				167	Vadamattam.
				168	Vadugakudi.
				169	Virkkudi (Vettar).
				170	Vishnupuram.
				171	Vandampalal.*
				172	Alangudi.
				173	Alivalam.
				174	Alathambadi.
				175	Apparakudi.
				176	Ettukudi.
				177	Gudur.
				178	Kunniyur.*
				179	Kodikalpalayam.
				180	Kolapadu.
				181	Manakudi.
				182	Mavoor.
				183	Olani.
				184	Pinnavasal.
				185	Puliivalam.
				186	Tennavarayanallur.
				187	Toppalampulliyur.
				188	Thirukkuwalai.
				189	Tiruvapur town.
				190	Vaiyalam.
				191	Vizayapuram.
				192	Adiramapatnam.
				193	Anakkadu.
				194	Madukkur.
				195	Movilur.
				196	Nattuchalai.
				197	Pattukottai town.
				198	Thuvanankurichi.*
				199	Anaikaranchatram.
				200	Iveli.
				201	Kathiramanangam.*
				202	Shiyali town.
				203	Thadalancoil.
				204	Valthiswarancoil.
				205	Ellupattai.
				206	Vallam.
				207	Alangadu.
				208	Idaiyur.
				209	Jambavanodal.
				210	Vadagadu.
				211	Kodiyalathur.
				212	Manali.
				213	Mangudi.
				214	Muthupet town.
				215	Nedumbalam.
				216	Palayangudi.
				217	Pandi.
				218	Sengandi.
				219	Siddamalli.
				220	Thalanayar.
				221	Tillalvalagam.
				222	Tiruturaipundi.
				223	Udayamarthandapuram.
				224	Velur.
				225	Abiramam town.
				226	Kamudhi.
				227	Athikarai.
				228	Ayyakkudi.
				229	Emaneswaram.
				230	Eleyankudi.
				231	Nainarkoil.
				232	Pudur.
				233	Paramakudi.
				234	Sathikarakudi.

APPENDIX H-2—cont.

List of villages and townships supplied by licensee undertakings as at the end of 1947-48—cont.

Serial number.	Name of licensee.	District.	Taluk.	Serial number.	Villages and townships.
	East Ramnad—cont.	Ramnad—cont.	Ramnad	234	Kilakarai town.
				235	Ramnad town.
				236	Sakkarakottai.
				237	Tiruppalani.
			Sivaganga	238	Manamadurai.
			Tirupattur	239	Kallai.
				240	Sembalur.
				241	Singampunari.
26	Ellore	West Godavari		242	Ellore.
27	Guntur	Guntur	Guntur	243	Guntur town.
				244	Mangalagiri.
				245	Angalakuduru.
				246	Edlapalli.
			Tenali	247	Sangamjagarlamudi.
				248	Tenali town.
				249	Vadalamudi.
				250	Valliveru.
			Bapatla	251	Chebrole.
28	Gudiyattam	North Arcot	Gudiyattam	252	Nariyampet.
				253	Oomerabad.
			Pernambut	254	Anganallur.
				255	Balur.*
				256	Bhimapuram.
				257	Cheruvangi.
				258	Damalcheruvu.
				259	Gudiyattam.
				260	Kothur.*
				261	Melmuttukkur.
				262	Natham.
				263	Pernambut.
				264	Singalpadl.
				265	Talayatham.
				266	Vadakkathipatti.
29	Gudivada	Kistna		267	Gudivada.
30	Hindupur	Anantapur		268	Hindupur.
31	Hospet	Bellary		269	Chittivadagi village.
32	Kanadukathan	Ramnad	Tirupattur	270	Hospet.
				271	Alagapur.
				272	Athangudi (Muthupattam).
				273	Avinipatti.
				274	Ayanarkoil.
				275	Chokanendal.
				276	Elayathangudi.
				277	Keeranipatti.
				278	Kilasevalpatti.
				279	Kanadukattan.
				280	Kondanur.
				281	Kothari.
				282	Kothamangalam.
				283	Kottiyur.
				284	Kunnakkudi.
				285	Lakshimpuram.
				286	Manachi.
				287	Nemem.
				288	O'Siruvalur.
				289	Palavangudi.
				290	Pallathur.
				291	Pillayaripatti.
				292	Poovandipatti.
				293	Puduvayal.
				294	Sirukoodalpatti.
				295	Velangudi.
				296	Viramathi.
				297	Viravanapatti.*
33	Kumbakonam	Tanjore	Kumbakonam	298	Aduthurai.
				299	Ammampet.
				300	Darasuram.
				301	Devangudi.
				302	Ganapathy Agraharam.
				303	Irumbuthalai.
				304	Iyyambettai.
				305	Kalanjeri.
				306	Kumbakonam.
				307	Marlamankoil.
				308	Marudanallur.
				309	Milathur.
				310	Nachlarkoil.
				311	Narasampet.*
				312	Pandaravadai.
				313	Papanasam.
				314	Pundi.
				315	Rajagiri.

APPENDIX H-2—cont.

List of villages and townships supplied by licensee undertakings as at the end of 1947-48—cont.

Serial number.	Name of licensee.	District.	Taluk.	Serial number.	Villages and townships.
	Kumbakonam—cont.	Tanjore—cont.	Kumbakonam—cont.	316	Royampet.
				317	Sakkottai.
				318	Sa'lamangalam.
				319	Someswarapuram.
				320	Sundaraperumalkoil.
				321	Swaminalei.*
				322	Tapparamanallur.
				323	Thippirajapuram.
				324	Thiruvaduthurai.*
				325	Tiruvadamardur.
				326	Tiruvadi.
				327	Tirukarugayur.
				328	Tiruppuvanam.
				329	Tirunageswaram.*
				330	Ukkadal.*
				331	Velangaiman.
				332	Veeramangudi.
				333	Veppattoor.
34	Karalkudi	Ramnad	Tirupattur	334	Amaravathipudur.
				335	Ariyakkudi.
				336	Karalkudi.
				337	Kovilur.
				338	Mangasiri.
				339	Nachlapuram.
				340	Zamadar Colony. (Devakkottah Road).
35	Karur	Tiruchirappalli	Karur	341	Karur.
36	Kodalkanal	Madura		342	Kodalkanal.
37	Kollegal	Coimbatore		343	Kollegal town.
38	Madura	Tanjore	Madura	344	Mudizundam village.
				345	Madura.
				346	Pichai Pillai Chavadi.
				347	Sambandar Alangulam.
				348	Mangalore town.
39	Mangalore	South Kanara		349	Masulipatam
40	Masulipatam	Kistna	Bandar	350	Kovur (Workshops at Bikragunta, M. & S. M. Ry.)
41	Nellore	Nellore		351	Nellore.
42	Negapatam	Tanjore	Negapatam	352	Adipallam extension.
				353	Allyur.
				354	Andanapet.
				355	Karuvelangadai.
				356	Kivalur.
				357	Kurichi.
				358	Manjakottai.
				359	Nagore.
				360	Negapatam town.
				361	Papakoll.
				362	Peravaheri.
				363	Paliyur.
				364	Puttur.
				365	Sikkil.
				366	Velenganni.
				367	Vellpalayam.
43	Nattarasankottai	Ramnad	Sivaganga	368	Nattarasankottai.
44	Narasaraopet	Guntur	Narasaraopet	369	Sivaganga.
45	Neikuppai	Ramnad	Tirupattur	370	Narasaraopet.
				371	A. Tekkur.
				372	Eranjyur.
				373	Kondavarayanpatti.
				374	Mahipalanpatti.
				375	Neikuppai.
				376	Pulankurichi.
				377	Sevvur.
				378	Acharakal.*
46	Ootacamund	Nilgiri	Ootacamund	379	Kerada.*
				380	Ketti village.
				381	Ootacamund.
				382	Santhur.*
				383	Selas.*
47	Okkur	Ramnad		384	Alayakottai.
				385	Chockanathapuram.
				386	Cholapuram.
				387	Kandramanickam.
				388	Keelapungudi.
				389	Kilamangalam.
				390	Madagupatti.
				391	Okkur.
				392	Paganeri.
				393	Pattamangalam.
				394	Tirupattur.

APPENDIX H-2—cont.

List of villages and townships supplied by licensee undertakings as at the end of 1947-48—cont.

Serial number.	Name of licensee.	District.	Taluk.	Serial number.	Villages and townships.
48	Ongole	Guntur .. ..	....	395	Ongole.
49	Pollachi	Coimbatore .. ..	....	396	Pollachi (Vadugupalayam village).
50	Palni	Madura .. ..	....	397	Palni.
51	Periyakulam	Madura	Periyakulam	398	Periyakulam.
52	Palghat	Malabar .. ..	....	399	Palghat.
53	Proddattur	Cuddapah .. ..	....	400	Proddattur.
54	Rajahmundry	East Godavari .. ..	....	401	Dowleshwaram.
55	Rameswaram	Ramnad .. ..	....	402	Rajahmundry.
56	Salem-Erode	Salem .. ..	....	403	Rameswaram.
				404	Chinnathirupathi.*
				405	Erode.
				406	Idappady.
				407	Kannankurichi.
				408	Paillipalayam.
				409	Periakolapatti.*
				410	Salem.
				411	Sankaridrug (including Kuppanur).
				412	Seelathalickenpatti.*
				413	Suramangalam.
				414	Tiruchengode.
57	South Arcot	South Arcot	Villupuram	415	Kollanur.
				416	Kannikoil.*
				417	Maharajapuram.*
				418	Madurappakkam.
				419	Malrajakuppam.
				420	Mokahakulam.
				421	Narimedu.
				422	Nariodai.
				423	Palapet.
				424	Penambattu.
				425	Pannayapuram.
				426	Puderi.
				427	Radhapuram.
				428	Rambakkam.
				429	Siruvallikuppam.*
				430	Siruvandadu.
				431	Valavanoor.
				432	Vanlampalayam.
				433	Villupuram.
				434	Vikravandi.
			Tindivanam	435	Batripuliur.
				436	Kaveripakkam.
				437	Mylam.
				438	Singanur.*
				439	Tindivanam.
			Cuddalore	440	Cuddalore N.T.
				441	Cuddalore O.T.
				442	District Jali.
				443	Gavarapet.
				444	Kandrekottai.*
				445	Karamankuppam.
				446	Kongampet.*
				447	Kondur.
				448	Kozhipakkam.
				449	Kondareddipalayam.
				450	Kuchipalayam.
				451	Malmiapet.
				452	Melpatiambakkam.
				453	Melkumaramangalam.
				454	Nathapet.
				455	Nellikuppam.
				456	Pagandai.
				457	Panruti.
				458	Poongunam.
				459	Sodupet.
				460	Soravanur.
				461	Tirukandeswaram.
				462	Valapet.*
				463	Varkalpet.*
			Chidambaram	464	Bhuvanagiri.
				465	Chidambaram.
				466	Vallampadugai.
58	Semblam	Madras .. ..	.. ..	467	Ayanavaram.
				468	Chinnasembarambak.*
				469	kam.
				470	Paravallur.
				471	Siruvallur.
				472	Semblam.

APPENDIX H-2—cont.

List of villages and townships supplied by licensee undertakings as at the end of 1947-48—cont.

Serial number.	Name of licensee.	District.	Taluk.	Serial number.	Villages and townships.
59	Salur-Parvatipur	Visagapatam .. ..	.. ..	472	Parvatipur town.
				473	Salur town.
60	Sivakasi	Ramnad	Sattur	474	Sivakasi.
61	Srivilliputtur	Ramnad	Srivilliputtur	475	Raj. palayam.
				476	Srivilliputtur.
62	Tirunelveli	Tirunelveli	Tirunelveli	477	Chattram Pudukulam.
				478	Melapalayam.
				479	Palameottah and Pettai
				480	Tachanallur.
				481	Tirunelveli.
			Sriekunkuntam	482	Mangalagiri.
				483	Tuticorin.
				484	Vallanad.
63	Tiruchirappalli-Srirangam.	Tiruchirappalli	Kullitalai	485	Hiranyamangalam.
				486	Karuppattur.
				487	Krishnarajapuram.
				488	Kullitalai.
				489	Lalapettai (Kallapalli).
				490	Manathattai.
				491	Mahadanapuram.
				492	Manappalai.
				493	Marudur.
				494	Mayanoor.
				495	Mettupadugai.
				496	Nangavaram.
				497	Nadupatti.
				498	Pillalpalayam.*
				499	Rajendram.
				500	Sithalaval.
				501	Thimmachipuram.
				502	Vagaimallur.
			Lalandi	503	Anagarai.
				504	Ayyampalayam.
				505	Bikshandarkoil.
				506	Dalmiapuram.
				507	Irungalur.
				508	Kallagam.*
				509	Kattur.
				510	Kanyamanickam.
				511	Kallakudi.
				512	Keelapalayam.
				513	Kovundakurichi.
				514	Kuthur.
				515	Lalgudi.
				516	Manachanallur.
				517	Manthurai.
				518	Manakkal.
				519	Mylampadi.
				520	Nanjai Sengandi.
				521	Natarajapuram.
				522	Nochium.
				523	Pachampettai.*
				524	Pachur.
				525	Peruvallanallur.
				526	Pinnavasal.
				527	Pudur Uthamanur.
				528	Pudukudi.
				529	Pullambadi.
				530	Punambalayam.
				531	Puvalur town.
				532	Purathakudi.*
				533	Salakkadu.
				534	Saravayapuram.
				535	Sengandi.
				536	Sirudayur.
				537	Tirumannamedu.*
				538	Tiruvellarai.
				539	Veladi.
				540	Vellanur.
				541	Kattuputhur.
				542	Mambarai.
				543	Mettupadugai.
				544	Murukkur.
				545	Musiri.
				546	Natham.
				547	Perumalpalayam.
				548	Peramur.*
				549	Pudupatti.
				550	Pulivalam.
				551	Sankapalayam.
				552	Silapillavarnadur.

APPENDIX H-2—cont.

List of villages and townships supplied by licensee undertakings as at the end of 1947-48—cont.

Serial number.	Name of licensee.	District.	Taluk.	Serial number.	Villages and townships.
	Tiruchirappalli Sitrangam—cont.	Tiruchirappalli—cont.	Musiri—cont.	553	Singalandapuram.*
				554	Thottiam.
				555	Thoraiyur.
			Tiruchirappalli ..	556	Tiruvenghi Hills.
				557	Abishekapuram.
				558	Allur.
				559	Andanallur.
				560	Amungudi.
				561	Anali.
				562	Arasangudi.
				563	Ariyamangalam.
				564	Edamalaiptipudur.*
				565	Golden Rock (Pom-malaiptti).
				566	Iluppur.
				567	Kalkandarkottai.
				568	Kambarasampettai.
				569	Kavakarpalayam.
				570	Kottampattu.
				571	Kolathur.
				572	Manjathadal.
				573	Melur.
				574	Mookanarmalaiptti.
				575	Mutharasallur.
				576	Nayalptti.
				577	Pahuvor.*
				578	Pandamangalam.
				579	Palur.
				580	Perugamanj.
				581	Pettavaithalai.
				582	Sathanur.
				583	Sengulam.
				584	Sirugamani.
				585	Srirangam town.
				586	Tiruverambur.
				587	Tiruppalathurai.
				588	Tiruchendurai.*
				589	Tiruchirappalli.
				590	Uthamarkoil.
				591	Vyakondanthiru-malai.
				592	Veethivadangam.*
				593	Veraganeri.
			Udayarpalayam ..	594	Ariyalur.
				595	Kilapaluvur.
			Tanjore	596	Ombathuvelli.
				597	Palmaneri.
				598	Tirukkattupalli.
			Pudukkotta (State)..	599	Annavasal.
				600	Mandianallur.
				601	Tiruvappur.
				602	Usilampatti.
				603	Viraimalai.
64	Tirupati.	Chittoor	Chandragiri	604	Akkarampalle.*
				605	Alipiri.
				606	Avilala.*
				607	Chandragiri.
				608	Galigopuram.
				609	Gollapalle.
				610	Kamapalle.
				611	Managapuram.
				612	Muthalaredipalle.
				613	Narasingapuram.
				614	Peroor.
				615	Perumallipalle.
				616	Phungaranpalle.*
				617	Pudipatta.
				618	Pudipet.
				619	Ravillavaripalli.*
				620	Ravalacheruvu.*
				621	Renigunta.
				622	Sankariah Garipalli.*
				623	Thookivakkam.
				624	Tirupathi town.
				625	Thondavada.
				626	Thirumalai.
				627	Thiruchanur.
				628	Vedantapura Agraha-ram.*
65.	Tiruvallur.	Chingleput	Tiruvallur	629	Ayvellicaram.
				630	Kakalur.
				631	Periyakuppam.
				632	Perambakkam.
				633	Puliyankuppam.
				634	Pungathur.
				635	Tiruvallur.

APPENDIX H-2—cont.

List of villages and townships supplied by licensee undertakings as at the end of 1947-48—cont.

Serial number.	Name of licensee.	District.	Taluk.	Serial number.	Villages and townships.
66	Tiruvottiyur ..	Chingleput ..	Tiruvallur ..	636	Kaladipet.
				637	Sattangadu.
				638	Tiruvottiyur.
67	Tirupattur ..	North Arcot ..	Tirupattur ..	639	Tirupattur.
68	Tiruvannamalai ..	North Arcot ..	Tiruvannamalai ..	640	Tiruvannamalai.
69	Tanjore ..	Tanjore ..	Tanjore ..	641	Tanjore.
70	Tiruppur ..	Coimbatore ..	Udamalpet ..	642	Tiruppur.
71	Udamalpet ..	Coimbatore ..		643	Udamalpet.
72	Udipi ..	South Kanara ..		644	Badagabattu.
				645	Kadakar.
				646	Kadiyur.
				647	Karkal.
				648	Manipal.
				649	Ambalipadi.
				650	Puttur.
				651	Shivah.
				652	Udipi.
73	Vellore ..	North Arcot ..	Vellore ..	653	Kaspa.
				654	Mullipalayam.
				655	Ramanalekenpalayam.
				656	Sattuwachari.*
				657	Toralpadi.
				658	Vellore.
			Gudiyattam ..	659	Viruthampet.
				660	Kangayanchlore.*
				661	Katpadi.
				662	Tharapadavadu.*
			Walajah ..	663	Arcot.
				664	Manathangal.*
				665	Mettur.*
				666	Ranipet.
				667	Vannivedu.*
				668	Visharam.
74	Vizagapatam ..	Vizagapatam ..	Vizagapatam ..	669	Wallajah.
				670	Vizagapatam.
75	Virudhunagar ..	Ramnad ..		671	Waltair.
76	Villivakkam ..	Chingleput ..		672	Virudhunagar.
77	Vaiparai ..	Coimbatore ..	Pollachi ..	673	Villivakkam.
78	Wellington ..	Nilgiris ..		674	Vaiparai.
				675	Wellington.

APPENDIX I.

PYKARA SYSTEM.

Numbers. Voltage ratio.

K.V.A.

I. INSTALLED CAPACITIES OF TRANSFORMERS.

	Power house.			
Singara	3 × 7,810	11/66-110 K.V.	..	23,430
	2 × 12,500	11/110 K.V.	..	25,000
	2 × 5,000	11/66 K.V.	..	10,000
	2 × 2,000	11/22 K.V.	..	4,000
	1 × 2,000	11/11/22 K.V.	..	2,000
	2 × 1,000	11/11 K.V.	..	2,000

II. E.H.T. POWER TRANSFORMER STATIONS (66 K.V. AND 110 K.V.).

1 Kottabettu ..	2 × 1,000	110/11 K.V.	..	2,000
2 Coimbatore ..	3 × 6,000	110/66 K.V.	..	18,000
	7 × 5,000	110-66/22-11 K.V.	..	35,000
3 Tiruppur ..	3 × 1,750	66-33/22-11 K.V.	..	5,250
4 Udamalpet ..	3 × 1,750	Do.	..	5,250
5 Sembatti ..	3 × 1,750	66/22-11 K.V.	..	5,250
6 Calicut ..	2 × 2,000	66/33-11 K.V.	..	4,000
7 Cannanore ..	2 × 1,000	66/33-11 K.V.	..	2,000

Total

APPENDIX I—cont.

PYKARA SYSTEM—cont.

	Numbers.	Voltage ratio.	K.V.A.	Aggregate capacity.
III. H.T. TRANSFORMER STATIONS.				
Karamadai	1 × 500 K.V.A.	22 11 K.V.	500	500
Madukkarai	2 × 500 K.V.A.	Do.	1,000	1,000
Pollachi	2 × 500 K.V.A.	Do.	1,000	1,000
			Total ..	2,500

IV. DISTRIBUTION TRANSFORMER STATIONS.

459

25,542

METTUR SYSTEM.

I. INSTALLED CAPACITIES OF TRANSFORMERS.

Power house.

3	11/66-110	12,500	37,500
3	11/11-22 K.V. ..	2,000	6,000
3	22-11/3-3	500	1,500

II. E.H.T. POWER TRANSFORMER STATIONS (66 K.V. AND 110 K.V.).

1	Erode	3	66-33/22-11 ..	1,000	3,000
2	Karur	3	Do.	750	2,250
3	Tiruchirappalli ..	3	66/33-11	2,500	7,500
		2	66/22-11	2,000	4,000
4	Tanjore	4	66/33-11	750	3,000
5	Tiruvarur	2	Do.	2,500	5,000
6	Negapatam	2	66/11	2,500	5,000
7	Singarapet	2	66/33-11	500	1,000
8	Tiruppattur	2	66-33/22-11 ..	250	500
		1	Do.	500	500
9	Ambur	2	66/33-11	500	1,000
10	Vadakkathipatti ..	3	Do.	500	1,500
11	Vellore	2	Do.	1,250	2,500
		1	Do.	750	750
		2	Do.	500	1,000
12	Tiruvannamalai ..	2	Do.	500	1,000
		1	Do.	250	250
13	Vettavalam	2	Do.	250	500
		1	Do.	100	100
14	Villupuram	4	66-33/22-11 ..	1,750	7,000
			Total ..	47,000	

III. H.T. POWER TRANSFORMER STATIONS (33 K.V. AND 22 K.V.).

Power house.

1	Papanasam	3	33/11	500	1,500
2	Kariamangalam ..	2	Do.	250	500
3	Chittoor	2	Do.	250	500
4	Pakala	2	Do.	250	500
5	Ranipet	2	Do.	250	500
		1	Do.	100	100
6	Kaveripauk	2	Do.	250	500
		1	Do.	100	100

APPENDIX I—cont.

METTUR SYSTEM—cont.

	Number.	Voltage ratio.	K.V.A.	Aggregate capacity.
III. H.T. POWER TRANSFORMER STATIONS (33 K.V. AND 22 K.V.)— <i>cont.</i>				
7 Conjeeveram	5	33/11-66	250	1,250
8 Arkonam	2	33/11	500	1,000
	1	Do.	100	100
9 Polur	2	Do.	250	500
	1	Do.	100	100
10 Arni	2	Do.	500	1,000
			Total ..	8,150

IV. DISTRIBUTION TRANSFORMERS.

307

16,113 K.V.A.

PAPANASAM SYSTEM.

I. INSTALLED CAPACITIES OF TRANSFORMERS.

Power house.

Numbers.	Voltage ratio.	K.V.A.	Aggregate capacity.
3	11/66 KV	7,250	21,750
2	11/11-22	2,000	4,000

II. E.H.T. TRANSFORMERS POWER STATIONS (66-K.V. AND 110 K.V.).

1	Koilpatti	3	66/33-11	1,000	3,000
2	Sattur	2	66/11	250	500
3	Virudunagar	1	66/33-11	1,250	1,250
		3	Do.	1,000	3,000
4	Madura	3	66/22-11	3,000	9,000
		1	Do.	3,000	3,000
5	Tuticorin	3	Do.	1,250	3,750
			Total ..	23,500	

III. H.T. POWER TRANSFORMER STATIONS (33 K.V. AND 22 K.V.).

1	Sivaganga	3	22/11-33	250	750
2	Gurumurthinaickenpatti ..	2	33/11	250	500
		1	Do.	100	100
3	Rajapalayam	3	66/33-22-11 ..	500	1,500
			Total ..	2,850	

IV. DISTRIBUTION TRANSFORMER STATIONS.

Number.	Capacity.
94	5,070 K.V.A.

APPENDIX I—cont.

ANDHRA SYSTEM.

20.284.

	Number.	Voltage ratio.	K.V.A.	Aggregate capacity
I. INSTALLED CAPACITIES OF TRANSFORMERS.				
<i>Power house.</i>				
Bezawada	1	3·3/11-33	1,500	1,500
	1	3·3/11	1,500	1,500
	3	3·3/11-33	750	2,250
Vizagapatam	1	3·3/11	1,500	1,500
	3	3·3/11-33	750	2,250
Cocanada	2	3·3/11	250	500
Kurnool	1	400/33	200	200
Total ..				9,700

II. E.H.T. POWER TRANSFORMER STATIONS (66 K.V. AND 110 K.V.)—Nil.

III. H.T. POWER TRANSFORMER STATIONS (33 K.V. AND 22 K.V.).

Bezawada.									
1 Tenali	..	..	..	2	33/11	..	..	500	1,250
				1	Do.	..	..	250	
2 Gudivada	..	..	..	2	Do.	..	..	100	200
3 Ellore	..	..	..	1	Do.	..	..	250	250
4 Nuzvid	..	..	..	2	Do.	..	..	100	200
5 Masulipatam	..	..	..	2	33/66	..	..	250	600
				1	33/11	..	..	100	
Vizagapatam.									
6 Vizianagram	..	..	..	2	33/11	..	..	500	1,000
7 Penuparti	..	..	..	2	Do.	..	..	250	500
8 Chittivalasa	..	..	..	1	Do.	..	..	500	700
				2	Do.	..	..	100	
Cocanada—Nil.									
Kurnool—Nil.									
Total								..	4,700

IV. DISTRIBUTION TRANSFORMERS.

Bezawada	52	2,145 K.V.A.
Vizagapatam	29	1,580
Cocanada	14	440
Kurnool	4	230
Total ..		4,395

R. F. 89