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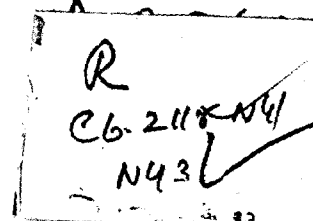


GOVERNMENT OF MADRAS

ADMINISTRATION REPORT
OF THE ELECTRICITY
DEPARTMENT FOR
1941-42

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ADMINISTRATION REPORT OF THE ELECTRICITY DEPARTMENT FOR 1941-42

GENERAL REVIEW.

INTRODUCTORY.

Progress during the year 1941-42 was generally satisfactory in spite of the restrictions and handicaps due to war conditions.

Difficulties in obtaining imported equipment continued due to the increasing necessity for conserving manufacturing capacity and shipping space for war needs. The receipt of the generating machinery ordered under the Papanasam Scheme and extensions to power plant at Mettur, Vizagapatam and Bezwada was therefore further postponed. Two major schemes, viz., West Coast Extension and Madras Extension, work on which had already been begun, were deferred. To meet the growing needs for oil-engines for the Military department, the two engines under the West Godavari Extensions were transferred to the Supply Department and the scheme suspended.

In order that the stocks of electrical materials in the country available in the market and with the electrical undertakings of municipalities, licensees and Government should be restricted and useful channels for the prosecution of the war, a restriction and control order was issued under a Central Control Board, banning all further extension schemes except those directly or indirectly connected with the war effort, or serving the minimum needs of the community on a war-time basis.

Due to shortage of coal and oil supplies, caused among other things by shortage of waggons, Government emphasized the need for utmost economy in the use of electricity in Thermal areas. Certain licensees and municipalities operating oil-engine power stations were authorized to curtail running hours and restrict supply to non-essential services.

Shortage of fuel has on the other hand affected many industries run on coal or oil. To assist small industries engaged in food production and thereby boost the food productive drive launched by Government, the application of the restriction and control order has been relaxed in respect of schemes of changeover of such industries to hydro-power.

To protect the electrical plant and equipments of the department in generating and distributing sub-stations, structural protection measures, as per standards advised by the Electrical Commissioner with the Government of India, were taken in hand under the supervision of a specially constituted A.R.P. Division.

Early in April 1942, Vizagapatam harbour was raided by enemy aircraft. The Thermal Power Station of the Department, however, fortunately escaped damage.

As stated, the progress was satisfactory in spite of the prevailing adverse conditions and the general position in its various aspects is shown in the charts.

2. (a) The aggregate of the demands on the different systems was 47,000 K.W. and the total generation 243 million K.W.H., against 42,000 K.W. and 208 million K.W.H. respectively last year, as per details below :—

TABLE I.

System.	Demand in K.W.		Total generation in millions of K.W.H.	
	1940-41.	1941-42.	1940-41.	1941-42.
Pykara	26,200	28,900	136.13	156.57
Mettur	12,300	14,000	60.42	71.76
Andhra—				
1 Vizagapatam	1,000	980	3.001	3.096
2 Bezwada	2,000	* 2,300	6.61	* 9.12
3 Cocanada	325	360	0.77	0.94
Papanasam Construction	410	440	1.28	1.49
- Power-house.				

* Includes a small purchase of power from Kistna Cement Company's power-house. These increases were almost entirely devoted to war production.

(b) The gross revenue earned was Rs. 78.325 lakhs against Rs. 66.45 lakhs last year representing an increase of nearly 18 per cent.

Expenditure on construction works was Rs. 39.5 lakhs against Rs. 50.76 lakhs last year which is again due to delays in manufacture and delivery of plant and equipment.

(d) The financial position of the various systems is as follows :—

TABLE II.

System.	Year of operation.	Total capital in lakhs of rupees.	Net return on capital per cent.
Pykara	Ninth	318.96	9.8
Mettur	Fifth	225.60	4.50
Andhra—			
1 Vizagapatam	Third	24.10	1.18
2 Bezwada	Third	27.59	6.0
3 Cocanada	Second	6.12	0.25

(e) *The Indian Electricity and Cinematograph Acts and Rules.*—The administration of the Indian Electricity and Cinematograph Acts was generally satisfactory. Three more licences were issued during the year, though works were deferred due to war conditions. The total number of licensees operating was thus the same as last year. There was an increase of eight numbers in the permanent cinemas and a decrease of eighteen in touring cinemas in the Presidency.

This was the third year of operation of the Madras Electricity Duty Act and a revenue of about Rs. 6.56 lakhs was earned as against Rs. 6.54 lakhs last year which was comparatively free from black-out and restriction orders. Electrical inspections realized a revenue of about Rs. 54,500 against Rs. 40,000 last year.

(f) Due to A.R.P. works and other exigencies arising out of war, there was considerable increase in electrical installation work in Government buildings. In spite of the restrictions imposed on new electrical installations, expenditure amounted to Rs. 1.64 lakhs.

(g) The total energy generated by licensees was about 71 million units making the aggregate generation for the Presidency 314 million units representing a per capita generation of about 6.4 units on a population of 49 millions.

(h) The average revenue per unit sold in Hydro and Thermal areas was 0.564 anna and 0.89 anna respectively while the cost of generation, transmission and distribution was 0.41 anna and 0.93 anna respectively.

(i) An aggregate expenditure of about Rs. 5 lakhs is projected to be incurred on structural protection measures for the power stations and the more important sub-stations in the various systems according to the A.R.P. regulations and standards laid down by the Electrical Commissioner with the Government of India for such work. This work was put in hand at the close of the year.

The more important activities of the department are given below :—

PYKARA HYDRO-ELECTRIC SYSTEM.

3. *General.*—The year under review was the ninth year of operation of the system. In spite of the war conditions satisfactory increases in growth of load and revenue were again achieved. The salient features of the year are—

- (1) The peak load reached 28,900 K.W. as against 26,200 K.W. of the previous year and the generation was 156.57 millions as against 136.13 millions.
- (2) The units distributed and sold were 141 millions against 121 millions in 1940-41.
- (3) The revenue earned was Rs. 49.4 lakhs, an increase of about Rs. 6.7 lakhs or about 15.7 per cent over that of the previous year.
- (4) One 1,750 K.V.A. 66/22-11 K.V. transformer was installed at Udamalpet and one 1,000 K.V.A. 66/33-11 K.V. transformer at Virudunagar.
- (5) 11 and 22 K.V. lines totalling 66.6 miles were constructed during the year. Additional transformer capacity installed in distributions aggregated to 1,910 K.V.A.

ADMINISTRATION REPORT OF THE

(6) One waste cotton mill at Coimbatore, a textile mill at Koilpatti and a tea factory in the Nilgiris were connected up. A surgical-cotton mill was connected up at Rajapalayam through the West Ramnad Licensee. The total numbers of textile mills and tea factories taking supply are 40 and 40, respectively.

(7) 177 agricultural pump sets with an aggregate connected load of 1,297 horse power, were added as against 379 numbers and 2,283 horse power respectively, during 1940-41. The total number of agricultural pump sets connected to the system at the end of the year was 2,366 aggregating 14,298 horse power.

(8) Major and minor extensions costing about Rs. 3.36 lakhs were completed.

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

TABLE III.

Year.	Peak load in K.W.	Units generated in millions of units.	Gross receipts including miscellaneous in lakhs of rupees.
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 16.8 from Mettur).	31.0
1939-40 ..	24,900	114.7 (plus 3.81 from Mettur).	38.5
1940-41 ..	26,200	136.13 (plus 0.66 from Mettur).	42.7
1941-42 ..	28,900	156.57	49.4

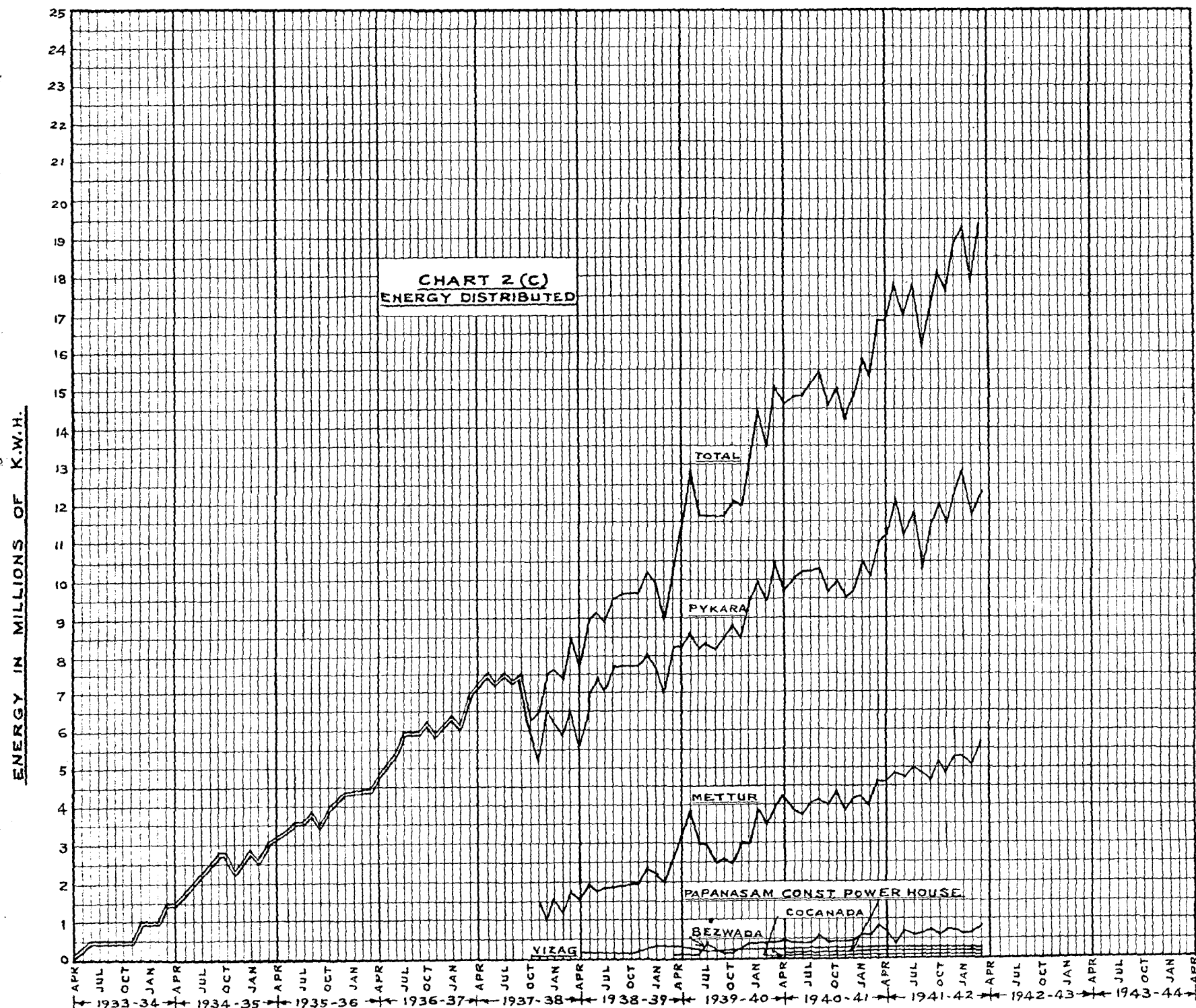
5. *Transmission lines.*—The transmission and distribution lines constructed during the year and the aggregate transmission line mileages are as below :—

TABLE IV.

Voltage.	During 1941-42.		Aggregate.	
	Single circuit miles.	Double circuit miles.	Single circuit miles.	Double circuit miles.
110 K.V. ..	..	..	..	49
66 K.V. ..	..	..	54	179
33 K.V. ..	..	..	28	..
*22 K.V. ..	32	2	283.25	81.5
11 K.V. ..	28.6	..	568.6	† 64.4

* The figure given for last year under this head was incorrect due to an error in allocation to lines of different voltages. The present figure is the correct one.

† Includes multiple circuits.



6. *Connected load.*—The connected load in the system under the different categories is as follows :—

TABLE V.

Description.	Connected load on 31st March 1942 K.W.	Description.	Connected load on 31st March 1942 K.W.
Industrial	26,588	Agricultural	10,724
Cement	3,445	Licensees	23,330
Tea	3,956	Miscellaneous	7,023
		Total	75,066

The above represents an increase of 7,589 K.W. or 11.24 per cent over the connected load on 31st March 1941.

7. *Textile mills.*—The Jayalakshmi Mill at Coimbatore (manufacturing yarn from waste cotton for blankets) and the Lakshmi Mills at Kovilpatti were connected up. To meet war orders most textile mills increased production by longer working hours and some by extensions to plant.

The Dwaraka Mill at Coimbatore and the Theni Mill did not materialize as anticipated.

The labour situation in the textile industry was generally satisfactory though there were a few strikes at Coimbatore, Tiruppur and Madura.

8. *Cement works.*—The Madukarai Cement Company continued to be the only cement load on the system and the highest individual consumer. Their maximum demand was 1,660 K.W. in October 1941.

9. *Tea factories.*—The Sussex Group Factory in the Nilgiris was connected up.

10. *Cordite Factory.*—Supply to the Cordite Factory was commenced over the newly constructed 11/22 K.V. double circuit line from Pykara.

11. *Licensees.*—No new licensee was connected. In all there are nineteen licensees on the system. The Dharapuram, Bodinayakanur and Sivakasi Municipal undertakings—which are the last out of the eleven managed by the department—having reached a profit-earning stage, were handed over to the respective municipal councils on 1st April 1942.

12. *Rural development.*—Twenty-two additional villages were electrified bringing the total of such villages to 250. Three Panchayat Board areas were also electrified bringing the total to forty-eight. At the close of the year there were—

(i) 2,366 agricultural pumps.

(ii) 241 industrial services.

(iii) 6,357 domestic services.

(iv) 48 panchayats with 4,266 street lights.

13. *Accidents.*—The accidents were as follows :—

TABLE VI.

Category.	Fatal.	Non-fatal.	Total.
Employees ..	11	20	31
Non-employees ..	11	26	37
Total ..	11	26	37

Compensation amounting to Rs. 837 was paid in seven cases (including three cases of last year) of non-fatal accidents to employees. There has been a reduction of 11 in the total number.

14. *Hire-purchase loans.*—About Rs. 19,250 were sanctioned as loans on hire-purchase system for agricultural pump sets to prospective consumers and a sum of Rs. 12,234 was disbursed. The total loans advanced since commencement of operation of the system amounted to Rs. 12.68 lakhs of which Rs. 11.2 lakhs have already been recovered.

15. *Financial results.*—The financial working of the system for the accounting year is shown in the following figures :—

TABLE VII.

	In lakhs of rupees.
1 Capital outlay including arrears of interest ..	3,18.96
2 Gross revenue	49.39
3 Expenses—	
(a) Operation and maintenance ..	7.45
(b) Depreciation Fund	7.45
(c) Special Reserve Fund	2.98
	17.88
4 Net revenue	31.51
5 Net return on capital outlay	9.88 per cent.

(These figures are exclusive of suspense.)

The net amounts to the credit of reserve funds, after operations in the course of the year, are as follows :—

(i) Depreciation Fund, Rs. 29.62 lakhs.

(ii) Special Reserve Fund, Rs. 11.76 lakhs.

The net return of 9.88 per cent compares with 8.4 per cent of last year.

16. *Commercial activity.*—Owing to the restriction on new extensions for purposes of war economy in materials and expenditure, the Commercial subdivision at Madura and the show room at Coimbatore were closed down. A Junior Engineer under the Madura Operation Division is conducting the reduced volume of commercial work.

17. *Staff.*—(a) *Technical.*—The technical staff continued to be very fully employed. The equipments in the different areas of the system demand increasing attention as they grow older and the operation and maintenance staff were kept fully occupied.

The volume of work in the Udamalpet and Coimbatore subdivisions in the Coimbatore Division has grown unwieldy and proposals for the formation of an additional subdivision at Tiruppur and redistribution of the work among the three subdivisions were formulated. Government sanction for the additional subdivision has since been received.

(b) *Ministerial.*—Although the office staff worked hard the arrears reported last year were not fully cleared.

A manual in two volumes dealing with the Administration, Financial and Accounting procedure of the Electricity department largely compiled in the Coimbatore Office was issued under the authority of the Chief Engineer (Electricity).

18. *Programme of work for 1942-43.*—The following transformers which were expected in 1941-42 but did not arrive are Coimbatore now programmed for installation during 1942-43 :—

To be erected at

- (1) One 1,250 K.V.A. 66/22-11 K.V. .. Madura.
- (2) Three 750 K.V.A. 66/22-11 K.V. .. Sembatti.
- (3) One 5,000 K.V.A. 66/22-11 K.V. .. Coimbatore.

When the 5,000 K.V.A. transformer under item (3) is commissioned the existing 3,000 K.V.A. 66/22-11 K.V. transformer at will be transferred to Madura and installed there.

Item 1 has since arrived and the others are urgently required.

19. Work on the installation of new exciters and voltage regulators on the three 7,810 K.V.A. generator units at Pykara Power House is in good progress and will be completed in the first quarter of 1942-43.

20. The changeover of the Cordite Factory line to 22 K.V. operation will be effected to suit the Factory's programme.

21. The changeover of the Sembatti-Periyakulam-Bodinayakkannur-Cumbum lines from 11 K.V. to 22 K.V. operation which is pending the receipt of some of the transformers referred to in paragraph 18 is expected to be carried out during 1942-43.

22. Arrangements for fire-fighting and oil drainage for transformers will be provided for the Coimbatore Receiving Station, and A.R.P. protective works for the stations at Pykara, Coimbatore and Madura will be completed.

23. Two 66 K.V. Oil Circuit Breakers of improved type ordered under Papanasam Scheme will on receipt be installed at Coimbatore replacing the existing breakers controlling the Madura feeders there. One of the released oil circuit breakers will be erected at Madura and the other at Kayattar.

24. Supply will be given to Tuticorin and arrangements for temporary 11 K.V. supply to Papanasam with necessary modifications to the Kovilpatti Sub-station will be made. As noted later these two supplies have both been effected since, in June 1942.

25. Consequent upon the restriction on new works, it is unlikely that any substantial extensions will be taken up during the year.

METTUR HYDRO-ELECTRIC SYSTEM.

26. *General.*—The year under review was the fifth year of operation of the System. Considerable increases were recorded in both load and revenue, in spite of the prevailing adverse conditions due to war. The System peak rose to 14,000 K.W. 71.76 million units were generated and the revenue earned was Rs. 21.75 lakhs.

27. The following statement shows the growth of load and revenue since the beginning of operation :—

TABLE VIII.

Year.	Peak load in K.W.	Units generated in millions.	Revenue in lakhs of rupees.	Year.	Peak load in K.W.	Units generated in millions.	Revenue in lakhs of rupees.
1937-38 .. (5 months).	5,700	17.40	3.45	1939-40 ..	10,900	46.49	13.34
1938-39 ..	7,700	44.00	11.03	1940-41 ..	12,300	60.42	18.19
				1941-42 ..	14,000	71.76	21.75

28. The Pykara and the Mettur Stations ran in parallel on five occasions when routine maintenance work was being carried out on the generating equipment at either place.

29. Operation in the System was generally satisfactory except for two major breakdowns. The former was due to a cyclone which occurred in December 1941 in the Villupuram area and caused the collapse of four towers on the Vettavalam-Villupuram 66 K.V. line. A temporary loop line on girder supports was constructed and supply to Villupuram was restored after an interruption of about seven days. In the latter case the transformer at Karur was badly damaged due to a fault on the 11 K.V. feeder control kiosk, but service was restored within a few hours with a spare transformer.

30. Additions to the system plant included a third 12,500 K.V.A. 11 K.V./66 K.V. transformer installed at Mettur Power House in September 1941. Two 2,000 K.V.A. 11/22 K.V. transformers for supply of power to Salem town direct from the Mettur Power House were also brought into service along with their control equipment.

31. A.R.P. protective measures, structural and general, were put on hand at the Mettur Power House and at a number of sub-stations in the system.

32. *Growth of demand and extensions.*—Due to load increases at many sub-stations and the difficulty of obtaining new transformers and equipment several spare transformers, were permanently connected up.

33. Five major and eighty minor extensions costing Rs. 5.72 lakhs were executed (as against Rs. 7.9 lakhs last year). In addition three major extensions which were sanctioned in the previous year were completed this year. There were severe restrictions on extensions from August 1941 due to the steel control order and at the end of the year this resulted in almost a complete stoppage.

34. The Mettur Chemical Corporation completed the erection of their plant and started manufacture under the new management of Messrs. Seshasayee Brothers. This represents a substantial increase in the demand on the system.

35. The Salem-Mettur 22 K.V. line was completed and supply to Salem was effected directly from Mettur. The Conjeeveram-Chingleput extension was completed early in the year and supply afforded to the Chingleput Licensee.

36. Proposals for constructing a 66/110 K.V. line in order to ensure an alternative supply to Madras in emergencies were made and line survey, land acquisition and ordering of materials, etc., were done. Government, however, later directed that further work on the scheme should be stopped.

37. Supply was extended to 16 villages.

38. *Transmission lines.*—Only 2.8 miles of 22 K.V. and 5.4 miles of 11 K.V. lines were added on to the system due to the restriction of extensions. The table below gives the lengths of H.T. transmission lines now in operation in the system :—

TABLE IX.

Item number.	Voltage.	Connected during the year in miles.		Total in service in miles.	
		Single circuit.	Double circuit.	Single circuit.	Double circuit.
1	110 K.V. ..	..	..	..	..
2	66 K.V. ..	..	..	188.5	228.5
3	33 K.V. ..	..	..	177.7	..
4	22 K.V. ..	2.8	..	333.3	..
5	11 K.V. ..	5.4	..	379.2	1.75

39. *Connected load.*—The connected load of the system on 31st March 1942 was as follows :—

TABLE X.

Description.	C.L. in K.W. as on 31st March 1942.	Description.	C.L. in K.W. as on 31st March 1942.
Industrial	6,976	Chemical	960
Cement	2,435	Miscellaneous	5,307
Licensees	26,565		
Agricultural	2,709	Total	44,952

The increase amounts to 9,596 K.W. or 27.1 per cent over that of last year.

40. *Licenseses.*—At the end of the year there were 15 licensees taking bulk power from the department. The Chingleput licensee commenced to take supply from April 1941. The two municipal undertakings of Tiruppattur and Tiruvannamalai were handed over to the respective municipal councils at the end of the year.

The prevailing conditions and the restriction orders, etc., affected the licensees also and impeded development. Nevertheless some progress was made and substantial increases in maximum demand were registered in the licensees' supplies at Tiruvarur and Villupuram.

Schemes of extensions in licensees' areas at Kondalampatti and Kandamanadi were undertaken with the consent of the respective licensees and supply effected at the two places.

41. *Industrial development.*—The Dalmia Cement Factory continued to be the biggest single industrial load on the system. Small industries totalling 596 h.p. were added during the year.

42. *Agricultural and rural development.*—Many agricultural services had to be deferred due to the restrictions imposed during the latter part of the year. However, 256 services with a connected load of 1,434 h.p. were added to the system bringing the total number of services to 656 and the connected horse-power to 3,631.

43. *Hire-purchase loans.*—Eighty prospective consumers applied for the supply of pumpsets and motors on the hire-purchase system and loans amounting to Rs. 40,092 were sanctioned to 78 applicants. A sum of Rs. 64,354 was disbursed which includes some loans sanctioned in the previous year.

44. *Municipal undertakings.*—The two municipal undertakings of Tiruppattur and Tiruvannamalai were handed over to the respective municipalities at the end of the year. Their working was normal.

45. *Accidents.*—Thirty-seven accidents occurred with details as in the statement :—

TABLE XI.

Category.	Fatal.	Non-fatal.	Total.
Employees ..	2	9	11
Non-employees ..	6	20	26
		Total ...	37

Compensation amounting to Rs. 2,445-6-0 was paid under the Workmen's Compensation Act.

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

TABLE XII.

	In lakhs of rupees.
1 Capital outlay including arrears of interest	2,25.61
2 Gross revenue	21.75
3 Expenses—	
(a) Operation and maintenance	5.88
(b) Depreciation Fund	4.77
(c) Special Reserve Fund	0.95
	11.60
4 Net Revenue	10.15
5 Net return on capital outlay	4.5 per cent.

[An expenditure of Rs. 40,513 and another of Rs. 50,045 were incurred under the Depreciation and Special Reserve Funds, respectively, during the year.]

47. *Mettur workshops.*—The year's outturn was Rs. 2,30,000 as against Rs. 2,41,400 of 1940-41. The continued decrease was due to the cancellation of several extension schemes and restriction on new extensions.

The average labour employed was around 120, the same as in 1940-41.

48. *Administration.*—The system was organized with three divisions as previously.

A newly sanctioned Meter and Relay Tests Subdivision with testing and special maintenance sections was formed in May 1941 and functioned satisfactorily.

Due to paucity of extensions the posts of two commercial Junior Engineers were surrendered, as also the posts of the Junior Engineers at Tiruppattur and Tiruvannamalai on the undertakings being handed over to the municipalities.

Due to increased Civil Works in the system the Civil Section was enlarged to a subdivision. For the A.R.P. structural works at Mettur Power-House and some sub-stations an Assistant Engineer with two supervisors was posted to the system under the control of the Executive Engineer, A.R.P., Coimbatore.

49. *Mettur fourth unit installation.*—Only a few minor items belonging to the fourth unit were received and the manufacture and delivery of the main plant was further delayed due to war conditions. Manufacture is now however making progress and the plant is expected about the end of 1942.

ANDHRA POWER SYSTEM.

50. The Andhra Power System comprises the steam stations at Vizagapatam and Bezwada and the oil engine station at Cocanada with their respective lines and distributions.

51. *Vizagapatam-thermal system.*—This was the third year of operation. 3.096 million units were generated against 3 million last year. The peak load on the station remained around 1,000 K.W. as in last year due mainly to restrictions which had to be imposed on industrial consumers.

The smaller unit of 750 K.W. continued to be only serviceable as an emergency standby pending replacement of the turbine rotor being arranged for by the suppliers.

The delivery of the third unit of 1,500 K.W. ordered in February 1940 was still further delayed due to war priorities in manufacture and is now programmed for installation during 1942-1943. Advice of its arrival in India in July 1942 has since been received.

Anxiety was felt throughout the year on account of lack of adequate standby plant and it is satisfactory that the one machine was kept in almost continuous operation.

52. A further order for a similar fourth unit of 1,500 K.W. together with additional boiler was placed to meet the anticipated increase in demand for the ship-building industry being established in the Vizagapatam Harbour area.

To meet the increased requirements of cooling water-supplies for the proposed extensions to plant, an additional inlet pipe from the sea and extensions to the cooling water system were sanctioned and work put in hand.

53. *Load development.*—The development of load and revenue since the commencement of operation of the system is shown in the following table :—

TABLE XIII.

Year.	Peak load in K.W.	Units generated in millions.	Gross revenue in lakhs of rupees.
* 1938-39	810	1.783	0.83
1939-40	1,010	2.490	1.37
1940-41	1,000	3.001	1.77
1941-42	980	3.096	1.91

* Treated as construction period.

54. The depression in the groundnut trade of last year continued. Construction was begun on the ship-building yard and considerable progress was made but due to delays in receipt of materials and equipment their connected load was only 120 K.W. against 800 K.W. anticipated.

55. *Transmission lines.*—The details of the transmission lines are shown in the following table :—

TABLE XIV.

Voltage in K.V.	Connected during the year in miles.		Total in service in miles.	
	Single circuit.	Double circuit.	Single circuit.	Double circuit.
33	..	..	48	..
11	..	..	61	8

Four major and minor extensions costing about Rs. 0.76 lakh were under execution.

56. *Hire-purchase system.*—Two more hire-purchase advances were made. Loans to a total of Rs. 14,661 were sanctioned and disbursed.

57. *Financial results.*—The financial working of the system for the accounting year are shown in the following table :—

TABLE XV.

	In lakhs of rupees.
1 Capital outlay including arrears of interest	24.10
2 Gross revenue	1.91
3 Expenses—	
(a) Operation and maintenance	1.63
(b) Depreciation fund	..
(c) Special reserve fund	..
4 Net revenue	0.29
5 Net return on capital outlay	1.18 per cent.

The return is slightly less than for last year (1.37 per cent). When the restrictions are removed and the extensions to the plant materialize, considerable improvement is expected.

58. *Connected load.*—Further connected load of 1,017 KW. was added to the system increasing the total to 4,210 KW.

59. Vizagapatam was declared as a Class I Air Raid Precautions area. Special air raid precaution measures at a cost of about Rs. 25,000 providing for anti-blast walls, shelters, etc., were undertaken at the power station.

60. *Bezwada Thermal System.*—This was the third year of operation and the satisfactory progress of the previous years has been well maintained. 8.70 millions of units were generated during the year against 6.61 millions in the previous year.

The peak-load went up to 2,300 KW. and would have gone higher but for restrictions which had to be imposed upon some consumers.

61. The manufacture and supply of the new 3,000 KW. turbo-generator set and boiler (including the replacement of parts lost at sea by enemy action) have been delayed by war priority work but some parts have been delivered and it is hoped that the plant will be installed during 1942-43.

62. *Load development.*—The development of load and revenue since the commencement of operation of the system is shown in the following table :—

TABLE XVI.

Year.	Peak-load in K.W.	Units generated in millions.	Gross revenue in lakhs of rupees.
1938-39	530	..	..
1939-40	1,540	4.68	1.89
1940-41	2,000	6.61	2.84
1941-42	2,300	8.87	3.686

The acute situation at Bezwada caused by the growing demand and the delay in the receipt of the 3,000 KW. set on order could not be controlled entirely by the restrictions during peak-load hours. An arrangement was therefore made with the Associated Cement Companies for purchasing surplus power from their Kistna Cement Factory and feeding it into the Bezwada system. Thanks are extended to the company for their accommodation.

63. *Transmission lines.*—The details of the transmission lines are shown in the following table :—

Voltage in KV.	TABLE XVII. Constructed during the year in miles.		Total in service in miles.	
	Single circuit.	Double circuit.	Single circuit.	Double circuit.
33	..	..	91	1.25
11	11	..	54	..

Three major and minor extensions costing Rs. 0.7 lakh were under execution.

64. *Connected load.*—The Guntur Jute Mills with a connected load of about 250 KW. were connected up through the Guntur licensee.

The Andhra Cement Factory continues to be the largest individual consumer with a peak-load of about 600 KW.

A connected load of 1,580 KW. was added to the system—against 1,064 KW. during last year—increasing the system total from 4,180 to 5,760 KW.

65. *Rural development.*—Supply was extended to six more villages increasing the number of such villages from 11 to 17. At the close of the year there were 88 agricultural pump sets, 2 industrial services and 159 domestic services.

66. *Hire-purchase system.*—Five hire-purchase loans amounting to Rs. 2,410 were sanctioned and disbursed.

67. *Financial results.*—The financial working of the system for the accounting year is shown in the following table :—

TABLE XVIII.					In lakhs of rupees.
1 Capital outlay including arrears of interest	..	..	..	..	27.59
2 Gross revenue	..	..	..	..	3.69
3 Expenses—					
(a) Operation and maintenance	..	..	..	..	2.03
(b) Depreciation fund	..	..	..	..	..
(c) Special reserve fund	..	..	..	..	..
					2.03
4 Net revenue	..	..	..	..	1.66
5 Net return on capital outlay	..	..	..	..	6 per cent.

The net return of 6 per cent in the third year of operation may be considered very satisfactory especially under the prevailing adverse conditions.

68. *Cocanada system.*—This system comprises an oil engine station at Cocanada with about 50 miles 11 KV. transmission line in the East Godavari district serving the following places. This is the second year of operation of the system :—

- | | |
|------------------------------|-----------------|
| (1) Cocanada Municipality. | (6) Pithapuram. |
| (2) Ramachandrapuram. | (7) Gollaprolu. |
| (3) Mandapeta. | (8) Velangi. |
| (4) Samalkota. | (9) Pasalapudi. |
| (5) Peddapuram Municipality. | |

69. The load development has been satisfactory, 386 domestic and other services and 75 horse-power industrial load having been added, increasing the system connected load from 722 KW. to 1,054 KW. Further development is held up due to the inadequate plant capacity in the power station, and the restrictions on new works. The Cocanada Municipality continues to be the largest individual consumer.

70. 0.94 million units were generated with a peak-load of 360 KW. on the station as against 0.72 millions and 325 KW. respectively last year.

71. *Financial results.*—The financial working of the system for the accounting year is shown in the following table :—

TABLE XIX.					In lakhs of rupees.
1 Capital outlay including arrears of interest	..	..	..	..	6.12
2 Gross revenue	..	..	..	..	0.76
3 Expenses—					
(a) Operation and maintenance	..	..	..	..	0.74
(b) Depreciation fund	..	..	..	..	..
(c) Special reserve fund	..	..	..	..	..
					0.74
4 Net revenue	..	..	..	..	0.015
5 Net return on capital outlay	..	..	..	..	0.25 per cent.

72. *West Godavari Electrification Scheme.*—A scheme costing about Rs. 8 lakhs was sanctioned by Government providing for an oil engine station at Attili in West Godavari district and 70 miles of 11 KV. lines and 15 distributions including seven towns, viz., Bhimavaram, Palacole, Narasapur, Attili, Tanuku, Maruteru and Nidadavole.

73. A construction division was sanctioned for the departmental execution of the scheme and about 60 per cent of the transmission line work had been completed and the power-house site acquired by February 1942.

74. It was then decided that the supply position with regard to the use of materials did not justify the continuation of the scheme and further construction was ordered to be deferred. The 2-150

KW. oil engines purchased from the Guntur licensee and proposed to be installed at Attilli were requisitioned by the Government of India for Military purposes.

75. *Accidents.*—There were 18 accidents in the Andhra power system, of which 4 were in Vizagapatam, 5 in Bezwada and 9 in Cocanada. The details are shown in the following table :—

TABLE XX.

Category.	Fatal.	Non-fatal.	Total.
Employees ..	..	3	3
Non-employees ..	6	9	15
Total ..	6	12	18

76. *Administration and Accounts.*—The Central office has been consistently understaffed with the result that serious arrears have accumulated and at times the routine work could not be carried out properly.

The posting of the permanent Chief Accountant referred to in last year's report was only made in December 1941.

CONSTRUCTION BRANCH.

Papanasam Hydro-Thermal Scheme.

77. *General.*—This was the fourth year of construction of the scheme which was sanctioned in April 1938. Under peace conditions all the works with the exception of the Tambraparni Dam would have been completed by now and the plant would be operating. Due to war priority orders however, the manufacturers have still been unable to complete and deliver the turbines and generating machinery with the result that the plant cannot be put into operation before 1943. Difficulties in obtaining supplies of iron and steel have also held up other parts of work such as transformer yard structures. With these exceptions, however, construction has proceeded satisfactorily and by the end of the year all civil works downstream of the dam were completed to the extent possible pending the arrival of the machines.

The Tambraparni Dam was not programmed for completion until April 1943 and construction is in advance of schedule. The transmission lines were completed during the year and the substations as far as deliveries of imported equipment would permit. Arrangements were in hand for putting these into beneficial use to the Tinnevely-Tuticorin licensees at Tuticorin and the Papanasam Construction Power House, thus saving the consumption and transport of oil, fuel and releasing the engine sets for military or other war purposes. Those two supplies were both effected later in June 1942.

An average daily labour force of about 2,750 was employed on the whole works and the expenditure during the year was Rs. 29 lakhs bringing the total expenditure to-date to Rs. 92 lakhs.

The health of the camps continued to be generally satisfactory.

78. *Tambraparni dam.*—The foundations were extended to the extreme flanks and masonry built to varying heights over the full length. The built-in parts of the upstream controls which should have been received from England at the end of 1940 only arrived in May 1941 and in the meantime the construction programme had to be modified by diverting work from the centre to the flanks. This left a heavier programme in the centre sections for after the monsoon but it was successfully carried out. Fourteen thousand units of masonry were built during the year against a programme of 12,350 bringing the total masonry completed up to 78 per cent. The total expenditure on the dam and spillway during the year was Rs. 9.8 lakhs.

All the materials for the upstream controls and overhead operating gear were received safely at site. One downstream control, viz., the reconditioned Mettur needle valve was erected and put into commission. The other, a new discharge regulator, is not expected until late in 1942.

A heavy flood of 47,000 cusecs occurred in November 1941. As this followed a similar one in December 1940 the adequacy of the spillway capacity was re-examined and as a result it was increased from 70,000 to 90,000 cusecs. A further series of scale model experiments for the spillway were subsequently conducted to determine the modified design particulars.

79. *Diversion weir.*—The few items of work still remaining to be done were finished before the monsoon. The whole work has been completed at a cost of about Rs. 8 lakhs against the estimated expenditure of Rs. 11 lakhs.

80. *Low pressure pipe.*—Expansion joints were manufactured and erected, thus completing the work. Hillside protection against loose rocks and debris was also completed.

81. *Surge tank.*—The materials were received from England at site in May 1941 and the base and manifold erected and tested by September. Concreting was then completed and the bottom portion of the tank erected and tested. Erection of the upper portion has been deferred until nearer the time for operation.

82. *Penstock.*—The erection of these pipes which was begun in March 1941 was completed by the end of November with the exception of the expansion joints, manufacture of which had been delayed due to difficulties in obtaining sound steel castings. These were received later and completed by the end of the year.

The air valves were received from England and fitted. The main butterfly valves, however, are still awaited.

83. *Power house.*—The erection of the steel frame was completed in March 1941 and masonry work begun in April. The building was completed during the year except for machinery foundations and formation of floors, etc., which can only be done after machine erection.

84. *Transformer yard.*—All foundation works were completed during the year. Erection of the overhead structures was held up on account of delay in supply of steel reinforcing rods. These have now been obtained and the work is expected to be completed by October 1942.

The oil house, tanks and piping system were under construction and nearing completion.

85. *Machinery and equipment.*—The three 7,250 KVA. transformers, the station transformers and most of the switchgear were received during the year. Completion and shipment of the turbines and generators has, however, been further delayed by priority munition manufacture and they are not now expected till the end of 1942. Arrangements are being made to start the erection of the electrical gear however in June 1942.

86. *66 KV. Transmission system.*—The Papanasam-Kayattar, Kayattar-Tuticorin and Kayattar-Koilpatti 66 KV. lines were all completed, tested and taken over. These comprise 52.4 miles of double circuit and 26.2 miles of single circuit line. The towers for these lines were fabricated in India from Tata steel sections and it was originally intended that sample towers should be sent to England for a complete range of tests. This however proved impossible and partial field tests had to be substituted.

87. *Sub-stations—Koilpatti.*—Extensions to this sub-station were completed during the year.

Kayattar.—The buildings, structures and equipment with the exception of one O.C.B. which is to be transferred from Coimbatore, were completed.

Tuticorin.—The buildings and structures were completed and the equipment was in course of erection at the end of the year when the transformers arrived from England.

The expenditure during the year on transmission lines and sub-stations was—

			LAKHS.
			RS.
Transmission lines	..	..	7.79
Sub-stations	..	..	0.65

Total	..		8.44

88. *Construction Power house and Supply.*—This was the fourth year of operation of this oil engine plant. The old engines were well maintained and continued to give good service. The peak load on the station was 440 KW. against 410 in the previous year and the units generated were 1,493,000 against 1,281,000. The connected load was 1,986 KW. A revenue of Rs. 81,645 was earned during the year excluding supply to the works and camps. The power supply was satisfactory, interruptions being minor

and infrequent. The various electrical driven construction plant on the works were well maintained and adequately met the requirements.

The workshop was busy throughout the year on both manufacture and repairs.

Kayattar, Tuticorin and Kovilpatti were linked up with the local telephone system before the end of the year.

89. *West Tinnevely distribution area.*—In spite of the heavy increase in costs of materials there was a satisfactory growth of load during the first half of the year but in the second half when restrictions, culminating in a prohibition of extensions and service connexions were introduced, there was eventually a small decline. The connected load at the end of the year was 1,240 KW. and the demand increased from 46,000 units in March 1941 to 67,700 in March 1942.

Supply was extended to Ilanji and Courtallam.

There were 45 industrial services with a connected load of 470 h.p. and 38 agricultural pumps with a connected load of 155 h.p. The total number of services is 1,648 and 633 street lights.

The supply from the Construction Power House has thus been a successful load-building enterprise and a profitable public amenity.

90. *Future extensions.*—The East Tinnevely area was investigated during the year but due to war restrictions could not be developed.

91. *Programme for 1942-43.*—The Tambraparni dam is expected to be completed by April 1943. The power-house generating machinery is expected at site between about October 1942 and January 1943 and it is hoped that erection will be completed and operation begun by about October 1943.

WEST COAST EXTENSIONS.

92. This scheme to supply Pykara power to Calicut, Cannanore and Tellicherry was sanctioned in March 1941 to meet an urgent public demand. Specifications were drawn up and most of the materials were ordered and other arrangements made. Due to changed war conditions, however, it was decided in November 1941 to defer construction and orders for most of the materials on which manufacture had not proceeded far were cancelled.

EXTENSION OF METTUR SUPPLY TO MADRAS.

93. To provide a limited emergency supply of hydro-electric power to Madras, a scheme for extending the Mettur supply from Tiruvannamalai was sanctioned in June 1941. This was designed on a temporary basis but to fit in with the permanent transmission system which would eventually be required. The main item of

permanent construction was about 90 miles of 66/110 KV. transmission line from Polur to a point a few miles west of Madras, with temporary extensions at either end. Orders for steel towers, insulators, conductors, etc., were placed and land acquisition, etc., taken up.

Construction on this scheme also had to be stopped in November 1941 and orders for materials were similarly cancelled or deferred.

THE MADRAS LOCAL AUTHORITIES ELECTRICAL UNDERTAKINGS AND ENGINEERS SERVICE.

94. The number of electric supply undertakings under the management of municipal councils increased by two (Tiruppattur and Periyakulam) during the year bringing the total number of undertakings managed by local authorities to twenty-nine.

The transfer of management of the Bodinayakkanur, Sivakasi, Dharapuram and Tiruvannamalai electrical undertakings to the respective municipalities was approved by Government from 1st April 1942.

The scrutiny of loan applications, financial forecasts, budget estimates and tenders continued to be the main feature of the headquarters work.

The restriction on Hindupur municipal undertaking against connecting up any additional load was continued during the year.

LICENSEE ELECTRIC SUPPLY UNDERTAKINGS.

95. Three more licences were granted during the year bringing the total to eighty-one. These, however, were unable to take up construction on account of the restriction and control orders with the result that the number of operating licensees remained the same as last year. One other licence which was applied for for the undeveloped areas under the South Arcot Electricity Distribution licensee and Pondicherry was not granted due to the restriction orders. Of the seventy-eight operating licensees, thirty-five were managed by local authorities and the remaining forty-three by companies.

96. *Restriction of supply.*—As a result of the restriction orders and the scarcity of electrical materials there were practically no extensions and the number of towns and villages electrified remained almost the same as last year.

97. The following is a summary of the plant and units generated in the Presidency :—

TABLE XXI.

	Installed KVA.	Generation in millions of units.
Government Hydro-Electric Schemes	87,430	228.33
Government Thermal Schemes	8,140	14.65
The Madras Electric Supply Corporation, Ltd.	53,750	60.55
Other stations	9,260	10.90

THE INDIAN ELECTRICITY ACT AND RULES.

98. Proposals to amend section 36 of the Act and Indian Electricity Rules 1, 5, 24, 40, 48, 49, 58, 65, 67, 69 and 118 were under consideration of the Central Electricity Board. Rule 51 was further relaxed till December 1942. There was no meeting of the Central Electricity Board during the year.

99. In 1941-42 the accounts of forty-five private licensees and 36 local authorities were scrutinized. Three applications for issue of debentures were also examined and recommendations made to Government.

100. Government laid down their general policies on the capitalization of certain items of expenditure such as interest on borrowed capital, managing agents' remuneration, Engineers' salaries, etc., and their application was extended to all licensees' accounts commencing from the year 1940-41. The year under review being the first year of its working, it is too early to estimate its effects.

101. The present international situation and the consequent black-out restrictions have adversely affected the further development of many electrical undertakings.

102. In connexion with the restriction and control orders Government sanctioned a subdivision under the Chief Electrical Inspector to Government for the scrutiny of and recommendations on applications for essentiality permits for extensions and service connexions in licensed areas.

103. *Accidents.*—There were 102 accidents during the year of which 33 were fatal. The table below gives a comparative statement of the accidents for the last six years :—

TABLE XXII.

Year.	Fatal accidents.	Non- fatal.	Total.	Year.	Fatal accidents.	Non- fatal.	Total.
1936-37 ..	32	45	77	1939-40 ..	44	94	138
1937-38 ..	36	43	79	1940-41 ..	45	87	132
1938-39 ..	49	89	138	1941-42 ..	33	69	102

It will be seen that there was a marked decrease.

THE INDIAN CINEMATOGRAPH ACT AND RULES.

104. The table below shows the number of cinemas in the Presidency during the last seven years :—

TABLE XXIII.

Year.	Perma- nent cinemas.	Touring cinemas.	Total.	Year.	Perma- nent cinemas.	Touring cinemas.	Total.
1936 ..	125	100	225	1940 ..	223	268	491
1937 ..	157	122	279	1941 ..	228	186	414
1938 ..	189	183	372	1942 ..	236	168	404
1939 ..	190	247	437				

Inspections of all cinemas were carried out during the year. There were no prosecutions under the Indian Cinematograph Act and Rules.

105. *The Electricity Duty Act and Rules.*—A revenue of Rs. 6.56 lakhs was earned under the Madras Electricity Duty Act against Rs. 6.54 lakhs last year in spite of the black-outs and restrictions.

The Madras Electric Supply Corporation, Limited, was again the highest individual contributor, having paid Rs. 2,39,165.

The number of licensees paying Electricity duty increased by four bringing the total up to 53.

Twenty-eight inspections under the Act were made during the year as against 37 last year the decrease being due to the heavy work at headquarters and inadequacy of staff.

106. An amendment to the Act allowing exemption for the sale of energy to the Central Government, the Federal Railway Authority and a Railway Company operating a Federal Railway was introduced and this was to some extent responsible also for the fall in the revenue.

107. *Laboratory.*—The supply voltage, house service meters and the rotating sub-standards maintained by the licensees continued to be tested as in previous years.

The total number of tests carried out in the Electrical Standards Laboratory at Madras and "in situ" in licensees' areas was as follows :—

	Numbers.		Numbers.
Rotating sub-standards.	150	Oil tests	58
Meters and measuring instruments (commercial grade).	1,075	Voltage and earth tests.	254
		Fire extinguishers ..	136
		Relays	Nil.

Of the 150 sub-standards, 71 were from the Government Hydro-Electric and Thermal Systems and the rest from Laboratory and Licensees.

108. *Electrification of public buildings.*—New installations costing Rs. 1.64 lakhs were added against Rs. 1.52 lakhs last year.

The operation and maintenance charges of the installations amounted to Rs. 1.43 lakhs representing 3.89 per cent of the capital cost. Rupees 2.2 lakhs were paid on account of current consumption.

The division in charge of this work continues to be under the administrative control of the Chief Engineer, Public Works Department and the technical control of the Chief Engineer for Electricity.

INVESTIGATIONS AND SURVEYS.

109. *Machkund scheme.*—The field investigation of the Machkund Hydro-Electric Scheme was sanctioned in November 1941, to serve the Andhra districts. Work was started on the construction of a measuring weir in January but it was only possible to collect staff at site and begin the surveys in March.

The amount of the estimate is Rs. 98,000 and the work is expected to take 1½ to 2 years.

110. *Sileru hydro-electric scheme.*—Staff for a reconnaissance of the Upper and Lower Sileru Schemes was sanctioned in December 1941 and work was in progress at the end of the year.

111. *Hydro-metric works.*—Collection, computation and recording of rainfall and run-off data for the several basins in the Presidency which are under observation were continued during the year as usual.

TECHNICAL WORK AND PURCHASES AT MADRAS.

112. *Electrical and Mechanical Division.*—The work of this division continued to be heavy throughout the year.

The various restrictions and controls in force involved a large volume of correspondence in obtaining priority assistance for imported equipment, licences for purchases of iron and steel, adapting and modifying contract terms to special war conditions and variation of prices to basic rates for materials and labour, freight charges, war risk insurance, etc.

113. Detailed technical studies were made and orders for materials placed for the important West Coast Extension and Polur-Madras Schemes.

Eleven important contracts for heavy equipment and materials and many smaller ones covering an aggregate value of over Rs. 74 lakhs were negotiated and placed.

About 43 extension proposals aggregating Rs. 11.6 lakhs were scrutinized. Purchase orders for materials costing about Rs. 7 lakhs were placed after obtaining necessary tenders, quotations, etc.

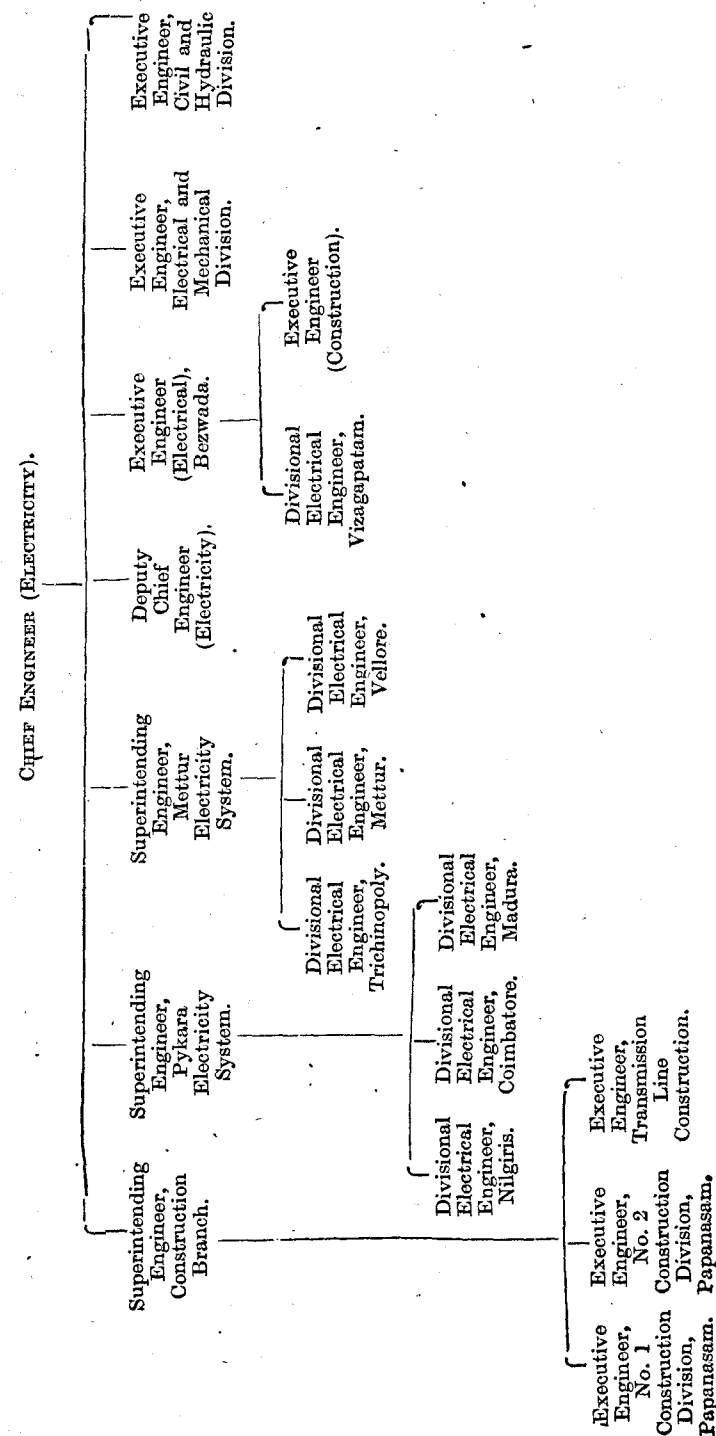
114. *Civil and Hydraulic Division.*—This division continued to be fully occupied on work connected with Papanasam construction and designs and estimates for works in Pykara, Mettur and the Andhra Systems.

TARIFFS.

115. No important changes were made in the departmental tariff structure. In the case of licensees, the process of reduction and standardization of rates was continued but the prevalent abnormal conditions precluded much progress. In consequence of the rise in the price of fuel oil, etc., some self-generating licensees were permitted to levy a surcharge on power consumers corresponding to the increase in the basic price of fuel.

116. Draft amendments to the model form of conditions of supply were submitted to Government for approval.

CHART 3.
ORGANIZATION CHART—SUPERIOR STAFF.



ORGANIZATION.

117. The framework of the organization of the department—shown in the chart—remains practically the same as last year. The Transmission Line Construction Division was temporarily suppressed from March 1942 on the Papanasam Transmission System nearing completion and construction on the West Coast and Polur-Madras Extensions being postponed.

118. For carrying out A.R.P. works in the various power houses and sub-stations expeditiously an A.R.P. division was sanctioned at the end of March 1942 but did not begin to function during the year under review.

119. A construction division for the West Godavari Electrification Scheme and other works in the Andhra System was sanctioned in June 1941 and placed under the administrative charge of the Executive Engineer (Electrical), Bezwada. On the stoppage of the scheme this division was suppressed in April 1942.

ACCOUNTS AND STORES.

120. The annual audit of the accounts of the Operation Systems was conducted by the Accountant-General's staff as usual while the accounts of the Construction Branch were audited twice during the year.

The inspection reports were generally satisfactory.

The stock verifier appointed in May 1941 completed the verification of stock in the Pykara System in October 1941. The verification of stores in the Mettur System was still in progress at the end of the year.

The question of introducing concurrent residential audit was being considered by the Government.

PROGRAMME FOR 1942-43.

121. The following important works are expected to be in progress next year :—

- (1) Papanasam Hydro-Electric Scheme.
- (2) Fourth Unit installation at Mettur.
- (3) Third Unit installation at Vizagapatam.
- (4) Third Unit installation at Bezwada.
- (5) Detailed investigation of Machkand Scheme.

Due to the uncertain deliveries and other factors caused by the war it is not possible to forecast the probable progress in detail.

STAFF.

122. Lt.-Col. M. G. Platts, Chief Engineer (Electricity), retired from the Indian Service of Engineers on 16th December 1941 and continued as Chief Engineer for Electricity on contract.

Mr. E. J. B. Greenwood, Superintending Engineer, who proceeded on leave from 1st March 1941, preparatory to retirement, retired on 16th September 1941.

Mr. L. Henshaw, Superintending Engineer, Construction Branch, proceeded on leave for one month from 6th May 1941 and resumed charge of the same post on return from leave.

Sri P. V. Chari, Chief Electrical Inspector to Government, was on leave for four months from 4th August 1941 and resumed charge of the post on return therefrom.

Sri J. Kuriyan, Divisional Electrical Engineer, officiated as Chief Electrical Inspector to Government, during the leave period of Sri P. V. Chari and then proceeded on leave for four months from 4th December 1941. On return from leave he assumed charge as Executive Engineer, Electrical and Mechanical Division.

Sri Rao Sahib B. R. Somayajulu, Executive Engineer, Electrical and Mechanical Division, on relief by Sri J. Kuriyan, took charge as Deputy Chief Engineer *vice* Sri Rao Sahib G. Yoganandam, who proceeded on leave for three months from the beginning of April 1942.

Sri Rao Sahib B. R. Somayajulu, Executive Engineer, Electrical and Mechanical Division, was on leave for one and a half months from January 1942 and Sri P. R. Sundaram, the seniormost Assistant Engineer, was in additional charge of the Division. On return from leave Sri B. R. Somayajulu was reposted as Executive Engineer, Electrical and Mechanical Division.

Mr. V. Lazarus, Divisional Electrical Engineer, Vizagapatam, was on leave for 60 days in May and June 1941 and resumed charge of the post.

Sri N. R. Narasimhamurthi, Divisional Electrical Engineer, was on leave for three months from the end of April 1941 and on return therefrom was posted to the Nilgiris Division.

Mr. A. C. D. Rozario, Electrical Engineer (General), went on leave for one month in October 1941 and Sri N. Nagappa Nayak, the seniormost Assistant Engineer of the Division, was in additional charge. On return from leave Mr. A. C. D. Rozario rejoined duty as Electrical Engineer (General).

Sri L. Ekambaram, officiated as Executive Engineer, West Godavari Electrification Scheme, from 7th July 1941 and on the abolition of the scheme he was transferred in April as Electrical Engineer (General), *vice* Mr. A. C. D. Rozario who proceeded on leave from 2nd May 1942.

The Transmission Line Construction Division was reduced as a subdivision and Sri Rao Sahib P. M. Chengappa assumed charge as Executive Engineer, A.R.P. Division, Coimbatore, at the end of March 1942.

Sri Rao Sahib N. Krishnamurthi assumed charge as Executive Engineer, Civil and Hydraulic Division, in June 1941.

Sri Rao Sahib S. R. Krishnamurthi officiated as Superintending Engineer, Construction Branch, for one month in the leave vacancy of Mr. L. Henshaw and on reversion assumed charge as Executive Engineer, Construction Division No. II and Personal Assistant to the Superintending Engineer, Construction Branch.

Sri A. Venkateswaran was appointed as Executive Engineer, Construction Division No. I, in May 1941.

Sri M. R. B. Rao, Assistant Engineer (Electrical), Vellore, was deputed as Assistant to the A.R.P. Controller, Madras, for communications from January to March 1942.

Sri K. Ramamurthi, Divisional Electrical Engineer, was appointed as full member of category 2 of Class I of the Madras Electrical Service.

The following officers were admitted to the Madras Electrical Service on probation :—

Assistant Engineers (Electrical), Category 3 of Class I of Madras Electrical Service—

Sri K. Narasimha Rao.

„ B. Gajapathi Rao.

„ T. Narayana Rao.

Executive Engineer (Civil)—Special Class II—

Sri A. Venkateswaran.

Assistant Engineer (Civil)—Class II—

Sri H. R. Alasingarachar.

„ E. V. Seshan.

Chief Accountant—Class I of the Madras General Service—

Sri M. C. Krishna Ayyar.

Sri T. J. Mirchandani received the honour of 'O.B.E.' in His Majesty the King Emperor's Birthday list of June 1941.

Sri B. R. Somayajulu received the title of 'Rao Sahib' in the New Year Honours of January 1942.

ACKNOWLEDGMENTS.

123. The Chief Engineer has pleasure in placing on record his great appreciation of the good work done by the whole staff of the department in an extremely difficult year.

Special thanks are again due to Sir Henry Howard, Consulting Engineer to Government, for his continued, ready and valuable advice on all matters referred to him.

As in the past the thanks of the department are due to the following for the assistance rendered by them :—

The Director-General of Stores, London, The Indian Stores Department, New Delhi and The Indian Posts and Telegraphs Department.

Thanks are also extended to the several contracting firms for their help in various ways.

MADRAS,
14th August 1942.

M. G. PLATTS,
Chief Engineer for Electricity.

Government of Madras

PUBLIC WORKS DEPARTMENT

(Electricity)

G.O. No. 3599, 3rd October 1942

Electricity Department—Administration Report for 1941-42—
Recorded.

READ—the following paper :—

From the Chief Engineer for Electricity, dated 11th/17th August 1942, No. 1192-G/42-18.

Order—No. 3599, P.W. (Electricity), dated 3rd October 1942.

Recorded.

2. The report contains as in previous years, a record of continued satisfactory progress of electrical development in the Presidency in spite of the restrictions and handicaps owing to war conditions. The Pykara and the Mettur Hydro-Electric systems and the Vizagapatam, Bezwada and Cocanada Thermal systems continued to work satisfactorily. The aggregate of demand under all the Government systems (inclusive of Papanasam which is under construction) during the year under review was 46,980 K.W. against 42,235 K.W. in 1940-41 and the total number of units generated 242.98 millions against 208.2 millions in the previous year. The net revenue realized from the Pykara system was Rs. 31.51 lakhs against Rs. 26.36 lakhs in 1940-41 and that from the Mettur system was Rs. 10.15 lakhs against Rs. 11.78 lakhs in 1940-41. The return on the capital outlay for these two systems during the year was 9.88 per cent and 4.5 per cent, respectively. This was the third year of operation for the Vizagapatam and Bezwada systems and the second year of operation for the Cocanada system. The number of units generated at the Vizagapatam, Bezwada and Cocanada stations was 3.1 millions, 8.87 millions and 0.94 million units, respectively. The net revenue of the three systems was Rs. 0.29 lakh, Rs. 1.66 lakhs and Rs. 0.015 lakh, yielding a return of 1.18 per cent, 6 per cent and 0.25 per cent, respectively.

3. Progress in the spread of electricity to rural parts is being maintained. Pykara power was extended to 22 villages and townships making a total of 250 up to end of March 1942. In the Mettur system the number of villages and towns electrified rose from 127 in 1940-41 to 143 in 1941-42. In the Pykara system, the total number of agricultural pump sets to which power was supplied was 2,366 with a connected load of 14,298 h.p. against 2,189 pump sets

with a connected load of 13,001 h.p. in 1940-41. In the Mettur system the number of pump sets installed rose from 400 sets with a connected load of 2,116 h.p. in 1940-41 to 656 with a connected load of 3,631 h.p. in 1941-42. In the Bezwada Thermal system 13 pump sets were connected to the system during the year bringing the total number of pumps to 88. The number of mills and other industries which were electrified in the areas served by the several systems to the end of 1940-41 was 64 against 58 at the end of the previous year.

4. This was the fourth year of construction of the Papanasam Hydro-Thermal scheme which was sanctioned in March 1938. Good progress was maintained in the construction of the Thambraparni Dam; and the diversion weir and the erection of the penstock and low pressure pipes were completed during the year.

5. Towards the end of the year, orders were issued by the Government of India restricting fresh supply and making it necessary for a number of electrical undertakings to obtain essentiality permits for giving fresh service connexions with a view to conserve the available stocks of electrical materials in the country for operation and maintenance purposes and for very important services. Restrictions were also imposed with a view to conserve and utilize electrical energy for essential purposes.

6. Two major schemes—viz., West Coast Extension and Madras Extension—work on which had already been begun were deferred owing to the War.

7. The Government are pleased to place on record their appreciation of the continued good work done by the department during the year.

(By order of His Excellency the Governor)

K. RAMUNNI MENON,
Secretary to Government.

To the Chief Engineer (Electricity).

- " Chief Electrical Inspector to Government.
- " Chief Engineer (Buildings and A.R.P.).
- " Chief Engineer (General and Irrigation).
- " Development Department.
- " Local Administration Department.
- " Education and Public Health Department.
- " Public (General) Department.
- " Librarian, Madras Legislature.
- " Secretary, Madras Public Service Commission (with C.L.).
- " Principal, Agricultural College, Coimbatore.
- " Inspector of Municipal Councils and Local Boards.
- " Statistical Officer under the Director of Industries and Commerce.
- " Accountant-General, Madras.
- " Principal, College of Engineering, Guindy.

