Costs were carried on the cost sheets under the headings of labor, material and sundries, for each item in the classification of detailed accounts. From the detailed sheets the costs were accumulated to plants, transmission lines, or divisions, then to departments for use in the monthly statement, and for prorating to divisions and classes of customers. By this method each item of expense, as well as the total department expense in each division, could be compared with the corresponding item in the budget. (See Figures 6 and 7 on this page.)

As has been stated, operating costs were divided into three general classes: labor, materials and sundries. The sundries class was used for all costs that could not be classified under either labor or materials; such items, for instance, as rent, traveling expenses, pole rentals, city inspection charges, salaries and expenses of superintendents, and like charges paid through voucher checks.

All time cards for employes were handled by the planning department. There the hourly rate, date, elapsed time, and charge symbol were entered, after which the time cards were sent to the cost department for extensions. The cards were then cut or punched for the tabulating machines, and accumulated until the end of the period. (For the time card, see Figue 4, page 93.)

At the end of the pay period the cards were sorted out by employe numbers through the sorting machine, then put through the tabulating machine to secure the total pay due to each employe. The total extensions were checked on a calculating machine by multiplying the hours worked by the hourly rate, then entered upon the payroll. Through this method the total distribution charges were sure to balance exactly with the payroll. The time cards were then resorted by charge symbols, tabulated, and posted to the cost ledger sheets. (See Figure 6 on this page.)

Stores issues were made out by the planning department, sent to the store room to be filled, then sent to the balance of stores clerk for extension, and then to the cost department to be cut, sorted by charge symbols and posted to the cost sheets at quarter monthly periods. (For Stores Issue, see Figure 3, page 93.)

Cards were cut for all payments made through voucher checks and the payments were posted to the sundries account at quarter monthly periods. The practice of posting charges at quarter monthly

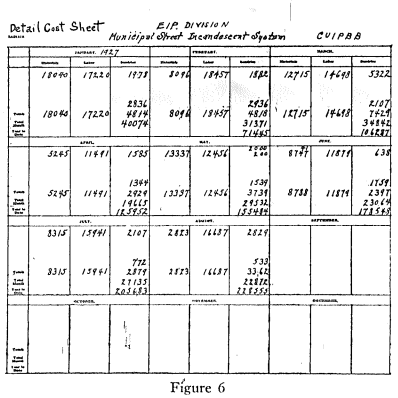
Detail Cost Sheet E/P DIVISION Municipal Street Incandescent System CUIPBB

Figure 6

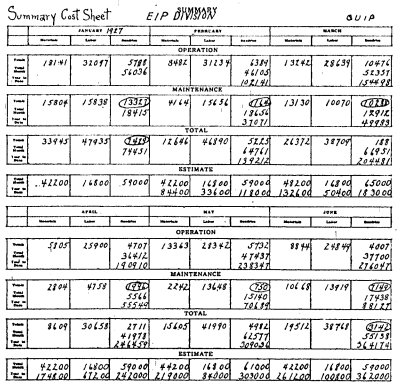
Summary Cost Sheet E/P DIVISION SUMMARY CUIP

Figure 7

periods permitted a close check to be made on the yearly estimates. Graphic charts were used for this purpose. The yearly estimates were plotted in black ink and the actual costs plotted four times each month in red ink. (See Figure 7 above.)

A chart was used for each charge symbol, total plant, line, district, division, and department. Taking the production department as an example, there was a chart for each detailed operating and maintenance symbol, total operating, total maintenance, total plant and total production department.

Production Costs

As the location for a central generating station is always selected for its economic value to the property as a whole, it is safe to assume the position that costs of current delivered to the substations of the various communities, that is, generating cost plus transmission line losses, should be the same. It is not fair to penalize a community because the location of the generating station is a distance from the community. Standby plants that are located and maintained purely for the protection of certain communities are a legitimate expense, and distribution losses from the substation to the customers' meters may be considered chargeable to class of customers due to the greater number of lighting customers compared with power customers.

In this set-up of expense we have charged the same price for current to all customers, inasmuch as the distribution losses should be worked out on a different scale for each individual property. And the tabulation as given shows the cost of current, including both the power plant costs and the transmission and distribution line losses between the power plant switch boards (bus bars) and the customers' meters.

The location of Division "EIP" on the map (see Figure 1, page 90) shows that it is served by the active plants "CPA" and "CPB," also by the standby plants "CPC" and "CPD." In other words, it must stand its proportion of the expense of these four plants, depending on the percentage of the current used from each plant.

The KWH generated and the cost for the month selected are shown on Table 1 below. As the main generating plants "CPA" and "CPB" were used to serve all customers irrespective of divisions, we have combined the cost of those two plants. "CPE" is a standby plant for the district and has no bearing on the generating costs of the "EIP" division.

The substation meters in the "P" district showed that there were metered into the "IP" division for the "EIP" customers 35.08 per cent of the output of plants "CPC" and "CPD," and 20.22 per cent of the combined output of the "CPA" and "CPB" stations. The division input and the cost of the same are shown by the tabulation on Table 2, page 96. The figures shown on Table 2 are the result of the consolidation of Tables 1A, 1B and 1C, pages 95 and 96. The complete allocation of the generating costs are shown on these three tables. In

TABLE 1

PRODUCTION COST AND OUTPUT

Plants	K.W.H. Output	Operating Cost	Maintenance Cost	Total Cost
CPC & D*	98,035	$2,551.21	$229.72	$2,780.93
CPE*	194,426	1,561.49	89.99	1,651.48
CPA	3,685,900			
CPB Water Power	279,595	30,692.18	1,306.45	31,998.63
CPB Steam	1,647,980			
Totals	5,905,936	$34,804.88	$1,626.16	$36,431.04

*Denotes standby plants.

TABLE 1A

STANDBY PLANTS CPC & CPD

Divisions	KWH Input	Per Cent Input	Cost
E1P	34,391	35.08	$975.55
E2P	2,078	3.12	86.77
E3P	510	.52	14.46
E4P	2,716	2.77	77.03
E5P	3,157	3.22	89.55
E1S	54,958	55.06	1,531.18
E2S	225	.23	6.39
Totals	98,035	100.00	$2,780.93

TABLE 1B

CPA AND B

Districts	KWH Input	Per Cent Input	Cost
E1P	1,002,784	20.22	$6,470.12
E2P	60,562	1.22	390.38
E3P	14,831	.30	96.00
E4P	79,294	1.60	511.98
E5P	91,918	1.85	591.98
E1S	1,602,597	32.31	10,338.75
E2S	6,885	.14	44.80
E1T	208,950	4.21	1,347.16
E2T	62,874	1.27	406.39
E3T	4,807	.10	32.00
E4T	8,959	.18	57.60
E5T	365,790	7.37	2,358.30
E1V	159,851	3.22	1,030.32
E2V	1,098,224	22.14	7,084.48
E3V	19,266	.38	121.60
E4V	15,754	.32	102.40
E5V	3,777	.08	25.60
E6V	1,785	.04	12.80
E7V	151,849	3.05	975.97
Total	4,960,757	100.00	$31,998.63