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## APPENDICES

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APPENDIX A.—SCHEDULES: CENTRAL ELECTRIC LIGHT AND POWER STATIONS  
AND STREET AND ELECTRIC RAILWAYS

APPENDIX B.—INSTRUCTIONS TO SPECIAL AGENTS

# APPENDIX A.

## SCHEDULES: CENTRAL ELECTRIC LIGHT AND POWER STATIONS AND STREET AND ELECTRIC RAILWAYS: 1912.

### CENSUS OF ELECTRIC LIGHT AND POWER STATIONS.

(All central electric light or power stations, including municipal stations, should be reported on this schedule. No report is required for isolated electric plants operated for the exclusive benefit of the owner in lighting or furnishing power for his factory, hotel, or other enterprise. *Isolated plants which incidentally sell current must be reported.*)

Name of company or plant.....  
 Location of plant: { State..... County.....  
 City or town..... Street and No.....  
 General office (give state, city, street, and number).....

(Light and power plants operated by the same corporation, firm, or individual, and located in different states, counties, cities, or towns, should be separately reported.)

#### AUTHORIZATION.

The act of Congress approved June 7, 1906, authorizes the Director of the Census to collect every fifth year statistics relating to the electric industries, including electric light and power stations and electric railways. The act approved July 2, 1909, directs that it shall be the duty of every owner, president, treasurer, secretary, director, or other officer or agent of any establishment or company covered by the census inquiry to furnish the information indicated by the schedules that have been prepared in conformity with these requirements.

The last census of electric light and power stations covered the year 1907, and this schedule has been prepared for the census of 1912. The statistics should relate to the calendar year ending December 31, 1912. Except in the case of number of employees, all questions that relate to a single date, such as cash on hand, number of lamps, etc., should be of the date of the last day of the year covered by the report.

The answers to inquiries in regard to financial matters will be held absolutely confidential; the separate reports will be combined so as to show totals for all companies in each state. The information will be used only for the statistical purposes for which it is given, and will not be disclosed to any individual, state or local authority, or other Bureau or Department of the Federal Government.

E. DANA DURAND,  
*Director of the Census.*

#### CERTIFICATE.

This is to certify that the information contained in this schedule is complete and correct to the best of my knowledge and belief, and it covers the period from ..... 19 , to ..... , 19 .

.....  
 (Signature and official designation of the person furnishing the information.)

.....  
 (Signature of special agent.)

.....  
 (Address of person furnishing the information.)

Each question should be answered; if not applicable, use word "None."

In case of electric light and power plants operated in connection with electric railways, a separate report for the electric light and power service should, if possible, be made on this schedule. If it is impossible to make complete separate reports for each, one combined report for railways and light and power plants may be made on the railway schedule.

If electric light and power plants are operated in connection with any business other than railways, and the accounts are not kept separate, careful estimates must be prepared for answers to all questions contained in this schedule. In these cases the items reported for income and expenses, balance sheet, and employees, salaries, and wages, must pertain only to the electric light and power plant department.

1. Character of organization: State the form of organization as it existed on the last day of the year covered by the report, whether individual, firm or partnership, incorporated company, municipal, or other form.....
2. If a controlling company, write on the last page of the schedule the names and addresses of subsidiary or leased companies for which report is included in this return.
3. If a subsidiary or leased company, give name and address of operating company or lessee.....
4. If the corporation or firm is engaged in any business or industry other than that of central station work for electric light and power, state the character of such business or industry, and whether conducted in the same or separate plants..

#### EQUIPMENT.

5. Number of lamps: Account for all lamps wired for service, including as commercial or private those used by company to light its own properties. If actual number is not known, give careful estimate.

	Number.			
	Total.	Street lighting.	Public buildings.	Commercial or private.
Arc lamps.....				
Incandescent lamps.....				
Other varieties (give name, such as Nernst, vacuum, vapor, etc.).....				

6. Miscellaneous statistics.	Number.
Number of stationary motors served (do not include small fan motors).....	
Total capacity in horsepower.....	
Recording meters on consumption circuits.....	
Total number of customers furnished electric current during the year.....	

7. Power-plant equipment: Include all generating units in all the plants covered by the report, and give the total horsepower for all included in each group.

Generating power plant.	Total.	500 H. P. or under.	Over 500 H. P. and under 2,000 H. P.	2,000 H. P. and under 5,000 H. P.	5,000 H. P. and over.
Steam engines (not turbines), number.....					
Total capacity in horsepower.....					
Steam turbines, number.....					
Total capacity in horsepower.....					
Gas and oil engines, number.....					
Total capacity in horsepower.....					
Water wheels and turbines, number.....					
Total capacity in horsepower.....					

8. Electrical generators: Give the total number of each of the three kinds of dynamos, and the total rated capacity in kilowatts of all machines of each class.

	Number.	Total rated capacity in kilowatts.
Dynamos:		
Direct current, constant voltage.....		
Direct current, constant amperage.....		
Alternating and polyphase current.....		

9. Output of station: The output must be obtained from the load voltage and amperage, or from the actual watt or kilowatt reading of dynamo meters.

Total kilowatt-hours generated for year.....  
Total kilowatt-hours purchased during year.....

10. Substation equipment: Include equipment in main power plant, as well as that in separate substations. Give total number of each class of machines and total rated capacity in kilowatts for all machines of each class.

	Number.	Total rated capacity in kilowatts.
Rotary converters and motor generator sets.....		
Boosters.....		
Storage battery cells.....		
Transformers.....		
Auxiliary generators.....		
Miscellaneous machines (state kind).....		

FINANCIAL STATISTICS.

11. Revenue and income account: Give actual amounts carried on income account statement. This may include income and expenses properly belonging in but not actually received or paid during the year, and therefore need not agree with a cash statement. If accounts do not show the income for each class of service indicated, give a carefully estimated segregation, and state that it is an estimate. Do not include the value of electricity furnished free of charge to municipal or other government, or of current consumed by lamps and motors on the company's properties. The estimated value of the free service should be given only in answer to Inquiry 12. The inquiry is not intended to cover commercial transactions in electric supplies, but where the company incidentally sells supplies to its customers the profits on the merchandise sales should be included. Account for all expenses incident to the operation and maintenance during the year covered by the report. Salaries and wages must be included, and also shown as a separate item in answer to Inquiry 13.

REVENUE.

Electric service:

Commercial or private light, power, and heat.....	\$.....
Municipal street lighting, both arc and incandescent.....	.....
Municipal building lighting.....	.....
Sale of electric current to other public service corporations.....	.....
Interest and dividends from investments.....	.....
All other income, including rents and profits on merchandise sales.....	.....
Total.....	\$.....

EXPENSES.

Supplies and materials used for ordinary repairs or replacement, and salaries and wages (as shown in answer to Inquiry 13).....	\$.....
Fuel.....	.....
Electric current and power purchased.....	.....
Rent of offices, stations, line-wire supports, conduits, underground and water privileges.....	.....
All other expenses incident to operation and maintenance, such as advertising, law expenses, telegraph and telephone service, power other than electric, ordinary repairs of buildings, machinery, and and lines, and miscellaneous items.....	.....
Taxes:	
Real and personal property.....	.....
Capital stock.....	.....
Federal corporation tax.....	.....
Earnings.....	.....
Miscellaneous (specify items).....	.....
Interest on funded and floating debt and mortgages.....	.....
Injuries and damages, and legal expenses incident thereto.....	.....
Insurance.....	.....
Charges for depreciation, if any.....	.....
Charges for sinking fund, if any (if charged against income).....	.....
Total.....	\$.....
Dividends declared during the year	
{ On common stock.....	.....
{ On preferred stock.....	.....

12. Free service: Give the estimated value of current supplied free to municipalities or other government by either commercial or municipal plants. The estimate must be based upon the prevailing commercial rates. Do not include these amounts in the answer to Inquiry 11.

If the report is for a commercial company, give the estimated value of free service furnished municipal or other government..... \$.....  
If the report is for a municipal plant, give the amount of estimated income represented by current consumed in lighting streets, parks, public buildings, etc., for which no income is received.....

13. Employees, salaries, and wages: The salaries and wages reported here should be the total amount paid during the year, and should also be included in the amount reported for the first item of expense under Inquiry 11. Account for all regular officers and employees, whether engaged on maintenance, operation, canvassing, collecting, or otherwise. General superintendents or other heads of departments, if considered as salaried officers of corporations, may be reported as such. Do not include employees engaged exclusively on additions or extensions. Overseers and foremen performing work similar to men over whom they have charge must be included with wage earners. Those whose duties are wholly supervisory should be reported as salaried employees. If possible, give number employed on September 16, 1912, as per pay roll. If data are not available for that day or month, give the data for nearest representative or normal day, and state day and month here.....

	Number Sept. 16, 1912.	Salaries and wages for year.
Salaried employees:		
Salaried officers of corporations.....		\$.....
Superintendents and managers.....		.....
Clerks, stenographers, and other salaried employees.....		.....
Total for salaried employees.....		\$.....
Wage earners (do not include salaried employees reported above).....		.....

14. Balance sheet.

Assets.		Liabilities.	
Kind.	Amount.	Kind.	Amount.
Cost of construction, equipment, and real estate.....	\$.....	Capital stock { Common .. \$.....	.....
Stocks and bonds of other electric companies.....	.....	{ Preferred .. .. .	.....
Stocks and bonds of companies other than electric companies.....	.....	Funded debt.....	.....
Treasury securities: { Stock.....	.....	Cash investment (for unincorporated companies).....	.....
{ Bonds.....	.....	Real estate mortgages.....	.....
Other permanent investments (specify).....	.....	Floating debt (loans and notes).....	.....
Cash and current assets, including supplies.....	.....	Reserves.....	.....
Stock and bond discount.....	.....	Accounts payable.....	.....
Sinking and other special funds.....	.....	Interest and taxes due and accrued.....	.....
Sundries (specify principal items).....	.....	Dividends due.....	.....
Profit and loss deficit.....	.....	Sundries (specify principal items).....	.....
Total.....	\$.....	Profit and loss surplus.....	.....
		Total.....	\$.....

CENSUS OF STREET AND ELECTRIC RAILWAYS.

OPERATING COMPANIES.

(All electric railways and all street railroads, irrespective of kind of motive power, should be reported on this schedule. Nonoperating and lessor railway companies should be reported on schedule.)

Name of company.....  
 State in which operated..... Post office of general office.....  
 Post office of local operating office.....

AUTHORIZATION.

The act of Congress approved June 7, 1906, authorizes the Director of the Census to collect every fifth year statistics relating to the electric industries, including electric railways and electric light and power stations. The act approved July 2, 1909, directs that it shall be the duty of every owner, president, treasurer, secretary, director, or other officer or agent of any establishment or company covered by the census inquiry, to furnish the information indicated by the schedules that have been prepared in conformity with these requirements.

The last census of electric railways covered the year 1907, and this schedule has been prepared for the census of 1912. The statistics should relate to the calendar year ending December 31, 1912. Except in the case of number of employees, all questions that relate to a single date, such as mileage of track, cash on hand, etc., should be of the date of the last day of the year covered by the report.

The answers to inquiries in regard to financial matters will be held absolutely confidential; the separate reports will be combined so as to show totals for all companies in each state. The information will be used only for the statistical purposes for which it is given, and will not be disclosed to any individual, state or local authority, or other bureau or department of the Federal Government.

E. DANA DURAND,  
 Director of the Census.

CERTIFICATE.

This is to certify that the information contained in this schedule is complete and correct to the best of my knowledge and belief, and it covers the period from ....., 19., to ....., 19..

(Signature and official designation of the person furnishing the information.)

(Signature of specialent.)

(Address of person furnishing the information.)

Each question should be answered; if not applicable, use word "None." In case of electric light and power plants operated in connection with electric railways, a separate report for the electric light and power service should, if possible, be made on schedule Form B 3-450. If it is impossible to make complete separate reports for each, one combined report for railways and light and power plants may be made on this schedule, showing the number of lamps, income, etc., of the light and power plants as called for by inquiries 17 to 19.

- Write on the last page of the schedule the names of all companies reorganized, consolidated, or merged into the reporting company since December 31, 1907.
- If a controlling company, write on the last page of the schedule the names and addresses of subsidiary or leased companies for which operating report is included in this return. (If a nonoperating and lessor company, separate report must be made on schedule Form A 3-449.)
- If a subsidiary or leased company, give name and address of operating company or lessee.
- Is electric current generated for sale for light or power?..... If so, is there a separate power plant or line construction?..... Are data for electric light and power plant included in this report, or is separate report made for same?

PLANT.

- Track: For "Leased" give the track leased for the sole use of the reporting company; for "Trackage rights or contract" give the track used jointly with other companies under such arrangement. (The totals reported for the different sections must agree with each account for the total track operated.) If track is owned jointly and other companies, make a note of the fact and give the names of the companies and the miles of track owned in this manner.

	Owned.		Leased.		Operated under trackage rights or contract.		Total operated (in miles and decimals of a mile).
	From electric companies.	From steam companies.	From electric companies.	From steam companies.	From electric companies.	From steam companies.	
Length of road (first main track).....							
Length of second and other main track (including third and fourth).....							
Total length of main track.....							
Length of sidings and turnouts, including car houses, storage yards, etc.....							
Total length of all tracks.....							[A]

5. Track—Continued.

Classification of track: In order to eliminate duplications in the statistics trackage of each kind operated under trackage rights, if any, should be stated in the column provided; such trackage being also included with the total operated.	Trackage, if any, operated under trackage rights.	Total miles of track operated.	Total miles of track operated.
Overhead trolley.....			City and suburban lines.....
Conduit trolley.....			Interurban lines (the total for city and suburban and interurban lines should agree with the total track [A] above).....
Third rail.....			
Cable.....			
Steam.....			On private right of way owned or leased by reporting company.....
Animal.....			On private right of way not owned or leased by reporting company, including that operated under trackage rights or contract.....
Self-propelled cars.....			
Other (state kind).....			
Total (should agree with total track [A] above).....			Elevated.....
			In subways and tunnels.....

- If track extends into more than one state, give the number of miles of track in each state: The total operated as reported (item marked [A]) should be segregated by states.....

- Cars: Account for all cars operated, ready for operation, or being repaired. Cars reported as "Express, freight, mail, and baggage cars" must be devoted solely to one or more of these specified uses. Parlor, sleeping, dining, and private cars should be included as passenger cars.

Class.	Number.
Passenger cars:	
Closed.....	
Open.....	
Combination (closed and open).....	
Combination (passenger, with baggage, express, freight, or mail).....	
Total passenger cars.....	
Prepayment (all cars of this type should be included above but here shown separately).....	
Parlor, sleeping, dining, private, etc. (should be included above as passenger cars but here shown separately).....	
Other cars:	
Express, freight, mail, and baggage.....	
Miscellaneous (work cars, snow plows, sweepers, etc.).....	
Electric locomotives.....	
Total other cars.....	
Kind of brakes (if the total of these two items does not account for all cars, the discrepancy should be explained):	
Cars equipped with hand brakes exclusively.....	
Cars equipped with other types of brakes including air brakes.....	
Cars equipped with one motor.....; two motors.....; three motors.....; four motors.....	



14. Operating expenses.

Account.	Amount.
<b>Way and structures:</b>	
1. Superintendence of way and structures.....	\$.....
2-19. Maintenance of way.....	
20-24. Maintenance of electric lines.....	
25. Buildings and structures.....	
26. Depreciation of way and structures.....	
27, 28. Other operations—Dr. or Cr. (For adjustment with lighting plant or other department if separate accounts are kept).....	
Total, way and structures.....	
<b>Equipment:</b>	
29. Superintendence of equipment.....	
30, 31. Maintenance of power equipment.....	
32-35. Maintenance of cars and locomotives.....	
36, 37. Maintenance of electric equipment of cars and locomotives.....	
38-41. Miscellaneous equipment expenses.....	
42. Depreciation of equipment.....	
43, 44. Other operations—Dr. or Cr. (For adjustment with lighting plant or other department if separate accounts are kept).....	
Total, equipment.....	
<b>Traffic:</b>	
45-47. Traffic expenses.....	
<b>Conducting transportation:</b>	
48. Superintendence of transportation.....	
GROUP I—POWER.	
49. Power-plant employees.....	
50. Substation employees.....	
51. Fuel for power.....	
52-55. Other power supplies and expenses.....	
56. Power purchased.....	
57. Power exchanged—Balance.....	
58, 59. Other operations—Dr. or Cr. (For adjustment with lighting plant or other department if separate accounts are kept).....	
GROUP II—OPERATION OF CARS.	
60, 61. Conductors, motormen, and trainmen.....	
62-72. Miscellaneous transportation expenses.....	
Total, conducting transportation.....	
<b>General and miscellaneous:</b>	
73-79. General expenses.....	
80, 81. Other operations—Dr or Cr. (For adjustment with lighting plant or other department if separate accounts are kept).....	
82. Injuries and damages.....	
83. Insurance.....	
84. Stationery and printing.....	
85, 86. Store and stable expenses.....	
87. Rent of tracks and terminals.....	
88. Rent of equipment.....	
Total, general and miscellaneous.....	
<b>Recapitulation of expenses:</b>	
Way and structures.....	
Equipment.....	
Traffic.....	
Conducting transportation.....	
General and miscellaneous.....	
Total operating expenses.....	\$.....

15. Balance sheet.

Assets.		Liabilities.	
Kind.	Amount.	Kind.	Amount.
Cost of construction, equipment, and real estate.....	\$.....	Capital stock {Common.....	\$.....
Stocks and bonds of other electric railway companies.....		Preferred.....	
Stocks and bonds of companies other than electric railways.....		Funded debt.....	
Treasury securities {Stock.....		Real estate mortgages.....	
Bonds.....		Floating debt (loans and notes).....	
Other permanent investments (specify).....		Reserves.....	
Cash and current assets, including supplies.....		Accounts payable.....	
Stock and bond discount.....		Interest and taxes due and accrued.....	
Sinking and other special funds.....		Dividends due.....	
Sundries (specify principal items).....		Sundries (specify principal items).....	
Profit and loss deficit.....		Profit and loss surplus.....	
Total.....	\$.....	Total.....	\$.....

16. Employees, salaries, and wages: The salaries and wages reported here should be the total amount paid during the year and should also be included in the amounts reported for the different items under Inquiry 14. Account for all regular officers and employees, whether engaged on maintenance, operation, canvassing, collecting, or otherwise. Salaried officers of corporations should include president, vice presidents, secretary, assistant secretaries, treasurer, assistant treasurers, general auditor, assistant general auditors, auditors, assistant auditors, counsel, and similar officials. Managers and superintendents should include general managers, assistant general managers, managers, general superintendents, assistant general superintendents, superintendents, assistant superintendents, superintendents of maintenance of way, superintendents of construction, and similar employees. Clerks and stenographers and other salaried employees should include clerks, stenographers, civil engineers, electrical engineers, mechanical engineers, purchasing agents, cashiers, claim agents, dispatchers, starters, inspectors, master mechanics, and similar employees. Do not include employees engaged exclusively on additions or extensions. Overseers and foremen performing work similar to men over whom they have charge must be included with wage earners. Those whose duties are wholly supervisory should be reported as salaried employees. If possible, give number employed on Sept. 16, 1912, as per pay roll. If data are not available for that day or month, give the data for nearest representative or normal day, and state day and month here.....

	Number Sept. 16, 1912.	Salaries and wages for year.
<b>Salaried employees:</b>		
Salaried officers of corporation.....		\$.....
Managers and superintendents.....		
Clerks, stenographers, and other salaried employees.....		
Total.....		\$.....
<b>Wage earners:</b>		
Conductors.....		
Motormen.....		
All other employees.....		
Total.....		\$.....

Additional questions for electric railways which operate separate electric light and power plants. The following questions should be answered if there is a separate power plant or line construction for which a complete separate report can not be prepared as provided for by instructions at top of page 2.

CENTRAL ELECTRIC STATIONS AND STREET RAILWAYS.

17. Number of lamps: Account for all lamps wired for service, including as commercial or private those used by company to light its own properties. If actual number is not known, give careful estimate.

	Number.			
	Total.	Street lighting.	Public buildings.	Commercial or private.
Arc lamps .....				
Incandescent lamps .....				
Other varieties (give name, such as Nernst, vacuum, vapor, etc.) .....				

18. Income: Give total income from electric light and power department. The income reported here should also be included under Inquiry 13, "Revenue and income account."

Income—Continued.

	Amount.
Electric service:	
Commercial or private light, power, and heat .....	\$.....
Municipal street lighting, both arc and incandescent .....	
Municipal building lighting .....	
Sale of electric current to other public service corporations .....	
Profit on merchandise sales .....	
Income from other sources for this department .....	
Total .....	\$.....

19. If free electric service is furnished municipality or other government, give estimate of total amount that would have been received for the same, based upon the prevailing commercial rates..... \$.....

NONOPERATING AND LESSOR COMPANIES.

(Nonoperating and lessor electric railway companies should be reported on this schedule. This class includes all companies that have leased their properties to other companies for a given period at a definite rental, or under an agreement for the payment of the interest on the bonds and fixed dividends on the stock of the lessor company, or under some other arrangement that relieves the lessor of the supervision of operation. The operating companies should be reported on schedule Form A4-451. If properties are leased to two or more operating companies, separate reports should be made on this schedule for each.)

Name of company .....

State in which operated..... Post office of general office.....

Name and address of operating company .....

AUTHORIZATION.

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The last census of electric railways covered the year 1907, and this schedule has been prepared for the census of 1912. The statistics should relate to the calendar year ending December 31, 1912. All questions that relate to a single date, such as cash on hand, should be of the date of the last day of the year covered by the report.

The answers to the inquiries will be held absolutely confidential; the separate reports will be combined so as to show totals for all companies in each state. The information will be used only for the statistical purposes for which it is given, and will not be disclosed to any individual, state, or local authority, or other bureau or department of the Federal Government.

E. DANA DURAND,  
Director of the Census.

CERTIFICATE.

This is to certify that the information contained in this schedule is complete and correct to the best of my knowledge and belief, and it covers the period from ....., 19, to ....., 19.

(Signature and official designation of the person furnishing the information.)

(Signature of special agent.)

(Address of person furnishing the information.)

Each question should be answered; if not applicable, use word "None."

1. Track.

	Total miles of track.
Length of road (first main track) .....	
Length of second and other main tracks (including third and fourth) .....	
Total length of main track .....	
Length of sidings and turnouts, including car houses, storage yards, etc. ....	
Total length of all track .....	

2. Income account: Give actual amounts carried on income account statement of company. This may include income and expenses properly belonging in, but not actually received or paid during, the year, and therefore need not agree with a cash statement.

Income:		
Rentals from operating companies .....	\$.....	
Miscellaneous income (specify principal items) .....		
Gross income .....		\$.....
Deductions from income:		
Interest on funded debt .....		
Miscellaneous deductions (maintenance of organization, etc.) .....		
Net income .....		\$.....
Dividends .....		
Surplus .....		

3. Balance sheet.

Assets.		Liabilities.	
Kind.	Amount.	Kind.	Amount.
Cost of construction, equipment, and real estate .....	\$.....	Capital stock {Common.....	\$.....
Stocks and bonds of other electric railway companies .....		{Preferred.....	
Stocks and bonds of companies other than electric railways .....		Funded debt .....	
Treasury securities {Stock .....		Real estate mortgages .....	
{Bonds .....		Floating debt (loans and notes) .....	
Other permanent investments (specify) .....		Reserves .....	
Cash and current assets, including supplies .....		Accounts payable .....	
Stock and bond discount .....		Interest and taxes due and accrued .....	
Sinking and other special funds .....		Dividends due .....	
Sundries (specify principal items) .....		Sundries (specify principal items) .....	
Profit and loss deficit .....		Profit and loss surplus .....	
Total .....	\$.....	Total .....	\$.....

## APPENDIX B.

### INSTRUCTIONS TO SPECIAL AGENTS.

#### LISTS AND CANVASS OF ESTABLISHMENTS.

*Unlisted establishments.*—Although the list of establishments furnished special agents has been made as complete as possible, it has not been practicable to secure absolute accuracy and completeness, and *special agents must be constantly on the alert to discover plants not named on the list. They will be held strictly accountable for a complete canvass of the district to which they are assigned.* They must make careful inquiry for other plants located in that vicinity.

The agents must account for all of the names on the list. A return must be secured for each establishment not already disposed of by mail or a satisfactory explanation given on the daily report. This explanation must be such as "Out of business, no successor," "Isolated plant, no current sold," or "Only — per cent sold." The explanation given on the daily report must be full and complete, leaving no doubt as to the conditions. The number of the establishment on the typewritten list must in all cases be written in the upper right-hand corner of the schedule and on the left-hand margin of the daily report.

*Change in name of establishment.*—If a change has been made in the name or location of the plant since the list was prepared, or if a report is secured for an establishment under a different name from that appearing on the list, the list must be changed to agree with the new conditions and this change must be stated on the daily report.

*Idle plants.*—All plants that commenced operations or did any work during the census year ending December 31, 1912, must be reported, although they may not have been in operation at the end of the year 1912. Reports are not required for plants which were closed or idle during the whole of the year. The circumstances, however, should be explained in the daily report of the agent.

*Central offices.*—A large number of properties are controlled from offices located elsewhere than at the plants. When known, central offices of this character and the names of the plants for which reports will be prepared at the central office are indicated on the lists. Agents canvassing the districts in which central offices are located must in every instance call at these offices for reports before canvassing the other plants. A return must be secured for every plant noted on the central office list. A large number of controlling companies have advised the office that reports for certain properties will be prepared at their office. The names of these properties will appear on the agent's list, but with a notation "See central office," or "Report will be secured at ———." Agents must not secure reports for these plants unless the central office is within their district, and then from the business office. If in the city the agent should call at such plants and explain that a census of electrical industries is being taken, also that it is understood the report is being prepared at the central office of the company. He should also leave blank schedules, explaining the requirements of the census, so that the local officials will know just what information is required if the central office requests them to furnish data for the reports. All of such visits should be noted on the agent's daily report.

If a plant is owned by a company whose business office is in another locality outside the territory assigned the agent and a portion of the information must be obtained from such office, the agent should complete the schedule so far as possible from the data obtainable at the plant and forward it to the Census Bureau with a full statement of the facts, giving also the names and addresses of the

persons from whom further information can be obtained. The agent must, however, exhaust every reasonable means to complete the report before sending it in to the Census Bureau.

*Annual reports.*—In all cases where an annual report of the company is printed, a copy of the latest report should be secured and forwarded with the schedule. Copies should also be returned of the latest report of the directors or officers of the company, or other printed matter that would add to the information contained in the schedule.

*Correction of reports.*—An agent should not return to a city already canvassed to secure information for a report returned to him for correction unless especially advised to do so. It is believed that the agent will be able in most cases to supply the information from his knowledge of the conditions. If he can not do so, he should return the schedule to the Census Bureau with such explanation for his error or neglect as he may be able to make. To obviate the necessity of returning schedules for additional information, the agent must be careful to secure *complete* reports for all plants not already disposed of on his list before leaving a city.

#### METHOD OF SECURING SCHEDULES.

*Reports secured by mail.*—Schedules were mailed to all companies, and if a report has been thus received, the name on the agent's list will be marked "Schedule received." If the mail report is unsatisfactory, that fact will be indicated on the list and the original schedule furnished the agent to complete. These schedules must be completed or corrected, signed, and returned by the agent. If it is found advisable to prepare a new report in place of the original, such report must be marked "Corrected report" on the title-page, and the original marked "Void" and returned with the new report. Otherwise the agent will still be charged with the original schedule.

*Promptness of agents.*—In many cases the schedule mailed to the company to be made out and sent back to the office will not have been returned to the bureau and may not be ready when the agent arrives. In that event he should proceed to get the information immediately. If the agent has not been advised that the office is in receipt of any report, whether or not on his list, he must secure the same, although the company may claim that the schedule has been furnished.

#### TITLE OF SCHEDULES.

The electrical industries covered by the census of 1912 will be reported on the following schedules:

- Electric railways.
- Nonoperating and lessor electric railways.
- Electric light and power stations.
- Telephones (large commercial systems).
- Telephone (short schedule for independent farmer or rural lines and small commercial systems).
- Municipal electric fire-alarm and police-patrol signaling systems.
- Telegraphs.

The reports for commercial telegraph companies will be collected wholly by correspondence. Reports for the industries covered by the other six schedules will be secured by the field force, and also by correspondence.

## PREPARATION OF THE SCHEDULES.

*Answers to inquiries to be taken from books of accounts and records.*—The information secured must be accurate. In drafting the schedule every effort has been made to frame the inquiries in such a form that the answers to them can generally be taken directly from the books of accounts and records. The agent may find a disposition on the part of persons furnishing the information to give general statements or estimates, claiming that they approximate very closely the exact figures. In no case should these general statements or estimates be accepted where it is possible to secure the answers directly from the books of accounts and records. If the accounts cover two or more of the items enumerated for any of the inquiries, the total should be equitably apportioned for the reply to each subinquiry. In all cases where the answers are estimated the amounts must be preceded by the word "Estimate."

All answers must be made clearly and neatly in ink. Each question is to be answered. If any question is found not applicable and no amounts are reported, write the word "None."

Some of the inquiries require no explanation, but the following instructions, in addition to those on the schedules, should be followed by the agents in preparing all reports:

*The title-page.*—Page 1 must contain the name and location of the company, the address of the general office, and the signature, address, and official designation of the person furnishing the information. *Place the office number of the report in the upper right-hand corner.* If the address of the general or business office is at a different place from that of the plant, care must be taken to give both.

The period covered, where possible, should be that of the year ending December 31, 1912. Where, however, the business year of the establishment does not correspond to the calendar year, the data may be secured for such completed business year as corresponds most nearly to the calendar year 1912. The reports for plants that were in operation only a portion of the census year will be tabulated separately; therefore it is essential to give on the title-page the exact period covered by each report.

## ELECTRIC RAILWAYS.

The schedule is prepared primarily for railways operated by electricity, as the greater number of street railways, including the most important, have adopted this form of motive power. All classes of street railways, whether operated in whole or in part by electricity, cable, animal, steam, or other motive power, and also interurban railways, must be reported on this form.

*Reports to state officials.*—In a number of states the electric railways make reports to state railroad commissioners or other state officials. In a few states arrangements will be made to copy the data contained in such reports. For such states special instructions will be given the special agents.

*Combined reports for two or more systems.*—In a number of instances independent street railway companies have recently been combined under one *ownership*. In such cases one report may be made for the operations of the entire system, but if the system of accounting will permit of the preparation of separate schedules a separate report should be secured for each of the constituent companies. In preparing separate reports for subsidiary companies the name and address of the controlling company must be given in answer to Inquiry 3. (See also instructions for "Separate reports for nonoperating and lessor electric railway companies," p. 432.)

*Combined reports for railways and light and power plants.*—A number of street railway companies generate electricity for sale to other roads, or for light, power, or other purposes. In such cases either a combined report or separate reports should be prepared, as provided for by the instructions at the top of page 2 and preceding Inquiry 17 of the schedule. Although separate reports are preferred, these should not be secured unless they can be made *complete*, with no cross references. If this can not be done, a combined report should be prepared on the railway schedule.

The first four inquiries must be answered, and special attention is called to Inquiry 4. The answer to this inquiry must show how the two industries, when carried on by the same company, have been reported.

## INQUIRY 5.—TRACK.

The track reported in answer to the two sections of this inquiry must be given in miles and decimals of a mile carried to two places. The total miles reported for answer to the first section must cover the total track. "Single track" means one set of rails in any thoroughfare. "Second track" means another pair of rails running alongside the first, so that cars can pass each other in opposite directions. Even in some of the largest cities there will be but one track in one street, the return route running parallel on another street near by.

Be careful not to report as "operated under trackage rights or contract" any portion of the track operated under a lease and included in the column "Leased." The ownership (name and address of company) of leased track should be noted on the margin of the schedule.

The second section of the inquiry is divided into three parts. Each of the first two parts should account for the total miles of single track operated as reported in answer to the first section.

The miles of track reported in answer to the inquiries "City and suburban lines" and "Interurban lines" will depend upon the understanding of each company concerning the character of the road and territory served. These two items must account for the total miles of single track operated.

The answer to the last four inquiries cover only a portion of the track, as indicated by the following questions and instructions:

*Track on private right of way owned or leased by reporting company.*—Give the length in single-track miles of all tracks laid on ground owned by railway companies.

*Track on private right of way not owned or leased by reporting company, including that operated under trackage rights of contracts.*—Give length in single-track miles of all tracks laid on ground owned by individuals, firms, or corporations, other than railway companies. This must not include tracks laid on streets or public thoroughfares.

## INQUIRY 6.—TRACK, BY STATES.

The statistics for miles of track must be shown by states; therefore when a company operates in more than one state the entire length of the road, including leased lines, must be segregated so as to show the number of single-track miles in each state. If track is operated under trackage rights or contract, the length so operated must be reported separately by states.

## INQUIRY 7.—CARS.

The answers must account for all cars operated, ready for operation, or being repaired. Some cars may serve for more purposes than one, but they must not be counted twice. The total must be the actual number. Passenger cars used also for express, baggage, freight, or mail business must be reported as "Combination cars (passenger, with baggage, express, freight, or mail)." The cars reported as "Express, freight, mail, and baggage" cars must be devoted solely and specifically to one or more of these several uses. Snowplows and sweepers are often a composite vehicle, and in such cases must be counted only once, and with sprinklers should be reported under "Miscellaneous."

## INQUIRIES 8 AND 9.—POWER-PLANT EQUIPMENT AND ELECTRICAL GENERATORS.

The capacity of the engines and water wheels and of the dynamos is closely related. The engines and water wheels, as a rule, have an excess capacity over that of the dynamos.

The answer to Inquiry 8 must show the total number and indicated horsepower of each of the four classes of machines distributed by the four classes specified. The horsepower given must in every instance be the total for all the machines reported for each

class shown. If the company operates more than one contributing power plant, include the total for all.

The answer to Inquiry 9 must show the total number and kilowatt capacity of each of the three classes of dynamos. The kilowatt capacity given must in every instance be the total for all machines reported for each class shown.

#### INQUIRY 10.—OUTPUT OF STATION AND CURRENT PURCHASED.

This is an inquiry in regard to which some roads may have no data, although with many of them it is a matter of careful scientific accounting. In every case the volts multiplied by the amperes will give the number of watts. A kilowatt is 1,000 watts.

There are 746 watts in the old familiar horsepower, so that a kilowatt is, roughly,  $1\frac{1}{2}$  horsepower. Watt hours are the product of watts multiplied by the number of hours during which the current is in use. Thus a power house with a dynamo delivering current to the line of 1,000 amperes at 550 volts pressure is generating 550,000 watts, or 550 kilowatts. If these 550,000 watts are furnished, on an average, 20 hours daily, we get 11,000,000 watt hours, or 11,000 kilowatt hours. The total for the year can be arrived at from the daily totals.

#### INQUIRY 11.—SUBSTATION EQUIPMENT.

Substation equipment is particularly a feature of long-distance rural electric-railway work. Such equipment is, however, frequently included in the main power plant. The total number and total kilowatt capacity for all machines in the main power plant and in all separate substations operated by the company must be reported for each of the five classes of machines specified, and also the total number and capacity for all other miscellaneous machines of this general class. Storage batteries are used, either in the main power plants or in the substations, to help maintain a steady supply of current at the right pressure, and "boosters" are dynamos assisting to the same end.

The feature of substation equipment is that, as a rule, it does not generate current, but receives it, manipulates it, stores it, and lowers the pressure or changes the form for local consumption.

#### INQUIRY 12.—TRAFFIC AND MILEAGE.

*Transfer passengers carried.*—Many street railway voluntarily, or when required by law, give free transfers to passengers paying one fare and desiring to ride over more than one line. These transfers are generally issued in the shape of tickets at junction transfer points, or sometimes the passenger steps from one car to the other, without such a ticket, under the eye of the transfer agent, and in this manner a continuous ride can be made over more than one road for the one fare. Careful count or estimate of transfers is made by all the roads granting them. Transfers for which an extra charge is made should be counted as revenue passengers.

*Free passengers carried.*—All free passengers carried should be reported here. This includes employees of the company and local government and other persons riding on passes. If there is no record, give a careful estimate, as indicated by the inquiry.

*Car mileage.*—It is an ordinary practice for street railways to keep an account of this mileage. Where it is not known, the car mileage can be estimated fairly well by ascertaining the number of round trips daily on each line or branch of the system and multiplying this by the length of the respective trips. The daily average should be multiplied by the number of days the road was in operation during the year to obtain the total for the period covered by the report. The number of miles that cars run per day depends upon the location of the road, roads in rural districts making faster time than those in cities.

The use of "trailers" is a source of confusion in computing the car mileage. As a rule the individual car should be considered as the unit in computing the car mileage; but when it is the practice of the company to consider the motor car and the trailer as one car in making the computation, the company's figures should be accepted. Train mileage based on three or more cars should not be accepted for car mileage.

The ratio of the number of fare passengers to the number of car miles run has a very important bearing upon the prosperity of the street railway business. For the country as a whole the average number of fare passengers per car mile in 1907 was 4.70. The cars were run, therefore, on an average, a little more than one-fifth of a mile for each fare collected. An extreme variation from this average should be questioned, and if correct, fully explained on the last page of the schedule.

In many cases the car mileage of express, freight, mail, and work-car service will be a matter of estimate and should include mileage of steam or electric locomotives.

The other inquiry, "car hours," is a comparatively new method of accounting for car operation and is employed by a large number of roads.

The car hour represents the time the cars are out of the barns in service, and includes all time they are held by blockades or other causes. It is based upon the principle that but little of the operating expense can be stopped or even checked when a day has started, and that if most of the cars are blocked the expense in large degree will be continued even though the earnings may wholly cease.

The revenue passengers per mile of track, car mile, and car hour must be computed and submitted to the person furnishing the data to see that they harmonize with the same computations that have been made for the use of the company in its financial reports.

*Fare charged per passenger within city limits.*—The object of this inquiry is to obtain a statement of the fare charged for a continuous ride within the city limits of each city in which the company operates, and the variations in this fare. In some instances lower fares are charged for school children or during the rush hours of morning and evening, and tickets are sold at a slight reduction from the single-fare rate. All of these facts must be clearly stated, together with the actual amounts paid for the continuous ride in each case.

Inquiries 13, 14, and 15 conform with the system of accounting adopted by the Interstate Commerce Commission, and the marginal numbers correspond with the numbers given in the official classification.

#### INQUIRY 13.—REVENUE AND INCOME ACCOUNT.

Give the actual amounts carried on the revenue and income account statement of the company. This may in some cases include bookkeeping items of income and expenses for the year, and therefore need not in every instance agree with an actual cash statement for the year.

*Passenger revenue.*—Include cash fares, sale of tickets and commutation books, and all sources of income from passengers.

*Parlor, chair, and special car revenue.*—It is a practice of many street railways to hire out cars for special travel purposes. These are usually known as "special" cars, a definition which includes theater cars, funeral cars, or other cars furnished for private use under special arrangement. For all work of this class it is the custom to make a special and separate rate, and the roads doing this business should have no difficulty in giving the income from it. Parlor-car and chair-car revenue should include the revenue from extra accommodations in cars of special types.

*Freight, mail, express, baggage, and milk revenue.*—Some electric interurban roads carry large quantities of freight and express matter. If it is impossible to ascertain the exact amount of each class of income, obtain the total for all items combined and prepare a careful estimate for each of the several items.

*Sale of electric current.*—Be careful to include the income from the sale of current to other public service corporations. If a combined report is prepared for railway and light and power plant, the total income reported in Inquiry 18 should also be reported in answer to this question.

*Interest on bonds and dividends on stock of other electric railways.*—It is necessary to show the total net amount of interest on funded debt and of dividends paid by street railway companies to the outside public as distinguished from the gross interest and dividends,

part of which goes to other street or electric railways. For this purpose the income from interest on bonds of other street or electric railway companies and the amount received as dividends on their stocks must be reported in answer to this question.

*Income from other permanent investments.*—Railway companies may own securities of public service corporations other than electric railways, also industrial or municipal securities. It is desired to secure a separate statement of the income, if any, from such sources.

*Other miscellaneous income.*—This item should include all amounts received from sources other than those enumerated, such as income from interest on deposits, outside operations of the company, etc. The principal items must be enumerated separately. The total income reported must be the gross income of the company for the year.

*Taxes.*—The sum of all taxes for the year should be reported. Include special taxes, such as car licenses, special taxes for police service at street crossings, etc., but in such cases a note must be made on the schedule describing the tax or license. Give separate amounts, by estimate, if necessary, for each of the five subdivisions of the inquiry.

*Interest on funded and floating debt and mortgages.*—When funded debt is shown as a liability in answer to Inquiry 15, interest should be reported as accrued on funded debt or proper explanation made on the last page of the schedule. In like manner if real estate mortgages and floating debt are shown as a liability under Inquiry 15, interest should be reported or explanation made.

#### INQUIRY 14.—OPERATING EXPENSES.

Substantially the same form of accounting for operating expenses is now used by all electric railways. This form was devised by the American Electric Railway Accountants' Association, and with some slight modification was adopted by the United States Interstate Commerce Commission. It is used by the railway commissions in the majority of the states. This form of accounting is in such general use that it is not necessary to give detailed instructions concerning the various items to be included under each of the five general groups of expenses for which separate totals are required. The primary accounts, as prescribed in the classification of operating expenses of electric railways adopted by the Interstate Commerce Commission, are arranged for three classes of companies, as follows:

*Class A.*—All companies with annual operating revenues of more than \$1,000,000.

*Class B.*—All companies with annual operating revenues of more than \$250,000, but not in excess of \$1,000,000.

*Class C.*—All companies with annual operating revenues of not more than \$250,000.

The form of accounting for class C companies is the simplest form used by the Interstate Commerce Commission, and this form has been adopted for the census.

The marginal numbers are account numbers of the Interstate Commerce Commission used in their most detailed form of accounts, which is required of the class A companies. For example, under "Ways and structures" numbers 2 to 19 represent all of the separate accounts in the form for class A companies that can properly be considered as expense of "Maintenance of way."

Accounts 20 to 24 include all that can be considered as expenses of "Maintenance of electric lines." These combinations have been made so it will be more convenient to prepare the reports for companies that do not keep accounts with all of the detail provided by the extended form. The inquiry contains five subtotals. In compiling the statistics the greatest use will be made of these subtotals. Therefore it is essential that each of these totals contain amounts for all items properly chargeable to it, and also that none of the amounts are duplicated.

#### INQUIRY 15.—BALANCE SHEET.

This condensed statement must balance and show the financial condition of the company on December 31, 1912, or the last day of the year for which the report is made. Any large items which would come under the head of "Sundries" should be stated specifically.

The combined balance sheets of all roads in the country must result in showing the total capital stock and funded debt of both operating and leased roads. Therefore the proportion of these securities which are owned by street or electric railways should be shown separately, so that a net figure for each kind of capital can be presented. For this purpose it is necessary that the amount of stocks of other street or electric railway companies and the amount of bonds of other street or electric railway companies owned by the company reporting must be reported in answer to the second question under "Assets."

If there is a profit and loss *deficit*, or if a large amount is reported for "other permanent investments," the reason for the loss and the nature of the investments should be given on the last page of the schedule. Items such as "purchase of completed road" or "payment for franchise" may be included as "cost of construction, equipment, and real estate," and not as "sundries" or "other permanent investments." "Sundries" is intended to include only the minor elements of accounts.

#### INQUIRY 16.—EMPLOYEES, SALARIES, AND WAGES.

The salaries and wages reported here will also be included in the amounts reported for the different items, under Inquiry 14, "Operating expenses," but this statement is required in order to obtain the number and wages for each class of employees. Account for all persons employed by the company, both in the management and in the operation of the road. Give the number of officers who receive salaries (not the number of stockholders) and the total amount of their salaries. Report separately the number and wages of conductors, motormen, and all other employees. If possible, the number employed on September 16, 1912, should be reported, as it is desirable to have the figures represent the same day for all companies. There should be no difficulty in securing this information, as all companies have a record of some character concerning their employees. If the road was in operation only a portion of the year, and for this or other reason the number can not be obtained for September 16, obtain the number for the nearest representative day.

The salaries and wages must be the total amounts paid during the year or period covered by the report.

#### INQUIRIES 17, 18, AND 19.—QUESTIONS FOR RAILWAYS WHICH OPERATE SEPARATE ELECTRIC LIGHT AND POWER PLANTS.

These inquiries, when considered in connection with their accompanying instructions and those at the top of page 2 of the schedule and page 13 of these instructions, should be readily understood and properly answered.

#### SEPARATE REPORTS FOR NONOPERATING AND LESSOR ELECTRIC RAILWAY COMPANIES MUST BE MADE ON SPECIAL SCHEDULE THEREFOR.

Separate reports must be obtained for all street railways which are leased to operating companies, covering the data for length of track, the income account, and balance sheet. The purpose is to present, in the financial accounts, a correct bookkeeping total of income expenses, etc., including the duplications which arise from the practice of leasing railway properties. The amount of such duplications will then appear under the respective inquiries in the schedules, and net amounts can be calculated.

Aside from the desirability of having such complete bookkeeping accounts it is essential to secure the statistics of leased roads separately in order to avoid error.

While agents may be able to prepare correct reports for the operating companies so far as the physical equipment and traffic features are concerned, it is very difficult to make a proper consolidation of the financial items. It requires an expert accountant to combine correctly figures of leased and operating roads, avoiding duplication.

While the figures for both operating and leased roads should be published separately, it will not do to calculate either the cost per mile of track or the capital liabilities per mile of track of either the operating or the leased roads separately, since in many cases the operating company spends large sums in improving leased lines which are not counted in the cost of such leased lines.

When the attempt is made to combine reports of operating and leased roads there should be an item of receipt in the revenue and income account, usually in the form of payments of guaranteed dividends and interest on stock and bonds received by the leased companies, equal in amount to the item for rentals paid under the heading of "Expenses" by the operating companies. The net income would then include the amount of rentals as well as the dividends and surplus of the operating company. Indeed, if the operating company and leased lines were to be treated strictly as one, both payments for rentals and receipts from rentals would be omitted. When separate reports of operating and leased companies are made and tabulated, rentals received in the totals will balance rentals paid, and total net income will include the dividends and surplus of both operating and leased companies, or the real profits of the business.

In the same way the item of interest on funded debt in the case of operating companies should include only interest on their own bonds. In many cases such companies assume directly the bonds of leased lines. The schedule should show the interest of the operating companies on their own debt and that on the debt of leased lines, but only the former must be charged as interest and the latter as "rent of leased lines and terminals." The rental received by leased companies will then be made to show the sum intended for interest on other bonds, and their expenditures will show a payment for such interest.

Operating companies often own part of the securities of leased companies. A correctly combined balance sheet of both operating and leased companies will show the total capital stock and funded debt of both, and over against this, under the head "Stocks and bonds of other electric railway companies," the amount of stocks and bonds held by the operating company.

Because of the complications above indicated it is evidently essential to correctness of data, and for the purpose of securing a net balance sheet, to insist on having separate supplementary reports for nonoperating and lessor companies.

There are comparatively few leased street railways, and the supplementary figures desired can be obtained with little difficulty. Reports for leased roads should accompany the report of the operating company.

Reports should also be prepared on this form for "Holding companies." These companies hold the capital stock of street railway companies. Inquiries 2 and 3 should be answered.

#### ELECTRIC LIGHT AND POWER STATIONS.

Reports must be secured for all electric plants doing a public service business—that is, for all plants, whether owned or operated by individuals, firms, corporations, or municipalities, established for the purpose of generating electric current for sale that were in existence during any portion of the year ending December 31, 1912.

No report is required for isolated electric light or power plants operated primarily for the benefit of the owner in lighting and furnishing power for his factory, hotel, or other enterprise, even though some current may be sold. The instructions on the title-page of the schedule provide that "isolated plants which incidentally sell current must be reported." This was intended for the guidance of persons who would receive the blank schedule through the mail and to avoid the possibility of omitting any central stations. Such plants can not be considered as central stations, and agents must not secure reports for them.

Electric plants owned by the United States and state governments and operated primarily for supplying light or power to public buildings, military posts, naval stations, Indian reservations, etc., should be considered isolated plants operating for their own benefit and no report secured.

*Combined reports.*—If the electric plant is operated in connection with an electric railway, separate reports should, if possible, be prepared, as required by the instructions on page 2 of the schedule.

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If the electric plant is operated in connection with any business other than a street railway, and the system of accounts will not permit of the preparation of a separate return, careful estimates must be prepared for answer to all the questions contained in the schedule. These estimates must pertain *only* to the electric light and power station, and be prepared by, or submitted to and approved by, the person furnishing the information and that fact indicated under "Remarks" on the last page of the schedule.

Where two or more plants are owned by one individual, firm, or corporation, and located in the same city or town, one combined report may be secured. In such cases the number of separate plants included in the report, and their names and locations, should be stated in answer to Inquiry 2. Light and power plants operated by the same corporation, firm, or individual, and located in different states, counties, cities, or towns, should be reported separately.

#### INQUIRY 5.—NUMBER OF LAMPS.

The answers to this inquiry must show the total number of the different varieties of lamps connected or wired ready for service on December 31, 1912, or the last day of the period covered by the report, and not the number actually performing service at any one time. The total must include all lamps in position to earn an income, irrespective of their ownership. Therefore it may include many lamps that are *not owned* by the company. If there is no record of the actual number of lamps, secure a careful estimate. The distinction between "Street lighting," the lighting of "Public buildings," and "Commercial or private lighting" must be carefully preserved.

Arc electric lamps are usually employed in street lighting, and are those having either one or two pairs of carbons inclosed in a single large globe. An inclosed arc lamp has two globes, a large or outer one inclosing a small one in which a single pair of carbons is incased, and is designed to burn a large number of hours (one hundred to one hundred and fifty) before having the carbons renewed. No distinction, however, is desired as to the particular kind of arc lamps used.

#### INQUIRY 6.—MISCELLANEOUS STATISTICS.

*Stationary motors.*—This term is applied by central station men to electric motors that are permanently located in one place, as distinguished from electric railway motors on cars. Such stationary motors will cover an infinite variety of work, and in many cases the companies will have difficulty in reporting the number of motors on their circuits, especially where current is furnished through meters. Where exact figures can not be given from records it is desirable that a close estimate be secured. The field covered by these stationary motors will include every class of industrial work and many other methods of application, such as in running large ventilating fans, elevators, etc. It is a custom of many companies to make special rates for what they call "power" business, as distinct from that done in supplying current for lamps; and where this is the case, their records should show the data as to motor service and income.

*Recording meters on consumption circuits.*—This inquiry applies solely to the number of electric meters installed on the consumers' premises, just as gas meters are placed for recording gas consumption, and does not apply to meters installed at the central station.

#### INQUIRIES 7, 8, 9, AND 10.—POWER-PLANT EQUIPMENT, ELECTRICAL GENERATORS, OUTPUT OF STATION, AND SUBSTATION EQUIPMENT.

See instructions for Inquiries 8, 9, 10, and 11 concerning street railways on pages 9 and 10.

#### INQUIRY 9.—OUTPUT OF STATION.

In addition to the instructions for Inquiry 10 of the schedule for electric railways, attention is called to the following: The kilowatt hours may be tested by the earnings, as reported in Inquiry 11,

and estimated value of free service, as reported in Inquiry 12. The average varies considerably for individual plants, but if the average is less than 1 cent or more than 15 cents per kilowatt hour the figures should be questioned, and if found correct, explanation made under "Remarks" on the last page of the schedule.

A standard arc lamp consumes from 450 to 550 watts per hour; ordinary carbon filament incandescent lamps of 16 candlepower have an average consumption per hour of about 3.1 watts per candlepower. Many incandescent lamps now in use, like the tantalum and tungsten, take much less.

In all calculations of average earnings per kilowatt hour and consumption of current per lamp, etc., the loss of current in transmission must be considered.

#### INQUIRY 11.—REVENUE AND INCOME ACCOUNT.

The instructions on the schedule and those for the corresponding inquiry (No. 13) of the electric railway schedule are sufficient to enable a proper understanding of this inquiry. The following points, however, should be emphasized:

The revenue and expenses must cover the financial transactions of the entire system covered by the report for the year to which it relates.

The amounts must be only those incident to the operation and maintenance of the plant or plants covered by the report.

Do not include expenditures for additions or extensions.

Do not include estimated income for free service, but report this as called for under Inquiry 12 only.

As only the profit on merchandise sales is to be reported as an income, the expense for supplies should *not* include those purchased for sale.

The expenses for taxes and interest must include all amounts properly chargeable to these accounts.

Central electric stations are frequently operated in connection with the manufacture of gas or ice, the operation of waterworks or commercial enterprises. In such cases the income, expenses, and balance sheet should relate only to the operation of the electric plant and careful estimates should be given if accurate figures can not be obtained from book accounts. However, if the other industry is merely incidental to the operation of the electric plant the report may cover both. In such cases the income from the outside industry should be included in the total reported for "All other income, including rents and profits on merchandise sales."

#### INQUIRY 12.—FREE SERVICE.

Practically all of the central stations owned and operated by municipalities receive no income from current furnished for the use of the cities. A number of the commercial stations also furnish current to municipalities or other governments free of charge. The

estimated value of the current thus furnished free to municipalities or other governments, based upon the prevailing commercial rates, should be reported only in answer to this inquiry.

#### INQUIRIES 13 AND 14.—EMPLOYEES, SALARIES AND WAGES, AND BALANCE SHEET.

See instructions for Inquiries 15 and 16 concerning electric railways on pages 15 and 16.

#### MUNICIPAL PLANTS.

The schedule for electric light and power stations is prepared primarily for plants owned by individuals, firms, or corporations. In applying this schedule to plants owned and operated by municipalities certain changes will be necessary. These changes should be made by the agent, and additional information, when required, must be given under "Remarks" on the last page of the schedule.

It will often occur that the administration of a municipal plant is assigned to a public officer or officers performing other duties, or that a part or all of the labor of collecting and accounting is done in the office of some other department—waterworks, for example. If in these cases a general account is kept for two or more departments, such as water, streets, etc., the expenses for the electric plant should be apportioned equitably. The following plan is suggested to aid in arriving at an equitable apportionment of the salaries, wages, miscellaneous expenses, etc.: For officers, clerks, and all employees, charge to each service the same proportion of the total amount paid in salaries or wages as the time devoted to that service constitutes of the whole time worked; for rent and all sundry office expenses, charge in proportion to the income of each service; for insurance, taxes, law expenses, interest, and all contingent expenses, in proportion to the amount of investment; for fuel, water, and all other power expenses, in proportion to the horsepower utilized by each service.

*Inquiry 11—Revenue and income account.*—As shown by the instructions on the schedule, the income for municipal plants must include only the actual amounts carried on income-account statement.

An estimate of the value of the service to the city, based on prevailing commercial rates, must be given in answer to Inquiry 12.

*Inquiry 14—Balance sheet.*—The portion of the inquiry relative to capital stock and dividends is not applicable to municipal plants. As a rule, there is a special bond issue to cover the installation of the electric plant. The amount of such bonds authorized by the special act and the amount outstanding at the end of the year, together with the interest paid or due for the year, should be reported. If, however, there was no special issue of bonds, the cost of the electric plant being met by proceeds of a general bond issue or special tax fund, a full explanation of the arrangement and a description of the general bond issue or special tax should be given under "Remarks."