

tively short period of time a complete water system, and had required all of its citizens to discard their private supplies (consisting almost entirely of cisterns) and take service from the municipal supply.

On page 88, paragraph 4, I find certain statements that are absolutely untrue with regard to the majority of the large electric companies. This for instance: "In this period of the consolidation . . . there is a lack of the old-fashioned utility economy of operation that was formerly considered necessary to permit the operation of a utility without loss." (The decreases in rates charged by electric companies since these consolidations took place prove sufficiently, I think, that the statements are incorrect.) Mr. Reed gives as his reason for this statement: "First, the higher executives cannot under present methods of cost accounting accurately check the economy of operation of each individual property." This I cannot agree to. If these higher executives, so called, are merely accountants or bankers, or, as has sometimes happened, men of ample business training but without long experience in the electric lighting industry, they are not competent to obtain from the periodic reports submitted to the holding company by the operating companies, the information needed to determine whether subsidiary properties are being operated economically or not.

There is another point that I must take exception to. The second paragraph in the introduction commences: "The public service commissions who guarantee an adequate return on capital investment in the utilities which they regulate, . . ." On page 88, paragraph 6: ". . . and so long as utility commissions permitted the earnings allowed to be based on replacement value, . . ." Further down: "With the utility commissions acting on the theory that adequate returns must be based upon replacement values, . . ." On page 88: "With the maximum replacement value allowed, . . ." For my own information I should like to know what commission in this country is doing just this. Of course, it is impossible for any one individual to read all the decisions of all the commissions, and many of the decisions apparently indicate that the value of a property has been taken as the cost to reproduce the property as of the particular date when the matter was under consideration, but a careful study

of these cases indicates no such thing. Even in the far famed Indianapolis water case, which has been referred to by so many as a case in which the full cost to reproduce the property new, on the date of the decision, was to be the basis for rates, a little study of the various figures submitted shows that this is not true. It is true in that case that the court allowed a value considerably in excess of the book cost of the property, but a value which was several million dollars lower than that claimed by the water company as being the full cost of reproduction on the date of the inquiry.

Much of Mr. Reed's paper is an argument to prove the necessity for proper allocation of detailed costs. There is no question in my mind at all of the value of detailed cost data, classified so as to make it possible to obtain the cost of service for each class of operation, and for each class of service or class of customer; but the mere statements that the commissions are not able to get from proper reports the information that they need does not strengthen the argument. Such arguments can only be made by those who, because of their lack of proper experience, are not qualified to make such an analysis.

Having entered my defense of the conduct of work by those public service commissions with which I am familiar, I wish to pass a few comments on the subject itself. Dr. Person asked me to make some comments on whether or not proper cost allocation was worth while; that is, whether it was in the last analysis of value to the public. In dealing with many matters concerning public utilities, I like, instead of using the word "public," to use the word "commonwealth," because to my mind that includes not only the customers of the public utility, the stockholders of the company, its directors and manager, but also other parts of our population who are not customers of the public utility and who, because of this, apparently obtain no advantage therefrom. There are a great many people who obtain benefits from our telegraph and telephone systems who never directly patronize either one of them. There are a great many of our people who are benefited by the existence of our railways who practically never travel on them or ship freight over them. Therefore, for the good of the whole commonwealth, I believe that the utility companies should keep their records and accounts in accordance with uniform and

accepted methods. They should publish periodic reports with such information as would enable the representatives of the commonwealth, that is, the public service commissions, to analyze these reports and to know from time to time just what the operating results are. On their own initiative they should take up such matters as excessive rates, improper distribution of operating costs, undue and unjust discrimination, either for or against any particular class of service or any particular locality, and provide, without delay, for correction of such improper conditions. Our New Jersey commission, without the formality of public hearings, has in the last five years brought about reductions in electric rates in the state of New Jersey amounting to between seven and eight million dollars per annum. All of these reductions were made possible because of the growth in the business itself, and because of the economies brought about by both physical and corporate consolidation.

On page 99, paragraph 2, of Mr. Reed's paper, I note his statement: "It is possible to go into the individual items of expense and secure a finer division of expense of classes. That method was given a trial, but it was found that, for all practical purposes, the difference in the total charged to each class varied but little from the results secured from using the general method. Therefore, this more complicated method was abandoned." I am glad to have Mr. Reed make this statement. I have seen many calculations in which the detail went far beyond the necessities of the case—when it has been ascertained by careful check and studies that the variation in results is very small. For instance in this case, Mr. Reed cites the cost of distribution in the various areas referred to, and I reply that, when it is found that the unit cost chargeable to each unit of production sold would vary but slightly in the different areas, one is justified in striking averages and, as long as conditions continue, in refraining from the waste of time involved in keeping such accurate records of detail. Each case, however, must determine its own rules as to the extent to which details are to be recorded.

From Mr. Reed's paper I am not clear as to what physical data—e.g., the data concerning pounds of coal, car miles, KWH, gallons of water pumped, etc.—are to be immediately related to the financial figures, that is, the figures concerning cost.

I have always contended that these figures should go right along with one another and be associated as early as possible. This calls for a somewhat different organization from that referred to by Mr. Reed. Under the "general manager" he has a planning department," and apparently the "auditing department" does not come under the general management. To my way of thinking the "comptroller" and the "treasurer" of the company, if the company is large enough to have both, are officers of the company and parallel to the "manager" in their authority. The "auditor," however, is the custodian of all records—not merely the records concerning dollars and cents, but the records concerning KWH, pounds of coal, car miles and all other data concerned in the operation of the utility. To make this effective, the "auditor" is a subordinate of the "general manager," who must always be an engineer. I know of a number of cases where the "general manager" of an electric light company is an "auditor," and the mistakes of this particular company in the development or the adjustment of rates have come entirely from the fact that the knowledge, which only an engineer could have concerning the details of construction and operation, is not possessed by the man having the title of "general manager."

How often do we see in an electric light company a statement presented to the management showing the financial results for a period and comparing these results with similar figures for other periods; but when the data concerning the actual output of the plant are asked for, the "auditor" knows nothing whatever about them and some cadet engineer is assigned to take this matter up and relate it to the figures presented by the "auditor." As I said above, the "auditor" ought to be the custodian of all figures concerning the company's operations, and with cadet engineers under his immediate supervision he should be able to make up for the "general manager" the complete report showing all relations concerning costs.

In the operation of the uniform system of accounts for electric utilities in New Jersey we have only found two places where accounting systems have not clearly shown the information needed. It has been customary to carry materials and supplies as a single item. In the development of costs and the separation of construction and maintenance costs, however, it is necessary to know how much