

I once had five clients in the same industry, all of the costs of which were computed on the same basis. Under these conditions, where we had a check not only between different periods within each concern but also as between the five concerns, their costs soon were accepted unquestioningly by all concerned.

Second, the man on the job, the manager, the superintendent, the practical operator in whatever position, is always more interested in costs in descriptive terms which he can identify with someone in a position to effect economies in them than he is in overall costs for a product or service. Such costs lend themselves more readily to supervision and control. They are the items in which budgets are made and in which expense is kept. The electric companies, as I understand it, have their accounts in these terms and I feel that some of the objections which they voice grow out of a fear that in introducing overall costs their budgetary costs may be contaminated.

Third, during the early stages of cost accounting it was universal, and even now it is common, for concerns to do their cost accounting as an integral part of their general accounting. This frequently destroys the availability of past records in their original form and it may be that the electric companies have this possibility in mind. This also can and should be avoided.

While the distribution of expense and the determination of ultimate overall cost should be separate and apart from the general accounting work, it should be based upon it, developed out of it, and include all cost and revenue. Otherwise routine cost accounting means nothing more than a glorified special study.

Coming now to the question as to how cost accounting may be installed in the electric utility companies without destroying any of the advantages of the existing methods, I have in mind a procedure somewhat as follows:

1. While the early stages of this work must be done in close co-operation with the general accounting department, it would be a mistake for the individual or group directing it to be subject to the general accounting department.

2. A theory and plan of distribution and expense should be worked out and tested on existing figures in an experimental way. Only after these experimental figures give substantial evidence of a satisfactory plan should the accounting classification be changed.

3. After the revised accounting classification has been in effect for a short time the figures for several companies compiled under it should be computed into

overall costs and these costs compared to see if they reflect such differences in overall costs as would reasonably be expected to exist between the companies compared.

4. The foregoing work should not be hurried and it should go forward with a view to perfecting the method rather than getting quick results. Only after the new accounting classification is working smoothly and the method of distribution of expense and computing of overall costs has been fully perfected should the work of determining overall costs at regular intervals be turned over to the general accounting department.

Discussion

Morris Llewellyn Cooke.^{*} I should like to get Mr. Anderson's opinion as to the financial, social and other advantages of introducing cost finding into an industry whose present revenue is nearly two billion dollars a year and where no effort at routine cost finding has been made. What percentage of increased profit would be expected to result from the introduction of a cost system into such a business?

Malcolm F. Orton.^{*} If savings have been effected in industry through cost accounting have they been in the nature of the elimination of operating and capital expenses or of unprofitable lines that have been shown up?

And do you believe a system of budgetary control, which permits comparisons between different plants but is not accompanied by a detailed system of cost accounting, would result in a pick-up in efficiency equal to that to be secured from a refined system of cost accounting?

D. R. Anderson. My personal opinion is that cost finding is more essential in this field than in the industrial. Public utilities are in the last analysis operating for private industry. Industry must render service and should be compensated for its service on the basis of fair costs for all parts of it. It would seem to me that accurate and modern methods of cost accounting are more important for the utilities than for private industry.

I am not sure I can answer the second question. In

^{*}Consulting Engineer, Philadelphia, Pa.

^{*}Chief, Research and Valuation Bureau, Public Service Commission of the State of New York, Albany, N. Y.

the plants with which I am familiar it has been possible to show a 10 to 15 per cent increase in profits after the introduction of cost finding. Cost accounting in itself will not do the job, however. It has to be used through adjustments in rates and other means. An industrial concern could hardly survive at the present time, because of the competition which has developed, without a cost-accounting system but I do not feel qualified to speak for public utilities.

In answer to Mr. Orton I should say that a cost-accounting system should result in both a reduction in operating and capital expense and in the elimination of unprofitable lines. In an industrial concern you first notice a reduction in waste. When accurate product costs are achieved they are used in adjusting sales effort.

We have the sort of comparisons between mills of which Mr. Orton speaks but do not consider them a final measure of efficiency. Time studies are made and standards set independently. If this were done by the public utilities I should think it would be all that could be accomplished. Adjustments of sales should provide additional savings.

John H. Williams. I recently had five printing concerns as clients. Each used an identical system of budgetary control and results were compared periodically. When one firm saw another doing a similar type of work at a very different cost it was stimulated to effect changes, even though problems were dissimilar, that resulted in increased efficiency.

King Hathaway. To mean anything comparisons must deal with identical conditions. That is one of the difficulties in the utility field. You cannot compare meter readings in a tenement-house district with those in the suburbs, for example. But you can set up standards of performance for every activity of the utilities.

A recent client of mine had overall costs but did not know how to use them. In going over the products we found some for which we could get more money. One item which was being manufactured in considerable quantity was selling for sixty cents and costing ninety. No more money could be had for it nor could it be dropped. The manufacturing department got busy and ultimately worked out a better product at a cost of thirty-three cents—by substituting a steel for a brass casting and eliminating certain parts. A knowledge of complete costs enabled us to do many things which would have been impossible without them.

Judson C. Dickerman. I am personally acquainted with two industries—heavy chemicals and electric utilities—and they are radically different as I see it. In the chemical industry our labor costs for the whole business amount to less than 20 per cent of the cost of the whole product. Materials are a heavy item. The fixed capital costs are almost insignificant—a few hundred thousand dollars for several million dollars worth of annual product. Working capital—the flexible thing—is of course a big item. It is represented by two or three million pounds of acid in chambers.

In the public-utility field operating costs—labor and material—make up one-third of the value of the products sold. Fixed capital makes up the other two-thirds. In the hydro-electric industry it represents about 80 per cent of the value. In industry, operating costs, including the use of men's labor, are the important things. I should like to have the cost-accounting people tell us how we can study capital distribution.

Mr. Cooke. It should not be assumed that public-utility plants are ideal. They are inefficient in the same way that private industrial plants are inefficient at times. Even the fact of low rates does not necessarily mean a wise use of capital.

Mr. Hathaway. Private industry has fixed capital—plant, machinery, tools, etc.—which must be taken into account in figuring costs just as items of operating expense are taken into account. Economical construction and use of fixed capital are equally important in either field. Fixed capital becomes an operating cost through the expenses which result from it—interest, depreciation and maintenance charges. I might say also that even though operating costs are such a small part of the public utilities products, they are important because of the total amount of product sold and should be studied.

Mr. Dickerman. While the best methods of cost accounting are not being used in the electric industry individual operations are being studied and capital investment controlled. Waste of material is being reduced, labor efficiency increased; research workers are studying such things as the cost of billing and comparing these costs for different districts. The trouble lies in the fact that these studies are not used in adjusting rate schedules.

^{*}Industrial Survey Department, Massachusetts Institute of Technology, Cambridge, Mass.