

9-1921

## Accounting for Construction in Public Utilities

W. C. Reyer

Follow this and additional works at: <https://egrove.olemiss.edu/jofa>



Part of the [Accounting Commons](#)

---

### Recommended Citation

Reyer, W. C. (1921) "Accounting for Construction in Public Utilities," *Journal of Accountancy*. Vol. 32: Iss. 3, Article 3.

Available at: <https://egrove.olemiss.edu/jofa/vol32/iss3/3>

This Article is brought to you for free and open access by the Archival Digital Accounting Collection at eGrove. It has been accepted for inclusion in Journal of Accountancy by an authorized editor of eGrove. For more information, please contact [egrove@olemiss.edu](mailto:egrove@olemiss.edu).

# Accounting for Construction in Public Utilities\*

By W. C. REYER

At the present time practically all public utilities are subject to national or state regulation. The administrative features of federal regulation are carried on by the interstate commerce commission and those for state regulation by the various commissions of the respective states. One important phase of regulation has been the promulgation of accounting classifications for all public utilities coming within the jurisdiction of the various commissions. Although there is of necessity a different classification of accounts for each of the several classes of public utilities, the general accounting principles underlying all of them are substantially the same. The powers and, in certain instances, the duties of the commissions also provide that the forms of all books, accounts and records to be kept are to be prescribed by such commissions. This power, where granted, has been exercised very rarely, however, and the control of accounting as a rule has been limited to the matter of the general accounting classifications. The extent of the detailed information, the forms of accounting records and the accounting procedure for recording the transactions under the prescribed classifications have been left almost entirely to the public utilities themselves.

Most of the accounting classifications contain rules or definitions for the purpose of assisting the public utilities in distinguishing between different classes of expenditures. Among the more important of these classes are construction, operation, maintenance and depreciation reserve charges. The rules submitted for dividing the charges among these classes are, of necessity, very general, and consequently a considerable variation in accounting practice has grown up among the public utilities in respect to the division of certain charges among the classes denoted above.

A detailed discussion of the policies followed by public utilities in recording the transactions for expenditures involving a division among the four general classes noted and the accounting principles that should govern such a division cannot be attempted in a thesis of this character. The comments, therefore, will be confined to the accounting for construction expenditures and the

\* A thesis submitted at the November, 1920, examinations of the American Institute of Accountants.

basis upon which overheads should be apportioned between construction and operations.

One of the most important questions to be determined by the public-utility accountant or auditor is the propriety of capitalizing expenditures to construction. As a rule, all work connected with a public-utility property is performed by the company's own organization. The engineering department, for example, directs the work of operation, maintenance and renewal of the property as well as that of new construction. In many instances the same group of workmen performs the various classes of work and certain kinds of materials used for maintenance and construction are identical, so that the division of the charges is a difficult and important consideration.

Originally the majority of companies made all charges for material, labor and other expenses directly to the various accounts provided in the classification. Under such conditions a proper control of the charges was exceedingly difficult, inasmuch as the costs of one piece of work were scattered over several accounts and information as to the exact nature of the work was difficult of ascertainment.

The difficulties cited in the preceding paragraph have been overcome almost entirely by the public utilities. Most of the companies to-day control the construction expenditures and the more important maintenance charges through a system of authorizations. Under this system, if the matter of certain construction or important maintenance work comes up, the department in charge, usually the engineering department, prepares a statement of the work to be performed, giving the reason therefor and nature of the work to be undertaken, together with a detailed estimate of the cost. In case the work is to replace existing property this fact is stated, with all particulars relating thereto. Blue prints are usually prepared showing the additions and changes to be made. Several copies are prepared containing all the facts noted above for any particular piece of work, and the original copy is then submitted to the board of directors, executive committee or other controlling group for approval. Upon acceptance, it becomes an authorization to do the work and receives a number. A copy of the authorization goes to the accounting department and all costs of a particular piece of work are earmarked with the authorization number. The accounting department assembles all costs by authorizations, but these records also contain a di-

vision of the costs by accounts, so that the proper clearing can be made when the work is completed. When the records are kept in this manner an intelligent study of the construction charges and property retirements is possible.

Some of the older classifications of accounts provided that only the difference between the original cost of the unit replaced and the replacement costs should be charged to construction. At the present time, it is a generally accepted principle, however, that the property account should be relieved or credited with the original cost of the unit of property removed from service and the cost of all new units should be capitalized by charges to construction.

In regard to the charges to be made to construction, the question arises as to the proper treatment of overhead expenditures. Overhead costs, as related to the construction accounts of public utilities, are usually understood to cover the following classes of items:

- Engineering and superintendence
- General-office salaries and expenses
- Legal expenses
- Liability insurance
- Injuries and damages
- Taxes
- Interest

The public utility accounting classifications promulgated by the state and national regulative agencies recognize the principle of a division of overhead charges between operation and construction, but no specific rules of procedure for such apportionments have been advanced in the classifications. As a result, the practices of the various utility operators differ widely in the treatment of such charges. The policies vary from charging to construction only the direct items of labor, material and other expenses to the inclusion of a flat percentage on such direct charges intended to cover all items of overhead. Furthermore, certain organizations controlling or managing a group of companies apply a fixed percentage on all construction work undertaken by the utilities controlled, in addition to the charges made on the apportionment basis by the individual companies. The charges made by the controlling or managing organizations, however, do not involve the question of a division of these costs between operation

and construction. These items are billed against the company as construction charges, and the propriety of such additions can be determined only by an inquiry into the nature of the services rendered and a study of the total overheads of all kinds included in construction in relation to the nature and extent of the construction work performed.

We come next to a consideration of the accounting principles which should govern a division of the overhead charges between operation and construction. Accounting authorities are in agreement regarding the inclusion of all overhead items as part of the costs of construction during the original construction period up to the time when the property is completed for operating purposes. The weight of authority, however, seems to be that the charges for interest should be limited to the amount actually paid or accrued during the construction period on interest-bearing obligations, less any interest earned on the funds on deposit during the period.

The matter of interest charges will be discussed separately, inasmuch as this item involves considerations not applicable to the other overheads.

When the construction work is carried on concurrently with operations many accounting authorities appear to favor charges to construction of only the additional overheads resulting therefrom. This theory is intended, no doubt, to apply to those industries in which the construction programme is irregular; and this appears to be the desirable one to follow in those instances. In the case of public utilities, however, the normal tendency is one of gradual extension and expansion so that the yearly construction expenditures are of considerable importance. A temporary cessation of construction could hardly be expected to reduce the expenditures of general management. And again, a construction programme, considerably in excess of the normal for a period would not tend materially to increase these expenditures. Furthermore, the systems of regulation to which most public utilities are subject generally make it obligatory on their part to extend their facilities within reasonable limits, to meet the increased demand for service as well as to supply service to the customers connected.

This being the situation, there are two functions which a public utility is obligated to perform, neither of which should be considered as incidental, although the total expenditures for one

may be substantially larger than for the other. It appears, therefore, that the two functions of operation and construction might reasonably be considered as coördinate undertakings and that the accounting policies should aim to show the full cost of performing each of these functions. The principle to be followed does not differ materially from that usually employed in apportioning joint expenses when one utility company operates several departments or more than one division or branch is maintained within one department of the business. The principle of apportioning joint or overhead expenses so as not unduly to burden any one department is recognized by commissions in the regulation of rates. Instances are also on record in which a certain amount of the overhead charge has been excluded from the operating expenses by commissions, on the theory that the items should have been added to the construction expenditures.

Accepting the principle that the functions of operation and construction should be considered as coördinate undertakings in public utility accounting we may now consider the bases that may be used in carrying out the apportionment of overhead charges.

The items of legal expense, liability insurance, injuries and damages and taxes are usually so closely related to certain construction projects or some direct element of cost that a basis for division is readily available. Legal services are generally performed by outside firms and the amounts billed are for specific services, so that the charges are distributable. When retainer fees are paid, the amount thereof can be apportioned on the basis of the other charges for specific services rendered additional to such retainer fees. The amount of liability insurance is dependent upon the payrolls and should be distributed on the labor costs, due consideration to be given, however, to the effective rates for different classes of labor. Injuries and damage awards in most instances can be charged directly to that part of the construction work where the injury or damage occurred. Taxes assessed during the period of construction are generally determinable from the assessment valuations. Providing that the valuations made for tax assessment purposes do not distinguish between the uncompleted construction and the property used in operations the ratio of the uncompleted construction to the total property at the valuation date will offer a reasonable basis for the apportionment. Inasmuch as the valuations for taxation purposes are made annually the matter of taxes during construction is relatively unimportant,

unless an extension project is under construction which requires a considerable period of time for completion.

The overhead charges represented by engineering and superintendence and general-office salaries and expenses are the most important elements of such costs. These two classes are somewhat similar in that the time devoted to the business by the officers, managerial staffs and clerical forces is general in character. On account of the diversified duties of those engaged in management any attempt to secure daily distributions of time in detail is difficult. In the engineering department, however, a practical solution of the problem may be accomplished by obtaining an approximate division of the time for all those employed, on the basis of the four principal classes of expenditures previously mentioned. These are construction, operation, maintenance and depreciation reserve charges. All expenses of the department not directly distributable to the four classes may be apportioned as overhead to the other items. The total of all the charges for each class should be transferred to a separate clearing account and the amount applicable to construction can then be distributed in detail to the various construction authorizations on a percentage basis. A general investigation may be made from time to time for the purpose of determining the amount of general-office salaries and expenses chargeable to construction.

This investigation or study should be conducted for the purpose of ascertaining a fair monthly charge to the capital expenditures under the existing conditions of operation and construction. The amount obtained in this manner may then be considered the proper charge from month to month until the general-office conditions change sufficiently to require a modification of the apportionment, at which time another study should be made. The amount of general-office salaries and expenses assigned to construction should also be transferred to a clearing account for detail distribution as suggested for engineering and superintendence.

Interest chargeable to construction is the remaining item of overheads requiring consideration.

The general practice of public utilities is to charge interest on all construction which is not completed for operation within one month from the time the work is undertaken. In accordance with this practice a considerable amount of construction carries no interest charges. The rate of interest is usually determined on

the basis of the cost of money to the company during that period, and the amounts charged to construction for interest are usually credited to the interest expense accounts. An intelligent review of the interest charges requires a knowledge of the sources from which the funds for construction were obtained. The borrowing power of utilities on mortgage obligations is usually limited to approximately 75 per cent. of the construction expenditures and the remaining funds are usually provided from sales of stock or from increased surplus and reserve funds. Providing the interest-bearing obligations for a given period supply funds sufficient to finance all construction on which interest has been charged, there can be no question as to the propriety if the basis mentioned above has been followed. This undoubtedly holds true, because the utility company can determine the manner in which its funds shall be applied. When the correctness of the interest charges is questioned the utility company may argue with considerable force that the funds to finance the construction, completed within the one-month limit and carrying no interest charges, were obtained from stock sales and from surplus and reserve funds.

Whether or not a charge for interest during construction is permissible if the funds are provided from the sale of stock or from the use of the company surplus and reserve funds is open to considerable argument. As previously indicated accounting authorities generally favor the limitation of interest charges to the funds provided from interest-bearing obligations. The accounting classifications issued by the various state commissions provide for interest charges to construction but do not specifically authorize such charges upon funds other than those obtained from interest-bearing obligations. The interstate commerce commission, on the other hand, specifically authorizes interest charges without differentiating between the sources from which the funds are obtained. The position of the interstate commerce commission is of considerable interest and its rulings are therefore cited here in full.

*Uniform System of Accounts for Electric Railways*, prescribed by the interstate commerce commission, effective on July 1, 1914, page 105, states:

When any bonds, notes or other evidences of indebtedness are sold or any interest-bearing debt is incurred for acquisition or construction of original road and equipment, extensions, additions and betterments, the interest accruing on the part of the debt representing cost of property chargeable to road and equipment accounts (less interest, if any, allowed by depositories



on unexpended balances) after such funds become available for use and before the receipt or the completion or coming into service of the property so acquired, shall be charged to this account. . . . This account shall also include reasonable charges for interest during the construction period on the carrier's own funds used temporarily during such period for construction purposes.

In *Accounting Bulletin No. 9*, issued by the interstate commerce commission, relating to decisions upon questions raised under the uniform system of accounts for electric railways, case 308, the above position is amplified still further as follows:

*Query.* To what account should a carrier credit the amount of interest which has been charged to construction? This company has no funded debt. Are we permitted to charge to construction the interest on the company's working funds used for construction purposes?

*Answer.* Interest charged to construction shall be included in account No. 547—"Interest during Construction," and corresponding credit shall be made to the account which was charged as such interest accrued. If no interest actually accrued or was paid, account No. 547 may include a reasonable charge for interest during the construction period on the carrier's own funds used temporarily, the corresponding credit being made to account No. 208—"income from unfunded securities and accounts."

Under the laws of England, companies, upon approval by the board of trade, may pay interest up to 4 per cent. a year to the stockholders during the period of construction and such payments may be added to the construction costs.

The argument most generally advanced against charging interest on construction expenditures financed from the company's own funds or stock sales is that such charges would be in the nature of a profit and that a profit should not be permitted on construction work. It must be conceded that the construction charges would be higher if all funds were obtained from interest-bearing obligations; but it may be contended, on the other hand, that the saving effected by use of the company's own funds and those derived from a sale of stock will reduce the cost of the property and hence a higher return on the investment will be possible. This situation, however, does not apply with full force to public utilities under a system of regulation. The original cost of the property is an important consideration in determining the fair value of the property for rate-making purposes. It appears that, provided the charges to construction are made at reasonable rates and only during the non-operating period, the additions should be recognized as proper, no matter what the sources of the funds may be. Such charges, in so far as public utilities subject to regulation are concerned, should be considered in the light of interest on capital furnished and as such represent a part of the cost of construction.

The credit arising from the interest charges to construction presents no difficulties when all construction carrying interest charges is financed through interest-bearing obligations. In these cases the credit should be applied in reduction of the interest charged to operations. When the money for construction has been provided from the company's own funds or through stock sales the disposition of the credit is not so clear. As will be seen from the foregoing comments, two extremes of practice are advocated regarding interest on such funds. On the one hand we find those who question the propriety of including interest on construction on any funds other than those derived from interest-bearing obligations; while on the other hand the interstate commerce commission not only permits the charging of interest on construction financed from the company's own funds but also specifies that the corresponding credit should be made to "income from unfunded securities and accounts."

In public-utility accounting it seems that the interest charge to construction should be permitted as approved by the interstate commerce commission; but, inasmuch as the disposition of the credit is subject to considerable difference of opinion, it appears desirable at the present time at least to consider the credit as "surplus appropriated to capital purposes."