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Depreciation

George Clyde Mathews

Wisconsin Gas Association

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DEPRECIATION

by

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Wisconsin Gas Association
Wisconsin Electrical Association
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DEPRECIATION

By G. C. Mathews

Regulation of public utilities in the form in which we know it today is a development of the past fifteen years. The New York and Wisconsin laws in 1907 practically mark the beginning of present methods of regulation. Under these and other laws passed since that time regulation has become less and less a matter of bargaining and of local politics and has come to be more and more a matter of fitting the requirements of regulation to the cost of doing the business. Among these costs that of meeting the loss occasioned by the retirement of property has been by no means the least important. A literature all its own has grown up around the subjects of depreciation, the physical phenomenon, its causes, and the importance of provision for it. Much that was written on the subject was evidently the result of a decidedly imperfect understanding—both of the physical questions involved and of its financial and accounting aspects. I will not attempt to do more than speak briefly of some aspects of the accounting problem.

Two extremes of theory relative to the accounting for depreciation are evolving. The first of these is that the provision for depreciation should be sufficient to amortize the physical property over its estimated life and that the reserve should represent on the balance sheet of the corporation the portion of the amortization which on an elapsed time basis only should be complete at the balance sheet date. In other words, this extreme theory would set up the provision for depreciation on a straight line basis on the estimated life of the property and would attempt to represent the so-called depreciation value on the balance sheet of the company. The other extreme is that the balance sheet need only show a small equalization reserve to take up unusual losses which would unduly distort the year's operating expenses and that the loss due to retirement of property should be charged as it occurs directly to operating expenses and no provision made for it in advance, except possibly a small equalization reserve.

The first of these theories is fully represented in the tentative classification of accounts and administrative rulings of the Federal Power Commission. This would require the setting aside of depreciation as a charge to operating expenses on a straight line estimated life basis regardless of any conditions whatsoever which might be expected to modify the provision. The second theory is represented by

present railroad practice with regard to the roadway and track maintenance and by the policies of such companies as the Consolidated Gas Company. It has had its most successful application in those large properties made up of an enormous number of units where retirements are more or less equalized over different fiscal periods.

In some classes of industries there can be little question that the reserve should be set up on the first of these theories. The best illustration probably is an industry in which the loss is due to depletion of some natural resource such as oil or ore. In these industries the time of probable exhaustion can be more or less accurately foretold, although not by any means with entire accuracy. Once the exhaustion is completed there is no possible way of prolonging the life and there is no value for the purposes of the industry left in the exhausted property. Failure to provide for the depreciation or depletion on the amortization theory would misrepresent the operating results and the financial status of the company. Similarly in businesses of a competitive non-regulated character where values are subject to market conditions and determined by purchasing power in exchange, it is often found important to have a partial amortization of the property represented on the balance sheet. Where exchange value controls, the failure to represent the complete accrued depreciation or the amortization which has been completed misrepresents the financial condition. The result is similar to what would occur if a manufacturing concern failed to take its loss on inventories in such times as the past year. As a general thing, where exchange value controls, it is unsafe not to take the full depreciation on an amortization basis.

On the other hand, in railroad accounting the general practice has been to make no provision for depreciation except on rolling stock and some minor items of property. As a result, railroad balance sheets do not contain a reserve representing an amortization of assets proportionate to their age. Railroad experience, except where it has been complicated, as it has in many cases, by inadequate earnings, demonstrates that there is no need for the full reserve on an amortization basis for the purpose of protecting the service and insuring its continuity. Whether or not it is needed for the protection of the investor is another question. That is, does the failure of railroad accounting to accrue its reserve for depreciation on a life basis and show the amount of the reserve in the balance sheet mean that investors are not protected by assets to the extent indicated by the balance sheet? If the standard of valuation of railroad properties is to be the exchange value, at valuation date, of the items making up the property this is undoubtedly the

result except as it may be corrected by an offsetting appreciation in the value of a part or all of the property.

The valuation of public utility properties, however, under present conditions of regulation is not necessarily a purchase and sale value. The value of public utilities is determined by regulating bodies and, whether or not the theory of the law contemplates that such should be the case, the value is coming to be fixed by such regulating bodies. The ordinary laws of exchange value do not apply. In the long run it will probably be true therefore that if the valuation which is determined and fixed by the public utility commission does not give effect to the accrual of a reserve for retirement of property on an amortization basis, the investor will not be injured by the failure to show the full amount of a reserve on that basis in the balance sheet. This does not mean that no reserve for depreciation should be carried in the balance sheet but merely that under given conditions a reserve, such, for example, as that contemplated by the Federal Power Commission, is unnecessary and being unnecessary its creation involves a useless expense.

Public utility commissions are not unanimous in the use of any given basis for determining fair value. Some deduct the accrued depreciation, while others make no deduction on this account. The value of a public utility property for purposes of purchase and sale will tend to stabilization at the amount of the "rate base". Because of this, the establishment of a rate base by a public utility commission tends to fix value rather than to find or determine value. If an undepreciated rate base should become generally accepted, the need of a reserve built up in sufficient amounts to amortize the physical property over its estimated life, for the sake of protecting the investor, would be greatly lessened.

It seems to me that a reserve to meet retirement losses need not be established strictly in accordance with the basis which would be used if the property is to be amortized over its useful life. There can be no question that some reserve will be needed to meet retirement losses regardless of the basis for its accrual, but of course, if the full theoretically accrued depreciation is to be deducted on an age basis for the purpose of rate cases, the corporation must have a chance to set aside a proportionate reserve out of earnings. The full amount of such a reserve could never be used unless all the property were made new or all of it were retired at one date. If the provision for depreciation or, to put it more correctly, for retirement losses were exact, that is, if the lives of property could be definitely determined, there would be a theoretical point when all the property would go out at one time. This would be the least common multiple of the

lives of all of the property. Actually such a condition is never reached except when the progress of events makes the entire industry obsolete as has happened, for example, with some of the canal companies. Estimates of life value upon which the amortization theory must be based are admittedly inaccurate and often very far from the actual life. The result of this and of the mingling of short and long lived property in a utility enterprise is that actual retirements are staggered in such a way that for a reasonably large property no such amount of reserve as would be accrued on the amortization theory will ever be required. It may be said that if we do not set up the provision for a reserve on a life basis we lose the only measure which we have of the amount required, imperfect though that measure may be. I think, however, that at the point which the utility industry has now reached we have in general sufficient experience, if the records of the companies have been so kept as to make that experience available, so that the reserve for depreciation can be accrued on a reasonable basis without making the life table the sole or controlling test. The full amount of the depreciation reserve on the amortization basis is inconsistent with the conception of the property as a continuing entity. If the entire industry is scrapped, the existence of the reserve is no protection since that reserve is usually invested in the very property which becomes useless and unless something approaching the scrapping of the entire industry is encountered there will never be a time when the property will be put back to cost new or, in fact, anything near that theoretical condition, so that there will never be a time when the entire reserve will or can be used for the purposes for which it was accrued. All this points to the fact that the amount to be reserved is largely a matter of experience. Undoubtedly a substantial balance should be carried as a protection against unusual losses or the retirement of large units, but the provision for the reserve may reasonably be varied from time to time as the reserve builds up or runs down, and the basis for such variation in the provision will largely be the amount in the reserve relative to the anticipated retirements which the reserve will be called upon to meet.

Some classes of property for which a retirement reserve must be provided do not depreciate in the strict sense of the term. Probably the best illustration is that of an insulator on a telephone line. We know that over a series of years there will be a certain breakage of telephone insulators and we could approximate the amount required to meet the retirement loss. However, if we think of accrued depreciation as a measure of decreasing value we have trouble reconciling the actual value of a unit of property with its de-

preciated value on the books. A telephone insulator is in as good condition the day before it is broken as it was when new. The same principle, although possibly not to the same extent, applies to many other classes of property. A concrete dam, for example, which has escaped the risk due to floods and ice jams can hardly be said to be in poorer condition than a new dam. Nevertheless, the provision for retirement losses strictly upon an amortization basis proceeds upon the theory that value declines with and in proportion to age for all classes of property which must ultimately be retired. Where the causes of the retirement of property are not wear and tear nor obsolescence nor inadequacy but where the cause is a catastrophe, a depreciation reserve to measure the lessening in value is ridiculous. Eventually, most property of this nature will have to be retired but the amount of the reserve accumulated for its retirement is not a measure of the value. In such cases the retirement reserve is not a provision for depreciation but is really an insurance reserve. The provision for the retirement of property and the amount by which the value of the property has diminished are not identical. There is a practical need of an adequate retirement reserve but where an undepreciated valuation is used as the basis for return there is no need of having the full theoretical depreciation accrued on a life basis, on the balance sheet, unless there are other circumstances than those which arise in connection with rate regulation where the failure to have provided such a reserve would imperil the investor's interests.

The security of the investment largely depends on the completeness with which an undepreciated rate base, accepted as value for all purposes, supersedes the exchange value. If rate regulation therefore proceeds upon the theory that the retirement reserve need not fully represent a lessening of value in proportion to age and that the provision for such reserve therefore need not be as large as under the amortization theory, a depreciated rate base cannot consistently be used and it is important that value for rate making purposes be accepted as value for other purposes. For example, the purchase price in case of municipal or government acquisition must be consistent with the value used for a rate base or the investor will not be protected. In the case of private purchase and sale, the tendency is to establish the rate base as the exchange value. Other factors will of course influence this value but any adverse effect which they may have on the investor is in spite of and not because of stabilizing the rate base.

Neither does the use of an undepreciated rate base work any injustice to the rate payer provided such reserve as is set up for retirement of property is accrued on a sinking

fund basis with interest credited to it. This interest must come out of the earnings of the total property so that the return on the total property available to security holders is actually the return for interest and profit on the original investment and the true surplus.

The tendency has been to place too much stress on life tables largely due to the lack of adequate experience data although the lack of experience necessarily made the life tables defective, partly to the lack of time available for the study of the various cases by regulating bodies and to some extent to the lack of a full comprehension of the problem on the part of the utilities in their earlier years. It seems to me that the state commissions are now about at the point of adopting a broader basis. The new accounting classification which is really a joint production of the National Association of Railway and Utilities Commissioners and of the National Gas and Electric Associations discards the word "Depreciation" entirely and substitutes for it the term "Retirement". Also, the text of the classification has been very carefully drawn so as not to contain any ruling, express or implied, which would require rigid adherence to a life basis in making provision for the reserve. These things, in my opinion, represent a degree of progress with reference both to the regulation of rates and to the accounting for retirement expense. Right at present, however, we are confronted with the proposal of the Federal Power Commission which for its licenses would compel a rigid straight line provision for depreciation and which very evidently contemplates a corresponding reduction of value. The danger of such a requirement, particularly in the early years of a company's life need not be discussed. The requirement introduces this danger at the time when a straight line provision for depreciation will be accumulating a needless "cushion" in the retirement reserve. From the standpoint of the state commissions the proposal of the Power Commission would take away a part of the power which is needed to carry out the functions of the state bodies or else it will lead to confusion between the requirements of the Federal government and those of the state. The Proposed regulation does not seem to be required by the law establishing the Federal Power Commission. It seems to me to be founded on the idea that the principal purpose of the provision of a reserve is to reflect a diminishing value on the books whereas my conception is that the purpose is primarily to protect investor and customer against loss when the property is retired.