EXTRAORDINARY OBSOLESCENCE, RATE- MAKING AND THE ATOMIC REACTOR

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THE ADVENT of atomic energy as a source of power to generate electricity has raised a host of important and in many ways unique legal problems. Insurance coverage, tort liabilities, licensing procedures, federal pre-emption, public or private ownership and the like, have been the subject of considerable comment.¹ For the most part however, one phase of this new field which has been substantially overlooked is that any nuclear power reactor will still be an integral part of a public utility subject to the jurisdiction of some appropriate state or local regulatory commission. Hence, public utility commissions will be faced with the problem of adapting existing notions of utility rate regulation to an entirely new utility industry. Given the present rapid rate of technological development it is not unlikely that the industry will experience considerable obsolescence of existing atomic facilities before the expiration of their estimated useful service lives. Retirement of these assets before their costs have been fully recovered through depreciation charges raises questions of what treatment for rate-making purposes should be given to this unrecovered investment. Should the consumer of the utility service bear this loss in the form of higher future rates; should it be borne by investors through charges to income or earned surplus and exclusion of the obsolete property from the rate base; or should there be some allocation of the loss between these two groups? Regulatory commissions have been far from consistent in dealing with this problem in relation to existing utility operations.² Finally, is the atomic energy picture sufficiently unique to justify some form of direct subsidy by state or federal government to offset these obsolescence losses? This article will attempt to point out the considerations which are involved in formulating a rate-making policy for handling extraordinary obsolescence with a view to consumer and investor interests and within the framework of a national atomic energy policy.

At the outset it is necessary to examine the distinction drawn between "normal" and "extraordinary" obsolescence. The former is commonly included as

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¹ For a fuller enumeration and treatment of many of the legal problems involved reference may be made to the symposia reported in the following law reviews: 25 Geo. Wash. L. Rev. 471 (1957); 34 Tex. L. Rev. 799 (1956); 21 Law & Contemp. Prob. 1 (1956).

² See Cook, Abandoned Property and the Rate Base, 17 Accounting Rev. 243 (1943), for a presentation of the different results which have been reached in disposing of retirement losses.

an element in determining the annual charge for depreciation, since this charge is based on an asset's estimated useful life and in determining this period anticipated or normal obsolescence is considered. The annual depreciation charge is then recovered from the consumer as part of the cost of service. Extraordinary obsolescence describes the situation in which external causes that utility management could not reasonably be expected to anticipate render an asset useless before its costs have been fully recovered.³

Extraordinary obsolescence in turn is generally the result of one (or more) of three broad classes of causes. First, there is functional obsolescence resulting from unexpected advances in technology which, if employed, would either lower costs or increase output (or both) in relation to present equipment so that it would be uneconomical to continue to utilize the present equipment. Second, there may occur a sudden physical deterioration of a particular asset which substantially shortens or terminates its useful life.⁴ Third, operative equipment may become prematurely useless as a result of a continuing decline in demand for the service which the utility is selling. The present state and rate of advancement in nuclear technology plus the desire (shared by both public officials and private industry) to develop as rapidly as possible a commercially practical nuclear power reactor make it very likely that substantial obsolescence of atomic power facilities will result from the first (and less hopefully, from the second) of these causes. Considering the large capital outlays, ranging from 20 to 40 million dollars, required to construct an atomic power plant,⁵ the treatment of obsolescence losses for rate-making purposes will significantly affect consumer rate charges and investor earnings.

To illustrate the problem suppose XYZ Electric Company, a substantial and forward-looking utility, completes construction of an atomic power reactor and specialized equipment for heat transfer to its standard generating facilities at a

³ This distinction is recognized for federal tax purposes, Treas. Reg. § 1.167(a)-9 (1956); for accounting purposes, Paton, *Accountants' Handbook* 730-34 (3d ed., 1943); and for rate-making purposes, *Washington Gas Light Co. v. Baker*, 188 F.2d 11, 20 (App. D.C., 1950), cert. denied 340 U.S. 952 (1951).

⁴ An extreme example of this second category would be the catastrophe or casualty loss. E.g., *Fond Du Lac v. Eastern Wisconsin Elec. Co.*, 26 Wis. R.C.R. 380 (Wis. Pub. Serv. Comm'n, 1922) (gas company allowed to amortize explosion loss over five years, with interest at 6 per cent). It should be noted that a retirement loss occasioned by a nuclear incident would not be classed as an obsolescence, as the term is defined by many writers. Moyer, in *Economic Aspects of Fixed-Capital Obsolescence*, 14 *Accounting Rev.* 285-86 (1939), defines obsolescence as the "abandonment of unused potential productive power." The casualty loss differs in that the asset is destroyed or rendered non-operative by physical forces rather than made obsolete because of economic changes or technological advances. However, for rate-making purposes each of these losses raises similar problems of how to treat the unrecovered asset costs.

⁵ For a full discussion of capital costs involved in constructing the various kinds of nuclear reactors see Lane, *Where Reactor Development Stands Today*, *Nucleonics* 30-37 (Aug., 1956), especially Table 2, at 33. This article is reprinted in 2 *Hearings Before the Joint Committee on Atomic Energy on Development, Growth, and State of the Atomic Energy Industry*, 84th Cong., 2d Sess., 642-50 (1956). See Table 2, at 644.

cost of \$30,000,000. XYZ has in operation conventional plant and equipment which, net of accrued depreciation, are carried at \$160,000,000. Assume that the acquisition of the atomic power plant was financed by an appropriation of retained earnings of \$2,500,000, the issuance of additional bonds of \$15,000,000 and additional common stock of \$12,500,000. XYZ, with commission approval, estimates the useful life of the new reactor to be twenty years and will depreciate on a straight line basis. Proceedings are instituted and a new rate level and structure established utilizing the above figures to determine the annual depreciation charge and the total rate base. A rate of return of 7 per cent is allowed.

Case One: Suppose that after five years of operation it becomes apparent to XYZ's management that operating and maintenance costs are far exceeding original estimates. Further, recent technological advancements have led to the development of a reactor which at a smaller initial investment cost has proved to be substantially more efficient with a higher thermal output and lower operating and maintenance costs than XYZ's present model. Although the present reactor is still operative, management has determined that cost savings and increased productivity of the newly developed reactor would more than offset the net loss on retiring the present reactor if the amount of this loss were amortized "above the line"⁶ as an operating expense over a period of at least ten years and the declining balance included in computing the rate base.⁷ Because the cost savings would offset the amortized net retirement loss there would be no need to raise rates. The net retirement loss would equal the total initial investment cost less the \$7,500,000 recovered through prior annual depreciation charges, or \$22,500,000, assuming no salvage value and before tax computations.

Case Two: Suppose that after five years of operation the reactor has deteriorated badly; operating and maintenance costs have skyrocketed and it becomes apparent to XYZ's management that the reactor should be abandoned as soon as possible. But, unlike the situation in Case One, there is in this case no happy alternative of having an improved cost-saving model available as a replacement. However, assume that another type of nuclear reactor is available which has fully measured up to all expectations by operating competitively with conventional equipment, though with initial investment and operating costs approximately the same as those originally estimated for the obsolete reactor. In this situation, assuming no manipulation of the rate of return, there must necessarily be a rate increase if any part of the retirement loss is charged to the consumer, whereas in Case One the entire loss can be charged to the future consumers without requiring a rate increase.

⁶ The "line" in this phrase separates those deductions properly includible as part of the cost of service from those which are not.

⁷ Troxel, *Economics of Public Utilities* 359-363 (1947), presents an excellent mathematical analysis of how obsolescence is measured in terms of the availability of a more efficient means of production.

As a practical matter it would seem very likely that management would detect the impending obsolescence, in either case, some time before it becomes necessary to retire the asset. However, even if the utility can successfully establish with some degree of certainty that the obsolescence will result at a given future date, as it must in order to accelerate depreciation charges for federal income tax purposes,⁸ the regulatory commission is faced with much the same problems. It must determine how to deal with the present deficient depreciation reserve and whether to allow increased depreciation charges over the remaining years of useful life sufficient to recover the remaining costs, and if so, whether to charge these costs above or below the operating expense line. In other words, it must decide the same basic policy question of who—the rate payer or the investor (or some combination of both)—should bear the retirement loss. It would seem that if a commission would allow both amortization as an operating expense and inclusion in the rate base of property suddenly made obsolete, then for stronger reasons it would allow an accelerated charge to operating expense in cases where alert utility management has spotted the impending obsolescence before it occurs.

One further point should be noted. In Case Two XYZ Company must make a replacement in order to restore its former operating capacity if it is to continue to fulfill its obligation to serve. In the interim it will cover its demand by reverting (if the capacity factor permits) to its conventional equipment; otherwise it will purchase power from other sources. How the commission treats the retirement loss may make it more difficult to attract capital necessary to finance the replacement (if for example the loss is charged to earned surplus), but in any case a replacement of lost capacity must be made as speedily as possible. On the other hand, in Case One the same conclusion does not follow. The decision whether to replace the obsolete reactor with the more efficient model may depend on whether the utility is allowed (1) to amortize the loss above the line and (2) to include the unrecovered balance in the rate base. If the commission refuses, or management is convinced that it will refuse to allow amortization and inclusion in the rate base, it is clear that XYZ Company will continue to utilize the obsolete reactor so long as it continues to recover the depreciation charges, operating and capital costs. The statutory or common-law obligation to serve does not ordinarily extend to the regulatory commission the power to compel a utility to risk new capital in improved techniques.⁹ Consequently, management will not voluntarily improve its service or reduce its rates by replacing the obsolete reactor if the investor (whose vote determines

⁸ Treas. Reg. § 1.167(a)-9 (1956).

⁹ Support for this proposition comes, quite naturally, not from the utility commission but from the courts in reversing the commissions which transgressed the elusive line between regulation and management. E.g., *Re Diamond State Tel. Co.*, 48 Del. 317, 103 A.2d 304 (1954); *Pacific Tel. & Tel. Co. v. Public Utilities Comm'n*, 34 Cal.2d 822, 215 P.2d 441 (1950); *Harvey v. Corporation Comm'n*, 102 Okla. 266, 229 Pac. 428 (1924).

who management will be) is made to bear the retirement loss by forfeiting his return on this part of his investment, or worse, having his investment depleted by charges below the line or to earned surplus.¹⁰ On the other hand, in either case, allowing amortization and inclusion in the rate base of the retirement loss places on the present and future consumer the burden which, it can be argued, should have been borne by past consumers or should fall on the present investor. Furthermore, in Case One, such a result would delay the present and future consumers' enjoyment of the lower rates that would have been theirs had they not first been required to pay in the amount of the retirement loss. Analytically it may be argued that there is little difference between the two cases once the retirement is made. Accountants would generally contend that a loss is a loss irrespective of its causes and the fact that a cost-saving model is available in Case One is a fortuitous and irrelevant event so far as handling the unrecovered costs of the retired property.¹¹ However, for rate-making purposes the subsequent events may have a far greater significance than from a pure accounting standpoint.

TAX CONSEQUENCES FOR RATE-MAKING PURPOSES

Before the basic issues involved in determining where the obsolescence loss should fall are discussed, the tax consequences essential to computing the amount of the obsolescence loss must be considered. Assuming the present maximum corporate tax rate of 52 per cent to be applicable in the foregoing hypothetical cases, a substantial tax "saving" amounting to \$11,700,000 will result from deducting the entire obsolescence loss (represented by the unrecovered asset cost of \$22,500,000) in the year of retirement. Under these circumstances it is likely that the commission would seek to minimize the disruptive income tax consequences by "normalizing" the effects of the tax "saving" occurring in the year of the retirement. "Normalization" involves adjusting the tax expense allowed each year as part of the cost of service so that it equals the amount of tax expense that would have been payable had the retirement loss

¹⁰ Although many writers consider that only the residual equity investor (the common shareholder) would be affected by charging a loss of this kind to earned surplus, it is suggested that this is not a sound view. Senior security holders have a substantial interest in the company's earned surplus position. For example, preferred dividends or payments on income bonds may be geared to a minimum earned surplus or annual income level. Furthermore, the assets representing earned surplus comprise a part of the capital cushion on which senior security holders rely in two important respects; first, as a protection of their assets preference in the event of liquidation, and second, in the form of the earning power which these assets represent. If the loss were charged against surplus and former operating capacity is to be restored, any replacement would have to be financed by new capital. To the extent that the new debt or equity holders receive rights equal or superior to those of the present senior security holders, the latter's ownership interests may be correspondingly diluted. These interests are more apparent in cases where the loss would require in addition a capital reduction. See Dodd and Baker, *Cases on Corporations* 997-99 (2d ed., 1951).

¹¹ Paton and Paton, *Asset Accounting* 223-29 (1952); Finney, *Principles of Accounting (Intermediate)* 315-17 (3d ed., 1946).

never occurred.¹² The tax "saving" would, in effect, be spread out over the years in which it was estimated that the reactor would have been operative. The fact that there is, however, no actual long-run "saving" can readily be demonstrated since the obsolescence has simply accelerated into the retirement year the depreciation deductions which would have been taken annually over the remaining fifteen years of estimated useful life. Hence, if the regulatory commission determines that the utility's investors should be completely insulated from any part of the loss and that the rate payers should bear the entire loss, it must (1) plug an imaginary \$10,800,000 figure into the rate base to restore it to its former position¹³ and (2) allow a future amortization of the net loss of \$22,500,000 as an operating expense to be charged above the line. The \$22,500,000 figure is necessary since the amortized expense allowed as a part of the cost of service is not deductible for purposes of determining taxable income. The rate payers must therefore contribute \$22,500,000 in order to produce the \$10,800,000 net-of-taxes required to convert the imaginary rate base component into one represented by actual assets with tangible value.¹⁴

On the other hand, if neither inclusion in the rate base nor amortization of the unrecovered \$22,500,000 is allowed, the entire obsolescence loss would fall upon the investors. The only significant tax consequence would be the increased income net-of-taxes resulting from the reduced tax expense in the year of the loss. If only amortization is allowed a commission must still determine what amount should be amortized, the total unrecovered investment cost or this cost minus the tax "saving."¹⁵

¹² For a statement of the accounting procedure involved in normalization see American Institute of Accountants, Accounting Research Bulletin, No. 43, 87-90 (1953); cf. Priest, What Should Commissions Regulating Public Utilities Do About Accelerated Tax Depreciation, 39 Va. L. Rev. 579 (1950). For a discussion of several versions of normalization with respect to liberalized depreciation allowed under Section 167 of the Internal Revenue Code of 1954, see The Effect on Public-Utility Rate Making of Liberalized Tax Depreciation Under Section 167, 69 Harv. L. Rev. 1096 (1956).

¹³ This assumes that the \$7,500,000 depreciation charges collected over the five years of operation and the \$11,700,000 tax "savings" have been promptly reinvested in rate-base assets or carried as working capital. In such case the \$10,800,000 figure is necessary as a book entry to maintain the original "prudent" investment rate base.

¹⁴ Several recent decisions indicate that the tax problem should be handled by deducting the federal tax "saving" from the remaining unrecovered cost figure and treating the difference as representing the net loss, regardless of how the net loss is in turn to be disposed of. Springfield Gas Light Company, 1 P.U.R.3d 65, 69 (Mass. Dep't of Pub. Util., 1953). Accord: St. Paul City Ry. v. City of St. Paul, 242 Minn. 188, 64 N.W.2d 487 (1954); Central Illinois Elec. & Gas Co., 64 P.U.R. (n.s.) 105, 108 (Ill. Commerce Comm'n., 1946). Such a method of computing the net loss seems questionable insofar as it assumes that the temporary tax reduction is in effect an actual tax "saving" rather than simply an accelerated recovery of the normal depreciation charges.

¹⁵ In computing the amount of the obsolescence loss the tax overlay causes two different figures to emerge, one (\$10,800,000) for rate base determination, and another (\$22,500,000) for amortization purposes. The latter figure perhaps more truly represents the loss, since it is what the rate payers would have to contribute to make the investors whole in terms of operating (i.e. income producing) capacity and tangible asset values. Whether former operating

EXTRAORDINARY OBSOLESCENCE IN RELATION TO
DEPRECIATION ACCOUNTING

In any analysis of this problem care must first be taken to distinguish extraordinary obsolescence from depreciation accounting. The Supreme Court has indicated in *Knoxville v. Knoxville Water Company*¹⁶ that a public utility has a duty to depreciate. The Court stated:

If, however, a company fails to perform this plain duty and to exact sufficient returns to keep the investment unimpaired . . . the fault is its own. When, therefore, a public regulation of its prices comes under question the true value of the property then employed for the purpose of earning a return cannot be enhanced by a consideration of the errors in management which have been committed in the past.¹⁷

Strictly construed this decision would prevent only the inclusion of passed depreciation as a component of the rate base, not necessarily prohibit an amortization of the deficiency as a charge against future consumers, though these separate issues are often erroneously run together under a general prohibition against *any* form of adjusting for prior depreciation mistakes. The *Knoxville* case may further be distinguished since it is concerned primarily with the constitutional guarantee that property shall not be taken for public use without just compensation. It is one thing to say that a commission can constitutionally refuse to adjust present rates so as to reflect deficiencies arising because of past inadequate depreciation. It is quite another to say that a commission cannot constitutionally allow present rates to reflect an adjustment for these past inadequacies.¹⁸

capacity and asset value will have been restored once the dollars representing the original assets have been collected would in turn depend upon the stability of the price level in the interim and the rate of technological advance.

¹⁶ 212 U.S. 1 (1909).

¹⁷ *Id.*, at 14. See *Galveston Electric Co. v. Galveston*, 258 U.S. 388, 395 (1921), for similar reasoning by Justice Brandeis.

¹⁸ Cf. *Lindheimer v. Illinois Bell Tel. Co.*, 292 U.S. 151, 166-68 (1934). Constitutional questions concerning depreciation and, to a lesser extent, extraordinary obsolescence which had plagued the Court since *Smyth v. Ames*, 169 U.S. 466 (1898), have now been largely eliminated by the judicial self-restraint imposed by the "reasonable end result" test of *FPC v. Hope Natural Gas Co.*, 320 U.S. 591 (1944). However, prior to *Hope*, the Court had shown its awareness of the extraordinary obsolescence problem, though always in the constitutional context of *Smyth v. Ames*. For example, in *Pacific Gas & Electric Co. v. San Francisco*, 265 U.S. 403, 415 (1924) the Court stated: "The obsolescence in question did not result from ordinary use and wear. Certainly it could not have been long anticipated . . . ; to provide for it out of previous revenue was not imperative, if possible." Justice Brandeis, dissenting, would have rejected "fair value" entirely and included the scrapped plant in the rate base. *Id.*, at 425 (1924). In an earlier case, *Kansas City Ry. Co. v. United States*, 231 U.S. 423, 451 (1913), the Court recognized that the abandonment caused by decline in demand is to be distinguished from the replacement of facilities inadequate to meet future service needs—though the problem was treated solely as one of depreciation accounting. Cf. *United Gas Pub. Serv. Co. v. Texas*, 303 U.S. 123 (1938), where the Court indicated that the utility was not constitutionally entitled to inclusion of abandoned property in the rate base, while intimating that the commission might in its legislative discretion allow such an inclusion.

How to deal with inadequate depreciation reserves, whether to deduct the actual "book" or estimated "required" reserve in computing the net rate base, whether to reconstitute an inadequate reserve by charges to surplus or operating expenses, these are formidable and widely discussed problems.¹⁹ However, many of these problems are avoided if it is recognized that depreciation and extraordinary obsolescence are distinct concepts that should be treated differently for rate-making purposes. This is true notwithstanding the fact that an initial computation of accrued depreciation (whether on a book or required basis) is a necessary but distinct first step in determining the amount of the obsolescence loss. Depreciation accounting is concerned primarily with allocation and recovery of past cost. It has been defined as "a system of accounting which aims to distribute the cost or other basic value of tangible capital assets . . . over the estimated useful life of the unit . . . in a systematic and rational manner."²⁰ Extraordinary obsolescence on the other hand should not be treated as though an adjustment must be made for past accounting errors. By hypothesis it involves an element of uncertainty which cannot reasonably be anticipated. This uncertainty, coupled with the refusal of regulatory authorities to recognize remote chances of unexpected termination of useful life,²¹ means that there can be no assessing of "fault" (as in the *Knoxville* case) because of management's failure to provide for the consequences of extraordinary obsolescence.²² A utility can be required to depreciate currently its tangible assets in order to maintain its capital investment (and indirectly to maintain the productive capacity with which it satisfies its obligation to serve) and to present a more accurate cost picture for rate-making and earnings regulation. However, a utility cannot be required to account currently for extraordinary obsolescence, and, when such a loss occurs, it should be recognized by the commissions and courts that fundamental policy questions concerning the interests of consumers, investors, and in the case of an atomic utility, important national interests, are involved, not merely the application of mechanical regulatory rules or accounting devices.

Care must further be taken to distinguish between regulated and unregulated

¹⁹ National Association of Railroad and Utilities Commissioner, Report of Committee on Depreciation XIX (1943); Lippitt, Net Investment Rate Making—The Deduction for Depreciation, 62 Harv. L. Rev. 1155, 1179 (1949).

²⁰ Report of the Committee on Terminology, American Institute of Accountants, Accounting Terminology Bulletins, No. 1, at 25 (1955).

²¹ E.g., *Public Service Comm'n v. United Rys. & Elec. Co.*, 155 Md. 572, 605, 142 Atl. 870, 882 (1928).

²² If the depreciation analogy were pressed too hard there is language in at least two Supreme Court decisions which tends to weaken the so-called "water over the dam" view of the *Knoxville* case by intimating that past depreciation and earnings histories may be considered in fixing the level of present rates. *Lindheimer v. Illinois Bell Tel. Co.*, 292 U.S. 151, 168 (1934); *St. Joseph Stock Yards Co. v. United States*, 298 U.S. 38, 66 (1936). See also the dissenting opinion in *United States v. Public Utilities Comm'n*, 158 F.2d 533, 538 (App. D.C., 1946) for a condemnation of the "water over the dam" rule used by the majority to protect investors from present earnings adjustments to reflect past earnings excesses.

industries in determining treatment of a retirement loss such as we are considering. The view of most accountants is that an unexpected loss of any kind substantial enough to distort the significance of the income statement should be charged directly to earned surplus.²³ Such a charge, while initially decreasing the available source out of which dividends may be paid, does not determine where the ultimate burden of the loss will fall in the case of an unregulated company. Disposition of the loss will depend on the degree of market power the particular company has. If the unregulated company is a monopoly it can and will raise its prices so as to recoup from its consumers as quickly as possible the loss suffered.²⁴ Conversely, if the company is faced with a competitive market in which no price rise is economically feasible, the loss will remain with the investor. The utility, however, has no market power in the sense that it is free to manipulate rates; on the contrary, the rates are regulated by an outside force. Hence, the utility is in the rather paradoxical position of being a monopoly in name only without price power and with earnings limited by the particular commission's idea of a "fair return." Moreover, the idea of a constitutionally guaranteed but limited "profit" in the form of just compensation is foreign to unregulated industry. And aside from the constitutional question there is direct public concern with the need to maintain and, if necessary, to attract capital to sustain the utility's operations. Because of these fundamental differences it is suggested that conventional accounting treatment for extraordinary obsolescence losses may not be justified for rate-making purposes.²⁵

EFFECTS OF DIFFERENT REGULATORY THEORIES

How a commission will deal with the problem of extraordinary atomic reactor obsolescence may well be influenced by the particular theory of rate regulation under which it traditionally operates. Current regulatory theories can be grouped generally under three broad headings—fair value, reproduction cost,

²³ Wixon, *Accountants' Handbook* 16.24-25 (4th ed., 1956); American Institute of Accountants, *Accounting Research Bulletins*, No. 43, at 63 (1953). Any theory that retirement losses should be treated as deferred charges and carried as an asset is considered basically "unsound." Wixon, *supra*, at 16.25.

²⁴ The price increase is due in part to the decrease in supply resulting from the obsolescence. Also the monopolist's ability to pass on the loss to the consumer assumes, as is usually the case, that the monopolist is not maximizing his profits in the short run. See Gorden, *Short-Period Price Determination in Theory and Practice*, 38 *Am. Econ. Rev.* 265, 269-71 (1948). If he were, and a price rise were not profitable, the investor would bear the obsolescence loss by earning less of a monopolistic profit than was previously the case or suffer a dilution of his equity if additional capital were required to restore former operating capacity.

²⁵ Since many utilities are subject to the accounting control of the Securities and Exchange Commission, there is the further problem of presentation of retirement losses in a form which will satisfy the SEC's accounting policies. "In cases where financial statements filed with this Commission . . . are prepared in accordance with accounting principles for which there is no substantial authoritative support, such financial statements will be presumed to be misleading or inaccurate despite disclosures contained in . . . footnotes to the statements. . . ." Securities and Exchange Commission, *Accounting Series Release No. 4* (1938).

and original cost or prudent investment. Whether differences in theory should cause different results in the light of the purposes of federal atomic energy legislation and administrative policy is a related question which will be deferred for later consideration.

Fair value and reproduction cost. The famous pronouncement of "fair value" by Justice Harlan in *Smyth v. Ames*²⁶ governed the thinking of commissions and courts on rate base valuation for fifty-six years or until the so-called "liberation" offered by the *Hope* case²⁷ in 1944. Under the aegis of *Smyth v. Ames* utility commissions consistently excluded from the rate base the value of the assets rendered obsolete and no longer capable of being employed in the utility's operations. This position grew out of the following statement in *Smyth v. Ames*:

[T]he basis of all calculations as to the reasonableness of rates to be charged . . . must be the fair value of the property being *used* by it for the convenience of the public.²⁸

These words gave rise to the oft-repeated rule of thumb that in order for property to be properly included in a rate base valuation, it must be "used or useful" (sometimes more restrictively "used *and* useful") in the public service. The "used and useful" rule seems to apply for stronger reasons in reproduction cost jurisdictions. In *Los Angeles Gas and Electricity Corp. v. Railroad Commission of California*,²⁹ the Supreme Court recognized the simple logic that would prohibit computing the reproduction costs of a non-existent or abandoned asset.

Whatever may be said of the propriety of including this entire plant in a valuation based on historical cost, in the light of prudent investment, we perceive no reason for embracing unnecessary facilities in an estimate of cost of reproduction.³⁰

The area of disagreement centered largely on the other aspect of the loss, namely whether any part of unrecovered investment cost could be amortized over future years as an operating expense. As will be shown later, in a majority of the court and commission decisions applying "fair value," with the one general exception of the street railway cases, the loss or some portion thereof was allowed to be amortized as an operating expense.³¹

Consequently, and it would seem unfortunately, reproduction cost as well as fair value jurisdictions have been hemmed in by the mechanics of their own theories insofar as the "used and useful" rule operates as an automatic prohibi-

²⁶ 169 U.S. 466 (1898).

²⁷ *FPC v. Hope Natural Gas Co.*, 320 U.S. 591 (1944); see Rose, *The Hope Case and Public Utility Valuation in the States*, 54 Col. L. Rev. 188 (1954).

²⁸ 169 U.S. 466, 546 (1898) (italics added). Fair value, however, affords some flexibility since a commission may include in the rate base a portion of the cost of property becoming obsolete relative to its usefulness at the valuation date or in the immediate future.

²⁹ 289 U.S. 287 (1933).

³⁰ *Id.*, at 311.

³¹ See notes 39 and 40 *infra* and accompanying text.

tion against inclusion of obsolete property in rate base computations. The primary function of a public utility commission is not valuing property, but regulating rates and earnings so as to encourage maintenance and expansion of productive capacity with a view toward future service requirements and costs. In the context of an atomic utility industry the attraction of new investment capital will be an important regulatory aim. This aim must be reconciled with the equally important need to encourage technological advancement which in turn may render existing facilities obsolete. Slavish application of the "used and useful" rule to prevent a return on the capital represented by the retired property is clearly not the way to achieve this reconciliation. Paying lip service to outmoded valuation rules while avoiding their effects by such indirections as raising the rate of return, inclusion as stand-by plant, or over-valuing other assets would be unsatisfactory simply because it would conceal fundamental regulatory problems which must be aired if the present national plan for private ownership of nuclear power facilities under public regulation is to succeed.

Prudent investment or original cost. In theory it would seem that amortization and inclusion in the rate base of unrecovered costs of obsolete property can be more easily fitted in to a prudent investment or original cost regulatory scheme. In its purest form as stated by Justice Brandeis in his special concurrence in *Missouri ex rel. Southwestern Bell Tel. Co. v. Public Service Comm'n*³² the prudent investment theory requires only that the utility earn a fair return on the amount of capital prudently invested in it:

The thing devoted by the investor to the public use is not specific property, tangible and intangible, but capital embarked in the enterprise. Upon the capital so invested the Federal Constitution guarantees to the utility the opportunity to earn a fair return.³³

Emphasis is thus placed not on a valuation of specific property but on the capital invested in assets necessary for the utility's operations. In terms of extraordinary obsolescence, so long as the "prudence" requirement (softened by Brandeis' presumption in favor of prudence unless the contrary is shown³⁴) is met, there would seem to be no objection to amortization and inclusion in the rate base of an undivided amount of investment capital although the asset it formerly represented is no longer used by the utility.³⁵ Justice Brandeis expressly sanctioned such treatment in his dissent in *Pacific Gas and Electric Co. v. San Francisco*:

The cost of a scrapped plant is carried as a part of the investment on which a return must be paid unless and until it has been retired, that is fully paid for, out of the depreciation reserve. Thus, justice both to the owners of the utility and to the public is assured.³⁶

³² 262 U.S. 276 (1933).

³³ *Id.*, at 290.

³⁴ *Missouri ex rel. Southwestern Bell Tel. Co. v. Public Service Comm'n*, 262 U.S. 276, 290 (1933).

³⁵ Cf. Troxel, *Economics of Public Utilities* 264-66 (1947).

³⁶ 265 U.S. 403, 425 (1924).

One may wonder whether Brandeis' resolution in terms of justice between consumer and investor is much more than a restatement of the basic problem. However, to date the only opinions specifically recognizing Brandeis' view (though with modifications we shall discuss later) have come from prudent investment jurisdictions—Massachusetts and the District of Columbia.³⁷

Before leaving prudent investment it should be noted that the theory will not provide the easy solution for every case and can have application to extraordinary obsolescence losses (or any loss for that matter) only if the utility can take in revenues sufficient to cover these losses. As an extreme example, suppose a substantial part of a utility's property is destroyed as a result of some catastrophe or suppose utility equipment becomes obsolete because of a sudden decline in demand for the utility's service.³⁸ In such cases no amount of prudence in the original investment can outweigh the fact that there is insufficient or perhaps no revenue available which can be used to regain or maintain capital investment and earn a return thereon. It is apparent that extraordinary obsolescence is a risk that must be borne by the investor in these extreme situations where the loss cannot be passed on to the rate payer. The less extreme situations (such as the two hypothetical cases outlined in the introduction) where the loss *can* be borne by either group are more troublesome because the point is soon reached at which the ready answer of the particular theory in vogue ceases to provide a just or practical result. At this point the more reasoned opinions will focus their attention on the facts of the particular case: the past rate level, earnings, and depreciation picture, the capital structure, the need for maintenance or expansion of operating facilities, the structure and strength of the consumer demand curve, the cause of the obsolescence, the need to encourage technological advancement, and, in the case of atomic power, the responsibility to an overriding national policy. Since a sensible resolution of this problem will consider these factors in terms of weighing the interests of the consumers and the investors, it is appropriate to turn to these interests to see how they have been treated by courts and commissions in the past, and finally, how they can and should be fitted into the atomic power picture.

STRUCTURE AND STRENGTH OF THE CONSUMER DEMAND

Commission treatment of obsolescence in the street railway and natural gas cases provides an excellent background for examining the problem at hand. The advent of the automobile caused many street railway companies to abandon existing traction equipment and convert to buses in an attempt to compete on more equal terms with this new means of transportation. Similarly the discovery in large quantities of natural gas of a higher B.T.U. rating per cubic

³⁷ *Washington Gas Light Co. v. Baker*, 188 F.2d 11 (App. D.C., 1950); *Springfield Gas Light Co.*, 1 P.U.R.3d 65 (Mass. Dep't of Pub. Util., 1953).

³⁸ As was the case in the history of the street railway industry; see note 39 *infra* and accompanying text.

foot which could be put at the consumers' disposal at a lower per-unit cost than manufactured gas led to the abandonment of numerous gas generating plants. Generally speaking, the retirement loss arising from the obsolescence of the existing equipment was placed on the street railway investor³⁹ and the gas consumer.⁴⁰

It has been suggested that this difference in treatment can be explained on one of several grounds, among them financial gain resulting from the conversion to natural gas as distinguished from the mere convenience of conversion to buses, or the general belief that the street railways had already been allowed to recover through rates their initial capital outlays.⁴¹ Although these factors are no doubt involved it would seem that the fundamental difference lies in the causes of the obsolescence and the economic settings in which they occurred. In the street railway cases, using our earlier analysis of the measure of obsolescence, there were no resulting cost savings arising from the conversions which could absorb the future amortization of the unrecovered investment costs. On the contrary, the necessity for rapid depreciation of the motor buses would probably raise the total cost of service irrespective of how the retirement losses were handled. Yet, if the demand for the service were such that a rate increase would result in a greater volume of total revenue, the increasing costs would not appear as formidable. Unfortunately, the demand outlook in many of the street railway cases was bleak in two respects: one, it was generally declining; two, it was relatively elastic so that any rate increase would only further accentuate the decline in total revenue.⁴²

The conversion to natural gas, on the other hand, occurred under very different circumstances and presents some striking similarities to the obsolescence of the atomic reactor posed in Case One. In both cases economies and improved quality of product resulting from replacements and conversions are sufficient to cover in whole or in large part the amortization of the remaining asset balance

³⁹ Salt Lake City Lines, 78 P.U.R. (N.S.) 1 (Utah Pub. Serv. Comm'n, 1949); Northern States Power Co., 1933A P.U.R. 297 (Wis. Pub. Serv. Comm'n, 1932); Eastern N.J. Power Co., 1930A P.U.R. 419 (N.J. Bd. of Pub. Util. Comm'rs, 1930). Contra: San Diego Transit System, 4 P.U.R.3d 129 (Cal. Pub. Serv. Comm'n, 1954); St. Joseph Ry., Light, Heat and Power Co., 5 P.U.R. (N.S.) 253 (Mo. Pub. Serv. Comm'n, 1934).

⁴⁰ Washington Gas Light Co. v. Baker, 188 F.2d 11 (App. D.C., 1950); Racine v. Wisconsin Natural Gas Co., 100 P.U.R. (N.S.) 467 (Wis. Pub. Serv. Comm'n, 1953) (though with a caveat that this treatment is an exception to the general rule); Wisconsin Southern Gas Co., 100 P.U.R. (N.S.) 71 (Wis. Pub. Serv. Comm'n, 1953); Springfield Gas Light Co., 1 P.U.R.3d 65 (Mass. Dep't of Pub. Util., 1953). Contra: State ex rel. St. Louis v. Public Service Comm'n, 341 Mo. 920, 110 S.W.2d 749 (1937); Joplin Gas Co., 1923D P.U.R. 332 (Mo. Pub. Serv. Comm'n, 1923).

⁴¹ See Accounting for Extraordinary Obsolescence, 65 Harv. L. Rev. 1431, 1439 (1952).

⁴² For a recent example of the plight of a street railway company facing a falling elastic demand and increasing costs, where any rate increase would simply accelerate the decline in revenue, see Eastern Massachusetts Street Ry., 95 P.U.R. (N.S.) 33, 36-39 (Mass. Dep't of Pub. Util., 1952).

over some reasonable future period (perhaps the remaining years of the original estimated life).⁴³ More important, the demand situation is strong in both industries, and this factor is significant in two respects. First, in Case One, where cost-saving features of the replacement reactor will offset the cost of amortizing the obsolescence loss, the burden which the consumer would bear takes the form of a deferral of the enjoyment of the fruits of the technological advancement (i.e., the lower rates resulting from the economies). The more sophisticated rate payer may realize that analytically this deferral has the same effect as the rate increase (relative to the rates fixed if the loss were charged to the investor) necessary in Case Two where no cost-saving alternative exists. Yet as a practical matter such a deferral would cause no actual out-of-pocket impact and would be unlikely to drive the rate payer to a competing source of power (*if* one were available). Second, from an economic standpoint, it can be assumed that the rate payer, in determining what utilization of his income will best satisfy his particular wants, will certainly pay the same rate for electric power if, as in Case One, no rate increase is needed to cover the retirement loss and costs of the replacement. Hence, it can be argued that an important factor to be considered in balancing the interests of the consumers and investors is the present and prospective strength and structure of the demand curve.

This second argument deserves further consideration since it might seem to be a statement of the conclusion that the consumer should bear the retirement loss, rather than a factor to be weighed in determining where the loss should fall. Economists may chafe at the value judgment inherent in the notion that the consumer *should* bear this loss because he *will* do so. In a sense the argument recognizes and accepts the worst aspects of monopoly market analysis. However, any analogy to the economic concept of monopoly would not be well taken. Unlike the unregulated monopoly, the local public utility is born a full-blown monopoly and blessed at the outset with the sovereign's approval on the theory that the public interest will best be served without competition. Regulation takes the place of competition to keep the utility from exploiting its position by requiring that the utility earn no more than a fair return on its investment. The consumer of electric power (which as a basic need undoubtedly does not rank far below food, clothing and shelter) must rely on the regulatory body to represent his interest in receiving the service at a fair rate. The "fair" rate is one which will cover the total cost of service, including the capital costs in the form of "fair" returns, but no more.

We are thus left with the strange picture of applying the competitive market norm (under which the forces of supply and demand will in theory tend to equate price with costs) to an artificially created monopoly situation to deter-

⁴³ For an indication of the lower costs per unit of gas resulting from the conversion to natural gas see *Economics of Gas Conversions*, 32 *American Gas Ass'n Monthly* 17.45 (1950); *Problems of Management Connected with Introducing Natural Gas into Manufactured Gas Systems*, *American Gas Ass'n Proceedings* 146-53 (1950). See also *Racine v. Wisconsin Natural Gas Co.*, 100 P.U.R. (N.S.) 467 (Wis. Pub. Serv. Comm'n, 1953).

mine the fairness of rates and earnings. Yet in terms of nuclear extraordinary obsolescence losses, the question of reaching a fair solution involves more than weighing the interests of the particular rate-payers and investors. Important national policies are involved, and in light of these policies the fact that the rate payer will absorb an obsolescence loss becomes more meaningful. It would seem that in considering the factors involved in determining where it is fair to place an obsolescence loss the existence of a strong inelastic demand is one which can and should have considerable weight if only in the negative sense of removing a possible objection to putting the loss on the rate payer. A commission should consider the rate-payer's ability to bear the loss in relation to consequences of taking the opposite course of putting the loss on the investor; and this would seem to be particularly significant with regard to an atomic utility because of the important role private investment must play in the growth and development of the industry under the present national plan.

THE INVESTOR'S INTERESTS AND HIS FUNCTION AS CAPITAL PROVIDER

The function of the investor in the utility field is of course to provide the capital with which the utility can undertake to fulfill its fundamental obligation to serve the public. At the outset two obvious but important observations should be noted. First, the investor enjoys complete freedom of choice in determining where to invest his funds—a situation in sharp contrast to the consumer who will pay any price within reason for his electric power. No public authority can compel the private investor to put his money in utilities. Second, as a corollary, regulatory commissions generally have no authority to compel a utility to seek new capital for either expansion or improvement of its existing facilities.⁴⁴ Both the stimulus and response are determined by considerations basic to a free enterprise economy, primarily those of profit expectation as weighed against the chance of loss. Given the basic premise that the atomic power industry is to develop under private ownership, it becomes imperative that regulation allow earnings (or the prospect of earnings) sufficient to permit the utility to compete with other investment opportunities for private capital. The Supreme Court in one form or another has consistently treated the need to attract capital as an important element in passing on the constitutional “validity” of any prescribed rate-earnings structure.⁴⁵

⁴⁴ See note 9 *supra*. However, this prohibition is not as severe as one might be led to believe since a commission may be able to achieve the desired results by indirect means, such as holding returns to the bare constitutional minimum or conversely permitting more generous returns as a reward for efficiency. Further, in extreme cases of dereliction a commission may tighten all authorized controls, particularly in regard to service standards, accounting procedure and records, financial and corporate regulation, and determinations as to depreciation charges, allowable expenses and rate base computations—in other words a general plan of harassment.

⁴⁵ E.g., *Bluefield Co. v. Public Service Comm'n*, 262 U.S. 679, 692–93 (1923) (“The return should . . . enable [the utility] to raise the money necessary for the proper discharge of its public duties.” *Id.*, at 693).

In freeing utility commissions from the constitutional strictures of "fair value," the Court in the *Hope* case set out four tests for determining the "validity" of rates charged.

Rates which enable the Company to operate successfully, to maintain its financial integrity, to attract capital, and to compensate its investors for the risks assumed certainly cannot be condemned as invalid. . . .⁴⁶

This broad language taken in context of the "end result" holding supplies no precise formula for application in every case. However, the last two "tests," attracting capital and compensating investors for risks, are significant in that they go beyond the bare minimum constitutional protection and involve the policy problems of determining whether capital should be attracted and what risks the investors should assume. For obvious reasons regulation should not attempt to attract capital to a utility dying for want of demand. On the other hand, it would seem that for policy reasons the atomic power industry stands in a unique position so far as capital needs are concerned. Before turning to these atomic power policy considerations, we shall consider the utility investor's position as a risk taker and how recent court and commission opinions have interpreted this position.

Although a commission can formulate a regulatory program favorable to the utility investor, we have seen that such a program could not be designed to insulate the utility investor from every conceivable risk of loss. Any argument that the investor's capital be maintained and earn a fair return in all possible situations would be inconsistent with a fundamental concept of free enterprise economy, namely that the capital provider is also the risk taker. Yet by investing in utilities these risks are substantially reduced because of the constitutional and statutory protection afforded. Risk can further be reduced by accepting debt or preferred securities with a lower contractual return. Yet, in the nature of things, the investor's risk of loss can never be wholly eliminated. This is particularly true of the residual owners, the common stockholders who impliedly assume the calculated risk that the possibility of profit exceeds the risk of loss. Moreover, there is no constitutional guarantee that profits will or must invariably be earned on utility investment. On the contrary, the Supreme Court has held that "regulation does not insure that the business shall produce net revenues."⁴⁷

Regulatory commissions have considerable latitude in determining how to distribute the losses which result when risks such as extraordinary obsolescence or casualty materialize. We have observed that in dealing with extraordinary obsolescence commissions and courts, to justify their results, have generally spoken in terms of the particular regulatory theories involved and whether as a logical matter abandoned property can be deemed "used and useful." However, aside from the street railway cases where it is often impossible

⁴⁶ *FPC v. Hope Natural Gas Co.*, 320 U.S. 591, 605 (1944).

⁴⁷ *FPC v. Natural Gas Pipeline Co.*, 315 U.S. 575, 590 (1942).

to pass any part of abandonment losses on to the rate payers, recent opinions show a marked tendency to strike a compromise position by allowing amortization of the unrecovered costs of obsolete equipment as part of the cost of service while excluding the declining balance from the rate base.⁴⁸ One variation on this theme is to allow some proportion of the balance, usually one-half, to be recovered by amortization;⁴⁹ another is to allow interest to be charged as an operating expense on the unrecovered balance in lieu of excluding it from the rate base.⁵⁰

Two recent opinions, each applying the prudent investment theory, have taken a further step by deciding that it is permissible to allow both amortization and a fair return on the unrecovered cost of obsolete assets which had been retired. In both opinions this view is taken subject to a general limitation that the financial history of the utility be free from any indication of excessive returns or depreciation charges. In the *Washington Gas Light* case,⁵¹ the District of Columbia Public Utilities Commission allowed inclusion in the rate base of the unrecovered costs of abandoned manufactured-gas plants and handled these costs as if they had resulted from an error in estimating useful life for depreciation purposes. The district court (in an informal opinion) reversed, holding that the Commission had erred in including the abandoned property in the rate base.⁵²

The court of appeals affirmed the district court order setting aside the rate increase but did so on very different grounds. In considering its function on appeal the court felt that "the composition of the rate base falls within the province of the commission under the doctrine of the *Hope* case."⁵³ In proceed-

⁴⁸ San Diego Transit System, 4 P.U.R.3d 129 (Cal. Pub. Util. Comm'n, 1954); Wisconsin Southern Gas Co., 100 P.U.R. (N.S.) 71 (Wis. Pub. Serv. Comm'n, 1953); Racine v. Wisconsin Natural Gas Co., 100 P.U.R. (N.S.) 467 (Wis. Pub. Serv. Comm'n, 1953) (subject to the caveat that only special circumstances, such as better gas at lower rates, allow an exception to the general rule).

⁴⁹ St. Paul City Ry. v. City of St. Paul, 242 Minn. 188, 64 N.W.2d 487 (1954); Minn. Street Ry. Co. 10 P.U.R.3d 356 (Minn. Railroad and Warehouse Comm'n, 1955). In each of these opinions the major concern was to determine the "actual" loss as opposed to the book loss, and in each case, because of the difficulties in computing this illusive "actual" loss, the commission (court) settled for half of the book loss.

⁵⁰ Pacific Electric Ry. Co., 96 P.U.R. (N.S.) 105 (Cal. Pub. Util. Comm'n, 1952); San Diego Transit System, 58 P.U.R. (N.S.) 454 (Cal. Pub. Util. Comm'n, 1951).

⁵¹ Washington Gas Light Co., 83 P.U.R. (N.S.) 4 (D.C. Pub. Util. Comm'n, 1949). The Commission stated (at 13): "It is obvious that, under present day concepts of depreciation, any factor causing the retirement of property should, if at all possible, be taken into account in fixing depreciation accrual rates. The record is clear that this was not done with respect to the property under consideration. It follows that the exclusion of this item from the rate base would deprive investors of a return on an investment originally made to furnish utility service which, by reason of inadequate depreciation accruals, was not fully recovered at the time of the abandonment."

⁵² The district court was apparently troubled by the Commission's use of the prudent investment theory in general, and did not feel constrained by the *Hope* "end result" doctrine. See Brief for Appellants 39, 40 (quoting from district court informal opinion).

⁵³ Washington Gas Light Co. v. Baker, 188 F.2d 11, 18 (App. D.C., 1950), cert. denied 340 U.S. 952 (1951).

ing to consider whether the end result was just and reasonable the court made the following observation:

If a unit of property resulting from prudent investment becomes obsolete before it has been recovered in full by the investor (either through annual depreciation charges or through returns sufficient to compensate for such inadequacy), it is not necessarily erroneous as a matter of law for the Commission to include it in the rate base until such recovery has occurred. Such a course may be necessary in order to assure efficiency and progress in the art and the continued attraction of capital to the enterprise.⁵⁴

But as surely as the court gave with one hand it imposed a limitation which effectively took back with the other. Inclusion of the abandoned property was made contingent upon a finding by the Commission that investors have not been compensated for assuming the risk of unanticipated obsolescence during the useful life of the property through including obsolescence

(1) as one of the elements used in calculating depreciation expense, or (2) as a risk considered in fixing the permissible rate of return. If, in the past, the risk of obsolescence was provided for in either of these two ways, then the abandoned property should not be included in the rate base today.⁵⁵

In establishing these two tests, based primarily upon inspection of past depreciation and earnings figures, one can readily perceive a further retreat from the rigid "water over the dam" rule of the *Galveston* and *New York Telephone Company* cases.⁵⁶

In the second case, *Springfield Gas Light Co.*,⁵⁷ the Commission when faced with a similar problem cited the *Washington Gas Light* case as authority for the position

that we must allow respondent either directly or indirectly to include in its plant account for rate purposes the unamortized balance of such abandoned property account.⁵⁸

⁵⁴ *Id.*, at 19.

⁵⁵ *Id.*, at 20.

⁵⁶ In *Galveston Electric Co. v. Galveston*, 258 U.S. 388, 395 (1921), the Court, in an opinion by Justice Brandeis, refused to consider past losses as a factor affecting rate base computations. "A company which has failed to secure from year to year sufficient earnings to keep the investment unimpaired . . . cannot erect out of past deficits a legal basis for holding confiscatory for the future, rates which would, on the basis of present reproduction value, otherwise be compensatory." In *Board of Pub. Util. Comm'rs v. New York Tel. Co.*, 271 U.S. 23, 32 (1926), the Court reversed the New Jersey Board's determination that past excessive depreciation charges must be amortized to augment future income and that the property representing this excess be excluded from the rate base. The Court stated, *id.*, at 31: "The just compensation safeguard to the utility by the Fourteenth Amendment is a reasonable return on the value of property used at the time it is being used for the public service. . . . Constitutional protection against confiscation does not depend on the source of the money used to purchase the property. It is enough that it is used to render the service."

⁵⁷ 1 P.U.R.3d 65 (Mass. Dep't of Pub. Util., 1953).

⁵⁸ *Id.*, at 72.

The unrecovered balance minus the federal tax saving resulting from the abandonment loss⁵⁹ was then allocated between two accounts, 56 per cent to an abandoned property account to be amortized over ten years on an operating expense and the declining balance to be included in the rate base, and 44 per cent as a deferred charge amortizable out of surplus over the same period and excluded from the rate base. However, the rationale for this allocation is not altogether clear.

First the Commission indicated that the existing depreciation reserve was inadequate to allow a full writeoff of the retirement loss since to do so would have diminished the accumulated reserve to 3.5 per cent of the remaining depreciable property. Yet apparently applying the *Knoxville* rule, the Commission found that to the extent of the difference between a retrospectively computed "proper" reserve (required reserve) and the actual inadequate reserve (book reserve), the investor should bear the loss.⁶⁰ Second, the Commission seems to have confused pay-out and earnings-price ratio in examining the propriety of past earnings. The former, 97 per cent (over a five year period), was high, while the latter, 8.5 per cent, can hardly be deemed unreasonable. A high pay-out ratio may be suspect if earnings are excessive, but standing alone it bears little relation to the reasonableness of the earnings out of which the dividend pay-outs are made. Although the opinion thus seems to have strayed from each of the two tests outlined in the *Washington Gas Light* case for limitation on inclusion of obsolete property in the rate base, for our purposes the deviations are not significant. Apparently if the Commission had been convinced that past depreciation charges were adequate it would have allowed the *entire* unrecovered asset balance to be amortized and included in the rate base.

THE EFFECTS OF FEDERAL LEGISLATION AND ADMINISTRATIVE POLICY ON THE GROWTH AND DEVELOPMENT OF ATOMIC POWER

It has been suggested earlier that the extraordinary obsolescence problem may assume a different posture when considered in relation to the federal policy framework within which the atomic power industry will develop. First,

⁵⁹ See note 14 *supra*.

⁶⁰ It is suggested that such a result would be sound only if the depreciation deficiency resulted, in effect, in a transposition (intentional or otherwise) of the deficiency from the depreciation reserve to earned surplus and a later distribution of this amount to the shareholders in *excess* of the fair return allowed. If on the other hand the depreciation reserve was deficient but earnings had been held to a minimum, it would seem the better rule to use the book reserve for present rate base purposes and make equalizing adjustments over *future* periods charging above or below the line depending on whether the prescribed future rates produce deficient or excessive earnings. See Lippitt, *op. cit.* *supra* note 19, at 1176-78. A second variation might arise if the deficiency resulted in excessive book profits but dividend distributions were limited to a fair return figure, the remaining excessive earnings (actually representing capital consumed) being reinvested in rate base assets. In this situation the solution should involve transferring the depreciation deficiency now appearing in earned surplus back into the depreciation reserve where it belongs. This would diminish the rate base, but justifiably so.

the pattern of relationships between atomic industry and government is just the converse of that which characterized the development of conventional utilities. Under the McMahon Act⁶¹ atomic energy began as an exclusive government monopoly, and only recently, with the enactment of the Atomic Energy Act of 1954,⁶² has the federal government relaxed its hold so as to permit private industry to participate. On the other hand, the present major utility industries came into being relatively free from the kind of regulatory control which was later imposed upon them with increasing intensity. Second, perhaps with the exception of the natural gas industry, the governmental authority with which the utility had to contend was generally state or local, not federal. However, the atomic utility will find its operations in many respects closely geared to an overall national plan designed to facilitate a rapid growth and development of the industry as a whole, yet in other respects subject to state and local controls much the same as its conventional counterparts.

In 1946 when the McMahon Act was passed the pressing need was to gain and maintain world supremacy in atomic weapons technology. As a consequence the McMahon Act provided for strict and exclusive government control of nearly every phase of atomic energy development. However, in the years that followed stock piles of atomic weapons began to satisfy military needs. Moreover, there arose a considerable apprehension that technological development might be severely hampered without the stimulus of competitive forces and private incentives. These factors, plus both reluctance to accept continuing government monopoly once the reasons initially supporting it ceased to exist and a growing realization of the commercial potential of atomic power, resulted in the passage of the Atomic Energy Act of 1954. For the first time private ownership of atomic facilities, subject to federal licensing provisions, is permitted.⁶³ The 1954 Act also permits direct federal aid to be given to private licensees, primarily in the form of research and technological assistance.⁶⁴ More indirect forms of subsidy may be achieved by manipulating the "reasonable charge" for the use of special nuclear material and the fair price paid for its production, or the AEC may waive the fuel charges entirely in connection with licences issued under Section 104.⁶⁵

Aside from this federal participation, the 1954 Act provides a framework for

⁶¹ 60 Stat. 755 (1946), as amended, 42 U.S.C.A. §§ 1801-19 (1957).

⁶² 68 Stat. 919 (1954), 42 U.S.C.A. §§ 2011-2281 (1957) (hereinafter referred to as the "1954 Act"). For general background material see Marks and Trowbridge, *Framework for Atomic Industry* 1-6 (1955).

⁶³ Sections 103, 104.

⁶⁴ Section 33.

⁶⁵ Section 53(c) (d) (but paradoxically see Section 169, the "no subsidy" provision). A recent example of how this AEC assistance operates is found in the contract signed with the Power Reactor Development Co., whereby the AEC will provide assistance valued at \$9,500,000, in the form of research and development work in AEC facilities, technological aid and consultation, personnel training, and waiver of fuel charges. *Atomic Industry Rep.* (BNA), *News and Analysis* 53:110-12 (April 3, 1957).

allocating control over various phases of the development of atomic power between federal and state (or local) authorities. The AEC is not permitted to engage in the sale or distribution of energy for commercial use except as incident to Commission-operated research and development facilities.⁶⁶ Further, no attempt is made to establish a federal *regulatory* scheme for Section 103 or Section 104 licensees operating nuclear power facilities. In this respect the Act expressly seeks to preserve the authority of state or local agencies "with respect to the generation, sale, or transmission of electric power."⁶⁷ Consequently, the 1954 Act permits a large measure of state and local responsibility for the development of peacetime uses of atomic energy and at the same time lays the groundwork for encouraging the industry to develop under private ownership. Whether this present distribution of authority will continue may well depend on whether state and local utility commissions regulate in such a way as to effectuate the basic policies set forth in the 1954 Act. Two of these basic policies seem particularly appropriate to the problem at hand.

First, the 1954 Act expressly declares it to be the policy of the United States that "the development, use, and control of atomic energy shall be directed so as to . . . strengthen free competition in private enterprise."⁶⁸ Second, emphasis is placed on shaping a policy designed to stimulate research and development "in order to encourage maximum scientific and industrial progress"⁶⁹ and "to encourage widespread participation in the development and utilization of atomic energy for peaceful purposes."⁷⁰ The AEC has attempted to formulate a program designed to achieve these basic purposes while seeking to hasten the transition from the federally-supported demonstration reactor program to competitive commercial power.⁷¹ This program has met with considerable opposition from those who fear that technological advancement under private ownership will come too late if at all.⁷² The AEC, however, has shown no signs of deviating from its position that private industry can carry its share of the load. A recent release inviting proposals from private industry for the construc-

⁶⁶ Section 44.

⁶⁸ Section 1(b).

⁶⁷ Section 271.

⁶⁹ Section 3(a).

⁷⁰ Section 3(d).

⁷¹ The following statement was made by AEC Chairman Lewis Strauss: "The Commission's program is directed toward encouraging development of the uses of atomic energy in the framework of the American free enterprise system, thereby deriving profit from the initiative and competitive resourcefulness which is characteristic of that system." 1 Hearings Before the Joint Committee on Atomic Energy on Development, Growth, and State of the Atomic Energy Industry, 84th Cong., 2d Sess. 2 (1956).

⁷² E.g., The Gore Bill, S. 4146, 84th Cong., 2d Sess. (1956), which would have authorized an additional \$400,000,000 for stepped up government reactor construction, and which was narrowly defeated in the House of Representatives (203-191) after passing the Senate (49-40). See also the separate statement of Commissioner Murray criticizing the present policy as inadequate and calling for increased government participation to accelerate the nuclear reactor development program. Atomic Industry Rep. (BNA), News and Analysis 53:26, 27 (Feb. 27, 1957).

tion of a third round of developmental nuclear reactors to be completed by 1962 indicates a continuation of this policy.⁷³

This clear expression of federal policy, as derived from the 1954 Act and the AEC, becomes highly significant in evaluating the role of a state utility commission in dealing with atomic energy problems in general, and in particular a retirement loss resulting from extraordinary obsolescence. It would seem that the 1954 Act and the present administrative policy place a considerable degree of responsibility on state utility commissions to support this national plan by regulating in such a way as to encourage private investment in atomic facilities. State commissions are well aware of what will necessarily follow from a failure of the atomic power industry to develop adequately under private ownership. Atomic energy came into being as a government monopoly and the concessions to private ownership and state regulation of certain phases of the industry in the 1954 Act are concessions which can be withdrawn just as they were granted.⁷⁴ While the possibility of an atomic TVA presents more of a political than a legal problem, the prospect of public atomic power is likely to cause the states to become more acutely aware of their responsibilities in fostering the peacetime growth of the atomic power industry by helping make it a paying proposition as quickly as possible.

When problems of extraordinary atomic reactor obsolescence arise, it would seem, therefore, that the rationale of the *Washington Gas Light* case should be applied by the state utility commissions as a part of discharging the responsibilities expressly or impliedly delegated to them under the federal atomic energy legislation. The *Washington Gas Light* and more hesitantly the *Springfield Gas* cases are authority for the position that the risk of extraordinary obsolescence, in a non-atomic context, should not be borne by the investor if it is "fair" in the particular circumstances to pass the risk on to the consumer. Moreover, Justice Brandeis' forceful opinions lend strong moral support for this view.⁷⁵ In other words, it would not be a radical departure for a commission dealing with extraordinary atomic reactor obsolescence to formulate and apply a general proposition that *if* extraordinary atomic reactor obsolescence occurs, amortization of the unrecovered cost above the line and inclusion of the declin-

⁷³ Atomic Industry Rep. (BNA), News and Analysis 53:11 (Jan. 9, 1957).

⁷⁴ For an indication that state utility commissions are aware of this possibility, see Report of the Committee on Nuclear Energy in the Electric Industry, given at the 1957 convention of the National Association of Railroad and Utilities Commissioners, appearing in 60 Pub. Util. Fort. 955 (1957). The 1954 Act itself contains two provisions which provide a hedge against the possibility that something more than private investment may be needed. Section 182 provides that the Commission is to give preference to public bodies in granting commercial licenses. Section 273 provides that federal projects shall not be precluded from obtaining commercial licenses.

⁷⁵ *Missouri ex. rel. Southwestern Bell Tel. Co. v. Public Service Comm'n*, 262 U.S. 276, 289 (1923) (concurring opinion); *Pacific Gas & Elec. Co. v. San Francisco*, 265 U.S. 403, 422-25 (1924) (dissent); *McCardle v. Indianapolis Water Co.*, 272 U.S. 400, 421 (1926) (dissent); *St. Louis & O'Fallon Ry. v. United States*, 279 U.S. 461, 488 (1929) (dissent).

ing balance for rate-base purposes will be allowed *unless* considerations of fairness in terms of consumer and investor interests dictate otherwise. Whether the tests supplied in *Washington Gas Light* to invoke the above "unless" clause are adequate is a question that will be considered later. But whatever form this limitation of "fairness" between consumer and investor takes, it should not be applied in such a way as to disable the force of the initial premise sanctioning both inclusion in the rate base and recovery of the costs through amortization.

Reasons in support of these conclusions and the problems they raise can be broken down into four general areas.

(1) *The inertia of public utility management.* This inertia must be overcome if nuclear power is to develop under private ownership. In our economy corporate management is largely responsible for obtaining and allocating capital resources into productive undertakings. While it is hoped that patriotic enthusiasm, desire to achieve technological advancements and to promote the general welfare, and the like, will enter into the process of decision, the hard fact must be faced that large scale atomic power programs will be motivated primarily by a practical concern with earnings and profits—and not the hazy prospect that at some remote date the industry will pay its way. In the case of functional obsolescence where utility management has the choice, an operating but obsolete reactor will not be retired and replaced by a more efficient model if the end result would benefit solely the consumers at the expense of the investors. Better methods can be thought of to remain in the voting shareholder's good favor. Moreover, in the case of functional obsolescence, the effect of a prospective commission refusal to allow amortization and inclusion in the rate base would be to encourage management to utilize the obsolete reactor until its costs have been recovered through the annual depreciation charges even though increasing operating expenses might require an increase in rates that would have been unnecessary had the retirement been allowed. Only the most obstinate and short-sighted commission would balk at allowing amortization and inclusion in such circumstances. Again the less fortunate circumstances of Case Two, such as a physical deterioration, present substantially the same problem except for the fact that a rate increase cannot be avoided if a cost-saving replacement is not available. In this latter case a commission may feel more justified in apportioning some part of the loss to the investor.

At present, management looking to the future of atomic power sees only uncertainties as to technological development, operating cost prospects, insurance problems, health and safety, security, and public atomic power, to mention but a few. Uncertainty as to regulatory policy looms as an even more distressing problem. Utility management might well be reluctant to risk millions of investor dollars in an enterprise which involves such a formidable array of unknowns. In some jurisdictions much of this uncertainty can be lessened by petitioning for an advance determination from the regulatory commission of how extraordinary obsolescence losses will be treated. A general statement of

policy would seem to be sufficient to give management some idea of what to expect. There are already indications of how several state commissions will handle, for rate-making and accounting purposes, the analogous problem of research and development expenditures. Those commissions whose views have been made known recognize their responsibility for encouraging scientific advancements by indicating that expenditures ranging from "reasonable" to "substantial" in amount will be allowed as operating expenses.⁷⁶ A noteworthy example of this attitude is reflected in an order by the Michigan Public Service Commission on application of the Detroit Edison Company for directions for accounting treatment of expenditures incurred (in the form of contributions to the Power Reactor Development Company) in the design and construction of a developmental fast-breeder reactor near Monroe, Michigan. In directing that these disbursements be charged to operating expense, the Commission concluded:

3) that private electric power companies of this State have an obligation to be informed about and familiar with technological changes and advancements that may ultimately lead to the generation of electric energy from new sources. . . .

9) [that] [t]he initial test or developmental fast neutron breeder reactor may . . . become obsolete after a relatively short period of trial operation as opposed to the useful life of present types of equipment.

12) [t]hat public interest requires encouragement by this Commission of the objective sought by petitioner to bring about the generation of electric energy at a reduced cost by use of nuclear fuels which will also benefit the nation as a whole. . . .⁷⁷

If this attitude carries over into the obsolescence field, management would be much less reluctant to invest initially in atomic facilities or to seek new capital as technological advancement warrants further investment.

(2) *The need for new capital.* Once management has determined that investment in nuclear power reactor equipment should be undertaken, there still remains the job of attracting sufficient capital to finance the venture. These are times in which even the average small investor has or is counselled into a high degree of awareness of the relative merits of available investment opportunities. It is generally accepted that utility investment affords little to no chance for speculative killings. On the other hand, constitutional and statutory safeguards, the monopoly character of the utility, a generally high demand level, and perhaps most important the regulatory policy that revenues should equal

⁷⁶ Stason, Estep and Pierce, *State Regulation of Atomic Energy* 21-22 (1956). These conclusions are based upon the unofficial responses from regulatory commissions of nine states to inquiries made by the authors. Further, the testimony of Walker Cisler, president of Detroit Edison Company, and Willis Gale, chairman of Commonwealth Edison Company, before the Joint Committee indicates that expenditures by their companies of \$6,250,000 and \$2,833,334 respectively would be treated as operating expenses by the Michigan and Illinois Commissions. Hearings, op. cit. supra note 71, at 238-39, 253.

⁷⁷ Accounting Order of Mich. Pub. Serv. Comm'n, D-1282A-55.1 (March 23, 1955), appearing in Hearings, op. cit. supra note 71, at 257-59.

(but not exceed) total cost of service, are all factors which have contributed to the prevailing view that investment in utilities is relatively risk-free.⁷⁸ It is suggested that this view in part results from the absence of circumstances in past utility operations which involved the prospect of substantial obsolescence (in actual dollar amounts) occurring over a short period of time. Conversely, XYZ Company's obsolescence loss of \$22,500,000 would amount to nearly 15% of the total net assets of the company. Suppose a commission were to refuse to allow inclusion in the rate base, or for stronger reasons to refuse amortization of an obsolescence loss of this size in a major rate case coming early in the development of the nuclear power industry. Such a result would necessarily have a dampening effect on the confidence of potential investors at a time when both investor skepticism and the need to attract additional capital is greatest.⁷⁹

(3) *Technological progress.* The availability of usable sources of energy is a crucial factor affecting the rate of economic growth of any country.⁸⁰ For years there has been considerable concern over the problem of dwindling reserves of fossil or natural fuels as a means of supplying energy to generate electric power. Although this area is not one in which definitive answers can readily be had, there is little disagreement that given the increasing rate of growth of the economy and the resulting increase in demand for energy, a long range problem of finding adequate sources of energy does exist. The 1956 McKinney Panel Report indicates that if the present rate of growth of electric power continues, the total electric generating capacity of the United States may reach 600 million kilowatts in 1980 as compared to 115 million kilowatts in 1955.⁸¹ Furthermore, there is much uncertainty as to whether conventional fuel reserves will continue to be available in sufficient quantities at costs favoring a desirable rate of economic expansion.⁸²

In view of this need for new and more economical sources of power and a national policy which looks to the development of nuclear power under private ownership, though with considerable government cooperation, it becomes essential that state utility commissions recognize their responsibilities to create a regulatory atmosphere which will stimulate the technological progress neces-

⁷⁸ This proposition is well illustrated in terms of property valuation for purposes other than rate-making, where utilities have consistently been assigned the lowest capitalization ratios, hence the highest multiplier. Dewing, *The Financial Policy of Corporations* 290-94, 352-55 (5th ed., 1953).

⁷⁹ It might also be argued that such treatment would be unfair (in the sense of frustrating reasonable expectations) to those present investors who would bear the loss since in furnishing capital they had relied on the prevailing view of low return for low risk induced by past regulatory practices.

⁸⁰ Mason, *Energy Requirements and Economic Growth, Reports on the Productive Uses of Nuclear Energy* (1955) (passim).

⁸¹ Background Material for the Report of the Panel on the Impact of the Peaceful Uses of Atomic Energy to the Joint Committee on Atomic Energy, 84th Cong., 2d Sess., 23-24 (1956).

⁸² President's Material Policy Commission, *Resources for Freedom* 20-21 (1952).

sary to achieve the goal of putting atomic power on a competitive basis in the shortest time possible. This progress can come only through research and development and actual reactor operating experience. In many ways the factors involved in stimulating "progress in the art" (to use Judge Bazelon's words in the *Washington Gas Light* case) are identical to those involved in inducing management action and the investor's decision to part with his funds. If, as has been indicated, state commissions will allow liberal recovery of research and development costs as an operating expense (apparently to encourage technological progress) does it seem sound that the same commission should penalize the utility investor because the industry has achieved a degree of scientific progress that makes it economically imperative to retire a reactor before the expiration of its estimated life? In other words, in encouraging research and development and assuming that management will *act* rather than continually wait for the better reactor (which of course is always coming), a commission should realize that the very technological progress it is fostering will cause obsolescence losses with which it must cope at some later date. By the same token substantial investments may be made on the basis of limited operating experience of one of the present prototype reactors before all the latent defects have been worked out. If a physical deterioration or a "nuclear incident" renders the reactor useless, it can be questioned whether the forward-looking utility which put its money on the wrong reactor should shoulder the loss rather than pass it on to the consuming public as a whole which in the last analysis enjoys the benefits of the resulting scientific enlightenment.⁸³

It should be noted that commission reluctance to accept this responsibility as middleman between a national atomic energy policy and the private investor will not be a permanent deterrent to technological development. Replacements will eventually be made, but so long as the obsolete reactor remains operative the utility will lose nothing by waiting out the reactor's estimated useful life, all the while continuing to recover its cost and (if regulation is prompt) passing any increasing operating costs to the rate payer. And even when the total cost of the operative but obsolete reactor is recovered through depreciation charges, the utility may balk at retiring the reactor in favor of an improved model if some of the costs recovered are not reinvested in rate-base assets and if regulation is not prompt in initiating a rate reduction to reflect the resulting decline in depreciation expense. Under these circumstances regulation can be an effective means of stimulating both retirement of outmoded equipment and investment in more efficient means of production which may ulti-

⁸³ In view of the important national interests involved, another alternative, namely passing on extraordinary obsolescence costs directly to the taxpayers as a whole, might well be considered. This could be accomplished by means of direct federal financial aid to atomic utilities experiencing extraordinary obsolescence losses. However, such federal aid would clearly require repeal of the "no subsidy" provisions of Section 169 of the 1954 Act and would render the present public-private atomic "partnership" relationship all the more tenuous.

mately lead to lower rates.⁸⁴ However, if utility management is forced to sit on its hands by commission policy, the delaying effect on technological development may well be a decisive factor in the final determination of whether the atomic power industry will be publicly regulated or publicly owned.⁸⁵

(4) *The question of fairness.* Finally, as in any other judicial determination in which the rights and obligations of the parties are to be settled in terms of broad policy considerations or even broader statutory standards, no commission can close its eyes to questions of fairness between the parties. Striking a balance in a rate case is made more difficult than in conventional litigation because (a) the parties are composed of large groups of individuals whose composition is constantly changing and within which conflicts of interests may arise, and (b) while rates, earnings and utility operations are continuous events, regulation tends to be sporadic. However, for the purpose of examining extraordinary obsolescence, and accepting these basic difficulties, it would seem that an important element in reaching a "fair" result is whether the investor has been compensated for bearing this risk. The *Washington Gas Light* case suggests two tests. Obsolete property would be excluded from the rate base (apparently there was no dispute over amortization as operating expense) if the investor has been compensated for this risk by including it "(1) as one of the elements used in calculating depreciation expense, or (2) as a risk considered in fixing the permissible rate of return."⁸⁶ In limiting the commission's general rule of inclusion by invoking equitable principles of fairness, the court undoubtedly sought to achieve some degree of needed flexibility. Yet, in examining each of these tests as it might be applied to an actual rate case the first seems overly simple while the second falls short of the mark. In both the focus is on what was *permitted* by the commission in the past, rather than on the propriety of the actual earnings and rates which *resulted* from the commission's last determination.

The first test in the *Washington Gas Light* case means simply that if the costs of the retired property have been recovered through the annual depreciation charges the property should not be included in the rate base. This proposition cannot seriously be questioned.⁸⁷ Ascertaining recent depreciation charges is not

⁸⁴ Troxel, *Obsolescence of Utility Property*, J. Land & Pub. Util. Econ. 266, 271 (1938).

⁸⁵ See Winsborough, *A Partnership Plan for Atomic Power Development*, 59 Pub. Util. Fort. 217 (1957).

⁸⁶ *Washington Gas Light Co. v. Baker*, 188 F.2d 11, 20 (App. D.C., 1950).

⁸⁷ E.g., *Farmers' Union Tel. Co.*, 84 P.U.R. (N.S.) 82 (N.J. Bd. of Pub. Util. Comm'rs, 1950); *Pennsylvania Pub. Util. Comm'n v. Saxonburg Heat & Light Co.*, 81 P.U.R. (N.S.) 536 (Pa. Pub. Serv. Comm'n, 1949). See Lippitt, *op. cit. supra* note 19, at 1158-62. It is possible that a commission may attempt to anticipate a premature retirement by allowing an additional operating charge to cover this contingency. If in spite of this precaution an asset, the cost of which has not been recovered, becomes obsolete, it may be argued that the investors deserve no additional protection and that they should bear the loss. Perhaps this is what Judge Bazelon intended in formulating his first test. However, one may question the logic of attempting to anticipate extraordinary obsolescence, which, by hypothesis, cannot

an overly difficult matter in these days of close scrutiny of accounting procedures imposed by the state commissions, the Internal Revenue, and in many cases the Securities and Exchange Commission. Once total investment costs have been recovered there should be no further amortization and no inclusion in the rate base.⁸⁸ In depreciation terms events would have worked out so that the book reserve equals the required reserve and no further adjustment is necessary. What the utility has done with these funds bears no relation to the fact that the consumers *have* paid in the full cost of the now obsolete reactor. In this sense the statement from the *New York Telephone* case can be properly applied: "The revenue paid by the consumer for service belongs to the company."⁸⁹ The disposition of these funds will effect present (not past) rates depending on whether the money is distributed to shareholders or retained and reinvested in rate-base assets. In the former case the money is out of the commission's reach, and if the asset is still operative and being used (though functionally obsolete) the time is ripe for prompt commission action to reduce the rate level to reflect the fact that the asset has been written off the books. Any delay will result in a windfall for the utility which is equally out of the commission's direct reach. On the other hand, if the funds had been reinvested in rate-base assets, the *New York Telephone* case "water over the dam" rule would not permit the commission, because of its tardiness, to penalize the investor by ignoring these assets in valuing the rate base. In this context such a rule appears to make good sense because the company would have recovered the investment cost over a period which in fact coincided with the actual useful life of the reactor, even though the prior depreciation charges, viewed as of the years in which they were accrued, might seem excessive.

The second test, whether the risk was "considered in fixing the permissible rate of return," is questionable on several grounds. If this test is taken to stand for the broad proposition that a commission must, in determining present rates, scrutinize the propriety of a utility's earnings from its inception, the decision would be subject to serious constitutional doubts⁹⁰ besides presenting a solution which is practically unworkable since no utility or commission could reasonably

be foreseen. This reasoning is illustrative of the unfortunate tendency of many writers to merge the distinct concepts of depreciation and extraordinary obsolescence. E.g., Saliers, *Depreciation* 47-48 (3d ed., 1939); Mason, *Principles of Public Utility Depreciation* 2-5 (1937); and Commission opinion in the *Washington Gas Light Co.* case, note 51 *supra*.

⁸⁸ In *Lindheimer v. Illinois Bell Tel. Co.*, 292 U.S. 151 (1934), the Court effectively put an end to the practice of recovering excessive annual depreciation charges while claiming only small depreciation deductions from the rate base by using the "observed" method of computing existing depreciation.

⁸⁹ *Board of Pub. Util. Comm'rs v. New York Tel. Co.*, 271 U.S. 23, 32 (1926). This use of the "water over the dam" rule as applied to depreciation accounting is to be distinguished from that involving excesses (or deficiencies) in earnings.

⁹⁰ The constitutional doubts arise because of the *Galveston* and *New York Telephone* cases. See note 56 *supra*.

be expected to undertake such a burdensome task. On the other hand, a narrow reading of the second test presents the problem (similar to that encountered in examining the first test) of whether it is logically possible to provide in advance against the risk of extraordinary obsolescence. Moreover, this risk is not an element which commissions consider in arriving at the rate of return to be allowed the utility—although such risk may require a higher return on debt and equity capital to induce the investor to invest his money in an industry which is experiencing large obsolescence losses.

Finally, suppose that a commission's overestimation of prospective operating and labor costs, a sharp decline in the price of labor and material, or some other situation, produces profits larger than anticipated. If the utility also experiences an extraordinary obsolescence loss at the same time, it can still successfully pass the tests laid down in *Washington Gas Light* and be entitled to both amortization and a return on the obsolete property, notwithstanding the earnings windfall. Whether this earnings windfall is paid out or plowed back it is bound up in a past rate determination that cannot be retroactively undone by directly manipulating current rates if such result would fall under the confiscatory rule of the *New York Telephone* case. And a court may be reluctant to invalidate present "reasonable" rates (rates which could be reduced without violating the constitutional impact of the *New York Telephone* case) to offset a commission's past error in judgment which allowed overly-generous earnings.⁹¹ However, under such circumstances it would seem that there should be some method of protecting the interests of the rate payers who have paid in the excessive returns.

Conclusions. It is suggested that the problem of achieving fairness to both the consumer and investor can be worked out within the present regulatory and constitutional framework. In the first place it should be recognized that excessive or deficient past earnings (and conversely rate levels) arise because utility commissioners do not have perfect knowledge or precognition. Yet utility commissioners, in regulating for future years, are making predictions or informed guesses as to future costs, consumer demand, technological advancements and the other imponderables that go into a rate-making determination. Being human, they make mistakes. In the second place an institutional shortcoming must be recognized. Rate-making, essentially a regulatory function, is carried on in a judicial fashion on a case-by-case basis, and often there are lengthy periods between rate cases, during which time events simply do not work out in accordance with the commission's predictions. Perhaps in response the system has developed its own kinds of corrective devices which can be fitted into the

⁹¹ *United States v. Public Utilities Comm'n*, 158 F.2d 533 (App. D.C., 1946). The prospect of overly-generous earnings may seem remote in these days when the utility industry is plagued by rising costs, attrition of capital and the need to pay higher costs to attract additional capital. Yet for purposes of examining the tests outlined in *Washington Gas Light*, this possibility must be considered.

general institutional view that a rate case looks only to future earnings based on probable future costs and consumer demand. A commission may attempt to compensate for past excessive or deficient depreciation charges or earnings by adjusting future returns within the range constitutionally permissible. In addition it may engage in other regulatory practices designed to bring a utility back into line.⁹² A more acceptable method in terms of directness and convenience of application would seem to lie in another direction pointed to by the Supreme Court's decisions in the *Lindheimer* and *Hope* cases. In *Lindheimer*, the Court said:

But if the amounts charged to operating expenses and credited to the account for depreciation reserve are excessive, to that extent subscribers for telephone service are required to provide, in effect, capital contributions, not to make good losses incurred by the utility in service rendered, and thus to keep the investment unimpaired, but to secure additional plant and equipment upon which the utility expects a return.⁹³

This decision further restricts the "water over the dam" rule by recognizing that depreciation, in terms of the correlation between the annual charges and the accrued reserve, necessarily forms a bridge between present and past accounting periods. Consequently, in calculating the present rate base, a commission may deduct a book depreciation reserve based upon the total annual depreciation charges taken, a depreciation reserve that will reflect *past* excessive or deficient depreciation charges. *Lindheimer* thus achieves the desired result of protecting the consumers' interests in reasonable rates over a longer period of time by preventing consumer contribution to, rather than maintenance of, capital. Likewise, there is nothing to prevent a commission from considering the recent actual earnings (as distinguished from the "permitted" return) of a utility experiencing extraordinary obsolescence losses as one important factor in determining whether to include all or a part of the unrecovered cost of obsolete equipment in calculating the rate base. This approach would not involve any attempt to retroactively undo past rates and earnings for present rate-making purposes.⁹⁴ On the contrary the questionable procedure of first arriving at the rate base and rate of return and computing prospective earnings only to adjust these earnings retroactively for past excessive profits or losses is very different from frankly considering the level of recent earnings as one factor in determining whether to include any of the obsolescence loss in the initial rate

⁹² See note 44 *supra*.

⁹³ *Lindheimer v. Illinois Bell Tel. Co.*, 292 U.S. 151, 168 (1934).

⁹⁴ Although at present a majority of state utility commissions have the power to make retroactive adjustments by employing sliding scale rate techniques of one kind or another. State Commission Jurisdiction and Regulation of Electric and Gas Utilities, FPC Report 18-21 (1954). Sliding scale techniques, as opposed to periodic regulation, generally provide for continuity in earnings regulation by means of direct adjustments against present and future rates for past excesses or deficiencies in earnings. See Troxel, *op. cit. supra* note 7, at 396-418; Foster, Rationale of the New Jersey Adjustment Plan, 33 Pub. Util. Fort. 673 (1944); Lippitt, *op. cit. supra* note 19, at 1176-77.

base calculation. It is apparent that this more flexible approach would involve no constitutional problems, particularly in view of the wide latitude afforded by the *Hope* case.⁹⁵

Time is an important element. Neither present investors nor consumers should be penalized because of errors in judgment or unexpected occurrences causing excesses or deficiencies in earnings or rates occurring fifty years ago. Looking back one or two years or since the last rate regulation may be a different matter.⁹⁶ Prompt regulation can make the commission's function easier in the long run by preventing serious dislocations in earnings and rate levels, but unfortunately regulation is often too little and too late. It would also seem important that any consideration of excesses or deficiencies in recent earnings must be carefully handled so as not to disable in every case a general rule calling for inclusion of unrecovered reactor costs in the rate base, since undoubtedly most utilities have experienced in the past what now might be considered excessive or deficient earnings.

Thus, in terms of extraordinary obsolescence of atomic reactor equipment, it would seem that a regulatory commission should make full and effective use of the leeway provided by the *Hope* case to decide each rate case in terms of its own particular problems, rather than on the basis of catch phrases such as "used and useful."⁹⁷ Moreover, treatment of such a loss in a rate case is not like determining whether a statute of limitations should apply; there is a full range of possible resolutions between the two polar views, any one of which may be most appropriate in a particular case. On the other hand, in order to afford some measure of predictability and rational coherence each case cannot be decided

⁹⁵ It should be noted that a consideration of recent earnings in this context will not be a one-way street to the investor's detriment. Since courts and commissions have consistently disallowed any return on obsolete property, the investor's position in this respect can only improve if actual earnings have proved less than the return last allowed and the commission chooses to accept the line of reasoning suggested. If, on the other hand, earnings proved excessive the exclusion of some part or all of the property would at least have a more rational basis. Moreover, it is difficult to believe that the existence of excessive or deficient past earnings does not have a significant effect on the decisional process in a rate case, which of necessity involves balancing, estimating and perhaps compromising a multitude of variable factors and interests in attempting to arrive at a "proper" rate base and rate of return. The court in *Washington Gas Light* recognized this probability. *Washington Gas Light Co. v. Baker*, 188 F.2d 11, 21 (App. D.C., 1950).

⁹⁶ Looking back over a considerably longer period might be justified in certain cases. As an example in an extreme case suppose a utility's residual equity ownership has been and is still in the hands of one individual. Adjustments considering longer periods of time seem more reasonable in this case since the problem of changing equities within the investor class itself would be largely eliminated.

⁹⁷ The court in the *Washington Gas Light* case stated: "With the abandonment of the eminent domain analogy in the *Hope* case and the adoption of the view that rate-making is but one species of price-fixing which, like any other action pursuant to the police power, may validly 'reduce the value of the property which is being regulated,' the constitutional basis for 'used and useful' was swept away." *Washington Gas Light Co. v. Baker*, 188 F.2d 11, 18-19 (App. D.C., 1950).

on a completely *ad hoc* basis. Therefore it is suggested that a utility commission faced with the problem of substantial extraordinary obsolescence of atomic reactor facilities, should as a general rule allow amortization as an operating expense and inclusion of the unrecovered costs in the rate base, when as a practical matter this can be done. Further, in applying or limiting this general rule a commission should consider each case in terms of the following:

(1) Whether in fact the cost of the obsolete property has been recovered through past depreciation charges or whether the rate of return since installation has been geared to cover this risk, and if so, whether sufficient time has elapsed so that it can safely be said that the risk has been compensated for.

(2) Whether the recent earnings and rate-level picture reveals any substantial excesses or deficiencies regardless of origin.

(3) The effects a contrary decision might have on (a) the particular utility management's enthusiasm in undertaking further investments in nuclear facilities; (b) other utility managements' plans for initial atomic power investments; and (c) the opportunity to compete for capital needed for replacement or expansion.

(4) The present national policy which looks to growth and development of the atomic power industry under private ownership subject to traditional state and local controls.