COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

ELECTRONIC APPLICATION OF MONROE COUNTY WATER DISTRICT FOR RATE ADJUSTMENT PURSUANT TO 807 KAR 5:076	)))	CASE NO. 2017-00070

NOTICE OF FILING

Notice is given to all parties that the following materials have been filed into the record of this proceeding:

- A copy of "Depreciation Practices for Small Water Utilities," National Association of Regulatory Utility Commissioners, August 15, 1979, relied upon in the drafting of the Commission Staff Report filed in the record on June 30, 2017.

- A copy of "Monroe County Water District Job Description," provided to Commission Staff by Monroe County Water District during the field review performed to produce the Commission Staff Report filed in the record on June 30, 2017.

Done at Frankfort, Kentucky, this 20th day of September, 2017.

John S. Lyons
Acting Executive Director
Public Service Commission
P.O. Box 615
Frankfort, KY 40602

DATED SEP 20 2017

cc: Parties of Record

MONROE COUNTY WATER DISTRICT
JOB DESCRIPTION

NAME: Richard O. Ross	DATE: March 13, 2001
JOB TITLE: General Manager	
JOB CLASSIFICATION: Management	
QUALIFICATIONS: High school diploma or equivalent required, certification and license as required by state law, ability to perform arithmetic computations, and organizational ability	

RELATIONSHIPS

Reports to: Board of Commissioners

Works with:

Outside the Company:

RESPONSIBILITIES

- In charge of day to day operations of the water district.
- Responsible for supervision of all employees.
- Schedules work and duties for employees.
- Maintains inventory and time records as needed.
- To be proficient at managing budgets and preparing budgets and financial information to be presented to the Board of Commissioners as needed.
- Will carry out the instructions and directions of the Board of Commissioners.
- Attends Board of Commission meetings.
- Assist and prepares monthly and quarterly reports.
- Assist in preparing new project plans.
- Assists with rules, rates and regulations in tariff on file with Public Service Commission.
- Reads meters, does line repair and construction, meter installation, equipment maintenance and repair, customer relations and office work as needed.
- Work after hours as needed.

NATIONAL ASSOCIATION OF REGULATORY UTILITY COMMISSIONERS
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CONSTITUTION AVENUE AND TWELFTH STREET, N.W.
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DEPRECIATION PRACTICES FOR SMALL WATER UTILITIES

AUGUST 15, 1979

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FOREWORD

To the National Association of Regulatory Utility Commissioners.

In December 1968, a manual entitled "Public Utility Depreciation Practices" was prepared by the Subcommittee on Depreciation, wherein many of the techniques used to determine service lives of depreciable property and depreciation rates were discussed. It was the observation of the Depreciation Subcommittee as well as that of some other state commissions that this manual was too complicated and too time-consuming to be of use to state commissions dealing with small utilities. It was felt that the Subcommittee should prepare a manual that could be used by state commissions dealing with small utilities having a limited amount of records and know-how. In December 1974, a manual entitled "Depreciation Practices for Small Telephone Utilities" was completed. The second of such manuals, for small water utilities, is presented herein and is intended to assist the state commissions in establishing depreciation rates for small water utilities. From an analysis of reports issued by state commissions, the majority of small water utilities generally have less than 200 customers and $50,000 of annual revenue. The Subcommittee analyzed data from various states and water utilities from which it selected typical average service lives and net salvages by plant accounts. It was assumed that the small water utilities use the same construction techniques, have similar equipment, maintenance standards and accounting practices as those in the selected sample; therefore, the small water utility average service lives and depreciation rates would be similar to those used by the average water utility.

The manual should allow the staffs of the state commissions to establish reasonable depreciation rates for small water companies and test the reasonableness thereof.

Many state commissions have established their own practices which may differ somewhat from those proposed herein. It is not suggested that this manual replace those practices.

The Subcommittee on Depreciation is continuing its work on depreciation practices for small gas and electric utilities and, in addition thereto, is continuing its work in the preparation of a manual of definitions used in depreciation work.

The members of the Subcommittee on Depreciation working on these practices were:

DEPRECIATION SUBCOMMITTEE

Ray J. Nery, North Carolina, Chairman

E.C. Hostettler, ICC	James R. Safford, New York
Daniel C. McLean, Washington	F.W. Bone, IRS
Robert G. Warnek, FCC	Martin Abramson, California
Alfred E. Ueberroth, Michigan	Norman Deutsch, FERC
Larry Hoaglan, Arkansas	Walter D'Haeseleer, Florida

This manual was recommended to the National Association of Regulatory Utility Commissioners by the Committee on Engineering and its Staff Committee. The text of the resolution adopting the manual is stated below. The members of these committees are as follows:

STAFF SUBCOMMITTEE ON ENGINEERING

Henry A. Minch, Maryland, Chairman

Robert G. Warnek, FCC
William J. Ide, Illinois
Ray J. Nery, North Carolina
Harold C. Blatt, Pennsylvania
Richard Bibb, Tennessee
Lester Stuzin, New York PSC
David C. Lathom, FERC
William F. Fox, Ohio
Russell N. Staley, Alaska PUC
Robert J. Buckley, Iowa SCC
Bruno A. Davis, California
Joseph W. Ferraro, Sr., New York
Joseph M. Flanigan, REA, Observer
Ray L. Pruett, Utah
Walter D'Haeseleer, Florida
Kevin Kelly, NRRI, Observer

COMMITTEE ON ENGINEERING

Robert K. Koger, North Carolina, Chairman

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Z. D. Atkins, Tennessee
Robert C. Downie, Arkansas PSC
Alfred H. Reichman, Illinois
James M. Plaskett, Indiana
Thomas J. Schneider, Montana
Roger L. Hanson, Minnesota PSC

Resolution Re Adoption of Depreciation Practices for Small Water Utilities

WHEREAS, The Committee on Engineering of this Association and its Subcommittee on Depreciation, after extended study and conferences, have developed Depreciation Practices for Small Water Utilities; and

WHEREAS, The Committee on Engineering of this Association has recommended the manual for adoption by this Association; and

WHEREAS, This Association believes that the Depreciation Practices for Small Water Utilities will be of value in assisting regulatory agencies in the practical solution of depreciation problems; now, therefore, be it

RESOLVED, That the Executive Committee of the National Association of Regulatory Utility Commissioners hereby adopts the Depreciation Practices for Small Water Utilities reported by the Committee on Engineering and authorizes its Washington Staff to make it available to the member regulatory agencies of the Association and others as a guide for the practical assistance and guidance to regulatory personnel and others regarding depreciation for small water utilities.

Adopted August 15, 1979

DEPRECIATION PRACTICES
FOR SMALL WATER UTILITIES

Purpose

The purpose of this manual is to present in a simplified manner the essential information and procedures recommended for estimating the service lives, net salvages and depreciation rates for the plant of small water utilities.

It is hoped that the practices developed in this manual will establish a basis for uniformity and be sufficiently clear to enable the staffs of regulatory commissions to prepare reasonable schedules of depreciation rates and amounts of annual depreciation accruals.

For a more complete discussion on the subject of depreciation practices or for a more detailed analysis of specific depreciation procedures, refer to "Public Utility Depreciation Practices" published in 1968 by the National Association of Regulatory Utility Commissioners, 1102 ICC Building, Post Office Box 684, Washington, D.C. 20044.

Scope

The scope of this manual includes the reasons for depreciation, the straight-line methods used to compute annual depreciation rates, an explanation of the factors used in the depreciation accrual equations, definitions of depreciation terms, some accounting transactions related to depreciation and suggested average service lives, net salvages and depreciation rates for most categories of water utility plant.

The straight-line average service life method of computing the annual depreciation rates used by most regulatory agencies has been developed and used in the text of this manual. The straight-line remaining life method used by some regulatory agencies has been developed and included as Appendix A.

A small water utility is defined for the purpose of this report as a water utility with plant investment of less than $1,000,000. The simplified and less detailed practices in this manual are designed to meet the needs of regulatory commissions to establish realistic depreciation rates for such utilities.

Objectives of Depreciation

The principal objective of recognizing depreciation as a cost of service is to allow the utility to recover the cost of the depreciable investment, less estimated net salvage, over the useful life of the depreciable plant by means of an equitable plan of charges to operating expenses or clearing accounts. The straight-line average service life method presented in this manual meets this objective.

Base for Depreciation Charges

The depreciation base used in this manual is the original cost of the depreciable property. Original cost is defined as the cost to the person who first devotes the property to public service. The base recoverable through depreciation is limited to cost of the depreciable parts of the property. This generally excludes the cost of organizing, franchises, intangible plant and land.[1] The base can usually be determined from actual construction costs recorded on the utility's books.

Actual construction costs include the cost of the labor, equipment and materials needed to construct the plant, the capitalized interest during construction, administrative and general expenditures such as engineering and supervision, general officers' and clerical salaries and expenses, office supplies and expenses, legal expenditures and other expenses covering injuries and damages, insurance, interest, and taxes. Care must be exercised in spreading these administrative and general expenses between the depreciable and nondepreciable plant such as land. While meticulous distinctions are impossible, reasonably accurate assignments or spreads can be obtained by the utilization of good accounting practices.

[1] Some jurisdiction may exclude contributions from the depreciable base.

Average Service Life Estimates

Determination of service lives basically involves an analysis of the past and engineering estimates of the future effect of wear and tear, decay, action of the elements, inadequacy, obsolescence and public requirements. In some cases, other factors such as anticipated changeover to new or improved kinds of plant, or specific plans of management must be given consideration. To arrive at a satisfactory estimate of future conditions, past experience generally gives an indication which can be used as at least one element in the estimate. The weight to be given to past experience depends upon the extent to which the conditions affecting service life in the future are expected to be similar or different from those in the past.

Utility property, in conformance with a uniform system of accounts, is classified broadly by function and each function is broken down into accounts. As an example, one function of a water utility is providing transmission and distribution services. The plant providing that function is divided into several accounts such as transmission and distribution mains, fire mains, services, meters, hydrants, and so on. Each account is further divided into subaccounts, groups, and units. Each unit is an individual item of plant, but it is common practice to combine units which have like mortality characteristics, like physical appearance and character and which operate under the same general conditions into one group. There may be one or more groups within an account. For instance, in the "transmission and distribution mains" account, the units (individual items) of cast iron, steel and asbestos-cement pipe over 12 inches in diameter may constitute one group, units of pipe from 12 to eight inches in diameter may constitute the second group, and the third group might include all pipe smaller than eight inches in diameter. Because of greater simplicity in maintaining records, the group basis is more feasible for most classes of utility property where a large number of units are involved and is the more generally used base among electric, gas, telephone, and water utilities.

In the above example, the average service life of a group containing cast iron, steel, and asbestos-cement pipe would be based on a composite or weighted average of the service lives of all units within the group. When a group such as described above contains units or items of plant with varying estimated average service lives, the average service life of the group is the reciprocal average of the lives as shown under the subject of "weighting" in this manual.

In utility accounting, the depreciation rate is applied to depreciable plant in service. Therefore, the surviving plant is of more interest than the retired plant, and the retirement curve is seldom used. The survivor curve shows the percent of original plant surviving by year.

A reliable method of estimating the average service life of a unit or group is to use the survivor curve method.

Underlying this method are certain statistical concepts which require some explanation. In estimating service life, we are concerned with the span of years from the placement of plant to its retirement. In groups of property seldom do all units reach retirement at the same time. Some will reach it at an early age, many will bunch around a period somewhere near the average and a few will extend out to a long age. The statistician would say we have a number of events (retirements) occurring with different values (ages) which can be illustrated by a graph known as a frequency curve. The frequency curve shows the retirements, as a percentage of the group, occurring in each year of the group's life. From either the frequency curve or survival and retirement ratios, the survivor curves can be developed. The average life or average age at which retirements occur can also be developed from the frequency curve.

The probable life is the expected life of the survivors, or plant in service, at any given age. At any age after retirements have started, the probable life is longer than the average life because the short-lived units have been removed from the surviving group.

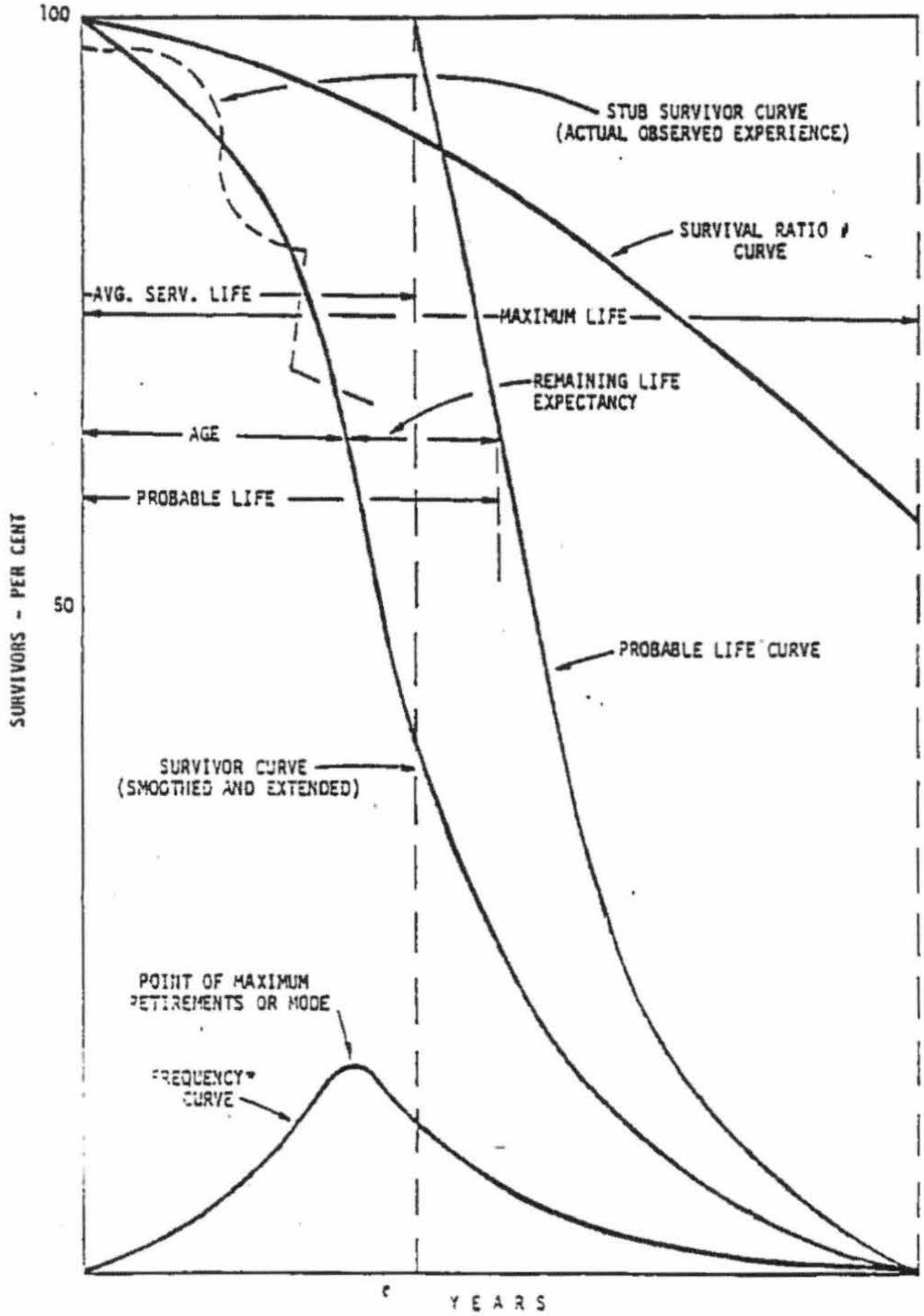
Using the survivor curve method, the remaining life of a group of depreciable property of any age can be determined by finding that age on the survivor curve and projecting horizontally to the probable life curve. The difference in years between the age and probable life is the remaining life. Typical survivor and related curves are shown on

Chart I.

The use of survivor curves developed from good mortality records by actuarial methods is considered to be an accurate and reliable method to determine the estimated average service life of depreciable property. One widely accepted study of survivor curves (Iowa Curves) is that conducted at the Iowa State College of Engineering Experiment Station as described in their Bulletin Nos. 125 and 155.

CHART I

A SURVIVOR CURVE AND RELATED CURVES



* THE FREQUENCY CURVE IS NOT REQUIRED IN THE USUAL DEPRECIATION COMPUTATIONS.
\# THE SURVIVAL RATIOS (SURVIVORS AT END OF PERIOD ÷ PLANT EXPOSED AT BEGINNING OF PERIOD) ARE USED IN COMPUTING THE SURVIVOR CURVE.

A small utility may not have sufficient records to develop its own survivor curves. This problem can be resolved by using survivor curves of comparable plant that have been developed by others, by selecting an average service life based on engineering judgment, or by using the forecast or life span method currently being used by other utilities throughout the country.

The forecast or life span method is basically an assumption that a given piece of property will be retired in a specific number of years after placement or that the actual date of retirement will be a certain date. At the final date of retirement of properties, all units comprising the piece of property including interim additions are retired at once. This is in contrast to group properties in which retirement of units occurs gradually until all are retired. The forecast method is basically the simplest method of computing depreciation and, theoretically, could be applied to each unit of property. Rather than using this method for group properties, it is generally used for comparatively large, easily identifiable pieces of property such as buildings, treatment plants, dams, and reservoirs. Appendix B shows an example of this method.

Where lack of appropriate data prevents the application of any of the two previous methods, engineering judgment estimates of service life expectancies may be appropriate. In developing these life expectancies, it is helpful to study possible ranges of life estimates setting down reasonable minimum and maximum expectancies before coming to final conclusions. As previously indicated under the survivor curve discussion, it should be noted that the average life of all units originally placed in the group is less than the probable life of surviving units because of the prior retirement of short-lived units.

Without the benefits of mortality data or definitive retirements dates for particular pieces of property, it will be very difficult for staffs of regulatory commissions and small water utilities to make a proper estimate of average service life for each group or unit of plant. For that reason, a range of average service lives currently being used by water utilities throughout the country for water facilities designed and installed and maintained in accordance with good water works practice is shown below in Figure 1.

FIGURE 1

Typical Average Service Lives, Salvage Rates, and Depreciation Rates

Small Water Utilities

NARUC Account Number	Class of Plant	Average Service Life a/ Years	Net Salvage Percent	Depreciation Rate Percent
	Source of Supply Plant			
311	Structures and Improvements	35-40		2.9-2.5
312	Collecting & Impounding Reservoirs	50-75		2.0-1.3
313	Lake, River and Other Intakes	35-45		2.9-2.2
314	Wells and Springs	25-35		4.0-2.9
315	Galleries and Tunnels	25-50		4.0-2.0
316	Supply Mains	50-75		2.0-1.3
317	Other Source of Water Supply Plant	30-40		3.3-2.5
	Pumping Plant			
321	Structures and Improvements	35-40		2.9-2.5
324-7	Pumping Equipment	20		5.0
328	Other Pumping Plant	25		4.0
	Water Treatment Plant			
331	Structures and Improvements	35-40		2.9-2.5
332	Water Treatment Equipment	20-35		5.0-2.9
	Transmission and Distribution Plant			
341	Structures and Improvements	35-40		2.9-2.5
342	Reservoirs and Tanks	30-60		3.3-1.7
343	Transmission and Distribution Mains	50-75		2.0-1.3
344	Fire Mains	50-75		2.0-1.3
345	Services	30-50		3.3-2.0
346	Meters	35-45	10	2.6-2.0
347	Meter Installations	40-50		2.5-2.0
348	Hydrants	40-60	5	2.4-1.6
	General Plant			
390	Structures & Improvements	35-40		2.9-2.5
391	Office Furniture and Equipment	20-25	5	4.8-3.8
392	Transportation Equipment	7	10	12.9
393	Stores Equipment	20		5.0
394	Tools, Shop & Garage Equipment	15-20	5	6.3-4[illegible]
395	Laboratory Equipment	15-20		6.7-5.[illegible]
396	Power Operated Equipment	10-15	10	9.0-6.0
397	Communication Equipment	10	10	9.0

a/ These lives are intended as a guide; longer or shorter lives should be used where conditions warrant.

Net Salvage Estimate

Estimated net salvage is the estimated gross salvage in cash or value which is expected to be realized from utility property retired less the estimated cost of removal involved in retiring such property. The estimated net salvage can be a negative figure in instances where the cost of removal is expected to exceed any gross salvage value. Net salvage is usually expressed as a percentage of the plant retired.

Reasonable salvage estimates and forecasts for small water utilities can be made by trending the net salvage experience and applying engineering judgment. Some of the factors to be considered in developing an estimated salvage percentage are:

(a) Utility's recorded experience, including trends with the same or similar type property;

(b) Effect on recorded salvage of transfers, sales and reimbursements from damages or forced relocations;

(c) Future conditions affecting cost of removal; and

(d) Changes in accounting practices that have affected salvage and cost of removal amounts.

Where records are available, recorded or past salvage experience for each account may be determined by analyzing the debits and credits to the reserve for depreciation. The retirements should be summarized for each year and the totals of gross salvage and cost of removal determined. Dividing each of the latter by the retirements gives the percent gross salvage and percent cost of removal realized each year. This type of calculation for a series of years is illustrated in the following table.

FIGURE 2

Determination of Net Salvage Value
Pumping Equipment

Year	Plant Retired	Gross Salvage Amount	Gross Salvage % of Retirement	Cost of Removal Amount	Cost of Removal % of Retirement	Net Salvage Amount	Net Salvage % of Retirement
	a	b	c=b÷a	d	e=d÷a	f=b-d	g=f÷a
1973	$ 50	$12	24.0%	$ 3	6.0%	$ 9	18.0%
1972	100	22	22.0	7	7.0	15	15.0
1971	70	11	15.7	5	7.1	6	8.5
1970	40	5	12.5	4	10.0	1	2.5
1969	30	7	23.3	5	16.7	2	6.7
1968	30	5	16.7	2	6.7	3	10.0
1967	50	2	4.0	7	14.0	-5	-10.0
Totals	$370	$64	17.3%	$33	8.9%	$31	8.4%

The above tabulation shows that the past recorded net salvage value amounted to 8.4% of the cost of plant retired.

In the use of the straight-line average service life method for computing depreciation rates, an estimated net salvage covering the entire life of the unit or group of property is needed. The utility must estimate salvage values for property that will retire many years in the future. In doing so, it should be remembered that with most depreciable property the percent gross salvage realized on retirement varies with the age of the unit. Past experience is usually based on only a few retirements, probably of shorter-lived units. Generally, the older units yield lower values. The decrease in gross salvage with age may be approximated by assuming a straight-line diminution from realized gross salvage of early retirements to the predicted ultimate gross salvage of oldest-lived units. A sample calculation of estimated net salvage values, using recorded values developed in the preceding tabulation and judgment values based on anticipated future conditions, is shown below.

FIGURE 3

Average and Future Net Salvage
Pumping Equipment

Factors	% of Retmt.	Amt. of Retmt.	Source of Data
A. Gross Salvage Past Retirements	17.3%	$ 370	Preceding tabulation
B. Gross Salvage Last Survivors	5.0		Selected by judgment
C. Gross Salvage Future Avg. = $\frac{A+B}{2}$	11.2	3,755	Plant presently in service
D. Average Gross Salvage	11.7		(17.3x370+11.2x3755)÷(370+3755)
E. Cost of Removal Past Retirement	8.9		Preceding tabulation
F. Cost of Removal Future Retmt.	11.0		Selected by judgment
G. Average Cost of Removal	10.8		(8.9x370+11.0x3755)÷(370+3755)
H. Future Net Salvage	0.2		C-F
I. Average Net Salvage	0.9		D-G

Where records are not available, management and engineering judgments must be made and comparisons with other utilities operating under similar conditions can often be made to develop reasonable estimated net salvage values. For a thorough discussion on estimating net salvage, the reader is referred to Chapter 8 of "Public Utility Depreciation Practices" published by the National Association of Regulatory Utility Commissioners, copyright 1968.

Weighting

Accounts frequently include more than one unit or group of depreciable utility property with different average service lives. To avoid the detailed work of calculating the accrual for each unit or group within an account, an average service life or a composite average service life should be obtained for each account. Reciprocal weighting should always be used in computing an average service life for an account or class of plant comprised of several groups. Only reciprocal weighting will derive the same total as if accruals were developed for each unit or group.

An example of reciprocal weighting to establish a composite average service life is shown in the following tabulation:

FIGURE 4

Weighted Average Service Life
Pumping Equipment

Group	Gross Plant Investment	Average Service Life	Reciprocal Weighting b÷c
(a)	(b)	(c)	(d)
1	$1,500	30.0 years	50 $/year
2	1,255	20.0	63
3	1,000	27.0	37
	$3,755	25.0 years	150 $/year

The weighting in column (d) is obtained by dividing the plant dollars in column (b) by the average service life in column (c) of every category to be weighted. A weighted average service life of 25.0 years is obtained by dividing the sum of column (b) by the sum of column (d).

In certain accounts as in the transmission and distribution mains account where the total account consists of several groups of pipe with each group having a different average service life and where the units constituting the group have different physical qualities and average service lives, it may be necessary to weight the units within each group first and then weight the groups to develop a composite or weighted average for the entire account.

Weighting can also be applied to develop a composite salvage for a group or an account. The following tabulation is an example:

FIGURE 5

Weighted Net Salvage Value
Pumping Equipment

Group	Gross Plant Investment	Average Service Life	Life Weight	Net Salvage Percent	Salvage Weight
a	b	c	d=b÷c	e	f=dxe
1	$1,500	30.0 years	50 $/year	8.0%	400% $/year
2	1,255	20.0	63	10.0	630
3	1,000	27.0	37	12.7	470
	$3,755	25.0 years	150 $/year	10.0%	1,500% $/year

The weighting of the net salvage values of the above three groups resulted in a weighted net salvage value of 10.0%. The total of column (f) was divided by the total of column (d) to obtain the weighted value of net salvage.

Theoretical Reserve Studies

A theoretical depreciation reserve is defined as that amount which together with the estimated future depreciation accruals will equal the original cost of the property less net salvage. Studies to determine this theoretical amount may be used for several purposes.

Certain jurisdictions may use the theoretical reserve for rate-making purposes where no reasonable actual reserve is available or for computing fair value in some fair value jurisdictions. It may also be used to allocate the total book reserve to individual account, plant categories or areas.

In making such studies, it is best to separate short-lived plant such as motor vehicles from the longer-lived water plant to be sure that the plant is fully accrued at the time of replacement. The prices, the dates of purchase, the expected dates of disposal, and the expected allowances at trade-in will usually be readily available for these short-lived facilities. With this data, the amount that should be in the reserve can be quickly determined.

The degree of merit and value of a theoretical depreciation reserve study are discussed in the manual, "Public Utility Depreciation Practices," published in 1968 by the NARUC. To use its suggested procedures for the calculation of a theoretical reserve, the manual assumes that the depreciation analyst has sufficient historical data on which to base a judgment on such things as mortality dispersion, average service life, and net salvage. However, such data is seldom available for a small water utility.

When adequate records are not available, a single theoretical reserve should not be selected on an arbitrary or convenient basis. Rather, it must be based on reasonable assumptions for service life, retirement dispersion, and salvage.

For the company that has periodic additions and retirements, no matter how large or small, a theoretical reserve percentage can be determined by assuming a certain dispersion of retirements, by estimating the average service life and by determining the average realized life of the plant. The average realized life is different from the average age in that it includes not only the ages of presently existing plant but also those for past retirements. An example of the determination of average realized life is presented in Appendix C.

The example assumes an average service life of 35 years and develops a realized life of 10.45 years. Interpolating between 10 and 11 years in Appendix D, the reserves would be 24.[illegible]% to 29.9% for a 30-year life and 16.9% to 21.9% for a 45-year life. Interpolating between these two sets of figures, a range of 22.2% to 27.2% is obtained for a 35-year service life.

Federal Income Tax Depreciation

Under section 167 of the Internal Revenue Code 1954, the general rule for depreciation for Federal income tax purposes is that there shall be allowed as a depreciation deduction a reasonable allowance for exhaustion and wear and tear (including a reasonable allowance for obsolescence) of property used in a trade or business or held for the production of income.

Accelerated methods of depreciation are provided by the 1954 Code, as well as the straight-line method most commonly used prior to 1954. In 1962, Rev. Proc. 62-21, 1962-2 C.B. 418, supplanted Bulletin F, old guidelines used for many years by taxpayers and the Internal Revenue Service in arriving at useful lives for depreciable property. Rev. Proc. 62-21 established guideline rules and lives for various classes of depreciable properties and generally liberalized depreciation deductions for income tax purposes. Although water utilities were not materially affected, some advantage was gained by the establishment of one guideline life for depreciable assets of water utilities except in the area of specific depreciable assets used in all business activities.

In 1971 an elective Asset Depreciation Range (ADR) system revoked Rev. Proc. 62-21 guidelines, including subsequent supplements and amendments thereto, for taxable years ending after December 31, 1970. The new elective system established vintage accounts (closed-end depreciation accounts containing eligible property to which a taxpayer elects to apply the ADR system) with an asset depreciation range in years (a lower limit, an asset guideline period, and upper limit) for each class of depreciable assets acquired after December 31, 1970. This system was modified by section 167 (m) of the 1954 Code in the Revenue Act of 1971 to include assets acquired both before January 1, 1971, and after December 31, 1970. For depreciable assets acquired before January 1, 1971, the system is called the Class Life (CL) system; for depreciable assets acquired after December 31, 1970, the system is called the Class Life Asset Depreciation Range (CLADR) system. The two systems are similar but they apply to depreciable assets differently: e.g., there is no range of years applicable to assets acquired prior to January 1, 1971. The asset guideline period is used instead. Section 1.167(a)-11 of Income Tax Regulations applies to assets acquired after December 31, 1970, and section 1.167(a)-12 applies to assets acquired before January 1, 1971.

To use the CLADR system, additions and retirements must be to and from vintage accounts, and gross salvage credited to the vintage account reserves, with removal costs charged to expense on retirement. Either gross or net salvage may be used for the CL system, but for tax purposes, some water companies have asked and received permission to change to gross salvage accounting to be consistent with the CLADR system. The cost of reinstalling depreciable assets that are not retired but merely relocated is treated as part of the repair allowance unless the permissible repair allowance is exceeded, in which case the excess is capitalized in a special vintage account.

In Appendix E is a summary of some of the asset guideline classes, periods, ranges, and repair allowances provided by Rev. Proc. 77-10, 1977-1 C.B. 548, updating Rev. Proc. 72-10, 1972-1 C.B. 721, that may be used by water companies.

Prior to the CLADR and CL systems estimated salvage was generally considered as either a reduction of the amount subject to depreciation (basis) or by a reduction in the rate of depreciation (rate). Under these two systems basis or rates are not affected, but salvage is not disregarded. Depreciation can only be claimed until the adjusted basis equals estimated salvage value. For water utilities class 49.3, the maximum rate would be 100÷40 = 2 1/2%. Under section 167 of the Code when depreciable property is placed in service, estimated salvage can be reduced by 10%. For example, if salvage is reasonably estimated at 5% it can be reduced to zero, if 25%, it can be reduced to 15%, and depreciation may be claimed for the full cost in the first instance and 85% of the cost in the second instance.

Both the CLADR and CL systems are elective each taxable year; however, under CLADR, the system must be applied to vintage accounts until all the assets in the vintage accounts are retired. If one of these systems is not elected, taxpayers must demonstrate the useful life used and follow the prior rules under section 167 of the Code with the exception that Rev. Proc. 62-21 and Bulletin F guidelines are no longer applicable.

If the CLADR system is elected, the annual asset guideline repair allowance percentage which applies to both CLADR and CL property may also be elected (see last column in Appendix E). Sufficient books and records must be kept for expenditures incurred for both CLADR and CL assets. Under the repair allowance election, expenditures for repairs, maintenance, rehabilitation or improvement of "repair allowance property" (investments subject to depreciation) that are not clearly capital expenditures are treated as deductible repairs to the extent that they do not exceed the repair allowance percentage of the repair allowance property. The excess, if any, is capitalized in a special vintage account as a property improvement in that class.

These newer income tax procedures for depreciation have only been briefly described, because they are complicated; but even with the complications, most utility companies that were opposed to the maintenance of continuing property records have adopted the CLADR and CL systems which generally require the maintenance of records in greater detail than that of regulatory authorities. With the consideration of added tax incentive there is a general tendency toward greater detail rather than lesser in most phases of utility operations, and, therefore, it would seem to be desirable for utilities to establish a system of continuing property records.

Depreciation Rate Calculations

To compute the annual depreciation rate for the straight-line average service life method, the basic equation is:

$$d = \frac{100-c}{L}$$

Where:

d = Depreciation rate in percent.
c = Estimated average net salvage percentage.
L = Estimated average service life.

Items c and L require estimates based on both experiences of the past and judgments of future conditions.

The values for service life and salvage components used in the above formula are the weighted average values for all of the plant in each of the accounting classifications. Weighted average values were discussed previously in this manual.

In actual practice, not only is a depreciation rate in percent desired but also a depreciation accrual in dollars. For the straight-line method, the equation is:

$$D = \frac{B-C}{L} \text{ or } \left(\frac{100-c}{100L}\right) \times B$$

where D is the depreciation accrual in dollars, C is the estimated average net salvage in dollars and B is the book cost of gross depreciable plant in dollars.

The composite annual depreciation accrual rate is the ratio of the sum of the depreciation accrued from all depreciable accounts to the gross depreciable plant in the same year. Expressed as a percentage, the equation for the composite or total annual accrual depreciation rate is:

$$d = \%\ \text{Rate} = \frac{\text{Annual Accrual}}{\text{Gross Depreciable Plant}} \times 100 = \frac{D}{B} \times 100$$

Determination of Annual Depreciation Accrual

The form for calculating annual depreciation accruals and rates by the average service life method is shown with sample calculations in Figure 6 below.

FIGURE 6

Company ___________
Area/Dept. _____________

Summary of Annual Depreciation Rate Determination
Straight-line Average Service Life Method

Year____

NARUC Account Number	Description Plant	Gross Depreciable Plant	Average Service Life Years	Net Salvage Percent	Depr. Rate Percent	Annual Accrual
		1	2	3	4	5
311	Structures & Improv.	$ 3,014	40		2.5	$ 75
314	Wells	11,290	30		3.3	373
324	Pumping Equip. 1/	3,755	25	10	3.6	135
342	Reservoirs & Tanks	8,628	50		2.0	17
343	Trans. & Distr. Mains	53,550	60		1.7	[illegible]
345	Services	9,452	40		2.5	23
346	Meters	6,038	40	12	2.2	13
348	Hydrants	995	50		2.0	2
391	Off. Furniture & Equip.	1,721	15	5	6.3	10
392	Transportation Equip.	6,290	6	15	14.2	39
	Total	$104,733			2.9 2/	$3,05

1/ Derivation of Columns 4 & 5

Col. 4 (Depr. Rate) = $(\frac{100-10}{100 \times 25}) \times 100 = 3.6\%$

Col. 5 (Annual Accr.) = \$3,755 x 3.6% = \$135

2/ Composite Rate of 2.9% is derived by dividing the sum of Column 5 by the sum of Column 1 and multiplying the product by 100.
\$3,056 ÷ \$104,733 = 0.029 x 100 = 2.9%

The first two unnumbered columns on the form are for the listing of an appropriate plant account number and its corresponding description. Column (1) shows the dollar amount of gross depreciable plant in each account of the utility's books at the beginning of the year. This is element B in the accrual equation.

Columns (2) and (3) are provided for the two elements in the depreciation accrual calculation which must be estimated. These are the average service lives to be assigned to a property and the percentage of average net salvage which can be expected when the property is retired.

For the average service life method, column (4) shows the depreciation rate for each account. This rate is derived from the estimates of average service lives and salvage percentages to be shown in columns (2) and (3). The annual accrual for each account to be entered in column (5) is calculated by multiplying plant dollars in column (1) by the depreciation rate in column (4).

Recording the Depreciation Accrual

There are several methods which can be used in calculating the annual accrual to be recorded on the utility's books for the year. The simplest is to apply the predetermined annual depreciation rates to the beginning-of-year depreciable plant. Another method is to estimate the end-of-year plant and then apply the depreciation rates to the average of the beginning- and end-of-year plant. The last method requires an adjustment to be made to the annual accrual after the recorded end-of-year plant amounts become available. In either method the utility may record the annual accrual as a single amount or in 12 monthly entries at its discretion or at the discretion of the regulatory commission. A third method employed by some of the larger utilities is to apply the annual depreciation rates each month to that month's beginning-of-month plant account balances or average monthly balances and record 1/12 of the result as that month's accrual.

Depreciation Accounting

Reference should be made to an appropriate system of accounts and instructions for complete details of accounting transactions. The following tabulation presents some of the essential transactions in a double entry set of records:

FIGURE 7

Depreciation Accounting

Transaction	Debit	Credit
Original cost on placing plant in service	Plant account (asset account)	Cash, materials and supplies
Depreciation accruals	Operation expenses and clearing accounts	Deprecation reserve account
Retirement of original cost of plant	Depreciation reserve account	Plant account (reduces the asset balance)
Cost of removal on retirement from service	Depreciation reserve account	Cash, or accounts payable
Gross salvage on retirement from service	Cash, materials and supplies or other investment accounts receivable	Depreciation reserve account

The accounting for additions and retirements should be promptly and properly recorded at the time of installation or retirement so that the plant and reserve accounts at all times reflect the current conditions.

Reasonableness of Final Report

An overall test of reasonableness should be applied to the final determination of the annual accrual. The overall composite depreciation rate produced by the accrual calculation should normally fall within a range of from 2.0% to 4.0%. When results are obtained which fall significantly outside this range, further review should be made to ascertain the nature of any special conditions which may be influencing the result. Under most circumstances, estimates of average service lives and net salvage should be made at intervals of not more than five years.

DETERMINATION OF
STRAIGHT-LINE REMAINING LIFE
DEPRECIATION ACCRUALS

General

The straight-line remaining life method is another method to determine depreciation accruals and is used frequently enough to warrant development in this manual. The factors considered in the straight-line remaining life method tend to control erratic fluctuations in the annual or periodic accruals. This method also has as its objective the control of excessive or deficient accumulations in the depreciation reserve.

Under the straight-line remaining life method, the net depreciable plant is recovered over the estimated remaining useful life of the property. This method differed significantly from the straight-line average service life method under which the depreciable plant is recovered over its entire estimated average life.

The straight-line remaining life method meets the objectives of depreciation accounting. The base for the depreciation charges is the same as the base used in the straight-line average service life method, explained earlier in the text.

The Depreciation Rate Equation

The basic equation for determining the annual depreciation rate by the straight-line remaining life method is:

$$d = \left(\frac{B - C' - U}{E}\right) \times \frac{100}{B}$$

Straight Line Average Service Life

$$d = \frac{100 - C}{L}$$

Where:

B = book cost of the gross depreciable plant in dollars.
C' = estimated net salvage in dollars from survivors.
d = annual depreciation rate in percent.
U = book depreciation reserve in dollars.
E = estimated average remaining life of survivors.
L = estimated average service life.
C = estimated average net salvage percentage.

Items B and U are obtainable from the utility's books of accounts. Item C' is estimated based on past experience and conditions likely to occur in the immediate future.

Determination of Annual Depreciation Accrual

The form used and examples of the straight-line remaining life method of calculating annual depreciation accruals are shown in Table I on page 33.

The first two unnumbered columns are for the listing of appropriate plant account number and its corresponding description. Column (1) shows the dollar amount of gross depreciable plant in each account of the utility's books at the beginning of the year. This is element B in the accrual equation.

Columns (2) and (6) show the two elements in the depreciation accrual calculation which must be estimated. They are the percentage of net salvage which can reasonably be expected when the property is retired and the service lives to be assigned to the property.

Column (3) is designed to show the estimated future net salvage dollars calculated by multiplying the plant dollars in Column (1) by the salvage percentage in Column (2). Column (4) is provided for the recorded depreciation reserve taken from the utility's books which, together with the salvage dollars, is deducted from the gross plant amounts to produce the net balance shown in Column (5).

Column (6) shows one weighted average service life for all the plant, units or groups within each account. Column (7) shows the average service life of the survivors (sometimes called probable life) and equals age plus remaining life. Column (9) shows the weighted average remaining life (element 3 in the accrual equation) in years and is determined either by subtracting the average age in Column (8) from the average service lives in Column (7) or determined directly by either the Forecast, Approximation or Direct Judgment Methods as noted in the footnotes in Table I. The annual accrual in Column (10) is computed by dividing the net balance in Column (5) by the average remaining life in Column (9). Column (11) shows the depreciation rate for each account derived by dividing the annual accrual in Column (10) by the gross plant in Column (1).

An overall depreciation rate or composite rate for the entire plant is determined by dividing the total annual accrual of all accounts by the total gross plant. The composite depreciation rate in Table I is 3.71%.

The discussion in the text relating to the reasonableness of the annual depreciation accrual, the recording of the depreciation accrual, and general depreciation accounting applies equally to the straight-line remaining life method.

TABLE I

SUMMARY OF
ANNUAL DEPRECIATION RATE DETERMINATION
STRAIGHT LINE REMAINING LIFE METHOD

Account No.	Description	Gross Plant at Beginning of Year $ (1)	Est. Est. Future Net Salvage (Est. Gross Salvage Less Cost of Removal) % (2)	$ (3)	Depreciation Reserve at Beginning of Year $ (4)	Net Balance (1)-(3)-(4) $ (5)	Est. Average Service Life Original Group Yrs. (6)	Survivors Yrs. (7)	Average Age Yrs. (8)	Remaining Life Yrs. (9)	Annual Accrual (5)÷(9) $ (10)	Depreciation Accrual Rate (10)÷(1) % (11)
311	Structures & Improvements	19,540	5.0	977	8,014	10,549	--	--	--	18 1/	586	3.0
315	Wells	13,786	0.0	--	9,618	4,168	--	--	--	16 1/	261	1.9
314	Springs and Tunnels	165	0.0	--	49	116	--	--	--	18 1/	6	3.6
324	Pumping Equipment	22,028	2.0	441	8,294	13,293	25	--	--	15 2/	886	4.0
332	Water Treatment Equipment	1,813	5.0	91	531	1,191	18	--	--	13 2/	92	5.1
343	Trans. & Distr. Mains	170,096	(5.0)	(8,505)	61,743	116,858	30	--	--	18 2/	6,492	3.8
342	Reservoirs and Tanks	21,103	0.0	--	6,805	14,298	33	--	--	17 2/	841	4.0
348	Hydrants	4,105	3.0	123	315	3,667	25	--	--	21 2/	175	4.3
345	Services	29,993	(10.0)	(2,999)	12,344	20,648	25	--	--	16 3/	1,291	4.3
346	Meters	34,865	15.0	5,230	6,974	22,661	30	--	--	22 2/	1,030	3.0
349	Other Trans. & Distr. Plant	931	0.0	--	120	811	18	22	13	9 4/	90	9.7
372	Office Furniture & Equipment	657	0.0	--	214	443	11	12	5	7 4/	63	9.6
374	Stores Equipment	2,471	5.0	124	451	1,896	12	13	3	10 4/	190	7.7
378	Tools, Shop & Garage Equip.	6,579	15.0	987	2,283	3,309	7	8	4	4 4/	827	12.6
	TOTALS	328,132	-	(3,531)	117,755	213,908	--	--	--	--	12,830	3.91

1/ Remaining life determined by forecast method.
2/ Remaining life determined by selecting survivor curve.
3/ Remaining life determined by computation from accounting records. (See Appendix C)
4/ Column 7 - Column 8.

DEPRECIATION STUDY BY FORECAST OR LIFE SPAN METHOD

Example: A dam is put into service at the beginning of 1961. The estimated life span is 40 years and the estimated time of retirement is the end of the year 2000. No salvage is assumed. Developments occur as follows:

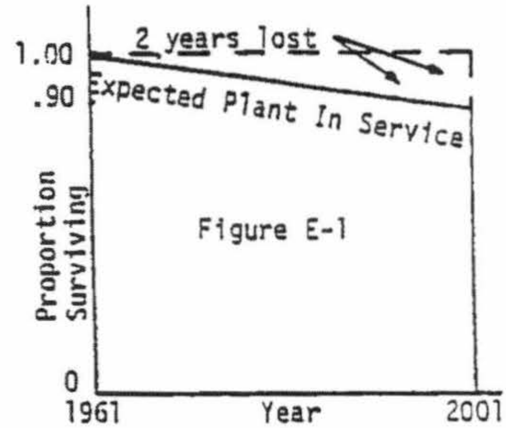
No.	Year End	Event	Additions $	Retirements $
1	1963	Outlet works modified	4,500	3,000
2	1965	Spillway modified	6,000	3,000
3	1970	Fencing installed	1,500	-
4	1980	Sealant placed (capitalized)	3,000	-
5	1985	New source of water supply procured. Existing source phased out over a 5-year period after which dam is retired.		

Year	Plant Surviving Beg. of Yr.	Additions $	Retirements $	Average Service Life: Orig. Dam	Addition No. 1	2	3	4	Depreciation: Rate %	Accrual $	Beg. Yr. Reserve
1961	$42000	-	-	38[1]					2.63[2]	1105	
1962	42000	-	-	38					2.63	1105	$ 1105
1963	42000	4500	3000	38					2.63	1105	2210
1964	43500	-	-	38	38[3]				2.63	1144	315[4]
1965	43500	6000	3000	38	38				2.63	1144	1459
1966	46500	-	-	20[5]	20	18			5.00[6]	2325	(397)
1967	46500	-	-	20	20	18			5.00	2325	1929
1968	46500	-	-	20	20	18			5.00	2325	4253
1969	46500	-	-	20	20	18			5.00	2325	6578
1970	46500	1500	-	20	20	18			5.00	2325	8903
1971	48000	-	-	30[7]	31	29	24		3.33[6]	1598	11228
1972	48000	-	-	30	31	29	24		3.33	1598	12825
1973	48000	-	-	30	31	29	24		3.33	1598	14424
1974	48000	-	-	30	31	29	24		3.33	1598	16022
1975	48000	-	-	30	31	29	24		3.33	1598	17620
1976	48000	-	-	33	34	32	27		3.03[6]	1454	19213
1977	48000	-	-	33	34	32	27		3.03	1454	20672
1978	48000	-	-	33	34	32	27		3.03	1454	22125
1979	48000	-	-	33	34	32	27		3.03	1454	23580
1980	48000	3000	-	33	34	32	27		3.03	1454	25034
1981	51000	-	-	34	36	34	29	19	3.13[6]	1596	26488
1982	51000	-	-	34	36	34	29	19	3.13	1596	28084
1983	51000	-	-	34	36	34	29	19	3.13	1596	29680
1984	51000	-	-	34	36	34	29	19	3.13	1596	31276
1985	51000	-	-	34	36	34	29	19	3.13	1596	32872
1986	51000	-	-	26	27	25	20	10	4.17[6]	2127	34468
1987	51000	-	-	26	27	25	20	10	4.17	2127	36595
1988	51000	-	-	26	27	25	20	10	4.17	2127	38722
1989	51000	-	-	26	27	25	20	10	4.17	2127	40849
1990	51000	-	51000	26	27	25	20	10	4.17	2127	42976
1991	-	-	-	-	-	-	-	-	-	-	(5897)[9]

(See Sheets 2 & 3 for Footnotes)

Footnotes:

1/ It is assumed that 10% of the original installation will be retired in piecemeal (interim) retirements over the life of the dam, which would average to 0.25% per year. Over a 40-year period this would amount to a loss of 2 years' service life (½ x 40 x .10). See Figure E-1.

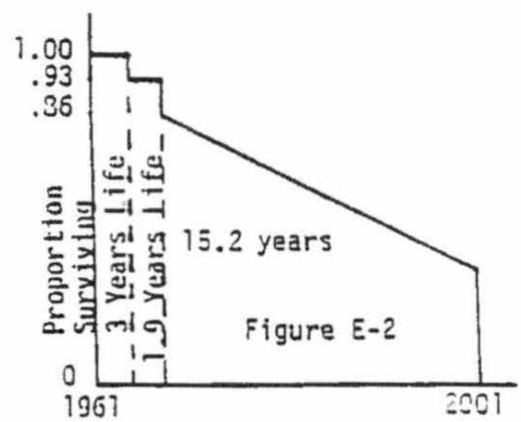


2/ Assuming zero salvage, the depreciation rate is 100 ÷ 38 = 2.63% and the Accrual is .0263 x 42000 or $1,105.

3/ It is assumed that depreciation studies are made every 5 years, as recommended in the text of this practice. Thus, the 1963 addition takes the same life as the original addition until the time of the next study.

4/ Depreciation reserve at the end of the third year (beginning of fourth year) is prior years' reserve of $2,210 plus $1,105 accrual less $3000 retirement.

5/ A depreciation study made as of the beginning of 1966 determines that the experienced interim retirement rate is (0 + 0 + 3000 + 0 + 3000) ÷ (42,000 + 42,000 + 42,000 + 43,500 + 43,500), which equals 2.82%. For the remaining 35 years, this represents a loss of life of ½ x 35 x (.0282 x 35), or 17.3 years. The remaining life is 35 - 17.3 or 17.7 years for the remaining plant. It would apply to the 1965 placement. The unrealized life of the original placement would be 86% of this, or 15.2 years. See Figure E-2. During the first 3 years, when the original placement was intact, the life that was realized was a full 3 years. During the next two, when only 93% of the original investment still survived, the realized life was 2 x .93 or 1.9 years. The average service life for the full span is 3 + 1.9 + 15.2, or 20.1 years. For the 1963 placement, from which nothing has been retired, the realized life is 2.0 years and the unrealized life is 17.7 for a total of 19.7. Both of these would round to 20 years.



6/ Composite average service life is:

Vintage a	Plant Surviving b	Service Life c	Accrual d=b÷c
1961	$36000	20	$1800
1963	4500	20	225
1965	6000	18	333
	$46500	19.7 years*	$2358

* 19.7 yr. from 46,500 ÷ 2358 use 20

Depreciation rate = $\frac{100}{20}$ = 5.0%

7/ At the time of the 1971 depreciation study, the experienced interim retirement rate is 6000 ÷ (3 x 42,000 + 2 x 43,500 + 5 x 46,500), or 1.35%. For the remaining 30 years the loss of life is ½ x 30 x (.0135 x 30), or 6.1 years and the remaining life is 23.9 years. This applies directly to the 1970 addition and is added to the realized lives of 5 and 7 years for the 1965 and 1963 additions. The realized life of the 1961 addition is 3 x 1.0 + 2 x .93 + 5 x .86, or 9.2 years and the unrealized life is .86 x 23.9, or 20.6 for a total average service life of 29.8 years. The composite life using the procedure as in 6/ above is 30 years and the depreciation rate is 3.33%.

8/ For the 1976, 1981 and 1986 studies, the following factors can be derived using the same procedures as above:

Date of Study	Experienced Int. Ret. Rate-%	Remaining Life	Composite Life	Depreciation Rate-%
1976	0.88	22.3	33	3.03
1981	0.65	18.7	32	3.13
1986	0.51	4.9	24	4.17

9/ Because of the reduction in the life span of the dam from 40 to 30 years, there is a shortage in the reserve at the time of retirement of the dam. The shortage is not large, however, when compared with annual accruals and no corrective measures should be taken. Rather, the span of the replacement facility should be adjusted downward as, for example, from 40 to 30 years, in expectation of a similar overestimation. The beginning interim retirement rate should also be higher (0.5 instead of 0.25), reflecting past experience.

Form D-5

UTILITY Alpha Water Company
AREA/DEPT -
AC 345 Services

REALIZED LIFE AND REMAINING LIFE OF PLANT
COMPUTED FROM ACCOUNTING RECORDS
AS OF 1/1 60

YEAR	GROSS ADDITIONS		TRANSFERS IN AND (OUT)	PLANT BALANCES (END OF YEAR)
	RECORDED	ADJUSTED		
1959	$1,923	$1,923	-	$29,993
58	2,705	2,705	-	28,518
57	1,620	1,620	-	26,225
56	1,278	1,278	-	24,998
55	1,127	1,127	-	23,992
1954	1,431	1,431	-	23,083
53	1,733	2,054	321*	21,901
52	983	983	-	20,018
51	308	308	-	19,114
50	447	447	50	18,806
1949	959	959	-	18,309
48	1,323	1,323	-	17,410
47	1,076	1,076	-	16,154
46	1,442	1,442	-	15,209
45	1,193	1,193	-	13,873
1944	1,754	1,754	-	12,791
43	1,893	1,893	-	11,110
42	1,276	1,276	-	9,244
41	521		-	8,048
40	409		-	7,617
19				
			* Originally devoted to public service in 1944.	
TOTALS	(1)	24,792	(2) 371	(3) 358,797

TOTALS TAKEN FROM MOST RECENT YEAR BACK TO SELECTED BEGINNING YEAR OF 1942

(4) Beginning Plt. Bal. 8,048 (5) ½ Beg. Plt. Balance 4,024

(6) Plant Exposed=(1)+(4) 32,840

(7) Plant Surviving 29,993 (8) ½ Surviving Balance 14,997

(9) Portion Surviving=(7)/(6) 0.9133 (10) $ Years=(3)-(5)-(8) 339,776

(9 x 371)

(11) Correction to Past Dollar Years for Transfers: 3,339

(12) Estimated Av. Serv. Life 35.00 Yrs. (13) Past Dollar Years 343,115

(14) Realized Life=(13)/(6) 10.45

(15) Difference(12)-(14) 24.55 (16) Rem. Life=(15)/(9) 26.88 Yrs.

(17) Conclusion: (Use Rounded Value) Remaining Life 27 Yrs.

Appendix D

RANGE OF DEPRECIATION RESERVE FOR AVERAGE REALIZED LIFE[1]

Average Realized Life In Years	Range of Depreciation Reserve As A Percentage Of Plant In Service		
	For 30-Year Life	For 45-Year Life	For 60-Year Life
1	2 to 4	1 to 3	1 to 2
2	5 to 7	3 to 5	2 to 4
3	7 to 10	5 to 7	4 to 5
4	10 to 13	6 to 9	5 to 7
5	12 to 16	8 to 11	6 to 8
6	14 to 19	10 to 13	7 to 10
7	16 to 22	11 to 15	8 to 12
8	18 to 24	13 to 17	10 to 13
9	19 to 27	14 to 19	11 to 15
10	24 to 29	16 to 21	12 to 16
11	26 to 31	18 to 23	13 to 17
12	27 to 33	19 to 24	14 to 19
13	29 to 35	21 to 26	15 to 20
14	30 to 37	22 to 27	16 to 22
15	31 to 39	24 to 29	17 to 23
16	32 to 40	25 to 30	18 to 24
17	33 to 42	26 to 31	19 to 25
18	34 to 43	27 to 33	21 to 27
19	35 to 43	28 to 34	23 to 28
20	36 to 43	29 to 36	24 to 29
21	36 to 43	30 to 37	25 to 30
22	36 to 43	31 to 38	26 to 31
23		32 to 39	27 to 32
24		32 to 40	27 to 33
26		34 to 42	29 to 35
28		35 to 43	30 to 37
30		36 to 43	31 to 39
32		36 to 43	32 to 40
35		36 to 43	34 to 42
45			36 to 43

[1] For the guideline reserves, the dispersion characteristics of Iowa Curves of the R_1, R_2, and L_1 and L_2 shapes were used; the net salvage was assumed to be zero.

Appendix E

ASSET GUIDELINE CLASSES AND PERIODS, ASSET DEPRECIATION RANGES, AND ANNUAL ASSET GUIDELINE REPAIR ALLOWANCE PERCENTAGE

Asset guide-line class	Description of assets included	Asset depreciation range (in years) Lower limit	Asset guideline period	Upper limit	Annual asset guideline repair allowance percentage
SPECIFIC DEPRECIABLE ASSETS USED IN ALL BUSINESS ACTIVITIES, EXCEPT AS NOTED:					
00.11	Office Furniture, Fixtures, & Equipment: Includes furniture & fixtures which are not a structural component of a building. Includes such assets as desks, files, safes, and communications equipment. Does not include communications equipment that is included in other CLADR classes	8	10	12	2
00.13	Data Handling Equipment, except Computers: Includes only typewriters, calculators, adding & accounting machines, copiers, & duplicating equipment	5	6	7	15
00.22	Automobiles	2.5	3	3.5	16.5
00.241	Light General Purpose Trucks: Includes trucks for use over the road (actual unloaded weight less than 13,000 pounds)	3	4	5	16.5
DEPRECIABLE ASSETS USED IN THE FOLLOWING ACTIVITIES:					
49.3	Water Utilities: Includes assets used in the gathering, treatment, & commercial distribution of water	40	50	60	1.5

INDEX

D

E

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