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Cost Accounting and Rate of Return Determination

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COST ACCOUNTING

COST ACCOUNTING

- Utilized as the basis for allocating costs used to determine rates
- Assess the reasonableness of charges
- Examine/determine overall financial health
- Assess newer investments and evaluate impacts to existing services

UNIFORM SYSTEM OF ACCOUNTS (USoA)

- An accounting system established by a regulatory body
- Apply consistency across regulated companies and other industries
- Mandatory
- Prescribes accounting treatment for consistent reporting
- Standardized basis for determination of utility's financial information that is reported to regulatory bodies
- Does NOT need to be used as the utility's primary accounting system for other financial reporting

Purpose of a Uniform System of Accounts

- Consistent reporting of financial data
- Stability in reporting
- Enables valid year-to-year comparisons
- Enables valid company-to-company comparisons
- Reflects stable, recurring data
- Enables proper cost allocations across multiple jurisdictions

Purpose of a Uniform System of Accounts

- Groups related transactions for the regulated industry
- Changes for new accounting standards
- Changes dictated by regulatory environment
- Underlying basis mostly remains “Generally-Accepted Accounting Principals” (GAAP)

CONTENT OF USoA

Definitions

Accounting Instructions

Listing of Accounts

Account Numbers

Account Titles

Instructions on recording transactions and description of the types of transactions to be recorded in the account

DEFINITION EXAMPLE

Cost of Removal

“means the cost of demolishing, dismantling, tearing down or otherwise removing electric plant, including the cost of transportation and handling incidental thereto. It does not include the cost of removal activities associated with asset retirement obligations that are capitalized as part of the tangible long-lived assets that give rise to the obligation. (See General Instruction 25) “

[18 C.F.R. Part 101, UNIFORM SYSTEM OF ACCOUNTS PRESCRIBED FOR PUBLIC UTILITIES AND LICENSEES SUBJECT TO THE PROVISIONS OF THE FEDERAL POWER ACT]

ACCOUNT NUMBERING*

100-199 Assets and other debits

200–299 Liabilities and other credits

300–399 Plant accounts

400–432, 434–435 Income accounts

* FERC Uniform System of Accounts for Public Utilities and Licensees

Subject to the Provisions of the Federal Power Act (electric); (gas similar)

ACCOUNT NUMBERING

433, 436–439 Retained earnings accounts

440–459 Revenue accounts

500–599 Production, transmission and distribution expenses

900–949 Customer accounts, customer service and informational, sales, and general and administrative expenses

MISCELLANEOUS BALANCE SHEET ACCOUNTS

Current Assets

- Cash and equivalents
- Receivables
- Allowance for Doubtful Accounts
- Materials and Supplies
- Prepayments
- Other Current Assets

MISCELLANEOUS BALANCE SHEET ACCOUNTS

Non Current Assets

- Non regulated Investments
- Other Non-current Assets
- Deferred Charges
- Other

LIABILITIES AND OTHER CREDITS

Proprietary capital

- Common stock, Preferred stock, Retained earnings

Long-term debt

- Bonds, Advances from associated companies

Other non-current liabilities

- Obligations under capital lease, Rate refunds, Asset retirement obligations

Current and accrued liabilities

- Notes payable, Accounts payable, Customer deposits, Taxes accrued, Interest accrued, Declared dividends

Deferred credits

- Other regulatory liabilities, Accumulated deferred investment tax credits

PLANT ACCOUNTS

Organization

(Summary Account)

Franchises and Consents

Miscellaneous intangible plant

Production plant

Land and land rights

Structures and improvements

Etc., etc., etc.

PLANT IN SERVICE

General Plant:

Land and land rights
Structures and improvements
Office furniture and equipment
Transportation equipment
Stores equipment
Tools, shop and garage equipment

Laboratory equipment
Power operated equipment
Communication equipment
Miscellaneous equipment
Other tangible property

ASSETS AND OTHER DEBITS

Utility Plant

- 101 Electric plant in service (Major only).
 - 101.1 Property under capital leases.
- 102 Electric plant purchased or sold.
- 103 Experimental electric plant unclassified (Major only).
 - 103.1 Electric plant in process of reclassification (Nonmajor only).
- 104 Electric plant leased to others.
- 105 Electric plant held for future use.
- 106 Completed construction not classified—Electric (Major only).
- 107 Construction work in progress—Electric.

ASSETS AND OTHER DEBITS (continued)

- 108 Accumulated provision for depreciation of electric utility plant (Major only).
- 109 [Reserved]
- 110 Accumulated provision for depreciation and amortization of electric utility plant (Nonmajor only).
- 111 Accumulated provision for amortization of electric utility plant (Major only).
- 112–113 [Reserved]
- 114 Electric plant acquisition adjustments.
- 115 Accumulated provision for amortization of electric plant acquisition adjustments (Major only).
- 116 Other electric plant adjustments.

ASSETS AND OTHER DEBITS (continued)

- 118 Other utility plant.
- 119 Accumulated provision for depreciation and amortization of other utility plant.
- 120.1 Nuclear fuel in process of refinement, conversion, enrichment and fabrication (Major only).
- 120.2 Nuclear fuel materials and assemblies—Stock account (Major only).
- 120.3 Nuclear fuel assemblies in reactor (Major only).
- 120.4 Spent nuclear fuel (Major only).
- 120.5 Accumulated provision for amortization of nuclear fuel assemblies (Major only).
- 120.6 Nuclear fuel under capital leases (Major only).

ASSETS AND OTHER DEBITS (continued)

- Other property and investments
 - Non-utility property, Investment in associated or subsidiary companies, Depreciation fund
- Current and accrued assets
 - Cash and working funds, Notes receivable, Fuel stock
- Deferred debits
 - Unamortized debt expense, Extraordinary property losses, Other regulatory assets

PLANT ACCOUNT INSTRUCTIONS

- Do not include the cost of plant contributed to the company.
- Plant is recorded at original cost.
- Plant cost includes *allowance for funds used during construction* (AFUDC) which provides for the cost of financing the plant construction.

ACCUMULATED DEPRECIATION AND AMORTIZATION

Accumulated Depreciation

Accumulated Depreciation – Held for Future Use

Accumulated Depreciation – Non-operating

Accumulated Amortization -- Tangible

Accumulated Amortization – Capitalized Leases

LIABILITIES AND STOCKHOLDERS' EQUITY

Current Liabilities

- Current Accounts and Notes Payable
- Customers' Deposits
- Income taxes – Accrued
- Other taxes – Accrued
- Net Current Deferred Operating Income Taxes
- Net Current Deferred Non-operating Income Taxes
- Other Current Liabilities

LIABILITIES AND STOCKHOLDERS' EQUITY

Long Term and Funded Debt

Other Liabilities and Deferred Credits

- Other liabilities and deferred credits
- Unamortized operating investment tax credits
- Unamortized non-operating investment tax credits
- Net non-current deferred operating taxes
- Net deferred tax liability adjustments
- Net non-current deferred non-operating income taxes
- Deferred tax regulatory adjustments
- Other jurisdictional liabilities and deferred credits

LIABILITIES AND STOCKHOLDERS' EQUITY

Stockholders' Equity

- Capital Stock
- Additional Paid-in Capital
- Treasury Stock
- Other Capital
- Retained Earnings

INCOME ACCOUNTS

Utility operating income

- Operating revenues & expense
- Maintenance & depreciation expense
- Amortization of ltd.-term and other electric plant
- Regulatory debits & credits
- Taxes: income, utility operating income & other
- Provisions for deferred IT & investment tax credits
- Gains/losses from disposition of utility plant & allowances
- Expenses of electric plant licensed to others
- Other utility operating income

INCOME ACCOUNTS

Other income & deductions

- Other income
- Revenues from merchandising, jobbing, & contract work
- Revenues from & expenses of non-utility operations
- Non-operating rental, interest & dividend income
- Gain/loss on disposition of property
- Donations, Life insurance, Penalties
- Other deductions

Interest charges

RETAINED EARNINGS ACCOUNTS

Balance transferred from income

Appropriations of retained earnings

Declared dividends – common & preferred stock

Adjustments to retained earnings

REVENUE ACCOUNTS

Sales of electricity

- Residential, commercial & industrial sales
- Street & highway lighting
- Other sales to municipal utilities, railroads, railways
- provisions for rate refunds

Other operating revenues

- Forfeited discounts
- Revenues from transmission of electricity to others
- Regional transmission service revenues
- Miscellaneous revenues

REVENUES

Operation

- Operation supervision and engineering
- Fuel
- Steam expenses
- Electric expenses
- Rents
- Allowances

REVENUES

Maintenance

- Maintenance supervision & engineering
- Maintenance of structures
- Maintenance of boiler plant
- Maintenance of electric plant
- Maintenance of steam plant
- Nuclear power generation

CUSTOMER ACCOUNTS EXPENSES

Supervision (major only)

Meter reading expenses

Customer records and collection expenses

Uncollectible accounts

CUSTOMER SERVICE AND INFORMATIONAL EXPENSES

Customer service & informational expenses

Supervision

Customer assistance expenses

Informational & instructional advertising expenses

Miscellaneous

SALES EXPENSES

Operation

- Supervision (major)
- Demonstrating and selling expenses
- Advertising expenses
- Sales expenses
- Administrative and general expenses – salaries, office supplies, outside services, insurance, benefits, regulatory commission expenses

OTHER ACCOUNTING CONSIDERATIONS

Record Retention Requirements

- Retain supporting documentation for how long?
- For audit?
- For regulators?

Requirements for Level of Detail in Main Accounts and Subsidiary Records?

Cost/Benefit of Implementation

- Costs of implementation to system operators versus informational need for regulatory bodies?

USoA Electric

4901:1-9-05 Uniform system of accounts for electric companies.

- (A) Electric light companies subject to the jurisdiction of the public utilities commission of Ohio shall keep their books of accounts and records in accordance with the uniform system of accounts from time to time prescribed by the federal energy regulatory commission (FERC) except to the extent that the provisions of said uniform system of accounts are inconsistent in any way with the outstanding accounting orders of the public utilities commission of Ohio.
- (B) The public utilities commission of Ohio reserves to itself the right to require the creation and maintenance of such additional accounts as may hereafter be prescribed to cover the accounting procedures of electric light companies operating within the state of Ohio.

R.C. 119.032 review dates: 10/8/2002 and 09/30/2007

Promulgated Under: 111.15

Statutory Authority: 4905.13

Rule Amplifies: 4905.13

Prior Effective Dates: 1/8/88

USoA Gas

4901:1-13-13 Uniform system of accounts for gas companies.

- (A) Natural gas companies subject to the jurisdiction of the public utilities commission of Ohio shall keep their books of accounts and records in accordance with the uniform system of accounts from time to time prescribed by the federal energy regulatory commission except to the extent that the provisions of said uniform system of accounts are inconsistent in any way with any outstanding orders of the public utilities commission of Ohio.
- (B) The public utilities commission of Ohio reserves to itself the right to require the creation and maintenance of such additional accounts as may hereafter be prescribed to cover the accounting procedures of natural gas companies operating within the state of Ohio.

Replaces: 4901:1-13-01

Effective: 12/07/2006

R.C. 119.032 review dates: 09/30/2009

Promulgated Under: 111.15

Statutory Authority: 4905.04, 4905.06, 4905.22, 4905.28

Rule Amplifies: 4905.13

Prior Effective Dates: 2/1/91

Rate of Return Regulation

- Rate of Return - Cost+ Regulation
 - Determines the amount of profit included in allowable prices
 - Usually defined as a percentage of Rate Base (recognized and allowed regulatory assets)
 - Financial incentive/recognition of the reasonable investment necessary to provide adequate service

Rate of Return Regulation

- Rate of Return - Price Cap Regulation
 - A revenue requirement calculation is required to derive the starting prices from which periodic allowable price changes are added

Capital Structure

- Reflects the ratio or mix of debt to equity securities that is used by the company in financing its operations
- Adjustments may be required if the utility operations are part of a conglomerate – a larger overall corporate entity

Capital Structure

	Portion of Total Capital Structure	Average Cost	Weighted Cost
Debt	53%	7.44%	3.94%
Equity	<u>47%</u>	→ <u>10.66%</u>	<u>5.01%</u>
Total	100%		→ 8.95%

Return
On
Equity

Weighted
Average
Cost of
Capital

Debt Cost

- Markets generally determine at the time of bond issuance
 - May be fixed or variable for the term of the bond
 - Reflects effective interest rates at time of issuance
- Impacted by ratings assigned by agencies (for example, Moody's or Standard and Poors)

Cost of Equity

- Difficult to determine
- Usually takes into consideration the rate of return sufficient to attract capital investment
- Combination of analytical methods + judgment
- Returns
 - Commensurate with risk
 - Equal to returns for other businesses with similar risks and uncertainties



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RATE OF RETURN

Rate of Return Models

- Constant Growth Discounted Cash Flow
 - Required return is equal to a combination of the expected dividend yield plus expected dividend growth
 - Theory that market value of a stock equals the present value of all future income associated with investment

Required return = expected dividend yield + expected dividend growth

Rate of Return Models

- Non-Constant Growth Discounted Cash Flow
 - Near-term growth is not expected to be constant
 - May contain a mix of historical growth rates combined with investment analysts' growth forecasts

Rate of Return Models (continued)

- Capital Asset Pricing
 - Expected return is equal to a risk free rate plus the total of the beta risk measurement times the difference between the overall market-required rate of return less the risk free rate
$$E(r) = R_f + \beta(R_m - R_f)$$
 - The beta risk measurement = 1.0 for market average risk; less risky stocks are discounted, more risky stocks are premium
 - Theory that a stock's expected return includes a risk premium in addition to the return necessary for a risk-free investment (U.S. Government Treasury Bonds have been considered a basis of risk-free investments)

Rate of Return Models (continued)

- Risk Premium
 - Expected return is equal to a risk free rate plus the risk premium
 - Theory that a stock's expected return includes a risk premium in addition to the return necessary for a risk-free investment (U.S. Government Treasury Bonds have been considered a basis of risk-free investments)

$$E(r) = R_f + R_p$$

Return on Investment

Other examples:

- Electricity Generators
 - Gas-fired
 - Nuclear
- EU
 - Germany or France
 - Greece or Spain

Thank you!

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