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National Association of Regulatory Utility Commissioners

RATEMAKING'S IMPACT ON INVESTMENT LEVELS

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Statutory Requirement

- Commission required to provide utility with both amount sufficient to provide for depreciation expense and also a reasonable return on investment based on allowed rate of return and rate base
- Within this overall requirement the Commission has discretion on ratemaking methodologies

Summary Of Approaches Used In Maine

- Rate of Return/Cost of Service Ratemaking
- FERC Formula Rates
- Capital Trackers
- Alternative Rate Plans (ARPs)/Incentive Regulation
- Hybrids

Rate of Return/Cost of Service

- Classic ratemaking approach
- In first instance based on actual spending (historic test year)
- Then adjusted for known and measurable changes
- Then further adjusted for the projection of what costs will be in the year that rates are effective (the attrition year)
- Attrition year investment can be based on trending analysis or forecast approach

Pros/Cons of Rate of Return

- Conventional wisdom is that Rate of Return does not provide sufficient incentives for efficiency since utility is provided with a return of/on investment in close to real time basis
- Utility has incentive to gold plate its system since the more it invests the greater its return.
- The incentive to gold plate is exaggerated if the return allowed to the utility is higher than the amount needed to attract capital

Pros/Cons of Rate of Return Regulation

- Utility investments can be reviewed frequently in rate case environment to determine if utilities are investing at appropriate levels
- Utility's rates are based on actual costs which result in just and reasonable rates
- Regulatory lag provides a sufficient incentive for efficiency

FERC Formula Rates

- Variant of cost of service ratemaking
- Rates change annually based on FERC approved formula and information provided in annual financial report to FERC
- Investments to be made during the rate effective year based on projected plant additions subject to true-up
- Two components to rates; regional(RNS) and local (LNS)
- RNS component based on regional formula and information compiled by ISO-NE

Criticisms of FERC Formula Rates

- Regulatory lag reduced so incentive for efficiency reduced
- No meaningful opportunity to review reasonableness of costs
- Socialization of regional costs has resulted in largely insulating investing utility's rates from increases in investments and incentive to spend so you are a not a socialization “loser”
- Impacts for over investment exaggerated by high FERC allowed rates of return

Support for FERC Formula Rates

- Eliminates time-consuming and costly rate cases
- Based on historic objective information
- Reducing regulatory lag along with FERC allowed returns has spurred investment in transmission plant

Alternative Rate Plans (ARPs)

- Rate changes are based on an external index
- Index can be applied to rates (price index) or revenues (revenue index)
- Index mechanism breaks the link between cost and rates
- ARP to be in effect for certain time period during which utility precluded form filing for cost of service rate change
- Usually contain Service Quality Index (SQI) metrics and penalty mechanism to ensure reliable service

Support for ARPs

- Breaking the link between costs and rates creates greater incentives for cost containment and efficiencies
- Risks are shifted away form ratepayers and onto shareholders
- Rate predictability and stability enhanced
- Service quality protected by SQIs
- Regulatory costs and administration reduced

Capital Trackers

- Usually done as part of a pre-approval request
- Under capital tracker approach utility allowed to recover actual costs for investment on single issue basis
- Commission has broad authority to issue Accounting Orders
- Under authority granted by an Accounting Order the utility can defer costs (both return of and return on investment) for future recovery

Pros of Capital Trackers

- Eliminates regulatory lag thus encouraging utilities to make large investments
- Based on actual cost so no risk of over collection
- Can avoid burden of comprehensive rate cases
- Eliminates prudence risk by approving type of investment before hand.

Cons of Capital Trackers

- Real time recovery eliminates incentives for efficiency
- Review of prudence of costs difficult to accomplish in single issue expedited review case
- Once investment type determined to be prudent difficult to challenge prudence of costs

Examples of Capital Trackers

- Advanced Metering Infrastructure (AMI)
- Cast Iron Replacement (CIRP)
- CMP new customer billing system

Hybrid Approaches

- It is possible to mix and match some of the above approaches
- CMP's recent ARP proposal contained elements of indexing, long-term budget projections and single issue rate-making

Case Studies

- Investments in transmission (CMP and Regional)
- CMP ARP
- BHE Rate Case

Final Thought On Ratemaking Approaches

- Regardless of what ratemaking approach is used, accurate cost information is crucial to fair and accurate ratemaking.
- Ultimately the Commission's ability to meet its obligation to set just and reasonable rates which provide the opportunity for the utility to earn a fair return on its investment is based on the availability of accurate cost information

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Depreciation

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Depreciation

Ratemaking theory

- Utilities pay for the capital plant used to provide utility service through debt financing and financing by investors
- Depreciation expense returns the investment made by the utility for capital assets over that assets useful live
- Investors are granted a return on capital plant used in providing utility investment made net of any accumulated depreciation
- Ratemaking concerns generally focus on useful life, salvage value and cost of removal as those components are estimated – original cost is the only known component
- Regulators may modify how quickly an asset is recovered to incent investment by utility shareholders or lengthen the recovery period to moderate the impact on ratepayers

Depreciation

What is depreciation:

- Depreciation accounting is fundamentally a process of allocating in a systematic and rational manner the value of a depreciable asset over its life.
- Components to determining basic depreciation expense for accounting purposes:
  - Cost of asset to be depreciated
  - Useful life of the asset
  - Best Method of allocating cost for the asset

Depreciation (con't)

- Other factors to consider to determine total depreciation expense
  - Is there a salvage value to the asset
  - Is there a cost to remove the asset
  - Salvage value decreases the amount to be recovered while cost of removal increases it
- The depreciable asset is the original cost less salvage value plus cost of removal
- Accounting generally follows ratemaking in selecting depreciation method

Depreciation

- Assets are recorded at original cost in Account 101, Utility Plant, for both T&D Electric Utilities, Gas Utilities, both Local Distribution Companies and Interstate Pipelines
- Accounting rules require that depreciation expense be accumulated in Account 108 which is used as a reduction to Account 101 when calculating net utility plant
- Generally when assets are retired, Account 108 is debited as it is assumed that the accumulated balances cover the full cost of the asset which has already been expensed and reflected in the Company's profit and loss over its useful life
- Net utility plant is the major component of rate base, which utilities earn a return on

Depreciation

- Use of Plant Records
  - All depreciation studies start with a review of plant records
    - What assets are recorded and where were those assets placed in service?
    - What is the level of accumulated depreciation already recorded?
    - Have the utilities estimates of salvage values and cost of removal been reasonable? What are the estimated costs now?
    - What is the remaining life of the assets?
    - What is necessary for the utility to fully depreciate the original cost of the asset, net of salvage and cost of removal?

Depreciation

- Basic Techniques
  - Straight-line depreciation is the most straight forward method to calculate depreciation. As its name suggests, it expenses the depreciable amount equally over a set period
  - Units of production – depreciable amount is expensed based upon production of asset – generally not used in utilities
  - Utilities generally depreciate assets on a composite or group basis (poles, meters, etc.) and not on an individual asset basis
- Utilities generally use the straight-line method so depreciation expense initially is calculated by dividing the depreciable asset (original cost plus net salvage) by the estimated total life

Depreciation

- Iowa Curves
  - Were developed empirically to represent the life characteristics of most industrial and utility property
  - There are now 31 Iowa Curves
  - Choice of specific curve is based on best fit to plant data and the analysts judgment after reviewing facts
  - Basically, different Iowa curves are more suitable to different asset categories to determine the life cycle
  - The life cycle determines the period over which to depreciate an asset

Depreciation

- Average Service and Remaining Lives
  - "Average life" is the average expected life of all units of a particular group when new, and is the arithmetic average of the lives of the units
  - Remaining life is the number of years that remain in the useful life of the asset and those years are used in any the calculation of the depreciation expense – for example, if a straight-line method is used, the remaining life is just substituted for the original life and plant net of accumulated depreciation is used instead of original cost to calculate depreciation expense
- Net Salvage Value
  - Net Salvage Value – Original Cost minus salvage from disposal plus cost of removal

Depreciation

- Net Salvage – Issues
  - Determining gross value of salvage and cost of removal
  - Determining whether ratepayers should pay based upon current year dollars or the value of the dollars in the year of retirement
  - How is inflation incorporated into those dollars?
  - In recent CMP and BHE cases, Staff took the position that net salvage should be based on current dollars which greatly reduced the amount of depreciation expense to be collected now from ratepayers. Staff's position was accepted as part of a comprehensive settlement

Depreciation

- Regulatory Depreciation vs. Tax Depreciation
  - Goals of depreciation for ratemaking and tax different
  - US Congress has generally used tax depreciation as a method to promote investment by businesses
  - For tax purposes, accelerated depreciation methods allow business to depreciated assets quicker
  - Tax depreciation expense is an offset to revenues and therefore, higher depreciation expense equals lower revenues and decreased taxes
  - Theory is that the resulting decrease in taxes allows businesses to have more money to invest in the economy
  - Tax law requires that regulators allow utilities to have the benefit of the accelerated depreciation resulting in the recording of deferred taxes to reflect the time value of money

Depreciation- Final Thoughts

- The level of depreciation effects the timing of recovery from ratepayers but not the overall level of recovery
- Can be seen as a zero sum game. The higher the depreciation expense, the lower the rate base and the lower the return component in revenue requirements

Splitting Costs Between Transmission and Distribution

- Since Maine Restructured the Electricity Market and FERC asserted jurisdiction over transmission, it was necessary to separate costs between transmission(T) and distribution(D)
- The split in physical plant was done using FERC's 7 Factor Test

FERC's 7 Factor Test

- Local distribution facilities are normally in close proximity to retail load
- Local distribution is primarily radial in character
- Power almost always flows into local distribution systems
- Power entering a local distribution system is consumed in comparatively small geographic area
- Local distribution systems will be of reduced voltage
- Meters based at the T/D interface to measure flows

FERC's 7 Factor Test

- As a result of application of the 7 Factor test, FERC took jurisdiction over facilities at or above the 34.5kV level

Allocating Common Investments

- In addition to assigning facilities to either transmission or distribution as part of the jurisdictional split it was necessary to allocate common costs (e.g. meters) between transmission and distribution
- This was/is done through basic allocation factors:
  - Plant
  - Wage
  - Customer Allocator

Allocating Common Costs (cont'd)

- Customer Allocator
  - Based on the ratio of retail transmission or distribution revenues to total retail revenues
  - Used to allocate most billing and customer service costs
- Wage Allocator
  - Based on ratio of directly assigned transmission or distribution wages and allocated customer wages to total wages
  - Used to allocate common Administrative and General (A&G) costs and investments

Allocating Common Costs (cont'd.)

- Plant Allocator
  - Based on the ratio of transmission and distribution gross plant in service to total plant
  - Primarily used to allocate general insurance and property taxes

Final Thought On T&D Allocators

- Choice of Allocator and the form of regulation can have significant on how costs are recovered form customers in the post-restructuring world
- Examples include:
  - CMP's use of allocators during the ARP
  - AMI costs and savings
  - BHE's new customer billing system