<u>Case Study</u>
ABC Electric Company

<u>Overview</u>

ABC Electric Company is a small, investor-owned company serving the ABC territory and surrounding communities. ABC has not increased its rates in the past two years. But now, because of significant increases in labor costs and financing costs, and a proposed change in depreciation rates during the past year, management intends to present its case to the Public Utility Commission for an increase in electricity rates.

The balance sheets of ABC as of December 31, 2006 and 2007 and the related income statements for the years 2006 and 2007 have been provided on Exhibit 1-2 and Exhibit 1-3, respectively.

Note that the "Operating Income" on Line 10 of the Income Statement has decreased significantly from 2006 to 2007. "Operating income" represents the Company's return to providers of capital and must be sufficient to cover interest payments and provide a fair return on equity devoted to utility operations. It is this amount that, when considered as a percentage of the rate base, indicates the actual overall rate of return earned by the Company during the period. This amount can then be compared with the previously allowed overall rate of return to determine if the Company is earning its Commission-authorized rate of return.

In addition, if ABC's rate of return is viewed by investors as being inadequate, ABC will find it difficult to attract capital in the future. Accordingly, in order to obtain a fair and adequate return, the Company must seek to increase its rates to be effective January 1, 2009.

At this point, please do a preliminary review of ABC's Balance Sheet and Income Statement for the year ended December 31, 2007.

Part 1 – Calculation of Rate Base

After you have reviewed the balance sheet and income statement, the first task is to consider the calculation of the rate base for ABC. This calculation should be based on and limited to the following facts and the information related to ABC's balance sheet and income statement.

1. ABC intends to use 2007 as its test year because the Commission's policy is to use an historical period for the test year. Therefore, the income statement for the year ended December 31, 2007 and the related balance sheet will provide the starting point for determining rate base.

2. Based on precedents established by the Commission and the state courts, the rate base of a utility company is based upon original costs.

3. Construction Work in Progress is normally excluded from rate base because it represents plant that is not currently providing electric service.

4. The Commission has historically included the average balances of inventories in rate base.

5. The Commission has previously authorized for ABC the booking of a regulatory asset for $800,000 of deferred expenses. ABC Company is recovering this asset through its existing rates and is allowed to earn a return on the unamortized amount.

6. The Commission has historically allowed a cash working capital allowance based on 1/8 of annual other operations expenses and maintenance expenses.

7. ABC Company will also request that an *additional* amount of 515,875 be included in rate base for other working-capital items.

8. ABC had an extraordinary property retirement due to the early obsolescence of a smokestack, which did not meet pollution control requirements. The net book value of the retired property is being amortized at $50,000 per year (this amount is included as part of the 2007 operating expenses in the income statement on Exhibit 1-3). The Company still has an unrecovered investment in that smokestack, equal to the unamortized cost of $400,000 at December 31, 2007 (this amount is shown on the balance sheet on Exhibit 1-2 under Deferred Charges). The Commission has previously allowed the Company to defer and amortize over the ten-year period the undepreciated cost of this asset, with recovery through rates. The Commission's action recognized that the unrecovered cost of this stack is appropriately included in the rate base since it has not been recovered from prior customers and its retirement was beyond the Company's control.

9. ABC Company finds it necessary to obtain various properties and equipment in advance of their required use to avoid costly delays in initiating construction. At 12/31/07, ABC had invested $500,000 in equipment for a service center, but of this amount, $100,000 will not be needed to provide service to customers. The remaining amount of $400,000 was used to pay for equipment that went into service at 1/1/08. This equipment will be depreciated at the same rate as other depreciable plant (the depreciate rate is discussed later).

10. In early January, 2008 the Company installed pollution control equipment to comply with federal and state emission control standards. This equipment has a cost of $200,000. The equipment will be depreciated at the same rate as other depreciable plant (the depreciation rate is discussed later).

11. The rate-base amounts are typically reduced by amounts that are collected by the Company before they are required to be paid. Because of the timing difference between the receipt and expenditure of certain funds, the funds provide a source of cost-free capital. The amount for Accumulated Deferred Federal Income Taxes is a common example of such a rate-base reduction. Customer deposits are also considered a source of cost-free capital, and therefore these amounts are also deducted from rate base.

Complete *Exhibit 1-4 Workpaper* that is provided for computing rate base that the Company will request in its filing with the Commission. Your computation should be based on the historical data and the information provided above.

Review the recommended solution on *Exhibit 1-4 Solution* for ABC's rate base calculation.

Part 2 – Calculation of Rate of Return

The next step in determining the Company's revenue requirement is calculating a fair rate of return (cost of capital) to apply to the rate base.

The first step in determining the rate of return for ABC is to determine the appropriate amounts of equity and debt. As the Company completes a major construction cycle during 2008, it has arranged with its investment bankers to issue during January 2008 an amount of $1,125,000 of new common equity and $1,325,000 of long-term debt.

The cost of equity is supported by a Company-sponsored study comparing electric utility companies of similar size and service areas, and this study indicates that a 10 percent return on equity capital is reasonable. The Commission has also allowed a 10 percent return on equity in some of its recent cases, with a range of 9 to 11 percent. ABC will submit all this evidence to the Commission in support of its requested 10% return on equity.

The embedded cost of debt must also be determined. ABC has calculated its overall embedded cost of debt financing as 6.36 percent for its total outstanding long-term debt at December 31, 2007. The cost of the $1,132,000 of new debt will be 6.36%.

Complete *Exhibit 1-5 Workpaper* provided for computing the overall rate of return that the Company will request in its filing with the Commission.

Review the recommended solution on *Exhibit 1-5 Solution* for ABC's rate of return calculation.

Part 3 – Calculation of Operating Revenues and Expenses

Now that we know the rate base and overall rate of return, the next step is to compute allowable operating revenues and expenses for the test period, which should reflect all known and measurable adjustments.

As previously stated, ABC Company intends to use 2007 as its test year, because the Commission has not accepted the use of a forward-looking test year. Therefore, the income statement for the year ended December 31, 2007, and the related balance sheet will provide the starting point for determining the normal operating revenues and expenses of ABC's cost of service.

This calculation should be based on and limited to the following facts.

1. The Company intends to amortize, over a two-year period, the costs of preparing its rate case to the Commission. Such costs are considered a necessary cost of doing business at a regulated company, and this Commission generally allows recovery through rates. Such costs are generally required to be amortized over the time period expected before the next rate case. It is assumed that this period will be two years. The total cost of preparing this case is estimated at $300,000.

2. Beginning in 2008, the Company is planning to increase its composite depreciation rate from 3.4 percent to 3.5 percent. This increase, which amounts to an annual amount of $300,000 on *existing* equipment, is supported by a depreciation study completed in late December, 2007.

3. The depreciation rate on the equipment for the new service center (discussed previously in the determination of the rate base) is 3.5%. Note that this is *in addition to* the $300,000 amount in item 2 above.

4. The depreciation rate on the equipment for the new pollution control equipment (discussed previously in the determination of the rate base) is 3.5%. Like the depreciation on the equipment for the new service center, this depreciation is *in addition to* the $300,000 amount in item 2 above.

5. The Company had an increase in payroll costs resulting from a new three-year labor contract effective on January 1, 2008. For the years 2008 through 2010, ABC Company's annual payroll costs will be approximately $800,000 higher than in 2007.

6. During 2007, weather was hotter than normal in the ABC jurisdiction, resulting in $14,800 more revenue than if the weather had been of normal temperature. For ratemaking purposes, ABC's regulatory commission determines sales revenue based on normal weather.

7. Based on the company's latest actuarial study, ABC's pension costs will increase in the test period by $50,000.

8. The 2007 test year includes $5,300 of expenses related to payments to vendors for computer programming work. This expense is nonrecurring.

Complete *Exhibit 1-6 Workpaper-A* provided for computing ABC's Pro Forma statement of Electric Operating Income.

Review the recommended solution on *Exhibit 1-6 Solution-A* for the adjustments made to obtain ABC's pro forma operating income.

Part 4 – Calculation of Income Tax Expense and Revenue Requirement

The income tax expense should be based on ABC's income tax rate of 40 percent. Complete *Exhibit 1-7 Workpaper* to compute the revenue requirement deficiency.

The objective of the rate case is to determine and request the revenue required to provide a fair return on rate base after recovery of allowable operating expenses. All of the data necessary for this determination have now been assembled.

Now complete *Exhibit 1-6 Solution-Complete* by filling in the fourth and fifth columns of data.

Summary

Now that you have calculated the required return for ABC Electric Company, let's summarize the matters just discussed in preparing for and conducting a rate case. The Company files an application for a rate increase and, based on the requested cost of service and testimony from other parties, the Commission determines the cost of service, the rate base and the rate of return. Rate of return is applied to rate base to produce the estimated required operating income (or return). Adding the desired level of operating income to the operating expenses (including income taxes) produces the amount of revenue that is needed.

You should now understand the basic theory of how revenue requirements are established in the rate-case process.