STATE OF NEW HAMPSHIRE

BEFORE THE

PUBLIC UTILITIES COMMISSION

IN THE MATTER OF:)
)
Carrying Charge Rate on Cash Working Capital)

DG 07-072

DIRECT TESTIMONY

AND SCHEDULES

OF

JAMES A. ROTHSCHILD

ON BEHALF OF THE

PUBLIC UTILITIES COMMISSION

May 5, 2008

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I. STATEMENT OF QUALIFICATIONS

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is James A. Rothschild and my address is 115 Scarlet Oak Drive, Wilton, Connecticut 06897.

Q. WHAT IS YOUR OCCUPATION?

A. I am a financial consultant specializing in utility regulation. I have experience in the regulation of electric, gas, telephone, sewer, and gas utilities throughout the United States and Nova Scotia, Canada.

Q. PLEASE SUMMARIZE YOUR UTILITY REGULATORY EXPERIENCE.

A. I have been a consultant specializing in utility ratemaking since 1972. Initially, I was employed by Touche Ross & Co. Touche Ross & Co. later merged to form Deloitte Touche. I then provided similar consulting services while with J. Rothschild Associates, Georgetown Consulting Group, and Rothschild Financial Consulting. While associated with the above firms, I have worked for various state utility commissions, attorneys general, and public advocates on regulatory matters relating to regulatory and financial issues. These have included rate of return, financial issues, and accounting issues. (See Appendix A.)

Q. WHAT IS YOUR EDUCATIONAL BACKGROUND?

A. I received an MBA in Banking and Finance from Case Western University (1971) and a BS in Chemical Engineering from the University of Pittsburgh (1967).

II. PURPOSE

Q. WHAT IS THE PURPOSE OF THIS TESTIMONY?

A. The purpose of this testimony is to determine what the appropriate rate utility companies in New Hampshire should be allowed to charge ratepayers for the carrying costs of supply-related cash working capital.

Q. WHAT IS SUPPLY-RELATED CASH WORKING CAPITAL?

A. Supply-related working capital is the financing a company needs to manage the relationship between its short-term accounts receivables and accounts payable in regards to purchasing natural gas for natural gas companies and fuel and purchased power for electric companies.

III. SUMMARY OF FINDINGS AND RECOMMENDATIONS

Q. PLEASE SUMMARIZE YOUR CONCLUSIONS.

A. For reasons that are explained later in this testimony, Energy North, Granite State, Northern Utilities and Unitil should be required to use the cost of short-term debt when determining the revenue requirements associated with supply-related working capital.

PSNH has not made a claim for any supply-related working capital, and has stated that it has not even computed the amount of such capital needed to run its business. If, in the future, the company should make such a computation, the principles laid out in this testimony should govern the determination of their appropriate carrying charge rate.

IV. BACKGROUND AND APPROACH

Q. HOW DOES A COMPANY OBTAIN ITS CAPITAL?

A. A company obtains its capital from investors. That capital is raised from investors through a mix of equity, long-term debt, and short-term debt. Ideally, the percentage of each that is used in the capital structure is determined with a goal of minimizing the long-run overall cost of capital. Especially after considering the allowance for income taxes, equity costs considerably more than either long-term or short-term debt. Short-term debt generally is less expensive than long-term debt. However, the greater the proportion of debt a company uses, the more financial risk exposure it will have and therefore, other things being equal, both the cost of debt and the cost of equity will rise as the proportion of total capital raised by debt increases. Therefore, there is a limit on the maximum appropriate amount of debt a company should or can use. There is also a separate appropriate limit on the total amount of debt that should or can be raised as short-term debt rather than long-term debt because of factors such as indenture limitations and the potential exposure to a financial environment in which interest rates rise rapidly. By considering the appropriate cost tradeoffs between equity and both long and short-term debt, a company can both maintain its financial integrity and minimize its overall cost of capital by using reasonably appropriate levels of each component of capital.

Q. WHAT ARE TYPICAL USES OF SHORT-TERM DEBT?

A. Common uses of short-term debt include the financing of short-duration assets such as working capital and for bridge financing. Also, to take advantage of the relatively low cost of short-term debt some companies may provide some level of financing of long-term assets with short-term debt.

Q. WHY IS WORKING CAPITAL A COMMON USE FOR SHORT-TERM DEBT?

A. The need for working capital typically varies with time. Such variation could occur for reasons such as seasonal variations in load, abnormal weather conditions, under collection of fuel or purchased gas costs. A capital need that varies with time is especially suited to be financed with short-term debt because, unlike permanent capital, the costs incurred from short-term debt financing are only incurred during the time the debt is actually being used. For example, a company that had a net positive need for working capital for 9 months of a year would incur interest charges for only 9 months if that need is financed with short-term debt. This is in contrast to long-term debt or equity in which the costs are incurred for all 12 months.

Q. WHAT IS BRIDGE FINANCING?

A. Bride financing is temporary financing that is used until the amount of new financing a company needs is large enough to make an issuance of long-term debt or common equity economical. It can be uneconomical to issue long-term debt or undertake major new issuances of common stock in small dollar increments. Therefore, companies frequently use short-term debt to finance physical assets during a construction period and then replace the short-term debt with long-term debt once the amount of short-term debt becomes large enough to make the long-term debt issuance economical.

Q. HOW SHOULD REGULATORS SUCH AS THE NEW HAMPSHIRE COMMISSION TREAT SHORT-TERM DEBT?

A. Regulators have a responsibility to balance the interests of investors and ratepayers. Since short-term debt is usually a relatively inexpensive source of capital, it is important for regulators on the one hand to provide ratepayers with the benefit of the lower cost associated with short-term debt while on the other hand protecting investors by not assigning more short-term debt in the ratemaking process than a company could reasonably be expected to use.

Q. HOW DOES THE REGULATORY PROCESS PROVIDE RATEPAYERS WITH THE BENEFIT OF LOW COST SHORT-TERM DEBT?

A. Each of the companies in this proceeding has stated in response to discovery (see for example Granite State's response to Staff 1-12) that it uses the Federal Energy Regulatory Commission (FERC) method for computing the Allowance for Funds Used During Construction (AFUDC) rate which it earns on the eligible Construction Work in Progress (CWIP) balance. The FERC has a policy of first allocating all available short-term debt to CWIP that is eligible to earn the AFUDC rate. The way the FERC method accomplishes this allocation is to set the AFUDC rate equal to the cost of short-term debt so long as the short-term debt balance is equal to or greater than the balance of CWIP eligible for AFUDC. If the balance of CWIP eligible for

AFUDC is greater than the short-term debt balance, then the FERC uses the overall cost of capital for the AFUDC rate applied to the balance of CWIP eligible for AFUDC in excess of the short-term debt balance.

Q. WHAT IMPLICATIONS DOES THE FERC METHOD FOR COMPUTING THE AFUDC RATE HAVE ON THE TREATMENT OF SHORT-TERM DEBT IN THE REST OF THE RATEMAKING PROCESS?

A. Since the FERC effectively assumes that the available short-term debt is used first to finance CWIP, ratepayers benefit from an AFUDC rate that is lower than if another rate, such as the overall cost of capital, were used. The lower the AFUDC rate used by a company, the lower will be the capital cost of the physical asset when it is completed and placed into service. This lower capital cost produces lower rates to customers because a smaller rate base results in a smaller return on rate base and a smaller depreciation expense. Therefore, it is appropriate for regulators to be mindful of the amount of short-term debt that has already been assigned to the AFUDC rate when deciding whether other assets should be financed with short-term debt.

Q. OTHER THAN ITS IMPACT ON THE AFUDC RATE, HOW COULD RATEPAYERS BENEFIT FROM SHORT-TERM DEBT?

A. A regulator could require that a certain portion of a utility's rate base be financed with low cost short-term debt, and/or a regulator could determine that supply-related working capital is being financed by short-term debt and therefore earns the short-term debt rate.

Q. DOES THE NEW HAMPSHIRE PUBLIC UTILITIES COMMISSION INCLUDE SHORT-TERM DEBT IN THE CAPITAL STRUCTURE WHEN IT DETERMINES THE OVERALL COST OF CAPITAL FOR THE COMPANIES IT REGULATES?

A. Yes, the New Hampshire Commission has frequently computed the cost of capital by including at least some short-term debt in the capital structure.

Q. IN ADDITION TO INCLUDING SOME SHORT-TERM DEBT IN THE CAPITAL STRUCTURE, DOES EACH COMPANY IN NEW HAMPSHIRE ALLOCATE SHORT-TERM DEBT TO ITS AFUDC RATE?

A. Yes. As noted above, each company in this proceeding has responded to discovery stating that it uses the FERC method for computing its AFUDC rate.

Q. IF SOME OF THE AVAILABLE SHORT-TERM DEBT HAS BEEN USED TO FINANCE CWIP ELIGIBLE FOR AFUDC AND SOME TO FINANCE A PORTION OF RATE BASE, IS IT POSSIBLE THAT THERE WOULD BE ENOUGH SHORT-TERM DEBT LEFT OVER TO FINANCE SUPPLY-RELATED WORKING CAPITAL?

A. Yes. Whether or not there is any short-term debt left over to finance supply-related working capital depends on three factors: (i) the total amount of short-term debt that a company is or should be using; (ii) the amount of CWIP earning the AFUDC, and

(iii) the amount of short-term debt that has been included in the determination of the overall cost of capital that was applied to rate base. Thus, the amount of short-term debt that is or should be financing supply-related working capital must be determined on a case-by-case basis.

Q. ARE THERE ANY SPECIAL CHARACTERISTICS OF SUPPLY RELATED WORKING CAPITAL THAT TEND TO MAKE IT ESPECIALLY APPROPRIATE FOR SHORT-TERM DEBT FINANCING?

A. Yes. As will be shown later in this testimony, the need for supply-related working capital tends to fluctuate greatly throughout the year. It sometimes falls to or below zero. This self-liquidating characteristic of supply-related working capital makes it especially suited for short-term debt financing. This is because providers of short-term debt take comfort in the ability of the company to periodically repay the loan and because the company can save on its interest expense by confining its borrowing to only those portions of the year in which working capital is actually needed.

Q. WHAT SHOULD THE COMMISSION DO TO ALLOCATE SHORT-TERM DEBT TO SUPPLY RELATED WORKING CAPITAL IN A WAY THAT FAIRLY BALANCES THE INTERESTS OF INVESTORS AND RATEPAYERS?

A. Because short-term debt may already have been allocated to CWIP and/or to the overall cost of capital applied to rate base, I recommend that the Commission use the decision tree diagram I have presented on JAR Schedule 1.

The first question asked in the decision tree is "Does the company have at least enough short-term debt to finance a) the amount of short-term debt allocated to rate base, and b) CWIP eligible for AFUDC?"

Q. WHY IS THIS FIRST STEP OF THE DECISION TREE IMPORTANT?

A. It is this step that determines whether or not the regulatory process has or has not already fully accounted for the amount of short-term debt being used by the company.

Q. WHAT SHOULD HAPPEN IF A COMPANY HAS MORE SHORT-TERM DEBT THAN IS ACCOUNTED FOR IN STEP ONE?

A. If this is the case, then the ratemaking process should allocate the remaining short-term debt to supply-related working capital. If this does not happen, ratepayers will not realize the full benefit of the short-term debt being used by the company.

Q. IF IN STEP ONE OF THE DECISION TREE IT WAS DETERMINED THAT THE COMPANY DID NOT HAVE ANY SHORT-TERM DEBT LEFT AFTER ASSIGNMENTS TO EITHER CWIP ELIGIBLE FOR AFUDC OR RATE BASE, IS IT STILL POSSIBLE FOR THE COMMISSION TO PROPERLY CONCLUDE THAT AT LEAST SOME SHORT-TERM DEBT SHOULD BE ALLOCATED TO SUPPLY RELATED WORKING CAPITAL?

A. Yes. A company is only entitled to recover prudently incurred costs. Costs are imprudently high and rates are unreasonable if the company fails to use an adequate amount of short-term debt. Therefore, if the reason no short-term debt is left after assignments to CWIP eligible for AFUDC and rate base is that the company failed to properly avail itself of short-term debt, ratepayers should not be penalized for that mistake. If, on the other hand, a company is already using a reasonable amount of short-term debt and that amount has already been fully allocated to CWIP eligible for AFUDC and rate base, it would not be proper to assign any short-term debt to supply-related working capital.

Q. THE DECISION TREE PROVIDES FOR POSSIBLE OUTCOMES WHERE IT IS REASONABLE TO CONCLUDE SUPPLY RELATED WORKING CAPITAL IS BEING FINANCED BY SHORT-TERM DEBT. IS THERE SOMETHING ELSE THE COMMISSION SHOULD CONSIDER TO FURTHER DETERMINE IF SUPPLY RELATED WORKING CAPITAL IS FINANCED BY SHORT-TERM DEBT?

A. Yes. The annual fluctuation in the amount of supply-related working capital should be examined. The greater the fluctuation, the more obvious it is that supply-related working capital is or should be financed by short-term debt. However, even if the amount of supply-related working capital does not fluctuate very much, it may still be appropriate because of economics to assign short-term debt to supply related working capital provided there is or should be short-term debt in excess of the amount that is allocated to CWIP eligible for AFUDC and rate base.

V. ANALYSIS BY COMPANY

<u>Energy North</u>

Q. DOES ENERGY NORTH HAVE ENOUGH SHORT-TERM DEBT TO FINANCE THE SHORT-TERM DEBT COMPONENT OF RATE BASE AND CWIP ELIGIBLE FOR AFUDC?

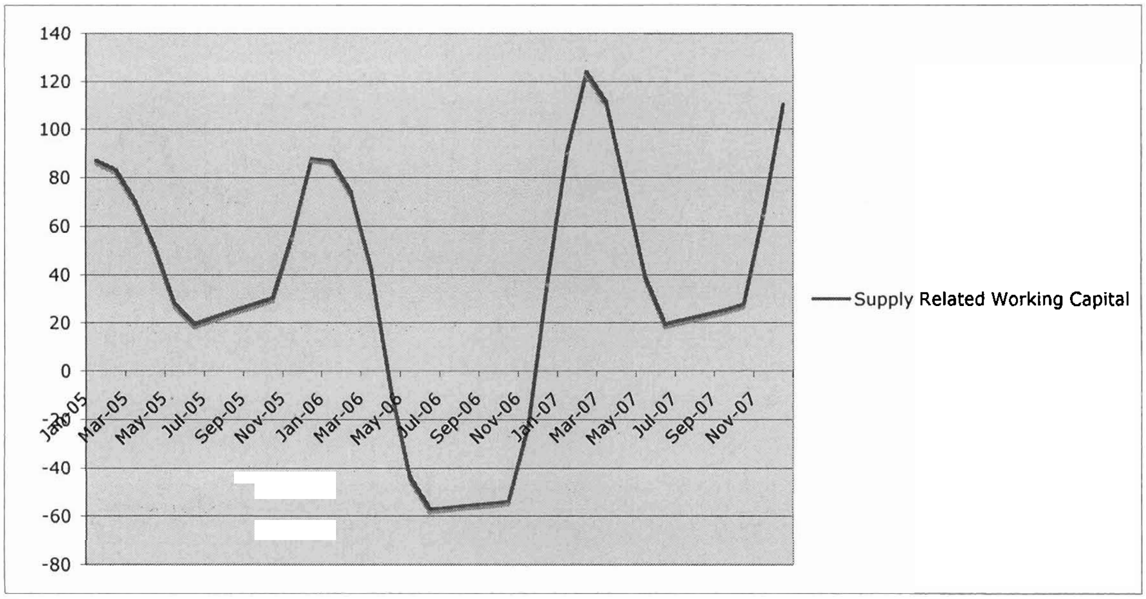
A. Yes, Energy North has more than enough. In the fourth quarter of 2007, Energy North had $59.3 million in short-term debt while the sum of CWIP eligible for AFUDC ($6.7 million) and the short-term debt in rate base ($9.1 million) was only $15.8 million. (See JAR Schedule 2). Similar excesses were recorded for each of the previous three quarters.

Q. IS THE SHORT-TERM DEBT BALANCE IN EXCESS OF THE AMOUNT ALLOCATED TO RATE BASE AND CWIP ELIGIBLE FOR AFUDC AT LEAST AS LARGE AS THE SUPPLY RELATED WORKING CAPITAL?

A. Yes. The amount of supply-related working capital in 2007 ranged between a negative $3,000 to a positive $119,000. The short-term debt remaining after allocations to rate base and to CWIP eligible for AFUDC is substantially higher than this supply-related working capital range. As shown on JAR Schedule 2, the excess for the four quarters of 2007 varied between $22.8 million and $43.3 million.

Q. IS ENERGY NORTH'S SUPPLY RELATED WORKING CAPITAL REQUIREMENT CYCLICAL IN NATURE?

A. Yes. As shown in the graph below for the period January, 2005 to December 31, 2007, Energy North's supply-related working capital varied cyclically with a minimum of negative $60,000 and a maximum of positive $120,000 This cyclical variation in the amount of supply-related working capital indicates that short-term debt is an ideal funding source for Energy North.



Source: Response to Request No.: Staff 1-2

Q. WHAT COST RATE DO YOU RECOMMEND BE APPLIED TO ENERGY NORTH'S SUPPLY RELATED WORKING CAPITAL?

A. The cost of short-term debt should be assigned to Energy North's supply-related working capital. I reach this conclusion for two reasons:

1. There is enough short-term debt to cover supply related working capital after funding CWIP eligible for AFUDC and the short-term debt component of rate base in the company's last rate case, and
2. Energy North's supply-related working capital varies on a cyclical basis and is therefore most likely best financed with short-term debt.

Granite State

Q. DOES GRANITE STATE HAVE ENOUGH SHORT-TERM DEBT TO FINANCE THE AMOUNT OF SHORT-TERM DEBT ALLOCATED TO RATE BASE AND CWIP ELIGIBLE FOR AFUDC?

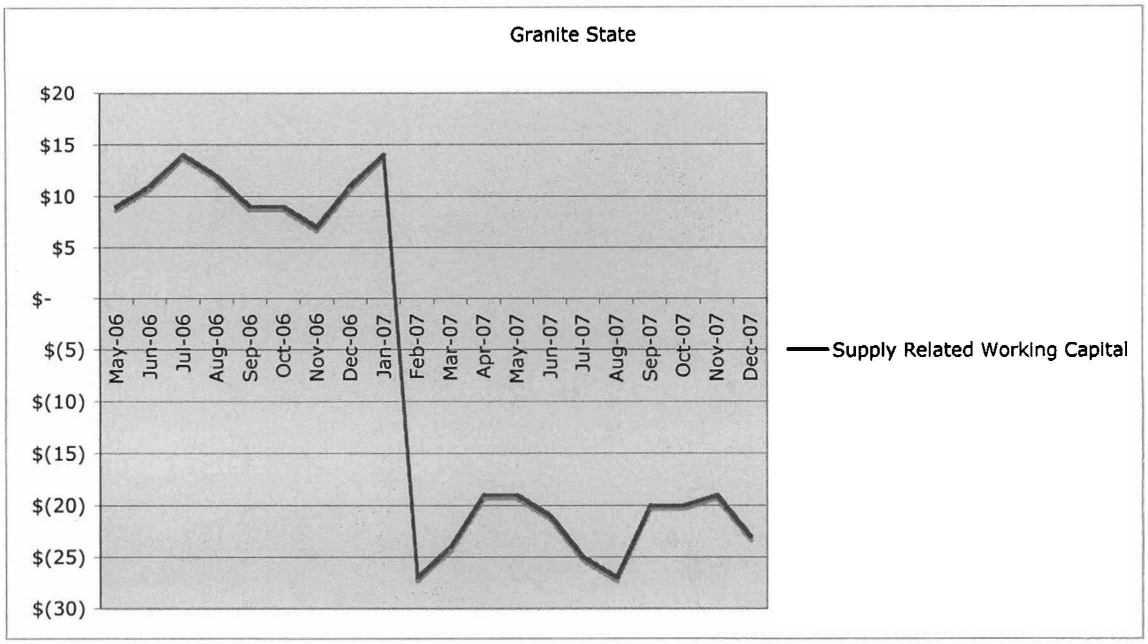
A. No. Granite State does not report any short-term debt in its balance sheet. (See discovery response to Staff 1-8)

Q. IS THE SHORT-TERM DEBT BALANCE IN EXCESS OF THE AMOUNT ALLOCATED TO RATE BASE AND CWIP ELIGIBLE FOR AFUDC AT LEAST AS LARGE AS THE SUPPLY RELATED WORKING CAPITAL?

A. No.

Q. DOES GRANITE STATE'S SUPPLY RELATED WORKING CAPITAL VARY ON A CYCLICAL BASIS?

A. Yes. The graph below shows that Granite State's supply-related working capital varied cyclically between negative \$25,000 and positive \$15,000 during the period May 2006 to December 31, 2007, indicating that short-term debt is the best funding source.



Source: Response to Request No.: Staff 1-2

Q. WHAT COST RATE DO YOU RECOMMEND BE APPLIED TO GRANITE STATE'S SUPPLY RELATED WORKING CAPITAL?

A. Even though the Company does not have any short-term debt, the cyclical nature of its supply-related working capital indicates that short-term debt should be used to finance that need at a cost equal to the cost of the Company's short-term debt.

Q. WHAT IS THE EFFECT OF APPLYING THE SHORT-TERM DEBT RATE INSTEAD OF THE OVERALL COST OF CAPITAL TO GRANITE STATE'S SUPPLY RELATED WORKING CAPITAL?

A. As shown in Granite State's response to Staff 1-1, the Company has determined that its supply-related working capital is negative. This means supply-related working capital generates savings to ratepayers. Use of the short-term debt rate instead of the overall cost of capital for calculating carrying charges will lower the savings to ratepayers as long as the supply-related working capital remains negative.

<u>Northern Utilities, Inc.</u>

Q. DOES NORTHERN HAVE ENOUGH SHORT-TERM DEBT TO FINANCE THE AMOUNT OF SHORT-TERM DEBT ALLOCATED TO RATE BASE AND CWIP ELIGIBLE FOR AFUDC?

A. Yes. Most, if not all, of Northern's working capital is being funded by short-term debt that is not accounted for elsewhere in the ratemaking process. In the fourth quarter of 2007, for example, Northern had $31.1 million in short-term debt while the sum of CWIP eligible for AFUDC and the short-term debt component of rate base[1] was only $2.3 million. (See JAR Schedule 5). Similar excesses were recorded for the previous three quarters of 2007.

Q. IS THE SHORT-TERM DEBT BALANCE IN EXCESS OF THE AMOUNT ALLOCATED TO RATE BASE AND CWIP ELIGIBLE FOR AFUDC AT LEAST AS LARGE AS THE SUPPLY RELATED WORKING CAPITAL?

A. Yes.

Q. DOES NORTHERN'S SUPPLY RELATED WORKING CAPITAL REQUIREMENT VARY ON A CYCLICAL BASIS?

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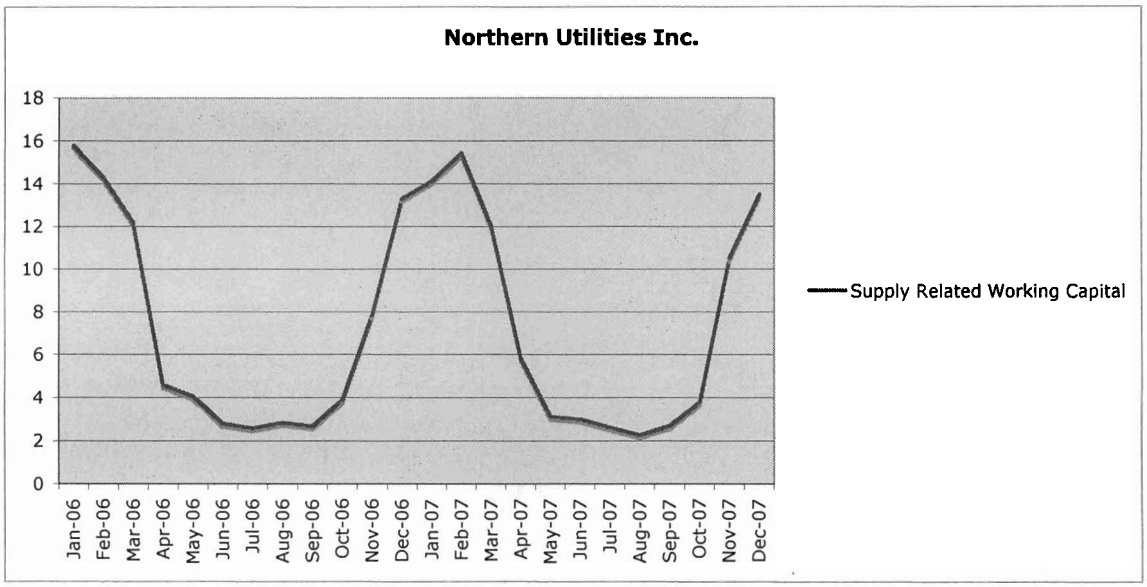
[1] The company reported that short-term debt was 0% of its capital structure (See response to Staff 1-7)

A. Yes. The graph below shows that Northern's supply-related working capital varied cyclically between positive $2,000 and positive $16,000 from January 2006 to December 31, 2007, indicating that short-term debt is the best funding source.



Source: Response to Request No.: Staff 1-2

Q. WHAT COST RATE DO YOU RECOMMEND BE APPLIED TO NORTHERN'S SUPPLY RELATED WORKING CAPITAL?

A. Since there is enough short-term debt to cover the supply-related working capital after funding CWIP eligible for AFUDC and the short-term debt component of rate base, the Company's cost of short-term debt should be used.

PSNH

Q. DOES PSNH HAVE ENOUGH SHORT-TERM DEBT TO FINANCE THE AMOUNT OF SHORT-TERM DEBT ALLOCATED TO RATE BASE AND CWIP ELIGIBLE FOR AFUDC?

A In 2007 PSNH did not have enough short-term debt in all but one quarter (See JAR Schedule 3, line 5).

Q. IS THE SHORT-TERM DEBT BALANCE IN EXCESS OF THE AMOUNT ALLOCATED TO THE AFUDC RATE AND TO RATE BASE AT LEAST AS LARGE AS THE SUPPLY RELATED WORKING CAPITAL?

A. No. PSNH's CWIP balance eligible for AFUDC was higher than the short-term debt balance.

Q. DOES PSNH'S SUPPLY RELATED WORKING CAPITAL VARY ON A CYCLICAL BASIS?

A. PSNH has not provided the necessary computation. Therefore, I do not know the extent to which its supply-related working capital varies throughout the year.

Q. WHAT COST RATE DO YOU RECOMMEND BE APPLIED TO PSNH'S SUPPLY RELATED WORKING CAPITAL?

A. PSNH has not made a claim for any supply-related working capital (See PSNH response to Staff 1-01), and has stated that it has not even computed the amount of such capital needed to run its business. If, in the future, the company should make such a computation, the principles laid out in this testimony should govern the determination of the appropriate carrying charge rate.

Unitil

Q. DOES UNITIL HAVE ENOUGH SHORT-TERM DEBT TO FINANCE THE SHORT-TERM DEBT ALLOCATED TO RATE BASE AND CWIP ELIGIBLE FOR AFUDC?

A. It did in March 2007. However, in June, September and December 2007 the Company had about $5.9 million, $9.2 million and $10.2 million respectfully, which were not sufficient to finance rate base and CWIP eligible for AFUDC. (See JAR Schedule 6)

Q. IN THE FIRST AND FOURTH QUARTERS, WAS THE EXCESS AT LEAST AS LARGE AS THE SUPPLY RELATED WORKING CAPITAL?

A. Yes.

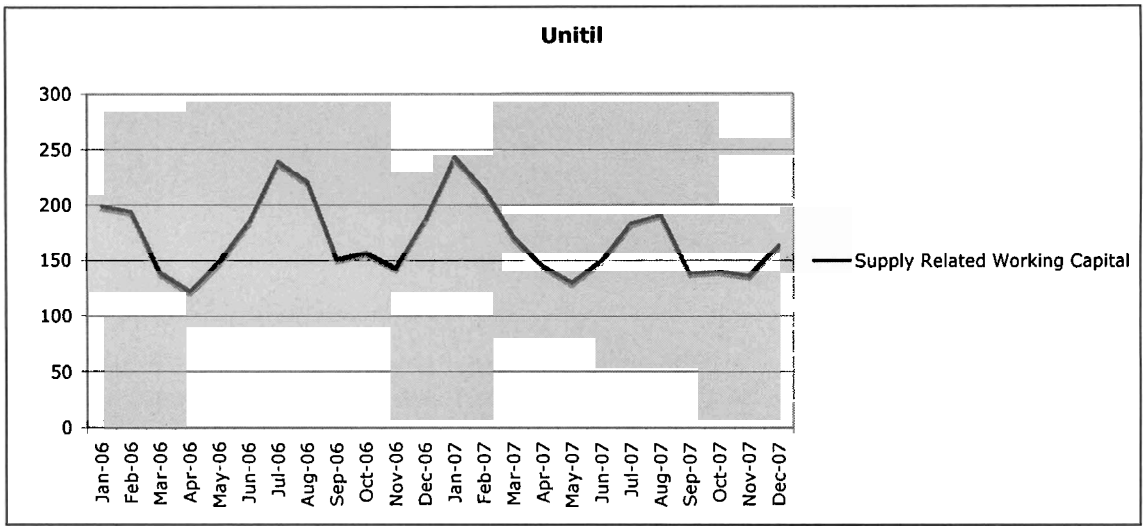
Q. IS THE REASON THAT UNITIL DOES NOT HAVE ENOUGH SHORT-TERM DEBT TO FINANCE SUPPLY RELATED WORKING CAPITAL BECAUSE IT IS NOT USING ENOUGH SHORT-TERM DEBT?

A. Yes. In Order No. 24,168 the Commission granted UES' request to increase its short-term debt limit from $16 million to $22 million for a period not to exceed six months. In June and September 2007 Unitil was not utilizing enough short-term debt to cover CWIP earning AFUDC and short-term debt allocated to rate base but this was not because of the limit imposed by the Commission. In June Unitil would have required only $12.3 million, in September only $12.9 million, and in December $12.3 million to cover the three requirements. (See JAR Schedule 6)

A second way of viewing Unitil's situation is provided by Unitil's response to Staff 1-7, which shows that the level of short-term debt used by Unitil in 2007 varied between 4.8% and 10.2% of total capital. Had the short-term debt percentage remained at the 10.2% level in each quarter, there would have been significantly more than enough left over to cover supply-related working capital.

Q. DOES UNITIL'S SUPPLY RELATED WORKING CAPITAL VARY ON A CYCLICAL BASIS?

A. Yes. As shown below, Unitil's supply-related working capital varied cyclically between about $120,000 and $250,000. Although the level of supply-related working capital did not dip to zero like some of the other companies covered in this testimony, the swing is sufficient to indicate that short-term debt is most likely the best form of funding.



Source: Response to Request No.: Staff 1-2

Q. WHAT COST RATE DO YOU RECOMMEND BE APPLIED TO UNITIL'S SUPPLY RELATED WORKING CAPITAL?

A. It is appropriate at this time for Unitil to charge ratepayers at the cost of short-term debt_for supply-related working capital.