THE STATE OF NEW HAMPSHIRE

BEFORE THE

PUBLIC UTILITIES COMMISSION

DG 13-086

NORTHERN UTILITIES, INC.

DIRECT TESTIMONY OF

DAVID L. CHONG

EXHIBIT DLC-1

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I. INTRODUCTION

Q. Please state your name and business address.

A. David L. Chong, 6 Liberty Lane West, Hampton, New Hampshire 03842.

Q. What is your position and what are your responsibilities?

A. I am Director of Finance for Unitil Service Corp., a subsidiary of Unitil Corporation that provides managerial, financial, regulatory and engineering services to Unitil Corporation's principal subsidiaries: Fitchburg Gas and Electric Light Company, Granite State Gas Transmission, Inc., Northern Utilities, Inc., and Unitil Energy Systems, Inc. My responsibilities are primarily in the areas of financial planning and analyses, treasury operations and banking relationships.

Q. Please describe your business and educational background.

A. I have approximately twelve years of professional experience in the energy and utilities industries. From 2001 through 2005, I worked for Exxon Mobil Corporation in various facilities engineering roles with my last position as a Senior Project Engineer. From 2005 through 2008, I worked for RBC Capital Markets Corporation in the energy investment banking group, where I provided corporate finance and mergers and acquisitions advisory services. While at RBC, I raised equity and debt capital on numerous occasions for various energy companies. I also advised on several buy-side and sell-side mergers and acquisitions transactions. From 2008 through 2009, I worked for El Paso Exploration & Production Company in its business development group as an

Acquisition & Divestiture Principal. I began working for Unitil Service in August 2009 as the Director of Finance. I hold a Master's Degree in Business Administration from Tulane University and a Bachelor of Science degree in Mechanical Engineering with Honors from the University of Texas at Austin.

Q. Have you previously testified before this Commission?

A. Yes, I have previously presented testimony before this Commission in Dockets DE 09-236, DG 09-239, DE 10-028 and DG 11-069.

II. SUMMARY OF TESTIMONY

Q. What is the purpose of your testimony?

A. The purpose of my testimony is to present and support Northern Utilities, Inc. New Hampshire Division's ("Northern" or the "Company") request for a permanent increase in distribution base rates based on 2012 test year revenues and expenses and year-end rate base with pro forma adjustments for known and measurable changes consistent with Commission precedent. I also describe and support the Company's request for a temporary increase in distribution base rates which would be subject to reconciliation based on the difference between permanent and temporary rates. In my testimony, I will provide a comprehensive overview of the schedules created to support the Company's distribution cost of service and revenue requirements analysis, which is presented to justify the requested increase in base revenues.

Q. Why is the Company filing for rate relief at this time?

A. The primary purpose of this base rate case filing is to bring distribution revenues in line with current operating costs and rate base. As discussed in the Testimony of Mark H. Collin and the Testimony of Thomas P. Meissner, the Company is continuing to make significant investments in non-revenue producing projects such as bare steel replacement and other safety and reliability improvements to its distribution infrastructure. The Company is not currently, nor is it able to earn its authorized rate of return on its rate base. In 2012, the Company's weather-normalized return on equity was 5.8 percent – well below the last authorized return on equity of 9.5 percent in the Company's last rate case in Docket DG 11-069. Due to continuing investments in non-revenue producing plant in 2013 and beyond, the Company expects its earned return on equity to continue to decline.

Q. Please summarize the Company's conclusions with respect to its revenue requirement.

A. For Northern to meet its customers' expectations for safe, reliable and cost-effective service, it requires a level of financial integrity that ensures the Company's access to investment capital at reasonable cost. At present, the Company's revenues under current rates are insufficient to recover its operating expenses and provide a reasonable return to compensate investors for their investment in the Company. Unless this shortfall in revenue is rectified, the Company will not have a reasonable opportunity to recover the cost of providing safe and reliable service to customers, nor will it be positioned to secure reasonably priced capital funding needed to maintain and improve service to customers.

Based on test year results, as adjusted for known and measurable changes, for the twelve months ended December 31, 2012, the Company has determined the need to increase its revenues by $5,171,302, or approximately 9 percent over test year total operating revenues. The request is founded on the need for achieving, after payment of all operating expenses, taxes and other charges, a weighted average cost of capital of 8.54 percent.

Q. Please summarize the Company's request for temporary rates.

A. As indicated in the Testimony of Mark H. Collin, the Company is seeking a temporary rate increase. In my testimony, I describe the derivation of the requested temporary rate level of $2,518,576 on an annualized basis to become effective on July 1, 2013. This temporary rate level is based on weather-normalized 2012 test year distribution revenues and expenses, a five-quarter average rate base and a cost of common equity of 9.5 percent, which was the amount approved by the Commission in the Company's last rate case in Docket DG 11-069. As I describe later in my testimony and in the Testimony of Dr. Samuel C. Hadaway, the Company is seeking a cost of common equity of 10.0 percent for its permanent revenue requirement in this rate case.

III. DEVELOPMENT OF DISTRIBUTION REVENUE REQUIREMENT

A. INTRODUCTION

Q. Please summarize your revenue requirement testimony.

A. My testimony presents and supports the Company's cost of service and revenue requirement, which is used in the Testimony of Paul M. Normand to establish the new distribution base rates contained in Northern's Gas Delivery Tariff. In this section of my testimony, I will present the revenue requirement methodology. I then describe the pro forma test year operating revenues and expenses, rate base and rate of return used to determine the revenue deficiency.

Q. What approach was used to perform the revenue requirements analysis?

A. The revenue requirements analysis was developed using a pro forma test year approach. This approach utilizes "per books" data adjusted for known and measurable changes to develop normalized revenues, expenses and net operating income for ratemaking purposes. The adjusted net operating income is compared to the required operating income, based on the overall rate of return applied to test period rate base, to determine the deficiency. The deficiency is then increased for state and federal income taxes to determine the revenue deficiency.

Q. What test year was selected by the Company?

A. The test year is the twelve-month period ending December 31, 2012.

Q. What standards were employed to determine the pro forma adjustments?

A. All adjustments to the test year cost of service are based upon known and measurable changes in revenues and expenses, or upon changes that will become known and measurable during the course of this proceeding. As a practical matter, the Company has limited all pro forma adjustments to those that will be known and measurable within the calendar year 2013, which is the first full year after the test year.

Q. Why are these standards important?

A. The level of rates approved by the Commission in this proceeding should provide Northern with sufficient revenues to continue to ensure safe, reliable and cost-effective delivery service for Northern's customers and to provide a reasonable opportunity for Northern to earn its authorized rate of return. Northern does have a reasonable opportunity to earn its allowed rate of return when the proposed rates reflect, as closely as possible, the cost of service that Northern will actually experience on a going-forward basis.

Q. Have you followed the Commission's required format for presenting the calculation of the proposed revenue requirement?

A. Yes, to the best of my knowledge. I have followed the requirements as described in New Hampshire Code of Administrative Rules, Chapter Puc 1600 Tariffs and Special Contracts, Part Puc 1604 Full Rate Case Filing Requirements, Sections Puc 1604.06 through 1604.09. The Filing Requirement Schedules specified in

Sections Puc 1604.06 and 1604.07 have been provided as "Filing Requirement Schedules Pages 1-19". The Filing Requirement Schedules are a summary of the actual revenue requirement model which drives the underlying calculations of the revenue deficiency. This revenue requirement model will be referred to throughout the rest of my testimony as "RevReq" schedules. The Rate of Return Information specified in Section Puc 1604.08 has been provided in Schedules RevReq-6 through 6-7. The Adjustments to Test Year specified in Section Puc 1604.09 have been provided in Schedules RevReq-3 through 3-26.

Q. Has Northern filed other material as required by Part Puc 1604 Full Rate Case Filing Requirements?

A. Yes. The material required by Section Puc 1604.01, Contents of a Full Rate Case, has been provided with this filing as separate volumes of materials.

B. DISTRIBUTION REVENUE REQUIREMENT

Q. Please describe the test year operating income, as adjusted and used to determine the revenue deficiency.

A. The cost of service schedules and workpapers for Northern in the test year is presented in Schedule RevReq-1 through RevReq-7 and Revenue Requirement Workpapers supporting the revenue requirement schedules.

The pro forma operating income for Northern in the test year is presented in Schedule RevReq-2, pages 1 and 2. In page 1, the "per books" revenues, operating expenses and net operating income are set forth in column (2), labeled

"Test Year 12 Months Ended 12/31/2012." Column (3), labeled "Cost of Gas Excluding Prod. & OH.", contains test year revenue and operating expenses associated with the Company's cost of gas mechanism, excluding its allowance for production and related overhead. I will discuss the exclusion of production and related overhead in the next Q&A. Column (4), labeled "Other Flowthrough" contains revenue and operating expenses from the Company's non-base rate mechanisms including energy efficiency, environmental response costs, residential low income assistance, rate case costs and recoupment. Column (5), labeled "Test Year Distribution, Prod. & OH." reflects base revenues and expenses and is calculated by subtracting Columns (3) and (4) from Column (2). In page 2 of Schedule RevReq-2, the proposed normalizing adjustments are set forth in column (3), labeled "Pro Forma Adjustments." The pro forma adjustments are added to column (2), labeled "Test Year Distribution, Prod. & OH.", to obtain the adjusted revenues and operating expenses in column (4), labeled "Test Year Distribution, Prod. & OH. Pro Forma". The pro forma operating income from column (4) is used to determine the operating income deficiency which is summarized in Schedule RevReq-1. Schedule RevReq-1 calculates the income required by multiplying rate base by rate of return. The pro forma operating income from column (4) of page 2 of Schedule RevReq-2 is then subtracted from the income required in Schedule RevReq-1 to obtain the operating income deficiency. This operating income deficiency is then grossed up for federal and state taxes to obtain the revenue deficiency as shown in line 7 of Schedule RevReq-1.

Q. Please describe the exclusion of production and related overhead allowances in the cost of gas mechanism as shown in column (3) of page 1 of Schedule RevReq-2.

A. During the test year, the Company collected $739,354 for production and related overhead through the Company's cost of gas mechanism as shown in Workpaper – Cost of Gas. This revenue relates to the revenue requirement last approved for the Company's gas production facilities. Excluding this amount from column (3) causes it to be included as a component of revenues in column (5) of Schedule RevReq-2, page 1. This component of the revenue requirement is later functionalized as production-related by witness Paul M. Normand and appropriately assigned for recovery through the cost of gas mechanism consistent with the current ratemaking.

Q. Please describe the pro forma adjustments that are shown in column (3) of page 2 of Schedule RevReq-2.

A. As shown, I have made pro forma adjustments to the following areas of revenue and operating expense:

- Total Sales
- Operating and Maintenance Expenses
- Depreciation and Amortization

- Taxes Other than Income
- Federal and State Income Taxes

These pro forma adjustments are detailed on Schedule RevReq-3 and on subsequent schedules as identified.

I. TOTAL SALES

Q. What adjustments were made to Total Sales?

A. Northern made the following adjustments to total sales:

- Weather Normalization
- Residential Low Income
- Unbilled Revenue
- Revenue Annualization
- Production Revenue
- Non-Distribution Bad Debt

Q. Please explain the weather normalization adjustment.

A. The weather normalization adjustment normalizes the effect of actual weather experienced during the test year. Normal weather is based on 30-year historical average temperatures. In 2012, net temperatures were warmer than normal; therefore the test year operating revenues were lower than would occur under normal weather conditions. Schedule RevReq-3-1 provides for a pro forma adjustment to increase base distribution revenue by $891,894. This adjustment was calculated and supported in the Testimony of Paul M. Normand.

Q. Please explain the residential low income adjustment.

A. I increased distribution revenues by $272,265 to reflect that residential low income costs are collected through a separate flow-through rate recovery mechanism, but should be attributed to the Company's cost of service. This adjustment is shown in Schedule RevReq-3-2.

Q. Please explain the unbilled revenue adjustment.

A. Northern books unbilled revenue to account for the difference between the amount of gas delivered to customers during the test year and the amount billed to customers during the same period. Because the test year sales are based on weather-normalized sales, the accrual for the amount of unbilled sales was removed from the test year. This adjustment reduces revenue by $643,156 as shown in Schedule RevReq-3-3.

Q. Please explain the revenue annualization adjustment.

A. During the test year, rates were increased for permanent rates and step increases on May 1 pursuant to the Commission's Order 25,352 issued in the Company's last base rate case in Docket DG 11-069. The revenue annualization adjustment reflects the difference between test year revenues recalculated at year-end rates and actual test year revenues. The amount of this adjustment increases revenue by $778,097 and is supported in the Testimony of Paul M. Normand. During the test year, the Company also booked $434,815 of estimated recoupment which is removed in this adjustment. The net adjustment to revenue is an increase of $343,282 as shown in Schedule RevReq-3-4.

Q. Please explain the production revenue adjustment.

A. I decreased total sales by $19,991 in Schedule RevReq-3-5 to reflect the difference between the production revenue requirement established in the Company's last rate case in Docket DG 11-069 and the test year production revenue. During the test year, there was an adjustment made to reflect a true-up to the Company's production revenue due to the implementation of the Company's rates approved in its last rate case.

Q. Please explain the non-distribution bad debt adjustment.

A. I increased total sales by $61,510 to remove accrued revenue associated with non-distribution bad debt. I also make a similar adjustment to increase operating expenses by $61,510 which is the provision for non-distribution bad debt in operating expenses. These adjustments are summarized in Schedule RevReq-3-6. Overall, there is no impact on the revenue requirement since both the revenue and operating expenses are adjusted by the same amount.

II. OPERATING & MAINTENANCE EXPENSES

Q. What adjustments were made to Operating & Maintenance Expenses?

A. Pro forma adjustments for Northern are included in the distribution cost of service for the following Operating & Maintenance Expenses:

- Production Expense

- Payroll
- Labor Adjustment for Mutual Aid Workers
- Distribution Bad Debt
- Non-Distribution Bad Debt
- Medical & Dental Insurances
- Pension, Postemployment Benefits Other than Pension, and 401K
- Property & Liability Insurances
- Audit Fees
- Postage
- Banking and Commitment Fees
- NH PUC Assessment

I will discuss each adjustment individually in the following section.

Q. What adjustments were made to production expense?

A. This adjustment allocates production facility operation and maintenance expenses between Northern Utilities' Maine (ME) and New Hampshire (NH) divisions by the Fixed Demand factor as filed in the Company's cost of gas filings. The Fixed Demand factor as of December 31, 2012 was 46.40 percent (NH) and 53.60 percent (ME). This allocation results in an increase of expense of $75,757 to the NH division as shown in Schedule RevReq 3-7.

Q. What adjustments were made to payroll?

A. The payroll adjustment, as detailed on Schedule RevReq-3-8, pages 1-3, increases the test year payroll charged to O&M Expense for known and measurable increases that will occur during 2013. The adjustment reflects payroll adjustments for both the Company and for Unitil Service amounts assigned to the Company. The pro forma increase to test year O&M payroll is $373,157. This adjustment is discussed in more detail in the Testimony of George E. Long.

Q. Please explain the labor adjustment for mutual aid workers.

A. During the test year, Northern provided mutual aid support to neighboring utilities following Hurricane Sandy. As such, the test year does not reflect normal expense levels, because these workers were not charging their time to the Company for normal duties. All of the workers charged their time, which included all fringe benefits, to a construction work order (CWO) created specifically for this situation. The CWO was held in construction work in progress, which is excluded from rate base. The full amount of the CWO has been billed out to the companies that the workers assisted, offsetting the charges in the CWO, ensuring no net effect to plant or rate base. The adjustment to expense is $41,128 as shown in Schedule RevReq-3-9 and is further supported in the Testimony of George E. Long.

Q. Please explain the adjustment of test year distribution bad debt expense.

A. The calculation of this adjustment is shown in Schedule RevReq-3-10. I developed this adjustment by first calculating a bad debt rate based on the past three-year history of delivery net write-offs divided by delivery billed revenue. I then multiplied the bad debt rate by test year delivery revenue including the revenue requirement from Schedule RevReq-1, which establishes an uncollectible revenues amount. The uncollectible revenues amount is compared to test year delivery write-offs to produce the pro forma adjustment of $99,992.

Q. Please explain the expense adjustment for non-distribution bad debt.

A. Please refer to Schedule RevReq-3-6 and the response provided above in Section III (B) (I), titled Total Sales.

Q. Please explain the medical and dental insurance adjustment.

A. The Northern test year O&M expense has been adjusted to increase test year medical and dental expense by $74,266. This adjustment is shown in Schedule RevReq-3-11, and includes amounts allocable to the Company from Unitil Service. This adjustment is described in more detail in the Testimony of George E. Long.

Q. Please explain the pension, postemployment benefits other than pension, and 401k adjustments.

A. The purpose of the pension, postemployment benefits other than pension (PBOP) and 401k adjustments is to update these costs from test period O&M expense.

The latest year-end 2012 actuarial report was the basis for the projections. The pension, PBOP and 401k adjustments are all provided in Schedule RevReq-3-12 which shows increases of $28,165, $103,629, and $3,327, respectively. These adjustments include costs for the Company as well as costs allocable to the Company from Unitil Service. A full description of the pension, PBOP and 401k plans is contained in the Testimony of George E. Long.

Q. Please describe Northern's property and liability insurance coverage and the adjustment to test year property and liability insurance expense.

A. Property and liability insurance coverage includes a number of types of insurance that provide protection from casualty and loss, and other damages that the Company may incur in the conduct of its business. Northern's insurance program includes both premium-based and self-insured coverages, in order to obtain the widest portfolio of insurance coverage at the most reasonable cost. As shown on Schedule RevReq-3-13 page 1, the pro forma adjustment for property and liability insurances is an increase of $50,711 to test year O&M expense. This adjustment was made to adjust the property and liability insurance test year O&M expense to reflect known and measurable increases in premiums for the Company and for premiums allocable to the Company from Unitil Service. Property and liability insurance is further adjusted to remove capitalized amounts. The Company will renew additional insurance policies during 2013 and will provide a final update of this adjustment before the completion of this proceeding.

Q. Please explain the adjustment for audit fees.

A. The Company has an independent auditor for public financial reporting purposes and also to comply with audit covenants contained within the Company's note purchase agreements governing its long-term debt. Schedule RevReq-3-14 reflects an adjustment of $4,001 for normal annual audit fee increases in 2013.

Q. Please explain the adjustment for postage.

A. This adjustment reflects two postage rate increases. The first rate increase occurred January 22, 2012 which increased postage rates $0.01. An additional rate increase occurred on January 27, 2013 which increased postage rates an additional $0.01. Annualizing the impact of both of these postage rate increases to the Company's test year postage expense results in an adjustment of $3,343 as shown in RevReq-3-15.

Q. Please explain the adjustment for banking and commitment fees.

A. In January of every year, the Company trues up its banking and commitment fees for the prior year. The adjustment shown in RevReq-3-16 removes the adjustment in January 2012 which relates to 2011 and adds the adjustment in January 2013 which relates to 2012. This methodology results in actual banking and commitment fees incurred during 2012. This reduces expense by $14,317 as shown in RevReq-3-16.

Q. Please explain the NH PUC regulatory assessment adjustment.

A. During the test year, the Company paid $240,388 of regulatory assessment costs to the Commission. The distribution portion of the assessment, or 36.25 percent, equates to $87,141. However, the test year expense is only $28,823, because an adjustment was made during the test year to true-up the prior year's recovery of the supply portion of the assessment in the Company's cost of gas filings. The adjustment to the test year is $58,317, which is the difference between $87,141 and $28,823 as shown in Schedule RevReq-3-17.

III. DEPRECIATION AND AMORTIZATION

Q. Is Northern proposing an annualization adjustment for depreciation for the test year?

A. Yes. The annualization of depreciation expense based on the twelve months ended December 31, 2012 depreciable plant balance is detailed in Schedule RevReq-3-18. The annualization adjustment increases the depreciation expense by $409,304.

Q. Is Northern proposing an adjustment to depreciation expense for any proposed changes in depreciation rates?

A. No. In the Company's last base rate case in Docket DG 11-069, the Company performed a comprehensive depreciation study and established new depreciation accrual rates appropriate for its properties. Given the recent completion of this depreciation study, the Company does not believe there has been a sufficient period of time elapsed to materially change the results from the last depreciation study.

Q. What adjustments were made to production depreciation expense?

A. This adjustment allocates production facility depreciation expense between the NH and ME divisions by the Fixed Demand Factor used in the Company's cost of gas filings as discussed earlier. This results in an increase in expense of $46,754 to the NH division as shown in Schedule RevReq-3-7.

Q. Please explain the customer information systems amortization adjustment.

A. In the test year, the Company amortized its customer information system project over an 8-year life. Pursuant to the settlement agreement approved by the Commission in Docket DG 08-048 and DG 08-079, this project should amortize over a 13-year period. The adjustment in Schedule RevReq-3-19 reduces amortization expense by $43,376 to reflect a 13-year amortization period.

Q. Please explain the 2013 project additions amortization adjustment.

A. As provided in Schedule RevReq-3-20, the Company is implementing numerous information technology projects in 2013. The projected cost and annual amortization of all of the 2013 projects is provided in the schedule. The schedule adds the annualized amortization expense from the 2013 projects to the Company's existing asset amortization in 2013. The pro forma adjustment related to additional information technology projects is $56,075 based on the additional annualized amortization from the 2013 projects and existing amortization compared to test year amortization expense.

Q. Please explain the plant acquisition adjustment.

A. In Unitil Corporation's acquisition of Northern approved by the Commission in Docket DG 08-048 and DG 08-079, the Company agreed to not seek recovery of purchase acquisition premium, transactions costs and transition costs. In Schedule RevReq-3-21, I removed the amounts that were included in the test year for a total adjustment of $352,468.

Q. Please explain the supply bad debt amortization adjustment.

A. During the test year, the Company recorded $100,402 of supply-related bad debt amortization related to amounts that were in excess of allowed cost of gas recovery as determined in the Company's last base rate case proceeding. The adjustment in Schedule RevReq-3-22 removes this amortization from the test year.

IV. TAXES OTHER THAN INCOME

Q. Have test year property taxes been adjusted?

A. Yes. The adjustment is detailed on Schedule RevReq-3-23, page 1 and amounts to an estimated increase in property tax expense of $493,262. This schedule also presents additional information related to property taxes including taxation period, amount paid, assessed valuations, and tax rates by municipality.

Q. Why is the pro forma property tax adjustment estimated?

A. Property taxes are generally billed by municipalities in two installments. The first billed installment for 2013 is generally estimated based on 2012 property taxes, and the second billed installment will reflect the final accounting for 2013. Typically, the second billing installments are received in October and November, with payments due in November and December. Absent the final tax bills for 2013, Northern estimated the increase in its property tax expense to be equal to the average property tax expense increases for the period 2008 to 2012, as shown on Schedule RevReq-3-23, page 2. The property tax adjustment will be updated during the proceeding to reflect final property tax bills.

Q. Have test year payroll taxes been adjusted?

A. Yes, the adjustment is shown on Schedule RevReq-3-24 and amounts to an increase in payroll tax expense of $25,497. This adjustment is described in the Testimony of George E. Long.

V. INCOME TAXES

Q. Does the cost of service reflect adjustments to test year income taxes?

A. Yes. The adjustment is summarized on Schedule RevReq-3-25, pages 1-3, and amounts to a reduction in federal income taxes of $190,495 and state income taxes of $52,048. The adjustment to test year income taxes calculates the income tax effect of the adjustments to revenues and expenses previously described in testimony and as listed in the Summary of Adjustments in Schedule RevReq-3.

The adjustment also reflects the income tax effect of the adjustment for interest expense synchronization with rate base, based on the difference between interest expense for ratemaking and test year interest expense, which is shown on Schedule RevReq-3-25, page 2. The adjustment also reflects the income tax effect on flow through net operating income of $383,273 which is the sum of the operating income in columns (3) and (4) in Schedule RevReq-2 page 1.

Q. Please explain the adjustments for prior year federal, state and deferred income taxes as shown in Schedule RevReq-3-25 page 4.

A. As part of its normal tax accounting practice, the Company accounts for a prior year return to accrual in its current year tax provision. This prior year return to accrual is offset entirely by deferred income taxes, so that there is no net impact to the Company's effective tax rate. The adjustment in Schedule RevReq-3-25 page 4 removes the prior year return to accrual so that the adjusted cost of service reflects current year income taxes.

Q. Please explain the adjustments for lobbying and penalty taxes.

A. Similar to the treatment in the Company's last base rate case in Docket DG 11-069, I have adjusted taxes to remove the effect of lobbying and penalties. This adjustment removes the taxes associated with lobbying and penalties as these are below the line activities for ratemaking purposes. In Schedule RevReq-3-26, I have removed $22,062 associated with lobbying and penalties.

VI. RATE BASE

Q. Have you provided the balance sheets for Northern?

A. Yes, I have provided Assets & Deferred Charges and Stockholder's Equity and Liabilities in Schedules RevReq-4-1 and 4-2, respectively. I have also provided detailed plant and accumulated depreciation information in Schedules RevReq-4-3 and 4-4, respectively.

Q. Please summarize the information you have provided to support the rate base used to determine Northern's revenue requirements.

A. Schedule RevReq-5 summarizes the rate base. The summary includes several calculation methodologies, including the "Test Year Average" (arithmetic average of the beginning and end of test period amounts), the "5 Quarter Average" and the "Rate Base at December 31, 2012." The test year-end rate base at December 31, 2012, was used to determine Northern's revenue requirement.

Q. What did you consider in selecting a year-end rate base?

A. A year-end rate base is appropriate for Northern given the significant annual growth in its rate base driven by investments in bare steel replacement and other system improvements. A year-end test year rate base reduces earnings attrition, because it aligns expenses, revenues and rate base with the period in which rates are going to be in effect. A historical average test year rate base, without pro forma adjustments beyond the end of the test year, produces a "stale" estimate of rate base by the time rates actually go into effect. For example, a 5-quarter historical average rate base in this proceeding would be based on an average of the five quarters from Quarter 4, 2011 through Quarter 4, 2012, effectively establishing rates based on mid-2012 data. This lag results in earnings attrition from the moment that rates are put into effect.

I have quantified the difference in revenue requirement between a 5-quarter average rate base and a year-end rate base. In Schedule RevReq-5, the difference in rate base from the 5-quarter average to the year-end rate base is $4,027,783 as illustrated in column (5). Multiplying this difference by 8.54 percent, the Company's requested return on rate base, and then by the tax gross-up factor of 1.6559 yields an under-recovery of revenue of approximately $0.6 million.

Q. How is the problem of rate base attrition addressed in other jurisdictions?

A. Approximately two-thirds of the regulatory commissions in the United States value rate base at year-end or on a fully forecasted or fair value basis. Given that the majority of regulatory commissions utilize a year-end or forecasted rate base, I believe that a year-end rate base more adequately addresses rate base attrition rather than a historical average approach. Furthermore, as I established earlier, the difference between a 5-quarter rate base and year-end rate base is substantial for the Company, because of its intrinsic growth profile resulting from outsized investment in non-revenue producing plant including bare steel replacement.

Q. Are you familiar with the Commission's position on year-end rate base in recent rate cases?

A. Yes. The Company is aware of several recent rate cases in which the Commission allowed year-end rate base. These include Public Service Company of New Hampshire (Docket DE 09-035), Unitil Energy Systems, Inc. (Docket DE 10-055), EnergyNorth Natural Gas, Inc. (Docket DG 10-017) and Northern Utilities, Inc. (Docket DG 11-069).

Q. Is the use of year-end rate base consistent with the Company's proposed Targeted Infrastructure Replacement Adjustment ("TIRA") mechanism?

A. Yes. The Company's proposed TIRA mechanism reflects annual plant additions beginning from year-end 2012. The use of year-end rate base in the Company's revenue requirement calculation synchronizes rate base with the TIRA mechanism. Since both the revenue requirement and the TIRA mechanism are synchronized at year-end 2012, there is no under-recovery of TIRA-related rate base during the term of the four-year rate plan.

Q. Please describe the component of rate base information on Schedule RevReq-5-1.

A. Schedule RevReq-5-1 presents the balance of rate base items for each of the 5 quarters beginning with the balance at December 31, 2011 and ending with the balance at December 31, 2012. In the last column, the 5-Quarter Average is calculated. The components of rate base include Utility Plant in Service, Depreciation Reserve, Materials and Supplies Inventories, Cash Working Capital, Deferred Income Taxes, Customer Advances and Customer Deposits.

Q. Please describe the component of rate base information on Schedule RevReq-5-2.

A. The calculation of cash working capital in rate base is detailed in this schedule. The calculation consists of a 4.58 day lead lag factor applied to test year distribution operating expenses. The test year distribution operating expenses are sourced from column (5) of Schedule RevReq-2 page 1, and include production, transmission, distribution, customer accounting, administrative & general, taxes other than income, federal and state income tax, and interest expense. The adjustment to cash working capital is based on adjustments to test year distribution operating expenses as outlined in Schedule RevReq-3 excluding distribution and non-distribution bad debt adjustments.

The lead lag factor of 4.58 days is based on the Company's lead lag study provided in its last base rate case in Docket DG 11-069. Given the recency of that lead lag study, and the Company's belief that no material changes to inputs for that study have occurred during the intervening period, a new lead lag study has not been prepared for use in this proceeding.

Q. Please list the other components added to rate base.

A. In addition to Net Utility Plant in Service and Cash Working Capital described above, Materials and Supplies Inventories have been added to rate base. These items are shown on Schedule RevReq-5 and 5-1.

Q. Please list the components deducted from rate base.

A. These items consist of Deferred Income Taxes, Customer Advances, and Customer Deposits and are also shown on Schedule RevReq-5 and 5-1.

Q. Please explain Schedule RevReq-5-3 which contains the Supplemental Plant Pro Forma Adjustment.

A. This schedule contains plant in service and accumulated depreciation for the Company's production facilities, including LNG and LPG plants located in New Hampshire and Maine. This schedule allocates these production plant and depreciation balances to either New Hampshire or Maine based on the Company's Fixed Demand factor (46.40 percent NH and 53.60 percent ME). The Company allocates the production facilities based on this methodology because the Company manages a combined system where the costs are allocated among the states based on relative gas usage. This methodology was approved in the Stipulation and Settlement approved by the Maine Commission in Docket No. 2005-273 and by the New Hampshire Commission in Docket DG 05-080.

Q. Please explain Schedule RevReq-5-4 which contains a deferred income tax adjustment.

A. In Docket DG 08-048 and DG 08-079, the Company agreed to hold ratepayers harmless from the tax impact of Unitil Corporation's acquisition of the Company. In this acquisition, a 338(h)(10) election was made which eliminated the Company's historical accumulated deferred income taxes. In the Stipulation approved by the Commission in Docket DG 08-048 and DG 08-079, the Company agreed to maintain pro forma accounting for regulatory purposes of the historical deferred income tax balance assuming the acquisition had not occurred. This historical deferred income tax balance is then used for ratemaking purposes until such time that the newly acquired deferred income tax balance equals or exceeds the historical balance. This schedule provides both the historical and newly acquired deferred income tax balances and utilizes the historical balance for ratemaking purposes. The schedule then incorporates deferred income tax balances as a result of capital spending post-acquisition and deferred taxes due to net operating losses. The deferred taxes associated with net operating losses have been adjusted to reflect losses attributable only to rate base (i.e. flow-through and other non-rate base attributions have been removed).

Q. Please explain the customer information system accumulated depreciation adjustment to rate base.

A. As discussed earlier, the Company is amortizing its customer information system project over an 8-year life. Pursuant to the Stipulation approved by the

Commission in Docket DG 08-048 and DG 08-079, this project should amortize over a 13-year period. The adjustment in Schedule RevReq-3-19 reduces accumulated depreciation by $133,741 from project inception through year-end 2012.

VII. RATE OF RETURN

Q. What rate of return have you used for ratemaking purposes?

A. As shown on Schedule RevReq-6, Northern's weighted cost of capital is calculated to be 8.54 percent. This is derived from the Company's capital structure and related costs for various capital components and represents the required rate of return on rate base used in the determination of the Company's revenue requirement.

Q. How did you determine Northern's capital structure?

A. As detailed on Schedules RevReq-6-1, the Company's capital structure consists of 51.76 percent common equity, 47.56 percent long-term debt, and 0.69 percent short-term debt. The common stock equity and long-term debt balances are as of December 31, 2012, which is consistent with the use of a test year-end rate base.

Q. How is the cost of common equity determined?

A. The cost of common equity of 10.0 percent is the cost of equity determined in the Testimony of Dr. Samuel C. Hadaway, as the appropriate market cost of common equity for Northern for ratemaking purposes. Please refer to the testimony and exhibits presented by Dr. Hadaway.

Q. Have you determined the cost of preferred stock equity.

A. No. As shown in Schedule RevReq-6-3, the Company does not have preferred stock outstanding.

Q. Please explain the derivation of the cost of long-term debt.

A. The calculation of the cost of long-term debt for Northern is detailed on Schedule RevReq-6-4, which uses the net proceeds methodology. This methodology calculates the cost of long-term debt based on the comparison of total annual debt costs to the total outstanding net proceeds. The total annual costs consist of the annual amortization amount of debt issuance costs and annual interest charges. The total outstanding net proceeds consist of the long-term debt amount outstanding reduced by the unamortized balance of issuance costs. The weighted cost rate is derived by dividing the total annual cost by the total outstanding net proceeds. In the Company's last base rate case in Docket DG 11-069, the Company reflected pre-acquisition cost of debt pursuant to the Stipulation approved by the Commission in Docket DG 08-048 and DG 08-079. This pre-acquisition cost of debt would have matured in June 2013. Thus, the pre-acquisition cost of debt is not reflected in Schedule RevReq-6-4, since the maturity of this debt is known and measurable. Overall, Schedule RevReq-6-4 contains the actual cost of long-term debt incurred by the Company post-acquisition.

Q. Please explain the derivation of the amount and cost of short-term debt.

A. The derivation of the amount and cost of short-term debt is shown in Schedule RevReq-6-5, pages 1 and 2. In the Company's cost of capital, I used an average monthly short-term borrowing balance and an average historical interest rate paid on its monthly short-term borrowings. All of the Company's short-term borrowings are under the Unitil Corporation cash pool, and the Company is charged the same interest rate paid under Unitil Corporation's revolving credit facility with its banking group. Unitil Corporation's interest rate under this credit facility during the test year (and currently) is LIBOR + 175 basis points (bps). I used a monthly average for the short-term debt balance because of the volatility of short-term debt throughout the year which is caused by variations in cash flow resulting from peak winter and summer seasons and by seasonal capital spending. In Schedule RevReq-6-5, page 1, I deduct average accrued revenue (net of unbilled), purchased gas working capital, average margin hedging balance and average construction work in process balances, to reflect that these items are financed through short-term borrowings and should be unbundled in the Company's rate of return on rate base. Flow-through costs such as cost of gas are financed through short-term borrowings, but do not provide the Company with carrying charges at the same rate of return on rate base, so these items must be removed from short-term borrowings to properly reflect an unbundled short-term debt balance for return on rate base. In addition, construction work in process is not reflected in rate base, but is financed through short-term borrowings. Since the Company does not recover construction work in process through rate base, the cost of capital associated with this is appropriate to unbundle.

Q. Please describe the other rate of return schedules that you have prepared.

A. I prepared Schedule RevReq-6-6 showing the Company's historical capital structure and Schedule RevReq-6-7 showing historical capitalization ratios.

C. DISTRIBUTION REVENUE REQUIREMENT CONCLUSION

Q. Please provide the result of the revenue requirement calculation for Northern.

A. As shown on Schedule RevReq-1, when the rate of return of 8.54 percent is applied to the rate base of $84,587,012 the resulting income required is $7,223,731. The income required is then compared to the test year adjusted net operating income to arrive at an operating income deficiency of $3,122,949. Applying the income tax factor associated with the deficiency results in a revenue requirement of $5,171,302.

IV. TEMPORARY RATES

Q. Is the company requesting that temporary rates be set in this proceeding?

A. Yes. The company requests that temporary rates be established in the amount of $2,518,576 on an annualized basis to become effective on July 1, 2013. The development of the temporary rate amount is detailed in Schedule DLC-1.

Q. Please explain how the temporary rate amount of $2,518,576 was derived.

A. In general, I employed a conservative approach in calculating the amount of the temporary rate request. The amount of the temporary rate request was based on a five-quarter average rate base, which, as I discussed earlier, reduces rate base by approximately $0.6 million compared to a test year-end rate base. The cost of capital used in the calculation is based on the rate case filing capital structure and debt costs as provided in Schedule RevReq-6. However, the cost of equity was set at 9.5 percent reflecting the last authorized return on equity awarded to the Company in its last base rate case. As shown in page 2 of Schedule DLC-1, this results in an overall cost of capital of 8.28 percent. The test year net operating income was adjusted to reflect only a handful of pro forma adjustments required to portray a weather-normal 2012 distribution test year. No known and measurable adjustments relating to 2013 costs are requested in the temporary rate increase. The adjustments to test year net operating income are detailed in page 3 of Schedule DLC-1.

V. RATE CASE EXPENSES

Q. How do you propose to recover rate case expenses?

A. Northern proposes to file a rate case surcharge to recover the costs incurred to plan, develop and present this rate case to the Commission at the conclusion of this proceeding when the final dollar amount of these expenses is known.

Q. How do you propose to structure the rate case surcharge?

A. The rate case surcharge will be a charge per therm, applied to all rate schedules. Subject to Commission approval, the charge will be a temporary charge, and will be set at a level to recover the costs over a one year period. The revenue collected will be fully reconciled with the costs incurred. At the end of the recovery period, the Company would file with the Commission a reconciliation of the surcharge, including a recommendation for treatment of any under or over recovered balances projected to remain at the end of the surcharge account.

Q. Please provide the estimated amount of rate case costs.

A. The estimated costs to be incurred for the rate case are $494,000 and are detailed on Schedule RevReq-7-1.

Q. How does the Company account for rate case costs?

A. The Company defers all costs associated with the case as they are incurred during the course of the proceeding for future recovery in rates. The Company is prepared to provide the Commission's audit staff with documentation to support those costs eligible for recovery. This documentation will consist of copies of invoices and/or other information that will assist the Commission Staff with its audit.

VI. CONCLUSION

Q. Does this conclude your testimony?

A. Yes, it does.