

**THE STATE OF NEW HAMPSHIRE
BEFORE THE
PUBLIC UTILITIES COMMISSION**

DG 11-069

NORTHERN UTILITIES, INC.

DIRECT TESTIMONY OF

DAVID L. CHONG

EXHIBIT DLC-1

Table of Contents

I. INTRODUCTION	1
II. SUMMARY OF TESTIMONY.....	2
III. OVERVIEW OF DISTRIBUTION RATE CASE	5
A. DESCRIPTION OF RATE REQUEST	5
B. SUMMARY OF REASONS FOR RATE CASE	6
IV. DEVELOPMENT OF DISTRIBUTION REVENUE REQUIREMENT.....	11
A. INTRODUCTION	11
B. DISTRIBUTION REVENUE REQUIREMENT	13
i. TOTAL SALES	16
ii. OPERATING & MAINTENANCE EXPENSES.....	17
iii. DEPRECIATION AND AMORTIZATION	22
iv. TAXES OTHER THAN INCOME	24
v. INCOME TAXES	25
vi. RATE BASE.....	25
vii. RATE OF RETURN	30
C. DISTRIBUTION REVENUE REQUIREMENT CONCLUSION	35
V. 2012 STEP ADJUSTMENT	35
VI. TARGETED INFRASTRUCTURE REPLACEMENT ADJUSTMENT MECHANISM.....	37
VII. TEMPORARY RATES	41
VIII. RATE CASE EXPENSES	42
IX. CONCLUSION.....	43

SCHEDULES

Filing Requirement Schedules Pages 1-19

NH Puc 1604.06 Filing
Requirement Schedules

Schedule RevReq-1 through RevReq-7

Cost of Service Schedules

Schedule DLC-1

Amended and Restated Cash
Pooling and Loan Agreement

Schedule DLC-2

Capitalization Versus Rate
Base: Impact to Return on
Equity

Schedule DLC-3

2012 Step Adjustment

Schedule DLC-4

Illustrative Mechanics of
Targeted Infrastructure
Replacement Adjustment

Schedule DLC-5

Computation of Revenue
Deficiency and Revenue
Requirement for Temporary
Rates

WORKPAPERS

Revenue Requirement Workpapers

Workpapers Supporting Cost
of Service Schedules

1 **I. INTRODUCTION**

2 **Q. Please state your name and business address.**

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

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

5 A. I am Director of Finance for Unitil Service Corp. (“Unitil Service”), a subsidiary
6 of Unitil Corporation that provides managerial, financial, regulatory and
7 engineering services to Unitil Corporation’s principal subsidiaries: Fitchburg Gas
8 and Electric Light Company, Granite State Gas Transmission, Inc., Northern
9 Utilities, Inc., and Unitil Energy Systems, Inc. In this capacity I am responsible
10 for: managing treasury operations and banking relationships; planning and
11 executing financing programs; financial planning and analysis; overseeing
12 property and liability insurance programs; interfacing with the financial
13 community and investors; and managing certain regulatory, cost of service and
14 other ratemaking objectives.

15 **Q. Please describe your business and educational background.**

16 A. I have approximately ten years of professional experience in the energy industry.
17 From 2001 through 2005, I worked for Exxon Mobil Corporation in various
18 facilities engineering roles; my last position was Senior Project Engineer. From
19 2005 through 2008, I worked for RBC Capital Markets Corporation in the energy
20 investment banking group, where I provided corporate finance and mergers and
21 acquisitions advisory services. While at RBC, I raised equity and debt capital on

1 numerous occasions for various energy companies. I also advised on several buy-
2 side and sell-side mergers and acquisitions transactions. From 2008 through
3 2009, I worked for El Paso Exploration & Production Company in its business
4 development group as an Acquisition & Divestiture Principal. I began working
5 for Unifil Service in August 2009 as the Director of Finance. I hold a Master's
6 Degree in Business Administration from Tulane University and a Bachelor of
7 Science degree in Mechanical Engineering with Honors from the University of
8 Texas at Austin.

9 **Q. Have you previously testified before this Commission?**

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

12 **II. SUMMARY OF TESTIMONY**

13 **Q. What is the purpose of your testimony?**

14 A. The purpose of my testimony is to present and support Northern Utilities, Inc.
15 New Hampshire Division's ("Northern" or the "Company") requests for a
16 permanent increase in distribution base rates, a 2012 Step Adjustment related to
17 the Company's 2011 capital additions, implementation of a Targeted
18 Infrastructure Replacement Adjustment ("TIRA") cost recovery mechanism, and
19 a temporary distribution base rate increase. My testimony summarizes the
20 reasons for the Company's filing for an increase in base distribution rates at this
21 time. I also provide a comprehensive overview of the schedules created to

1 support the Company's distribution cost of service and revenue requirements
2 analysis, which is presented to justify the requested increase in distribution base
3 revenues. The Company's distribution revenue requirements analysis is based on
4 2010 test year revenues and expenses and year-end rate base with pro forma
5 adjustments for known and measurable changes consistent with Commission
6 precedent.

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

9 A. For Northern to meet its obligation to provide safe and reliable service at just and
10 reasonable rates, Northern requires a level of financial integrity that ensures the
11 Company's access to investment capital at reasonable cost. Presently, the
12 Company's revenues under its current rates are insufficient to recover its
13 operating expenses and to provide a reasonable opportunity for a return that
14 compensates the Company's investors. Unless this revenue shortfall is rectified,
15 the Company will not have a reasonable opportunity to recover the cost of
16 providing safe and reliable service to customers, nor will it be positioned to secure
17 reasonably priced capital funding needed to maintain and improve service to
18 customers.

19 Based on test year results for the 12 months ended December 31, 2010, the
20 Company has determined the need to increase base revenues by \$3,744,523 or
21 approximately 19% over distribution revenues. The request is founded on the

1 need for achieving, after payment of all operating expenses, taxes and other
2 charges, a weighted average cost of capital of 7.65%.

3 **Q. Please summarize the 2012 Step Adjustment related to capital additions in**
4 **2011.**

5 A. To offset earnings attrition which occurs when a utility does not have a reasonable
6 opportunity to earn its authorized rate of return because the ratemaking process
7 does not reflect all future changes in the utility's costs, the Company is seeking a
8 2012 Step Adjustment to recover the Company's 2011 budgeted capital additions
9 of \$8,972,770. The revenue requirement associated with this capital spending is
10 \$1,431,022 and would go into effect at the same time as permanent rates. The
11 Company will update this revenue requirement with actual 2011 capital spending
12 before this step adjustment becomes effective.

13 **Q. Please summarize the design and operation of the Company's Targeted**
14 **Infrastructure Replacement Adjustment cost recovery mechanism.**

15 A. The TIRA mechanism is presented in the testimony of George R. Gantz. The
16 TIRA mechanism is designed to recover the revenue requirement associated with
17 rate base additions resulting from the bare steel replacement program beginning
18 on January 1, 2012. The total annual revenue requirement under the TIRA
19 mechanism consists of three components: the revenue requirement attributable to
20 rate base, an annual carrying charge, and an operation and maintenance expense
21 savings offset. The first rate change under this mechanism would occur May 1,
22 2013 which would reflect the total revenue requirement associated with calendar

1 year 2012 TIRA capital expenditures. The timing of this rate adjustment would
2 also coincide with the summer cost of gas (“COG”) adjustment.

3 **Q. Please summarize the Company’s request for Temporary Rates.**

4 A. As indicated in the testimony of George R. Gantz, the Company is seeking
5 temporary rates. In my testimony, I describe the derivation of the requested
6 temporary rate level of \$1,756,248 to become effective August 1, 2011. This
7 temporary rate level is based on a “per books” weather-normalized view of 2010
8 test year distribution revenues and expenses.

9 **III. OVERVIEW OF DISTRIBUTION RATE CASE**

10 **A. DESCRIPTION OF RATE REQUEST**

11 **Q. What level of rate relief is the Company seeking?**

12 A. Northern seeks a permanent increase in distribution base revenues of \$3,744,523
13 which represents an increase of approximately 19% over the Company’s 2010 test
14 year distribution revenues. In addition, Northern is seeking a 2012 Step
15 Adjustment of \$1,431,022 to recover the revenue requirement associated with the
16 Company’s 2011 capital spending. Northern is also seeking a TIRA mechanism
17 which will provide recovery of bare steel capital spending in 2012 and beyond.
18 Finally, the Company is seeking authorization to implement temporary rates of
19 \$1,756,248 effective as of August 1, 2011.

20

1 **B. SUMMARY OF REASONS FOR RATE CASE**

2 **Q. Why is Northern filing for an increase in its distribution base rates at this**
3 **time?**

4 A. In 2010, the Company achieved a “per books” return on equity (“ROE”) of 5.67%
5 (see discussion in Section VII. Temporary Rates and Schedule DLC-5 page 2)
6 which is 400 basis points (“bps”) lower than the authorized ROE of 9.67%
7 established in the Company’s 2001 rate case, Docket DG 01-182. The
8 Company’s base rate levels are not sufficient to allow the Company the ability to
9 recover its distribution cost of service and the opportunity to provide a reasonable
10 return to its investors.

11 **Q. What are the primary factors causing the Company to earn less than its**
12 **authorized ROE?**

13 A. The Company’s current rate base of \$71.4 million is more than 20% greater than
14 its rate base of \$58.9 million in its last rate case approximately 10 years ago in
15 Docket DG 01-182. In addition, inflation has increased over 20% from 2001
16 through 2010, as calculated with the Bureau of Economic Analysis’ Implicit Price
17 Deflators for Gross Domestic Product, which has caused the Company to
18 experience increases in labor costs, benefits and most other operating expenses.
19 This rate case provides an opportunity to address the Company’s current cost of
20 service and provide rate relief for the first time in approximately 10 years.

21 **Q. Please discuss the current financial health of the Company.**

1 A. As indicated above, the Company's 2010 ROE is significantly below its last
2 authorized ROE. The Company is not recovering its operating costs and is not
3 able to generate an adequate investment return for its shareholders. I am also
4 concerned about the Company's operating cash flows and uses of cash, including
5 capital spending, which directly impact the Company's financial leverage.

6 **Q. Please explain your concern regarding the Company's operating cash flows
7 and uses of cash which directly impact the Company's financial leverage.**

8 A. The Company's financing policy is to satisfy working capital, operating expenses
9 and capital spending with internally generated cash flows. When necessary, the
10 Company supplements its internally generated cash flows initially with short-term
11 debt. The Company then seeks periodic long-term debt financings to refinance
12 this short-term debt. This model is self-sustaining when the Company's
13 borrowings equal retained earnings growth, so that the Company's capital ratios
14 can be maintained. Thus, we see that maintaining an appropriate level of
15 financial leverage is really dependent on two drivers: 1) the borrowing rate and 2)
16 retained earnings growth.

17 In 2010, the Company's operating cash flows were insufficient to cover the
18 Company's cash outflows, including capital expenditures, and thus the Company
19 was a net borrower. To further exacerbate matters, the Company was
20 significantly under-earning compared to its last authorized ROE, and the
21 Company's retained earnings growth was not able to keep up with its borrowings,
22 so the Company's capital ratios deteriorated in 2010. I expect the Company to

1 continue to be a net borrower in the future because of its on-going capital
2 programs, including its bare steel replacement program. The Company's bare
3 steel replacement program is largely non-revenue producing, so to mitigate
4 leverage it is important that the Company have a cost tracking mechanism to both
5 offset the borrowing requirements and to add to retained earnings.

6 **Q. Please explain how a cost tracking mechanism alleviates financial leverage**
7 **concerns.**

8 A. A cost tracking mechanism alleviates financial leverage in two ways. First, it
9 provides incremental revenue to offset capital expenditures. Without a cost
10 tracking mechanism, the Company would initially incur the whole capital
11 expenditure upfront, and would finance it with operational cash flows and short-
12 term borrowings. The Company would not begin to recover any of these costs
13 until the next base rate case, which would cause considerable lag in recovery and
14 would cause the Company's leverage ratios to rise. However, with a cost tracking
15 mechanism, the Company would obtain incremental revenue closer to the time
16 that capital spending occurred, typically commencing with the next calendar year.
17 These incremental revenues provide for more operating cash flows and reduce the
18 Company's borrowing requirements. Second, a cost tracking mechanism
19 increases retained earnings, which, in turn, increases the equity portion in the
20 leverage ratio. Again, absent a tracking mechanism, the Company would have to
21 wait until the next base rate case to commence recovery of these capital
22 expenditures, thereby creating considerable lag. With a cost tracking mechanism,

1 the Company avoids this regulatory lag and is able to increase its common equity
2 concurrently as capital expenditures are made, which tends to synchronize the
3 leverage ratio with the capital program.

4 In this rate case filing, the Company has proposed both a 2012 Step Adjustment
5 and a Targeted Infrastructure Replacement Adjustment cost recovery mechanism
6 designed to provide a reasonable opportunity for the Company to earn a return on
7 its invested capital and to also mitigate leverage.

8 **Q. Please explain the purpose for the 2012 Step Adjustment.**

9 A. The 2012 Step Adjustment is designed to mitigate earnings attrition and financial
10 leverage by providing recovery of the Company's total capital spending in 2011
11 concurrently with permanent rates. The Company expects to obtain permanent
12 rates in approximately the early-to-middle part of 2012. Thus, without a step
13 adjustment to capture capital spending in 2011, the Company would have its
14 permanent rates set on a December 31, 2010 rate base. This would imply
15 approximately 1 ½ years of regulatory lag in rate base and an under-recovery of
16 \$1.4 million related to 2011 capital additions if the 2012 Step Adjustment were
17 not awarded. I will provide further details of the 2012 Step Adjustment and
18 discuss the derivation of the revenue requirement later in my testimony.

19 **Q. How does the Company's Targeted Infrastructure Replacement Adjustment**
20 **cost recovery mechanism specifically alleviate and address financial**
21 **leverage?**

1 A. The Company proposes that calendar year 2012 and future bare steel capital
2 expenditures be recovered through the TIRA mechanism. The Company proposes
3 that recovery would commence in the next calendar year at the start of the
4 summer season on May 1, so the first adjustment under the TIRA mechanism
5 would occur on May 1, 2013. The mechanism has several features designed to
6 provide timely recovery of capital spending. First, the mechanism provides for an
7 annual adjustment to base rates based on the previous calendar year's capital
8 spending. This provides incremental cash flows to offset the Company's
9 borrowing requirements and earnings growth to mitigate the Company's leverage
10 ratios. Second, the mechanism includes a carrying charge component to
11 compensate the Company for the regulatory lag resulting from the fact that
12 recovery of capital costs will not begin until several months after completion of a
13 calendar year's capital program. I will go into the complete mechanics of the
14 mechanism later in my testimony.

15 **Q. Please summarize the reasons for the Company's request for temporary**
16 **rates.**

17 A. As I stated earlier, the Company's financial health is suffering due to the fact that
18 the Company is significantly under-earning its last authorized ROE. Absent rate
19 relief, the Company expects its financial performance to further deteriorate in
20 2011, with financial results worse than those of the test year due to on-going cost
21 pressure including increases in fixed costs such as depreciation and property taxes
22 driven by capital spending.

1 **IV. DEVELOPMENT OF DISTRIBUTION REVENUE REQUIREMENT**

2 **A. INTRODUCTION**

3 **Q. Please summarize your distribution revenue requirement testimony.**

4 A. My testimony presents and supports Northern's cost of service and revenue
5 requirement, which is used by witness Paul M. Normand to establish the new
6 distribution base rates contained in Northern's Gas Delivery Tariff. In this
7 section of my testimony, I will present the distribution base revenue requirement
8 methodology. I then describe the pro forma test year operating revenues and
9 expenses, rate base and rate of return used to determine the distribution revenue
10 deficiency. In addition, I present the calculations for a 2012 Step Adjustment
11 which recovers 2011 capital spending. The proposed 2012 Step Adjustment
12 would be implemented on the effective date of permanent rates in this proceeding.
13 Then, I discuss the mechanics and calculations of the Targeted Infrastructure
14 Replacement Adjustment cost recovery factor. Finally, I describe the
15 methodology used to determine the level of the Company's temporary rate
16 request.

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

18 A. The revenue requirements analysis was developed using a pro forma test year
19 approach. This approach utilizes "per books" data adjusted for known and
20 measurable changes to develop normalized revenues, expenses and net operating
21 income for ratemaking purposes. The adjusted net operating income is compared

1 to the required operating income, based on the overall rate of return applied to test
2 period rate base, to determine the deficiency. The deficiency is then increased to
3 account for state and federal income taxes, thereby determining the total revenue
4 deficiency.

5 **Q. What test year was selected by Northern?**

6 A. The test year is the twelve-month period ending December 31, 2010.

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

8 A. All adjustments to the test year cost of service are based upon known and
9 measurable changes in revenues and expenses, or upon changes that will become
10 known and measurable during the course of this proceeding. As a practical
11 matter, the Company has limited all pro forma adjustments to those that will be
12 known and measurable within calendar year 2011, which is the first full year after
13 the test year.

14 **Q. Why are these standards important?**

15 A. The rates established in this proceeding should provide Northern with sufficient
16 revenues to continue to ensure safe, reliable and cost-effective delivery service for
17 Northern's customers and to provide a reasonable opportunity for Northern to
18 earn its authorized rate of return. Northern expects to have a reasonable
19 opportunity to earn its allowed rate of return when the proposed rates reflect, as
20 closely as possible, the cost of service that Northern will actually experience on a
21 going forward basis.

1 **Q. Have you followed the Commission’s required format for presenting the**
2 **calculation of the proposed revenue requirement?**

3 A. Yes, to the best of my knowledge. I have followed the requirements as described
4 in New Hampshire Code of Administrative Rules, Chapter Puc 1600 Tariffs and
5 Special Contracts, Part Puc 1604 Full Rate Case Filing Requirements, Sections
6 Puc 1604.06 through 1604.09. The Filing Requirement Schedules specified in
7 Sections Puc 1604.06 and 1604.07 have been provided as “Filing Requirement
8 Schedules Pages 1-19”. The Filing Requirement Schedules are a summary of the
9 actual revenue requirement model which drives the underlying calculations of the
10 revenue deficiency. These schedules will be referred to throughout the rest of my
11 testimony as “RevReq” schedules. The Rate of Return Information specified in
12 Section Puc 1604.08 has been provided in Schedules RevReq-6 through 6-7. The
13 Adjustments to Test Year specified in Section Puc 1604.09 have been provided in
14 Schedules RevReq-3 through 3-19.

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

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

19 **B. DISTRIBUTION REVENUE REQUIREMENT**

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

1 A. The pro forma operating income for Northern in the test year is presented on
2 Schedule RevReq-2, pages 1 and 2. In page 1, the “per books” revenues,
3 operating expenses and net operating income are set forth in column (2), labeled
4 “Test Year 12 Months Ended 12/31/2010.” Column (3), labeled “Cost of Gas
5 Excluding Prod. & OH.”, contains test year revenue and operating expenses
6 associated with the Company’s cost of gas mechanism, excluding its allowance
7 for production and related overhead, which I discuss in the next Q&A below.
8 Column (4), labeled “Engy. Eff., Env. Resp. Costs & Res. Low Inc.” contains
9 revenue and operating expenses from three of the Company’s non-base rate
10 mechanisms. Column (5), labeled “Test Year Distribution” reflects base
11 distribution revenues and expenses and is calculated by subtracting Columns (3)
12 and (4) from Column (2). The last two columns on page 1 contain operating
13 revenues and expenses for the two preceding calendar years 2009 and 2008.

14 In page 2 of Schedule RevReq-2, the proposed normalizing adjustments are set
15 forth in column (3), labeled “Pro Forma Adjustments.” The pro forma
16 adjustments are added to column (2), labeled “Test Year Distribution” to obtain
17 the adjusted revenues and operating expenses in column (4), labeled “Test Year
18 Distribution Pro Forma”. The pro forma operating income from column (4) is
19 used to determine the operating income deficiency which is summarized in
20 Schedule RevReq-1. Schedule RevReq-1 calculates the income required by
21 multiplying rate base by rate of return. The pro forma operating income from
22 column (4) of page 2 of Schedule RevReq-2 is then subtracted from the income

1 required in Schedule RevReq-1 to obtain the operating income deficiency. This
2 operating income deficiency is then grossed up for federal and state taxes to
3 obtain the revenue deficiency as shown in line 7 of Schedule RevReq-1.

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

7 A. During the test year, the Company collected \$814,608 for production and related
8 overhead through the Company's cost of gas mechanism as shown in Workpaper
9 – Cost of Gas. This revenue relates to the revenue requirement last approved for
10 the Company's gas production facilities. Excluding this amount from column (3)
11 causes it to be included as a component of base distribution in column (5) of
12 Schedule RevReq-2, page 1. This component of the base distribution revenue
13 requirement is later functionalized as production-related by witness Paul M.
14 Normand and appropriately assigned for recovery through the cost of gas
15 mechanism consistent with the current ratemaking.

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

18 A. Pro forma adjustments were made to the following areas of revenue and operating
19 expense:

- 20 • Total Sales
- 21 • Operating and Maintenance Expenses
- 22 • Depreciation and Amortization

- 1 • Taxes Other than Income
- 2 • Federal and State Income Taxes

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

5 **I. TOTAL SALES**

6 **Q. What adjustments were made to Total Sales?**

7 A. The following adjustments to total sales were made:

- 8 • Weather Normalization
- 9 • Residential Low Income
- 10 • Unbilled Revenue
- 11 • Non-Distribution Bad Debt

12 **Q. Please explain the weather normalization adjustment.**

13 A. The weather normalization adjustment accounts for the effect of actual weather
14 experienced during the test year. Normal weather is based on 30-year historical
15 average temperatures. In 2010, net temperatures were warmer than normal;
16 therefore the test year operating revenues were lower than would occur under
17 normal weather conditions. Schedule RevReq-3-1 provides for a pro forma
18 adjustment to increase base distribution revenue by \$511,509. This adjustment
19 was calculated by witness Paul M. Normand and is supported in his testimony.

20 **Q. Please explain the residential low income adjustment.**

1 A. I have increased distribution revenues by \$200,478 to reflect that residential low
2 income is collected via a separate rate recovery mechanism. This adjustment is
3 shown in Schedule RevReq-3-2.

4 **Q. Please explain the unbilled revenue adjustment.**

5 A. Northern books unbilled revenue to account for the difference between the
6 amount of gas delivered to customers during the test year and the amount billed to
7 customers during the same period. Because the test year sales are based on
8 weather-normalized sales, the accrual for the amount of unbilled sales was
9 removed from the test year. This adjustment reduces revenue by \$189,589 as
10 shown in Schedule RevReq 3-3.

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

12 A. I reduced total sales by \$245,604 to remove accrued revenue associated with non-
13 distribution bad debt. I also made a similar adjustment to reduce non-distribution
14 bad debt operating expenses by \$245,604. These adjustments are summarized in
15 Schedule RevReq 3-9. Overall, there is no impact on the revenue requirement
16 since both the revenue and operating expenses are adjusted by the same amount.

17 **II. OPERATING & MAINTENANCE EXPENSES**

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

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

21 • Payroll

- 1 • Medical & Dental Insurances
- 2 • Pension, Postemployment Benefits Other than Pension, and 401K
- 3 • Property & Liability Insurance
- 4 • Distribution Bad Debt
- 5 • Non-Distribution Bad Debt
- 6 • Regulatory Assessment
- 7 • Gas Public Safety Awareness

8 I will discuss each adjustment individually in the following section.

9 **Q. What adjustments were made to payroll?**

10 A. The payroll adjustment, as detailed on Schedule RevReq-3-4, pages 1-3, increases
11 the test year payroll charged to O&M Expense for known and measurable
12 increases that will occur during 2011. The adjustment reflects payroll
13 adjustments for both the Company and for Unitil Service amounts assigned to the
14 Company. The pro forma increase to test year O&M payroll is \$100,199. This
15 adjustment is discussed in more detail in the testimony of Elizabeth M. Shaw.

16 **Q. Please explain the medical and dental insurance adjustment.**

17 A. The Northern test year O&M expense has been adjusted to increase test year
18 medical and dental insurance by \$46,745. This adjustment is shown in Schedule
19 RevReq-3-5, and includes amounts allocable to the Company from Unitil Service.
20 This adjustment is described in more detail in the testimony of Elizabeth M.
21 Shaw.

1 **Q. Please explain the pension, postemployment benefits other than pension, and**
2 **401k adjustments.**

3 A. The purpose of the pension, postemployment benefits other than pension (PBOP)
4 and 401k adjustments is to update these costs from test period O&M expense.
5 The latest year-end 2010 actuarial report was the basis for the projections. The
6 pension, PBOP and 401k adjustments are all provided in Schedule RevReq-3-6
7 which shows increases of \$8,970, \$279,276, and \$7,139, respectively. These
8 adjustments include costs for the Company as well as costs allocable to the
9 Company from Unital Service. The PBOP adjustment of \$279,276 is large in
10 comparison to the other adjustments, because in 2010 the New Hampshire union
11 negotiated for inclusion in the retiree medical plan on the same basis as other
12 Northern non-union employees. Previously, the NH union received much more
13 limited retiree medical benefits. A full description of the pension, PBOP and
14 401k plans is contained in the testimony of Elizabeth M. Shaw.

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

17 A. Property and liability insurance coverage includes a number of types of insurance
18 that provide protection from casualty and loss, and other damages that the
19 Company may incur in the conduct of its business. Northern's insurance program
20 includes both premium-based and self-insured coverages, in order to obtain the
21 widest portfolio of insurance coverage at the most reasonable cost. As shown on
22 Schedule RevReq-3-7 page 1, the pro forma adjustment for property and liability

1 insurances is an increase of \$34,364 to test year O&M expense. This adjustment
2 was made to adjust the property and liability insurance test year O&M expense to
3 reflect known and measurable increases in premiums for the Company and for
4 premiums allocable to the Company from Unitil Service. Property and liability
5 insurance is further adjusted to remove capitalized amounts.

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

7 A. The calculation of this adjustment is shown in Schedule RevReq-3-8. I developed
8 this adjustment by first calculating a bad debt rate based on the past two-year
9 history of delivery net write-offs divided by delivery billed revenue. I then
10 multiplied the bad debt rate by test year billed revenue including the revenue
11 requirement from Schedule RevReq-1, which establishes an uncollectible
12 revenues amount. The uncollectible revenues amount is compared to test year
13 write-offs to produce the pro forma adjustment of \$15,053.

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

15 A. This adjustment was explained above in Section IV (B) (I), under the heading
16 “Total Sales.”

17 **Q. Please explain the regulatory assessment adjustment.**

18 A. Please reference Schedule RevReq-3-10 for the calculated adjustment of
19 \$147,687. In the settlement agreement in Docket DE 10-055, as a result of Staff’s
20 testimony, Unitil Energy Systems, Inc. removed from distribution revenues the
21 non-distribution portion of the annual PUC assessment which will be collected in
22 the External Delivery Charge. The same adjustment was erroneously applied to

1 the Company. The Company does not have a supply tariff provision that provides
2 for recovery of the non-distribution portion of the PUC assessment, so this
3 amount should not have been deferred and should have remained as a distribution
4 expense. Thus, this adjustment adds the deferral back to the test year expense, so
5 that the PUC assessment is reflected in distribution costs.

6 **Q. Please explain the adjustment for gas public safety awareness.**

7 A. In 2006 and in accordance with 49 CFR §192.616 Northern implemented a
8 written Public Awareness program that is designed to promote pipeline safety
9 through enhanced awareness and communication with primary stakeholders.
10 Primary stakeholders are defined by API RP 1162 2003 Edition as Affected
11 Public, Emergency Officials, Public Officials and Excavators. The Public
12 Awareness Program that Northern has adopted is the regional plan that was
13 developed by the Northeast Gas Association (“NGA”). In 2006, as part of this
14 program development, The Center for Research, on behalf of the NGA, conducted
15 an initial survey of the primary stakeholder groups. The purpose of this initial
16 survey was to establish a baseline in which to measure future performance and
17 effectiveness of these Public Awareness Programs. In 2010, in accordance with
18 the written plan, a follow up survey of key stakeholders was conducted for the
19 purpose of evaluating how effective the program was over the previous four years
20 and to identify program changes needed for continuous improvement. As a result
21 of this follow up survey Northern has identified key program changes that it
22 expects to implement in 2011 and 2012. The Company has included a pro forma

1 adjustment of \$1,461 in Schedule RevReq-3-11 to reflect the difference between
2 the 2011 budget of \$44,000 and the amount spent in the test year of \$42,539. The
3 Company anticipates additional spending of approximately \$70,000 in 2012
4 above the Company's 2011 budget for this program, but the Company has only
5 included the 2011 budgeted costs as an adjustment in the cost of service.

6 **III. DEPRECIATION AND AMORTIZATION**

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

9 A. Yes. The annualization of depreciation expense based on the twelve months
10 ended December 31, 2010 depreciable plant balance is detailed on Schedule
11 RevReq-3-12. The annualization adjustment increases the depreciation expense
12 by \$183,181.

13 **Q. Is Northern proposing an adjustment to depreciation expense for any**
14 **proposed changes in whole life depreciation rates?**

15 A. Yes. The depreciation rates adjustment, detailed on Schedule RevReq-3-13,
16 decreases the test year depreciation expense by \$173,658 for the new asset
17 depreciation rates presented in the testimony of Paul M. Normand. The proposed
18 rates are based on the whole-life methodology and have been applied to the test
19 year-end depreciable plant balances to derive the annualized depreciation
20 expense.

1 **Q. Does the proposed depreciation expense include recovery of a depreciation**
2 **reserve variance?**

3 A. Yes. As shown on Schedule RevReq-3-14, the Company proposes to amortize the
4 depreciation reserve of (\$1,464,364) over a 15-year period. The analysis of the
5 reserve deficiency is presented in the testimony of Paul M. Normand.

6 **Q. Please explain the 2011 project additions amortization adjustment.**

7 A. As provided in Schedule RevReq-3-15, the Company is implementing numerous
8 information technology projects in 2011. The projected cost of all of the 2011
9 projects is provided in the schedule, and the amortization period of all of these
10 projects will be 5 years. The schedule adds the annualized amortization expense
11 from the 2011 projects to the Company's existing asset amortization expected in
12 2011. The pro forma adjustment related to additional information technology
13 projects is \$155,040 based on the additional annualized amortization from the
14 2011 projects plus existing amortization compared to test year amortization
15 expense. The Company will update this schedule with actual costs incurred
16 throughout the course of this proceeding.

17 **Q. Please explain the Docket DG 08-048 and DG 08-079 settlement adjustments**
18 **related to amortization.**

19 A. In Unitil Corporation's acquisition Docket DG 08-048 and DG 08-079, the
20 Company agreed to not seek recovery of purchase acquisition premium,
21 transactions costs and transition costs. In Schedule RevReq-3-16, I removed the
22 amounts that were included in the test year for a total adjustment of \$445,708.

1 **IV. TAXES OTHER THAN INCOME**

2 **Q. Have test year property taxes been adjusted?**

3 A. Yes, the adjustment is detailed on Schedule RevReq-3-17 page 1 and amounts to
4 an estimated increase in property tax expense of \$215,055. This schedule also
5 presents additional information related to property taxes including taxation period,
6 amount paid, assessed valuations, and tax rates by municipality. The pro forma
7 test year property tax expense for utility operations is \$1,705,485 compared to test
8 year expense of \$1,490,429.

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

10 A. Property taxes are generally billed by municipalities in two installments. The first
11 billed installment for 2011 is generally estimated based on 2010 property taxes,
12 and the second billed installment will reflect the final accounting for 2011.
13 Typically, the second billing installments are received in October and November,
14 with payments due in November and December. Absent the final tax bills for
15 2011, Northern estimated the increase in its property tax expense to be equal to
16 the average property tax expense increases for the period 2005 to 2009, as shown
17 on Schedule RevReq-3-17, page 2. The property tax adjustment will be updated
18 during the proceeding to reflect final property tax bills.

19 **Q. Have test year payroll taxes been adjusted?**

1 A. Yes, the adjustment is shown on Schedule RevReq-3-18 and amounts to an
2 increase in payroll tax expense of \$6,373. This adjustment is described in the
3 testimony of Elizabeth M. Shaw.

4 **V. INCOME TAXES**

5 **Q. Does the cost of service reflect an adjustment to test year income taxes?**

6 A. Yes. The adjustment is summarized on Schedule RevReq-3-19, page 1, and
7 amounts to a decrease in federal and state income taxes of \$24,222.

8 **Q. Please describe the adjustment to test year income taxes.**

9 A. The adjustment to test year income taxes calculates the income tax effect of the
10 normalizing adjustments to revenues and expenses previously described in
11 testimony and as listed in the Summary of Adjustments in Schedule RevReq-3.
12 The adjustment also reflects the income tax effect of the adjustment for interest
13 expense synchronization with rate base, based on the difference between interest
14 expense for ratemaking and test year interest expense, which is shown on
15 Schedule RevReq-3-19, page 2. The adjustment also reflects the income tax
16 effect on prior period taxes of \$(8,562) and flow through net operating income of
17 \$290,219 which is the sum of the operating income in columns (3) and (4) in
18 Schedule RevReq-2 page 1.

19 **VI. RATE BASE**

20 **Q. Have you provided the balance sheets for Northern?**

1 A. Yes, I have provided Assets & Deferred Charges and Stockholder's Equity and
2 Liabilities in Schedules RevReq-4-1 and 4-2, respectively.

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

5 A. Schedule RevReq-5 summarizes the rate base. The summary includes several
6 calculation methodologies, including the "Test Year Average" (arithmetic average
7 of the beginning and end of test period amounts), the "5 Quarter Average" and the
8 "Pro forma Rate Base at December 31, 2010." The test year-end rate base at
9 December 31, 2010, was used to determine Northern's revenue requirements.

10 **Q. Why did you elect to use year-end rate base?**

11 A. I employed a year-end test year rate base, because it reduces earnings attrition and
12 better aligns expenses, revenues and rate base with the period in which rates are
13 going to be in effect. An historical average test year rate base, without pro forma
14 adjustments beyond the end of the test year, produces a "stale" estimate of rate
15 base by the time rates actually go into effect. For example, a 5-quarter historical
16 average rate base in this proceeding would be based on an average of the five
17 quarters from Quarter 4, 2009 through Quarter 4, 2010, effectively establishing
18 rates based on mid-2010 data.

19 I have quantified the difference in revenue requirement between a 5-quarter
20 average rate base and a year-end rate base. In Schedule RevReq-5, the difference
21 in rate base from the 5-quarter average to the year-end rate base is \$5,366,216 as

1 illustrated in column (5). Multiplying this difference by 7.65%, the Company's
2 requested return on rate base, and then by the tax gross-up factor of 1.6559 yields
3 an under-recovery of revenue of \$0.7 million.

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

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

10 **Q. Please describe the component of rate base information on Schedule RevReq-**
11 **5-1.**

12 A. Schedule RevReq-5-1 presents the balance of rate base items for each of the 5
13 quarters beginning with the balance on December 31, 2009 and ending with the
14 balance on December 31, 2010. In the last column, the 5-Quarter Average is
15 calculated.

16 **Q. Please describe the component of rate base information on Schedule RevReq-**
17 **5-2.**

18 A. The calculation of cash working capital in rate base is detailed in this schedule.
19 The calculation consists of a lead-lag factor applied to test year distribution
20 operating expenses. These test year distribution operating expenses are sourced
21 from column (5) of Schedule RevReq-2 page 1, and include production,
22 transmission, distribution, customer accounting, customer service, and

1 administrative & general expenses. The adjustment to test year distribution
2 operating expenses relates to the normalizing adjustments detailed in Schedule
3 RevReq-3 excluding distribution and non-distribution bad debt adjustments.

4 The lead-lag factor is based on a 45-day period and is calculated pursuant to Puc
5 1604.07 (t), which allows a formula based on the length of one-half of the utility's
6 billing cycle plus 30 days. The Company bills its customers monthly, therefore
7 one-half of the Company's billing cycle is 15 days. Thus, the formula results in a
8 45 day (15 days + 30 days) lead-lag period. The Company's witness, Paul M.
9 Normand, is currently performing a lead-lag study to obtain more accuracy of its
10 lead-lag days, and the Company will update this 45-day factor upon completion of
11 the study.

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

13 A. In addition to Cash Working Capital described above, Materials and Supplies
14 Inventories, and Prepayments have been added to rate base. These items are
15 shown on Schedule RevReq-5 and 5-1.

16 **Q. Please list the components deducted from rate base.**

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

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

1 A. This schedule contains plant in service and accumulated depreciation for the
2 Company's production facilities including LNG and LPG plants located in New
3 Hampshire and Maine. This schedule allocates these production plant and
4 depreciation balances to either New Hampshire or Maine based on the Company's
5 Fixed Demand factor as presented in its cost of gas filings. The Fixed Demand
6 factor as of December 31, 2010 for New Hampshire was 48.64% and 51.36% for
7 Maine. The Company allocates the production facilities based on this
8 methodology, because the Company manages a combined system where the costs
9 are allocated between the states based on relative gas usage. This methodology
10 was approved in the Stipulation and Settlement approved by the Maine
11 Commission in Docket 2005-273 and by the New Hampshire Commission in
12 Docket DG 05-080.

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

15 A. In Docket DG 08-048 and DG 08-079, the Company agreed to hold ratepayers
16 harmless from the tax impact of Unutil Corporation's acquisition of the Company.
17 In this acquisition, a 338(h)(10) election was made which eliminated the
18 Company's historical accumulated deferred income taxes. In the stipulation in
19 Docket DG 08-048 and DG 08-079, the Company agreed to maintain pro forma
20 accounting for regulatory purposes of the historical deferred income tax balance
21 assuming the acquisition had not occurred. This historical deferred income tax
22 balance is then used for ratemaking purposes until such time that the newly

1 acquired deferred income tax balance equals or exceeds the historical balance.
2 This schedule provides both the historical and newly acquired deferred income
3 tax balances and utilizes the historical balance for ratemaking purposes. The
4 schedule then incorporates deferred income tax balances as a result of capital
5 spending post-acquisition and deferred taxes due to net operating losses in 2010.

6 **VII. RATE OF RETURN**

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

8 A. As shown on Schedule RevReq-6, Northern's weighted cost of capital is
9 calculated to be 7.65 percent. This is derived from the Company's capital
10 structure and related costs for various capital components and represents the
11 required rate of return on rate base used in the determination of the Company's
12 revenue requirement.

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

14 A. As detailed on Schedules RevReq-6-1, the Company's capital structure consists of
15 40.25 percent common equity, 58.28 percent long-term debt, and 1.47 percent
16 short-term debt. The common stock equity and long-term debt balances are as of
17 December 31, 2010, which is consistent with the use of a test year-end rate base.

18 **Q. How is the cost of common equity determined?**

19 A. The cost of common equity of 10.5 percent is the cost of equity determined by the
20 Company's witness Dr. Samuel C. Hadaway as the appropriate market cost of

1 common equity for Northern for ratemaking purposes. Please refer to Dr.
2 Hadaway's prefiled testimony and exhibits for the derivation of this cost.

3 **Q. Please explain the amounts and derivation of the cost of preferred stock**
4 **equity.**

5 A. As shown in Schedule RevReq-6-3, the Company does not have preferred stock
6 outstanding.

7 **Q. Please explain the derivation of the cost of long term debt.**

8 A. The calculation of the cost of long-term debt for Northern is detailed on Schedule
9 RevReq-6-4 page 1, which uses the net proceeds methodology. This
10 methodology calculates the cost of long-term debt based on the comparison of
11 total annual debt costs to the total outstanding net proceeds. The total annual
12 costs consist of the annual amortization amount of debt issuance costs and annual
13 interest charges. The total outstanding net proceeds consist of the long-term debt
14 amount outstanding reduced by the unamortized balance of issuance costs. The
15 weighted cost rate is derived by dividing the total annual cost by the total
16 outstanding net proceeds. Schedule RevReq-6-4 page 1 contains two weighted
17 cost rate calculations – one for current long-term debt and the other for stipulated
18 long-term debt. Pursuant to the Company's settlement agreement in Docket DG
19 08-048 and DG 08-079, the Company agreed to impute Northern's pre-acquisition
20 cost of debt, until those instruments would have matured. The imputed debt
21 shown on Schedules RevReq-6-4 pages 1 and 2 show Northern's pre-acquisition
22 debt consisting of 4.80% Sr. Notes with principal value of \$60,000,000 and a final

1 maturity of June 2013. In Schedule RevReq 6-4 page 2, the pre-acquisition debt
2 is weighted with the Company's current post-acquisition long-term debt to
3 achieve a final weighted cost of long-term debt of 5.81%.

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

5 A. The derivation of the amount and cost of short-term debt is shown in Schedule
6 RevReq-6-5 pages 1 and 2. In the Company's cost of capital, I used an average
7 monthly short-term borrowing balance and an average historical interest rate paid
8 on its monthly short-term borrowings. All of the Company's short-term
9 borrowings are under the Unitil Corporation cash pool, and the Company is
10 charged the same interest rate paid under Unitil Corporation's revolving credit
11 facility with its banking group. Unitil Corporation's interest rate under this credit
12 facility during the test year (and currently) is LIBOR + 200 basis points (bps). I
13 used a monthly average for the short-term debt balance because of the volatility of
14 short-term debt throughout the year which is caused by variances in cash flow
15 resulting from peak winter and summer seasons and by seasonal capital spending.
16 In Schedule RevReq-6-5 page 1, I deduct accrued revenue (net of unbilled),
17 purchased gas working capital, and average margin hedging balance, to reflect
18 that these items are financed through short-term borrowings and should be
19 unbundled in the Company's rate of return on rate base. These deductions reflect
20 costs associated with the Company's flow-through mechanisms such as cost of
21 gas, which are financed through short-term borrowings. These flow-through
22 mechanisms do not provide the Company with carrying charges at the same rate

1 of return on rate base, so these items must be removed from short-term
2 borrowings to properly reflect an unbundled short-term debt balance for return on
3 rate base.

4 **Q. Please provide more information about the Unitil Corporation cash pool.**

5 A. As I mentioned above, the Company is a member of the Unitil Corporation cash
6 pool. Please see Schedule DLC-1 for the Amended and Restated Cash Pooling
7 and Loan Agreement which was signed on December 1, 2008 to add Northern
8 Utilities, Inc. and Granite State Gas Transmission, Inc. The cash pool is the
9 financing vehicle for day-to-day cash borrowing and investing. The cash pool
10 allows for an efficient exchange of cash among Unitil Corporation and its
11 subsidiaries. The interest rates charged to the subsidiaries for borrowing from the
12 cash pool are based on actual interest costs from bank lenders under Unitil
13 Corporation's revolving credit facility. Each subsidiary's borrowings from the
14 cash pool are accounted for as short-term debt.

15 **Q. Do you have any concerns with the Company's ability to achieve its rate of**
16 **return requested in this proceeding?**

17 A. Yes. I am concerned with the mismatch between the amount of total rate base and
18 the Company's total capitalization in its cost of capital. The Company's New
19 Hampshire rate base is \$71,374,482 as provided in Schedule RevReq-5. In the
20 Company's concurrent Maine rate case filing, its Maine rate base is \$95,450,269.
21 This totals to a combined rate base of \$166,824,751 for both divisions. In
22 Schedule RevReq-6, Northern Utilities, Inc. has a total capitalization of

1 \$180,179,245, which is \$13,354,494 greater than the combined rate base. There
2 are several reasons why the total capitalization is greater than the combined rate
3 base, including, but not limited to, transaction and transition costs (below the line
4 for ratemaking) and the use of the Company's pre-acquisition deferred taxes.
5 More importantly, the mismatch between rate base and capitalization implies that
6 the total financing costs are approximately \$13 million more than what can be
7 earned in rate base. This further implies that the actual resulting effective ROE is
8 less than the 10.50% requested in this proceeding. I have prepared Schedule
9 DLC-2 which illustrates that this difference in rate base and capitalization actually
10 results in an effective ROE of 9.09%, or 141 bps lower than its requested 10.50%.
11 So from a pure mathematical perspective, the Company can not earn its requested
12 ROE. Therefore, while reviewing these issues, it is important to be mindful that
13 even though the Company's ROE will be largely set based upon market
14 conditions, there will be an approximate 140 bps difference between the set ROE
15 and the resulting effective ROE.

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

17 A. I prepared Schedule RevReq-6-6 showing the Company's historical capital
18 structure and Schedule RevReq-6-7 showing historical capitalization ratios in
19 order to comply with the New Hampshire Code of Administrative Rules, Section
20 Puc 1604.08(c)(3) and (4), respectively. Only three years of data are provided
21 instead of five years. Five years of data would have reflected the pre-acquisition

1 capital structure which is inappropriate because it is not comparable to the post-
2 acquisition capital structure.

3 **C. DISTRIBUTION REVENUE REQUIREMENT CONCLUSION**

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

6 A. As shown on Schedule RevReq-1, when the rate of return of 7.65 percent is
7 applied to the rate base of \$71,374,482 the resulting income required is
8 \$5,460,148. The income required is then compared to the test year adjusted net
9 operating income to arrive at an operating income deficiency of \$2,261,317.
10 Applying the income tax factor associated with the deficiency results in a revenue
11 requirement of \$3,744,523.

12 **V. 2012 STEP ADJUSTMENT**

13 **Q. Please explain the Company's 2012 Step Adjustment.**

14 A. The Company proposes to recover the revenue requirement associated with
15 calendar year 2011 capital additions as a 2012 Step Adjustment. As I discussed
16 earlier in my testimony, the 2012 Step Adjustment is needed to offset earnings
17 attrition and to help mitigate financial leverage.

18 **Q. What is the proposed timing of the 2012 Step Adjustment?**

19 A. The Company proposes that the 2012 Step Adjustment go into effect on the same
20 date as the permanent rate increase.

1 **Q. Have you prepared a schedule showing the calculation and revenue**
2 **requirement of the 2012 Step Adjustment?**

3 A. Yes. Please see Schedule DLC-3. This exhibit shows the Company's 2011
4 capital budget including overhead less deferred taxes to obtain rate base additions
5 in 2011. The rate base is then multiplied by the pre-tax rate of return to obtain the
6 return and related income taxes. Then, the schedule adds the annualized
7 depreciation and property taxes associated with the capital spending. I used the
8 proposed weighted-average depreciation rate of 3.52% as shown in Schedule
9 RevReq-3-13 and a weighted-average property tax rate based on the Company's
10 assessed valuation in the various municipalities in New Hampshire. The resulting
11 revenue requirement for the 2012 Step Adjustment is \$1,431,022. The Company
12 will update this schedule with actual 2011 capital addition amounts to finalize the
13 step adjustment to occur concurrently with the permanent rate increase.

14 **Q. Please explain the pre-tax rate of return used in the revenue requirement**
15 **calculation for the 2012 Step Adjustment.**

16 A. The derivation of the pre-tax rate of return is shown in Schedule DLC-3. The
17 weighted components of common equity, long-term debt, and short-term debt of
18 40.25%, 58.28%, and 1.47%, respectively, remain the same as in Schedule
19 RevReq-6. The cost of equity and short-term debt remain the same as well.
20 However, the cost of long-term debt used in the calculation is 7.06% from
21 Schedule RevReq-6-4 page 1, which is the cost of long-term debt associated with
22 Northern's current post-acquisition debt. This long-term debt cost rate is

1 appropriate because any incremental financing for the 2012 Step Adjustment
2 would occur at current rates which are reflected in the Company's actual existing
3 debt.

4 **VI. TARGETED INFRASTRUCTURE REPLACEMENT ADJUSTMENT**
5 **MECHANISM**

6 **Q. Please provide a brief overview of the mechanics of the TIRA cost recovery**
7 **mechanism.**

8 A. The TIRA mechanism is designed to provide the revenue requirement associated
9 with cumulative rate base additions over a long-term period. The mechanism
10 incorporates annual capital spending and depreciation to calculate changes in net
11 utility plant. The mechanism also calculates deferred income taxes as they relate
12 to book and tax timing differences. The end result is a mechanism that tracks rate
13 base over a long-term period related to capital additions under the Company's
14 Targeted Infrastructure Replacement Adjustment mechanism. Schedule DLC-4 is
15 an illustrative example of the calculation schedules of the TIRA mechanism
16 which I will discuss in further detail below.

17 **Q. Please describe the capital expenditure forecast used in Schedule DLC-4.**

18 A. In page 1 of Schedule DLC-4, I show the capital expenditure forecast of the bare
19 steel replacement program. These costs include overheads and equate to
20 approximately 4.9 miles of bare steel replacement per year.

1 **Q. What is the timing of the step adjustments that will occur under the TIRA**
2 **mechanism?**

3 A. The TIRA mechanism will begin tracking capital investments in the TIRA
4 mechanism beginning January 1, 2012. The revenue requirement associated with
5 each calendar year would be recovered in a step adjustment to occur in the
6 immediately following calendar year on May 1. For example, the first step
7 adjustment under this mechanism would relate to 2012 TIRA capital spending and
8 would occur on May 1, 2013.

9 **Q. What are the major components of the TIRA mechanism?**

10 A. The TIRA mechanism has three major components:

- 11 • Revenue requirement related to rate base;
- 12 • Annual carrying charges; and
- 13 • Operation and maintenance expense savings offset.

14 **Q. Please explain the component of the TIRA mechanism which relates to**
15 **revenue requirement.**

16 A. This component calculates the cumulative revenue requirement associated with
17 the rate base of the TIRA program and is illustrated in page 1 of Schedule DLC-4.
18 Similar to the 2012 Step Adjustment, this component multiplies rate base by the
19 pre-tax rate of return and adds annualized depreciation and property taxes. For
20 illustrative purposes, I used the plastic main proposed depreciation rate of 3.05%
21 as shown in Schedule RevReq-3-13, because the majority of the project work will
22 involve plant additions to distribution mains. For property taxes, I used the same

1 weighted-average amount as the 2012 Step Adjustment which was based on the
2 Company's assessed valuation in the various municipalities in New Hampshire.
3 For this mechanism, I propose that both the depreciation rate and property tax rate
4 be calculated annually based on actual capital additions. In the Company's
5 annual determination of rate base, the Company proposes to obtain actual utility
6 plant, accumulated depreciation and deferred taxes as related to the TIRA
7 program from its plant and general ledger records. Therefore, rate base items will
8 be verifiable and auditable by the Commission. The depreciation and property tax
9 components of the revenue requirement will represent the calculated annualized
10 depreciation and property taxes relating to the TIRA program.

11 **Q. Please explain the pre-tax rate of return used in the revenue requirement**
12 **calculation.**

13 A. The pre-tax rate of return used for the TIRA mechanism is identical to that used
14 for the 2012 Step Adjustment which I discussed earlier. The derivation of the
15 pre-tax rate of return is shown in page 3 of Schedule DLC-4. The weighted
16 components of common equity, long-term debt, and short-term debt of 40.25%,
17 58.28%, and 1.47%, respectively, remain the same as in Schedule RevReq-6. The
18 cost of equity and short-term debt remain the same as well. However, the cost of
19 long-term debt used in the calculation is 7.06% from Schedule RevReq-6-4 page
20 1, which is the cost of long-term debt associated with Northern's current post-
21 acquisition debt. This long-term debt cost rate is appropriate because any

1 incremental financing for the TIRA mechanism would occur at current rates
2 which are reflected in the Company's actual existing debt.

3 **Q. Please explain the component of the TIRA mechanism which relates to**
4 **carrying charges.**

5 A. The carrying charge component is designed to calculate the pre-tax return
6 associated with the lapse of time between the time the capital spending for a
7 calendar year is completed and the time recovery begins, or 4 months. The
8 carrying charge provides the pre-tax return on only the annual additions to rate
9 base and is shown on page 2 of Schedule DLC-4.

10 **Q. Please explain the component of the TIRA mechanism which relates to**
11 **operations and maintenance savings offset.**

12 A. This component reduces the total revenue requirement under the mechanism by
13 an O&M offset of \$2,717 per mile which reflects projected expense dollar savings
14 per mile as derived in page 4 of Schedule DLC-4.

15 **Q. Please explain the total annual revenue change resulting from these three**
16 **components.**

17 A. The total annual revenue requirement adds the annual changes of all three
18 components. The first component reflects the annual change in the cumulative
19 revenue requirement. The second component reflects the annual change in the
20 carrying charge. The third component reflects the annual change in the O&M
21 offset. The projected total annual revenue adjustments are shown on page 2 of
22 Schedule DLC-4.

1 **VII. TEMPORARY RATES**

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

3 A. Yes. The company requests that temporary rates be established in the amount of
4 \$1,756,248 to become effective on August 1, 2011. The development of the
5 temporary rate amount is detailed in Schedule DLC-5.

6 **Q. Please explain how the temporary rate amount of \$1,756,248 was derived.**

7 A. In general, I employed a conservative approach in calculating the amount of the
8 temporary rate request. The amount of the temporary rate request was based on a
9 five-quarter average rate base, which, as I discussed earlier, reduces rate base by
10 approximately \$5.4 million compared to a test year-end rate base. The cost of
11 capital used in the calculation is based on the rate case filing capital structure and
12 debt costs. The cost of equity was set at 9.67% reflecting the approximate rate
13 recently awarded to several utilities in the Northern New England region,
14 including the last authorized return on equity awarded to the Company from its
15 rate case filed in 2001. As shown in page 3 of Schedule DLC-5, this results in an
16 overall cost of capital of 7.31%. The test year net operating income was adjusted
17 to reflect only a handful of pro forma adjustments applicable to the 2010 test year,
18 including weather normalization, residential low income, unbilled revenue, non-
19 distribution accounts and settlement adjustments pertaining to those required in
20 Docket DG 08-048 and DG 08-079. Essentially, the adjustments used for
21 temporary rate purposes reflect those required to more or less portray a “per
22 books” weather-normal 2010 distribution test year. No known and measurable

1 adjustments relating to 2011 costs are requested in the temporary rate increase.
2 The adjustments to test year net operating income are detailed in page 4 of
3 Schedule DLC-5.

4 **VIII. RATE CASE EXPENSES**

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

6 A. Northern proposes to file a rate case surcharge to recover the costs incurred to
7 plan, develop and present this rate case to the Commission at the conclusion of
8 this proceeding when the final dollar amount of these expenses is known. Subject
9 to Commission approval, the rate case surcharge would also recover any
10 difference between temporary rates and permanent rates.

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

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

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

1 A. The estimated costs to be incurred for the rate case are \$591,250 and are detailed
2 on Schedule RevReq-7.

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

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

10 **IX. CONCLUSION**

11 **Q. Does this conclude your testimony?**

12 A. Yes, it does.