

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

Docket No. DE 10-055

Unitil Energy Systems, Inc.
Petition for Approval of Base Rate Increase

**DIRECT TESTIMONY
OF
JAMES J. CUNNINGHAM, JR.**

November 5, 2010

1 **Q. Please state your name, current position and business address.**

2 A. My name is James J. Cunningham, Jr. and I am employed by the New Hampshire Public
3 Utilities Commission (Commission) as a Utility Analyst. My business address is 21
4 South Fruit Street, Suite 10, Concord, New Hampshire 03301.

5 **Q. Please summarize your educational and professional background.**

6 A. I am a graduate of Bentley University, Waltham, Massachusetts, and I hold a Bachelor of
7 Science Degree in Accountancy. I joined the Commission in 1988. In 1995, I completed
8 the NARUC Annual Regulatory Studies Program at Michigan State University,
9 sponsored by the National Association of Regulatory Utility Commissioners (NARUC).
10 In 1998, I completed the Depreciation Studies Program, sponsored by the Society of
11 Depreciation Professionals, Washington, D.C., of which I am a member. I have reviewed
12 and provided direct testimony on a variety of topics pertaining to New Hampshire
13 electric, natural gas, steam, and water utilities. In 2008, I was promoted to my current
14 position of Utility Analyst IV.

15
16 Prior to joining the Commission, I was employed by the General Electric Company (GE).
17 While at GE, I was a graduate from the Corporate Financial Management Training
18 Program and held assignments in General Accounting, Government Accounting &
19 Contracts, and Financial Analysis.

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

21 A. The purpose of my testimony is to provide my recommendations on (1) depreciation and
22 amortization expense, (2) pension expense, (3) post employment benefits other than
23 pensions (PBOPs), (4) 401k expenses, and (5) medical and dental expenses. In addition,
24 my testimony includes recommendations for certain depreciation-related adjustments to
25 rate base.

26

1 **Q. Please summarize your recommendations.**

2 A. Unitil Energy Systems, Inc. (UES) is proposing \$8,675,668 for depreciation and
3 amortization expense on Plant-In-Service as of December 31, 2009. I recommend
4 \$7,560,490, a reduction of \$1,115,178.

5

6 With respect to pension expense, UES is proposing \$1,198,069. I recommend
7 \$885,466, a reduction of \$312,603.

8

9 For PBOP expense, UES is proposing \$715,526. I recommend no changes.

10 With respect to 401k expense, my recommendation is the same amount as
11 proposed, *i.e.*, \$185,973.

12

13 For medical and dental expenses, I recommend no changes to the proposed
14 amount of \$742,527.

15

16 With respect to depreciation-related adjustments to rate base, I recommend a net
17 increase of \$663,252.

18

19 Schedule JJC-1 provides a side-by-side comparison of test-year, proposed and
20 recommended amounts.

21 **Q. Are your recommendations incorporated into the testimony and schedules of Mr.**
22 **Mullen?**

23 A. Yes.

24

1 **Depreciation and Amortization**

2 **Q. Please describe the plant accounts included in depreciation and amortization**
3 **expense.**

4 A. Depreciation expense pertains to depreciable plant. It excludes non-depreciable
5 plant such as land and rights of way, as the life of land and rights of way is
6 indeterminate and hence is not included in depreciable plant.

7
8 Amortization expense pertains to intangible software.

9 **Q. What is the rationale underlying your depreciation calculations?**

10 A. My testimony utilizes the whole-life (WL) technique for calculating depreciation
11 rates. The whole-life technique is consistent with the Commission's practice for
12 setting depreciation accrual rates for other electric companies and for natural gas
13 and water utilities. This technique is also the basis for the Commission-approved
14 depreciation accrual rates that are currently in place for UES.

15
16 The WL technique allocates the original cost less the estimated net salvage¹ over
17 the total estimated life of the investment. The WL formula is defined as follows:

18
19
$$\text{WL Depreciation Accrual Rate} = \frac{1 - \text{Net Salvage Rate (NSR)}}{\text{Average Service Life (ASL)}}$$

20

21
22 For instance, assuming an average service life of 10 years and a net salvage rate
23 of 20 percent, the whole-life depreciation accrual rate is calculated to be 8
24 percent, as follows: $1 - 0.20 / 10 = 8$ percent.

¹ Net salvage represents the estimated gross salvage less the estimated cost of removal at retirement.

1 To the extent that the updated average service life or net salvage rate turns out to
2 be different than previously estimated, the whole-life technique provides for an
3 amortization of this difference over a short period of time. The amortization term
4 typically reflects the interval between depreciation studies.

5 Whole-life depreciation accrual rates are easy to administer since the formula is
6 simple and the rates are fixed until the Commission approves new depreciation
7 accrual rates.

8 **Q. Are the depreciation accrual rates proposed by UES based on the whole-life**
9 **technique?**

10 A. Yes.

11 **Q. What adjustments to test year depreciation expense are proposed by UES?**

12 A. UES proposes three adjustments to test year depreciation expense. The first
13 adjustment increases test year depreciation expense by \$254,826. This adjustment
14 reflects plant in service at the end of the test year, *i.e.*, as of December 31, 2009.
15 The second adjustment increases depreciation expense by \$402,985. This
16 adjustment reflects the depreciation accrual rates based on the new depreciation
17 study prepared by Mr. Normand.² The third adjustment increases depreciation
18 expense by \$566,418. This adjustment pertains to amortization of depreciation
19 reserve variances. These variances are caused by differences in the depreciation
20 accrual rates – *i.e.*, new proposed depreciation accrual rates versus the existing
21 Commission-approved depreciation accrual rates. Schedule JJC-2 provides a
22 summary of these adjustments proposed by UES.

² The depreciation study and related testimony prepared by Mr. Normand can be found in UES' initial petition filing, Volume 2, starting at page 301.

1 **Q. How did you develop your recommendation for depreciation expense?**

2 A. I developed my recommendation by utilizing the depreciable plant balances as of
3 December 31, 2009, and depreciation accrual rates that are based on Mr.
4 Normand's depreciation study (Study), with certain modifications. These
5 modifications include changes to proposed average service lives (ASLs) and
6 proposed net salvage rates (NSRs) for certain plant accounts and changes to
7 proposed depreciation reserve deficiencies and related amortization. Schedule
8 JJC-3 provides a summary of my recommendation.

9 **Q. Please summarize your recommendations for ASL and NSR.**

10 A. With respect to changes in ASL, my recommendation incorporates adjustments
11 that both extend and shorten ASL, as compared to UES' proposal. I recommend
12 extending ASL for the following accounts:

- 13 • Station Equipment
- 14 • Poles, Towers and Fixtures
- 15 • Overhead Conductors and Devices
- 16 • Underground Conductors and Devices
- 17 • Communications Equipment

18 I recommend shortening or accelerating ASL for the following accounts:

- 19 • Line Transformers
- 20 • Line Transformer Installations
- 21 • Services
- 22 • Tools, Shop and Garage Equipment

23 Schedule JJC-4 provides a summary of my recommended ASLs.

1

2 With respect to changes in NSR, my recommendation incorporates a slightly
3 lower *negative* NSR for distribution plant and a slightly higher *positive* NSR for
4 general plant. A negative NSR occurs when cost of removal is greater than the
5 gross salvage received at the time of retirement. A reduction to negative NSR has
6 the effect of reducing depreciation accrual rates and related expense. A positive
7 NSR occurs when gross salvage is greater than cost of removal at the time of
8 retirement. An increase in positive NSR also has the effect of reducing
9 depreciation accrual rates and related expense.

10

11 Schedule JJC-4 incorporates my recommended ASL and NSR for each plant
12 account.

13 **Q. Please explain how you developed your recommended average service lives**
14 **(ASL).**

15 A. My recommendation for ASL, by plant account, is based on the following
16 rationale. For certain plant accounts, for which there were no historical data to
17 perform the SPR-Bal analysis, I adopted the ASL proposed by Mr. Normand.³ In
18 cases where the SPR-Bal results are meaningless,⁴ I utilized the existing ASL
19 from the currently approved Commission depreciation accrual rates.

³ Mr. Normand's proposed ASL was used for the following plant accounts: Plant Account 343-Primary Movers, Plant Account 370.1-Meters and Plant Account 370.2 Meter Installations.

⁴ The term "meaningless" is a term used by Mr. Normand to describe SPR-Bal results that fall outside a reasonable range, based, in part, on the Conformance Index (CI). The CI classifies the merit of the SPR-Bal results: i.e., a CI of 0-25 generally indicates *poor* results; 26-50 indicates *fair* results; a CI of 51 to 75 indicates good results, and; a CI above 75 generally indicates *excellent* results.

1 For other plant accounts, I utilized the SPR-Bal results, the same results that were
2 used by Mr. Normand to support in his recommendations for ASL. Specifically, I
3 calculated an average of the 3 highest ranked ASLs from the SPR-Bal results.⁵
4 Then, I compared this average with the existing ASLs and used half of the
5 difference to adjust the existing ASLs. For instance, for Plant Account 364,
6 Poles, Towers and Fixtures, the ASL for the average of the 3 highest ranked SPR-
7 Bal results is 48 years. The existing Commission-approved ASL is 34 years. I
8 add half the difference, or 7 years, to the existing ASL of 34 to calculate my
9 recommended ASL of 41 years. I use only half of the difference in order to
10 smooth out some fairly significant changes in ASL resulting from the SPR-Bal
11 methodology. As noted above, the SPR-Bal methodology shows a 14-year
12 extension in the ASL for Plant Account 364, from an ASL of 34 to an ASL of 48
13 years, a 41 percent increase (*i.e.*, 14 / 34). Based on the magnitude of this change,
14 I recommend that the proposed extensions in ASL be spread over the next two
15 depreciation studies, rather than incorporated 100 percent at this time. Also,
16 when the next depreciation study is performed, more historical data will be
17 available to provide a better estimate of ASL.

⁵ Source: SPR-Bal results are computer generated data that was provided in response to Staff 3-103. My calculations utilize this data by taking the average of the 3 highest ranked ASLs, based on the Conformance Index (CI). Mr. Normand's calculations reflect the average of the 5 highest ranked ASL's plus the 10th ranked ASLs.

1 **Q. Please explain how you developed your recommended net salvage rates**
2 **(NSRs).**

3 **A.** My recommendation for NSRs, by plant account, is based in part on existing
4 approved NSRs, in part on Mr. Normand's proposed changes pursuant to his
5 depreciation study and, in part, on my judgment.

6
7 Although the historical data supports an increase in NSRs, I am concerned about
8 the magnitude of the proposed increase. Schedule JJC-8 provides a side-by-side
9 summary of existing Commission-approved NSRs and the proposed NSRs. The
10 proposed NSRs are significantly more negative for distribution plant than the
11 existing NSRs. For instance, the proposed NSR for Plant Account 364, Poles,
12 Towers and Fixtures, is negative 60 percent, compared to the existing NSR of
13 negative 43 percent, a 40 percent increase. Also, the proposed NSR for Plant
14 Account 365, Overhead Conductors and Devices, is negative 50 percent,
15 compared to the existing NSR of only negative 34 percent, a 47 percent increase.
16 In addition to the magnitude of the proposed changes, I'm concerned that the
17 historical data used by Mr. Normand represent only a fraction of the plant in
18 service as of December 31, 2009; yet the data are used to develop an estimate for
19 NSL for the entire plant in service as of December 31, 2009. For instance, the
20 proposed NSR is based on historical retirement data for Plant Account 364 that
21 represents retirements of only 6 percent of the total plant in service at December
22 31, 2009, and the historical retirement data for Plant Account 365 represents only
23 10 percent of the total plant in service as of December 31, 2009.

1 Based on the magnitude of the change and the limited historical data used to
2 support this change, I recommend that the proposed increases in negative salvage
3 rates for distribution plant be spread over the next two depreciation studies, rather
4 than incorporated 100 percent at this time. When the next depreciation study is
5 performed, more historical data will be available to provide a better estimate of
6 NSR.

7
8 Based on the above, I recommend that half of the proposed increase in NSR be
9 incorporated at this time. To illustrate my recommendation, half of the proposed
10 increase in NSR for Plant Account 364 is 8.5 percentage points ($60\% - 43\% / 2 =$
11 8.5%). By adding 8.5 percentage points to the existing NSL of negative 43
12 percent, I recommend NSR of negative 51.5 percent. My recommendation
13 represents a 20 percent increase in NSL (i.e. $8.5\% / 43\% = 20\%$).

14 With respect to NSR for general plant, Mr. Normand's study proposes zero
15 positive salvage. The study indicates that zero is used because of the lack of
16 historical data.⁶ However, the existing positive net salvage rates are 12 percent
17 for Office Furniture and Equipment and 8 percent for Tools, Shop and Garage
18 Equipment. In my view, it is not appropriate to reduce existing positive net
19 salvage to zero, particularly given the lack of historical data to support the
20 change. Based on the above, I believe it is appropriate and reasonable to continue
21 with the existing NSR.

⁶ Source: UES Initial Petition Filing, Depreciation Study, Bates page 349.

1 **Q. Based on your modifications to proposed ASR and NSR, what depreciation**
2 **expense do you recommend?**

3 A. Based on my modifications to proposed ASR and NSR, I recommend a
4 depreciation expense of \$7,161,724, a reduction of \$648,954 from the proposed
5 level of \$7,810,678. Schedule JJC-4 provides a summary of my calculation of
6 depreciation expense.

7 **Q. Please summarize your recommendation for amortization of depreciation**
8 **reserve variances.**

9 A. Reserve variances result from booked depreciation reserves being different from
10 proposed or recommended depreciation reserves. This reserve difference can be
11 either a deficiency or a surplus. The reserve imbalance in this case is a
12 deficiency, *i.e.*, the actual booked depreciation reserve is less than what it would
13 have been, had the reserve had been calculated using the proposed or
14 recommended depreciation accrual rates.

15

16 The Company proposes a reserve deficiency of \$6,495,348 and annual
17 amortization of \$566,418.

18

19 I recommend a reserve deficiency of only \$1,060,627 and annual amortization of
20 \$132,578 per year.

21 My calculated deficiency is lower than the proposed deficiency because my
22 recommended depreciation accrual rates are lower than the proposed rates. My
23 lower depreciation accrual rates, in turn, result in lower calculated depreciation

1 reserves and a lower deficiency. Schedule JJC-5 provides a summary of my
2 calculation of the reserve deficiency and annual amortization.

3 **Q. Please continue by explaining your recommendation for amortization**
4 **expense for software.**

5 A. Amortization relates to the periodic allocation of costs and is generally
6 determined on a straight-line basis, with no provision for net salvage. The
7 amount of amortization charged to each period is determined by dividing the cost
8 by the number of periods of expected use.

9
10 The Company's practice is to calculate amortization by vintage year – *i.e.*, each
11 plant balance is identified by year of purchase (vintage) and amortization expense
12 is calculated for the original cost for each vintage.⁷

13
14 My recommendation mirrors the Company's amortization accounting for
15 software, specifically software costs recorded in two plant accounts: Plant
16 Account 303, Intangible Plant Accounts, and Plant Account 399, Miscellaneous
17 General Equipment. For these accounts, I recommend \$266,188 for
18 amortization, based on a known and measurable adjustment that utilizes
19 amortization for the 12month period ending December 31, 2010. Schedule JJC-3
20 provides a side-by-side comparison of amortization of software for the test year,
21 the proposal and my recommendation.

⁷ Source: Company response to Data Responses Staff 3-106, Staff 3-108, Technical Session Staff-1 and Technical Session Staff -2.

1 **Q. Please explain any depreciation-related rate base adjustments.**

2 A. I recommend two depreciation-related rate base adjustments. The first pertains to
3 my adjustment to depreciation and amortization expense. Specifically, I'm
4 recommending a reduction in depreciation and amortization expense of
5 \$1,115,178 from the amount proposed. A reduction in depreciation and
6 amortization expense results in a corresponding reduction to accumulated
7 depreciation and amortization reserves. As depreciation and amortization
8 reserves decrease, net plant balances increase.

9
10 The second adjustment pertains to deferred tax credits arising from liberalized
11 depreciation. Liberalized depreciation refers to certain approved methods of
12 computing depreciation expense for state and federal income tax purposes that
13 allows greater depreciation expense for tax purposes than for book purposes. The
14 gap between tax and book depreciation gives rise to a deferred income tax credit
15 which, in turn, gives rise to a deduction from rate base. Since my
16 recommendation for book depreciation and amortization is \$1,115,178 lower than
17 the amount proposed, the gap between book depreciation expense and tax
18 depreciation expense is widened by a corresponding amount, thereby increasing
19 the amount that is eligible for deferred income tax treatment. The deferred tax
20 credit is calculated by using a combined federal and state income tax rate of
21 40.525 percent, resulting in an increase in the deferred tax credit and a
22 corresponding reduction to rate base of \$451,926 (*i.e.*, \$1,115,178 x 40.525%).

1 The combination of both adjustments increases rate base by \$663,252 (*i.e.*,
2 \$1,115,178 less \$451,926). Schedule JJC-6 provides a summary of my
3 calculations.

4

5 **Pension Expenses**

6 **Q. What is your recommendation for pension expenses?**

7 A. I recommend \$885,466 for pension expense, a reduction of \$312,603 from the
8 Company's proposed amount of \$1,198,069.

9 **Q. Please identify the expense components of pension expenses and provide a**
10 **definition of each component.**

11 A. The major expense components and definitions are as follows:

- 12 • *Service costs*: actuarially determined present value of benefits attributed
13 to services provided by employees during the current period.
- 14 • *Interest costs*: increase in projected benefit obligation due to the passage
15 of time.
- 16 • *Expected Return on Plan Assets*: estimated return earned by the
17 accumulated fund assets during the year.
- 18 • *Amortization of costs that are not yet recognized as expense*: prior service
19 cost attributable to plan amendments including provisions to increase or
20 decrease benefits for employee service provided in prior years;
- 21 • *Amortization of Net (Gain)/Loss*: gains or losses attributable to changes in
22 the market value of plan assets and changes in actuarial assumptions that
23 affect the amount of projected benefit obligation;

- *Bill-Out Component:* costs that are billed out to capital/other projects.

Q. Have you compared test year pension expenses with proposed pension expenses?

A. Yes. Overall, proposed pension expenses are 37 percent higher than pension expenses incurred in the test year. Schedule JJC-9 summarizes the comparison of proposed and test year pension expenses.

Q. What is causing the increase in pension expenses?

A. Most of the increase is due to a significant increase in one component, amortization of net (gain)/loss. Specifically, the amount proposed is \$1,050,418 versus the test year amount of \$709,853, an increase of \$340,565, or approximately 48 percent.

Q. How was the proposed amount for pension expenses pertaining to amortization of net (gain)/loss developed?

A. The proposed amount was based on the actuarial report for fiscal year ended December 31, 2010. Specifically, the amount of pension expenses pertaining to amortization of net (gain)/loss is \$1,050,418.

Q. How did you develop your recommended amount for pension expenses pertaining to amortization of net (gain)/loss?

A. According to a discovery response, UES advised that the proposed amount for amortization of gain/loss represents an allocation of a portion of the total plan's amortization of net (gain)/loss.⁸ According to UES, this allocation is based on each of the Unitil companies' relative level of total plan assets. The actuarial

⁸ Source: Response to Technical Session Staff No. 3, October 14, 2010.

1 report for Unitil's total plan indicates that UES' relative level of plan assets at the
2 end 2010 is 30.67 percent of the total plan assets.⁹ I multiplied the total plan
3 amount for amortization of net (gain)/loss of \$2,405,358 by 30.67 percent to
4 determine the UES portion of amortization of net (gain)/loss, or \$737,815 (*i.e.*
5 \$2,405,358 x 30.67%). Schedule JJC-9 summarizes my recommendation.

6

7 **Post Employment Benefits Other Than Pensions (PBOP's)**

8 **Q. What is your recommendation for PBOP expenses?**

9 A. My recommendation for PBOP expenses is \$715,526, the same amount as
10 proposed by UES.

11 **Q. How did you develop your recommended amount for PBOP's expenses?**

12 A. The amount is taken from the actuarial report for the fiscal year ending December
13 31, 2010. One component is not covered by the actuarial report – *i.e.* the amount
14 pertaining to bill outs to capital and other projects. For this component, I am
15 adopting UES' proposed amount, a credit amount of \$541,801. Schedule JJC-10
16 summarizes my recommendation.

17

18 **401k Expenses**

19 **Q. What is your recommendation for 401k expenses?**

20 A. My recommendation for 401k expenses is \$185,973, the same amount as
21 proposed by UES. The proposed amount is \$56,991 higher than the test year
22 amount due to more employees choosing the 401k option.

⁹ Source: Response to Staff 1-6, Attachment 2, page 1 of 4.

1 **Medical and Dental Expenses**

2 **Q. What is your recommendation for medical and dental expenses?**

3 A. My recommendation for medical and dental expenses is \$742,527, the same
4 amount as proposed. The proposed amount is \$48,029 higher than the test year
5 amount of \$694,498, an increase of less than 7 percent.
6

7 **Summary of Testimony**

8 **Q. Please summarize your testimony by providing a comparison of the**
9 **Company's proposed amounts and your recommended amounts.**

10 A. The following table provides a comparison of the Company's proposed amounts
11 and my corresponding recommendations.

12 Table I
13 Summary of Proposed and Recommended Amounts
14

	<u>Proposed</u>	<u>Recommend</u>	<u>Increase/ (Decrease)</u>	<u>Schedule Reference</u>
15 Depreciation	\$ 8,377,096	\$ 7,294,302	\$(1,082,794)	JJC-4,5,7,8
16 Amortiz. of Software	\$ 298,572	\$ 266,188	\$ (32,384)	JJC-3
17 Pensions	\$ 1,198,069	\$ 885,466	\$ (312,603)	JJC-9
18 PBOP's	\$ 715,526	\$ 715,526	\$ 0	JJC-10
19 401k	\$ 185,973	\$ 185,973	\$ 0	
20 Med. & Dental Costs	<u>\$ 742,527</u>	<u>\$ 742,527</u>	<u>\$ 0</u>	
21 Total Expense Items	<u>\$11,517,762</u>	<u>\$10,089,982</u>	<u>\$(1,427,781)</u>	
22				
23 Rate Base Adjust.	<u>\$ 0</u>	<u>\$ 663,252</u>	<u>\$ 663,252</u>	<u>JJC-6</u>
24				
25				

26 **Q. Do you have any other comments?**

27 A. Yes. Two days before Staff testimony was due, UES filed an Amendment to its
28 Initial Petition, with Supplemental Testimony and Schedules of Mark H. Collin.
29
30 Other than noting that the filing deals with projected 2011 pension and PBOP
31
32

1 costs which are well beyond the test year, I have not reviewed that testimony nor
2 have I taken it into consideration in my testimony.

3 **Q. Does that complete your testimony?**

4 **A.** Yes, it does, thank you.