STATE OF CONNECTICUT
PUBLIC UTILITIES REGULATORY AUTHORITY

DOCKET NO. 17-10-46

APPLICATION OF
THE CONNECTICUT LIGHT AND POWER COMPANY DBA EVERSOURCE ENERGY
TO AMEND ITS RATE SCHEDULES

TESTIMONY OF

NED W. ALLIS

ON BEHALF OF

THE CONNECTICUT LIGHT AND POWER COMPANY DBA EVERSOURCE ENERGY

NOVEMBER 22, 2017

TABLE OF CONTENTS

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I. INTRODUCTION

Q. Please state your name and address.

A. My name is Ned W. Allis. My business address is 207 Senate Avenue, Camp Hill, Pennsylvania, 17011.

Q. Are you associated with any firm?

A. Yes. I am associated with the firm of Gannett Fleming Valuation and Rate Consultants, LLC ("Gannett Fleming").

Q. How long have you been associated with Gannett Fleming?

A. I have been associated with the firm since 2006.

Q. What is your position with the firm?

A. I am Project Manager, Depreciation and Technical Development.

Q. On whose behalf are you testifying in this case?

A. I am testifying on behalf of The Connecticut Light and Power Company dba Eversource Energy ("CL&P" or the "Company").

Q. Please state your qualifications.

A. I have over ten years of depreciation experience, which includes expert testimony in seventeen cases before six regulatory commissions. I have also

worked on over 100 depreciation assignments, which includes assisting other expert witnesses from my firm in numerous U.S. jurisdictions and two Canadian provinces. Please refer to Exhibit NWA-1 for additional information on my qualifications, which includes my leadership in the Society of Depreciation Professionals ("Society") and participation as a faculty member for depreciation training conducted by the Society.

II. PURPOSE OF TESTIMONY

Q. What is the purpose of your testimony?

A. My testimony will support and explain the depreciation study performed for CL&P attached hereto as Exhibit NWA-2 ("Depreciation Study"). The Depreciation Study sets forth the calculated annual depreciation accrual rates by account as of December 31, 2016.

Q. Please summarize the results of your Depreciation Study.

A. The depreciation rates set forth in the Depreciation Study as of December 31, 2016 appropriately reflect the rates at which the full cost of CL&P's assets should be recovered through depreciation expense. These rates are based on the most commonly used methods and procedures for determining depreciation rates. The service life and net salvage estimates are based on widely used methods and the depreciation rates are based on the average service life procedure and remaining life method.

Q. Are the recommended depreciation accrual rates presented in the Depreciation Study reasonable and applicable to the plant in service as of December 31, 2016?

A. Yes, they are. Based on the Depreciation Study, I am recommending depreciation rates using the December 31, 2016 plant and reserve balances for approval.

Q. What is the effect of the recommended depreciation accrual rates?

A. As explained in more detail later in my testimony, the Depreciation Study results in an increase of approximately $52.2 million in depreciation expense as of December 31, 2016. This increase is primarily the result of two factors. The first is the recommendation for more negative net salvage estimates in the Depreciation Study. As noted by the Public Utilities Regulatory Authority ("Authority") in its final decision in Docket No. 14-05-06, the Company's expectations in the previous depreciation study (referred to as the "2013 Depreciation Study") were that more negative net salvage estimates would be needed in the future.[1] Thus, the negative net salvage estimates resulting from my study, which are consistent with the Company's historical net salvage data, are not unexpected.

The second factor causing the increase in depreciation expense is the updated balances used in the depreciation calculations, as well as the expiration of credits to depreciation expense based on the theoretical reserve imbalance determined in the depreciation study filed in Docket No. 09-12-05 (referred to as the "2009 Depreciation Study"). As I will discuss in more detail in Section IV.B of this testimony, over half of the increase in depreciation expense recommended in the

[1] See p. 36 of the Authority's decision in Docket No. 14-05-06.

study is the combination of the expiration of these credits and the impact of updated balances on the remaining life depreciation calculations. That is, while changes to the service life and net salvage estimates also contribute to the overall change in depreciation expense, the most significant factor in the increase in depreciation expense is the result of the combination of the expiration of the credits to depreciation expense and updating the depreciation rates to reflect current plant and reserve balances.

III. DEPRECIATION STUDY

Q. Please define the concept of depreciation.

A. The Uniform System of Accounts defines depreciation as:

> Depreciation, as applied to depreciable electric plant, means the loss in service value not restored by current maintenance, incurred in connection with the consumption or prospective retirement of electric plant in the course of service from causes which are known to be in current operation and against which the utility is not protected by insurance. Among the causes to be given consideration are wear and tear, decay, action of the elements, inadequacy, obsolescence, changes in the art, changes in demand and requirements of public authorities.[2]

Q. Did you prepare the Depreciation Study filed by CL&P in this proceeding?

A. Yes. I prepared the Depreciation Study, and Exhibit NWA-2 contains a true and

[2] 18 C.F.R. 101 (FERC Uniform System of Accounts), Definition 12.

accurate copy of the Depreciation Study, entitled: "2016 Depreciation Study - Calculated Annual Depreciation Accruals Related to Electric Plant as of December 31, 2016." This report reflects the results of my Depreciation Study for CL&P.

Q. In preparing the Depreciation Study, did you follow generally accepted practices in the field of depreciation?

A. Yes.

Q. What is the purpose of the Depreciation Study?

A. The purpose of the Deprecation Study is to estimate the annual depreciation rates and accruals for CL&P's plant in service for financial and ratemaking purposes and to determine appropriate average service lives, survivor curves and net salvage percentages for each plant account.

Q. Are the methods and procedures of this Depreciation Study consistent with CL&P's past practices?

A. Yes. The methods and procedures used for this study are the same as those utilized in the past by this Company as well as other companies appearing before the Authority. Both the existing rates and the rates determined in the Depreciation Study are based on the average service life procedure and the remaining life method.[3]

Q. Please describe the contents of the Depreciation Study.

A. The Depreciation Study is presented in nine parts. Part I, Introduction, presents

[3] As discussed in Section IV.B of this testimony, the existing depreciation rates also include amortizations of the theoretical reserve imbalance estimated in the 2009 Depreciation Study.

the scope and basis for the Depreciation Study. Part II, Estimation of Survivor Curves, includes descriptions of the methodology of estimating survivor curves. Parts III and IV set forth the analysis for determining service life and net salvage estimates. Part V, Calculation of Annual and Accrued Depreciation, includes the concepts of depreciation and amortization using the remaining life. Part VI, Results of Study, presents a description of the results of my analysis and a summary of the depreciation calculations. Parts VII, VIII and IX include graphs and tables that relate to the service life and net salvage analyses, and the detailed depreciation calculations by account.

The Depreciation Study also includes several tables and tabulations of data and calculations. Table 1 on pages VI-4 and VI-5 of the Depreciation Study presents the estimated survivor curve, the net salvage percent, the original cost as of December 31, 2016, the book depreciation reserve, and the calculated annual depreciation accrual and rate for each account or subaccount. The section beginning on page VII-2 presents the results of the retirement rate analyses prepared as the historical bases for the service life estimates. The section beginning on page VIII-2 presents the results of the net salvage analysis. The section beginning on page IX-2 presents the depreciation calculations related to surviving original cost as of December 31, 2016.

Q. Please explain how you performed your Depreciation Study.

A. I used the straight line remaining life method of depreciation (also referred to as the straight line method and remaining life technique), with the average service

life procedure. The annual depreciation is based on a method of depreciation accounting that seeks to distribute the unrecovered cost of fixed capital assets over the estimated remaining useful life of each unit or group of assets in a systematic and rational manner.

For General Plant Accounts 391.1, 391.2, 393.0, 394.0, 395.0, 397.74, 397.75 and 398.0, I used the straight line remaining life method of amortization.[4] The annual amortization is based on amortization accounting that distributes the unrecovered cost of fixed capital assets over the remaining amortization period selected for each account and vintage.

Q. How did you determine the recommended annual depreciation accrual rates?

A. I did this in two phases. In the first phase, I estimated the service life and net salvage characteristics for each depreciable group (that is, each plant account or subaccount identified as having similar characteristics). In the second phase, I calculated the composite remaining lives and annual depreciation accrual rates based on the service life and net salvage estimates determined in the first phase.

Q. Please describe the first phase of the Depreciation Study, in which you estimated the service life and net salvage characteristics for each depreciable group.

A. The process for the estimation of service lives was based on informed judgment that incorporated a number of factors, including the statistical analyses of historical data; general knowledge of the property studied including the estimates

[4] The account numbers identified throughout my testimony represent those in effect as of December 31, 2016.

used for other electric utilities; and information obtained from field trips and management meetings.

Q. What historical data did you analyze for the purpose of estimating service life characteristics?

A. I analyzed the Company's accounting entries that record plant transactions during the period 1901 through 2016 to the extent available, although the earliest year of data varied by account. The transactions I analyzed included additions, retirements, transfers, sales and the related balances.

Q. What method did you use to analyze the service life data?

A. I used the retirement rate method for most plant accounts. This is the most appropriate method when sufficient retirement data is available, because this method determines the average rates of retirement actually experienced by the Company during the period of time covered by the Depreciation Study.

Q. Please describe how you used the retirement rate method to analyze CL&P's service life data.

A. I applied the retirement rate analysis to each different group of property in the study. For each property group, I used the retirement rate data to form a life table or life tables which, when plotted, show an original survivor curve for that property group. Each original survivor curve represents the average survivor pattern experienced by the several vintage groups during the experience band studied. The survivor patterns do not necessarily describe the life characteristics of the property group. Therefore, interpretation of the original survivor curves is required in order for the life tables to be used as valid considerations in

estimating service life. The "Iowa-type survivor curves" were used to perform these interpretations.

Q. What are "Iowa-type survivor curves" and how did you use such curves to estimate the service life characteristics for each property group?

A. Iowa-type survivor curves are a widely-used group of survivor curves that contain the range of survivor characteristics usually experienced by utilities and other industrial companies. These curves were developed at the Iowa State College Engineering Experiment Station through an extensive process of observing and classifying the ages at which various types of property used by utilities and other industrial companies had been retired.

Iowa-type survivor curves are used to smooth and extrapolate original survivor curves determined by the retirement rate method. The Iowa curves and truncated Iowa curves were used in the CL&P Depreciation Study to describe the forecasted rates of retirement based on the observed rates of retirement and the outlook for future retirements. The estimated survivor curve designations for each depreciable property group indicate the average service life, the family within the Iowa system to which the property group belongs, and the relative height of the mode. For example, the Iowa 50-R0.5 indicates an average service life of 50 years; a right-moded, or R, type curve (the mode occurs after average life for right-moded curves); and a low height, 0.5, for the mode (possible modes for R type curves range from 0.5 to 5).

Q. Did you physically observe CL&P's plant and equipment as part of your Depreciation Study?

A. Yes. In February 2017, I made a field review of CL&P's property as part of this study during to observe representative portions of plant. Field reviews are conducted to become familiar with Company operations and obtain an understanding of the function of the plant and information with respect to the reasons for past retirements and the expected future causes of retirements. This knowledge, as well as information from other discussions with CL&P management, was incorporated in the interpretation and extrapolation of the statistical analyses.

Q. How did your experience in development of other depreciation studies affect your work in this case for CL&P?

A. Because my firm customarily conducts field reviews for depreciation studies, I have had the opportunity to visit many similar facilities and meet with operations personnel at many other companies. The knowledge I have accumulated from those visits and meetings provides me with useful information to draw upon to confirm or challenge my numerical analyses concerning asset condition and remaining life estimates.

Q. Please explain the concept of "net salvage".

A. Net salvage is a component of the service value of capital assets that is recovered through depreciation rates. The service value of an asset is its original cost less its net salvage. Net salvage is the salvage value received for the asset upon retirement less the cost to retire the asset. When the cost to retire the asset exceeds the salvage value, the result is negative net salvage.

Because depreciation expense is the loss in service value of an asset during a defined period (*e.g.*, one year), it must include a ratable portion of both the original cost of the asset and the net salvage. That is, the net salvage related to an asset should be incorporated in the cost of service during the same period as its original cost, so that customers receiving service from the asset pay rates that include a portion of both elements of the asset's service value, the original cost and the net salvage value. For example, the full service value of a $500 distribution pole may also include $350 of cost of removal and $50 gross salvage, for a total service value of $800.

Q. Please describe how you estimated net salvage percentages.

A. The net salvage percentages estimated in the Depreciation Study were based on informed judgment that incorporated factors such as the statistical analyses of historical net salvage data; information provided to me by the Company's operating personnel, general knowledge and experience of the industry practices; and trends in the industry in general. The statistical net salvage analyses incorporates the Company's actual historical data for the period 1999 through 2016, and considers the cost of removal and gross salvage ratios to the associated retirements during the 18-year period. Trends of these data are also measured based on three-year moving averages and the most recent five-year indications.

Q. Please describe the second phase of the process that you used in the Depreciation Study in which you calculated composite remaining lives and annual depreciation accrual rates.

A. After I estimated the service life and net salvage characteristics for each depreciable property group, I calculated the annual depreciation accrual rates for each group using the straight line remaining life method, and using remaining lives weighted consistent with the average service life procedure. The calculation of annual depreciation accrual rates was developed as of December 31, 2016.

Q. Please describe the straight line remaining life method of depreciation.

A. The straight line remaining life method of depreciation allocates the original cost of the property, less accumulated depreciation, less future net salvage, in equal amounts to each year of remaining service life.

Q. Please describe the average service life procedure for calculating remaining life accrual rates.

A. The average service life procedure defines the group or account for which the remaining life annual accrual is determined. Under this procedure, the annual accrual rate is determined for the entire group or account based on its average remaining life and the rate is then applied to the surviving balance of the group's cost. The average remaining life of the group is calculated by first dividing the future book accruals (original cost less allocated book reserve less future net salvage) by the average remaining life for each vintage to determine the annual accruals for each vintage of plant. The average remaining life for each vintage is derived from the area under the survivor curve between the attained age of the vintage and the maximum age. The sum of the future book accruals is then divided by the sum of the annual accruals to determine the average remaining

life of the entire group. The annual depreciation accrual rate is equal to the total of the annual accruals divided by the total original cost for the group or account.

Q. Please describe amortization accounting in contrast to depreciation accounting.

A. Amortization accounting is used for accounts with a large number of units, but small asset values. In amortization accounting, units of property are capitalized in the same manner as they are in depreciation accounting. However, depreciation accounting is difficult for these types of assets because depreciation accounting requires periodic inventories to properly reflect plant in service. Consequently, amortization accounting is used for these types of assets, such that retirements are recorded when a vintage is fully amortized rather than as the units are removed from service. That is, there is no dispersion of retirement in amortization accounting. All units are retired when the age of the vintage reaches the amortization period. Each plant account or group of assets is assigned a fixed period that represents an anticipated life during which the asset will render full benefit. For example, in amortization accounting, assets that have a 20-year amortization period will be fully recovered after 20 years of service and taken off the Company's books at that time, but not necessarily removed from service. In contrast, assets that are taken out of service before 20 years remain on the books until the amortization period for that vintage has expired.

Q. Is amortization accounting utilized for certain plant accounts?

A. Yes. Amortization accounting is currently used for certain General Plant accounts. These accounts are 391.1, 391.2, 393.0, 394.0, 395.0, 397.74, 397.75 and 398.0, which represent less than two percent of CL&P's depreciable plant.

Q. Have you made additional recommendations for these amortization accounts?

A. Yes. In Docket No. 14-05-06, a five-year amortization was recommended and adopted to adjust the unrecovered reserve for these accounts in order to achieve a more stable accrual rate. It has been less than five years since the implementation of this amortization, and as a result this adjustment is not yet completed. For the study in the instant case, I have trued-up the adjustment amount to reflect plant and reserve balances as of December 31, 2016 and recommended completing the amortization over a three-year period.

Q. Please use an example to illustrate how the annual depreciation accrual rate for a particular group of property is presented in your Depreciation Study.

A. I will use Account 367, Underground Conductors and Devices, as an example because it is one of the largest depreciable mass property accounts and represents approximately 17 percent of depreciable plant. The retirement rate method was used to analyze the survivor characteristics of this property group. Aged plant accounting data was compiled from 1908 through 2016 and analyzed in periods that best represent the overall service life of this property. The life tables for the 1908-2016 and 1998-2016 experience bands are presented on pages VII-39 through VII-44 of the Depreciation Study. The life tables display the retirement and surviving ratios of the aged plant data exposed to retirement by

age interval. For example, page VII-39 of the study shows $7,013,369 retired at age 0.5 with $1,008,847,039 exposed to retirement. Consequently, the retirement ratio is 0.0070 and the survivor ratio is 0.9930. These life tables, or original survivor curves, are plotted along with the estimated smooth survivor curve, the 50-R0.5 on page VII-41 of the study.

The net salvage analysis for this account is presented on pages VIII-12 and VIII-13 of the Depreciation Study. The net salvage percentages in this analysis are based on the result of annual gross salvage minus the cost to remove plant assets as compared to the original cost of plant retired during the period 1999 through 2016. This 18-year period experienced negative $63,658,825 ($14,300 - $63,673,125) in net salvage for $93,953,143 plant retired. The result is negative net salvage of negative 68 percent ($63,658,825 /$93,953,143). Based on the overall negative 68 percent net salvage, the most recent five- and three-year averages of negative 56 and 42 percent, as well as the existing negative 20 percent net salvage estimate, knowledge of the property, current practices estimates of other utilities, and Company expectations, it was determined that a negative 40 percent estimate is the most appropriate estimate.

My calculation of the annual depreciation related to the original cost at December 31, 2016, of electric plant is presented on pages IX-22 through IX-24 of the study. The calculation is based on the 50-R0.5 survivor curve, 40 percent negative net salvage, the attained age, and the allocated book reserve. The tabulation sets forth the installation year, the original cost, calculated accrued

depreciation, allocated book reserve, future accruals, remaining life and annual accrual. These totals are brought forward to the table on page VI-4 of the Depreciation Study.

IV. RESULTS OF THE STUDY

Q. What is the impact of the depreciation rates recommended in the Depreciation Study?

A. Based on December 31, 2016 plant balances, the overall impact of the recommended depreciation rates is an increase in depreciation expense of approximately $52.2 million. While this represents a 36% increase in depreciation expense over the expense that results from applying the current depreciation rates to December 31, 2016 plant balances, slightly less than half of the increase is due to the service life and net salvage estimates recommended in the study. Instead, the largest contributor to the increase in depreciation expense is simply due to the impact of updating the depreciation calculations to incorporate current plant and reserve balances, as well as the expiration of depreciation credits established based on the theoretical reserve imbalance calculated in the 2009 Depreciation Study. The recommended service life and net salvage estimates alone result in an increase in depreciation expense of approximately $25.3 million, or 15%, when compared to the depreciation rates that result from applying the currently approved service life and net salvage estimates to December 31, 2016 plant and reserve balances. Exhibit NWA-3 sets forth the proposed depreciation expense compared to the depreciation expense that results from the existing depreciation rates as of December 31,

2016, including the impact of the expiration of the depreciation credits.

Q. What are the primary factors causing the change in depreciation expense as a result of the Depreciation Study?

A. The two primary factors that contribute to the change in depreciation expense are the following:

- Changes to net salvage estimates, which accounts for approximately $21.5 million of the increase in depreciation expense
- The expiration of the seven year and 35-year reserve amortizations based on the theoretical reserve imbalance in the 2009 Depreciation Study, as well as the impact of the calculation of remaining life depreciation rates using current plant balances. The combined impact of these factors results in an increase in depreciation expense of $26.9 million, which is over half of the total increase in depreciation expense.

The service life estimates for most accounts are similar to those incorporated into the existing depreciation rates, and the total changes to service life estimates results in an increase in depreciation expense of approximately $3.8 million. Two accounts that contribute to the impact of the change in service lives are Account 370 (Meters) and Account 373 (Street Lighting and Signal Systems). One of the reasons for shorter service lives for these accounts are changes in technology for the assets in these accounts.

A. Net Salvage Estimates

Q. Please explain the change in net salvage estimates.

A. The change in net salvage results from the need for higher levels of removal costs to be included in the depreciation rates for many distribution plant accounts. In the 2013 Depreciation Study, more negative net salvage estimates were recommended to begin to bring these estimates closer to the statistical indications from the Company's net salvage data. However, the estimates in that study were conservative (i.e., less negative than the data) and, as the Authority noted, the Company's expectation was that net salvage values would have to be more negative in the future.[5] Thus, the net salvage estimates I have recommended in the current study are more negative than those recommended in the previous study. While the net salvage estimates are still somewhat conservative when compared to the data for many accounts, they are consistent with expectations in the previous study.

In the Company's testimony in Docket No. 14-05-06, Company witness, John Spanos, presented a comparison of incurred net salvage (i.e., what the Company spent in cost of removal less gross salvage) to the amount accrued for net salvage in each year. The table below updates this comparison to include the years 2014, 2015 and 2016.[6] Net salvage accruals should typically be expected to exceed net salvage expenditures, and thus this table provides further evidence that more negative net salvage estimates have been and continue to be necessary.Distribution Plant
Incurred vs. Accrued Cost of Removal
for the Period 2008 - 2016

[5] See p. 36 of the Authority's final decision in Docket No. 14-05-06.

[6] The incurred cost of removal has also been updated to reflect the years in which cost of removal recorded to RWIP were incurred.

	Incurred	Accrued
2008	31,394,391	9,795,406
2009	22,680,806	12,239,899
2010	19,867,214	12,944,564
2011	23,567,135	13,585,052
2012	39,605,613	14,603,464
2013	32,686,829	15,520,100
2014	21,077,811	16,056,231
2015	20,963,540	23,311,430
2016	26,188,572	24,364,535

Q. Please explain why net salvage accruals should be expected to be higher than current net salvage expenditures.

A. For a company such as CL&P, net salvage costs should be expected to be higher in the future than current net salvage costs due to factors such as the mortality characteristics of the Company's assets, system growth, and the age of the Company's assets. The accrual for net salvage is related to the current plant in service, whereas the net salvage cost is related to plant being retired. As a result of system growth, as well as the concept that retirements are expected to increase as property ages, more assets will be retired in the future than are currently being retired. Cost of removal is a function of the number of assets retired in a given year. For example, the total cost to remove 1,000 poles is typically much higher than the cost to remove 100 poles. Thus, because more assets will be retired on an annual basis in the future, cost of removal will be higher in the future than the cost to remove plant currently being retired. For this reason, net salvage accruals should be expected to be higher than current net salvage expenditures.

B. Theoretical Reserve Imbalance and Reserve Credits

Q. What is a theoretical reserve imbalance?

A. A theoretical reserve imbalance ("TRI" or "imbalance") is calculated as the difference between a company's book accumulated depreciation, or book reserve, and the calculated accrued depreciation, or theoretical reserve. I should note that different terms may also be used for the theoretical reserve imbalance, including "theoretical reserve variance," "reserve excess" or "reserve surplus" (when the book reserve exceeds the theoretical reserve), or "reserve deficit" or "reserve deficiency" (when the book reserve is less than the theoretical reserve). For this testimony I will use the term "theoretical reserve imbalance," which is consistent with the terminology used in the National Association of Regulatory Utility Commissioners' ("NARUC") publication Public Utility Depreciation Practices.

Q. What is the book reserve?

A. The book reserve, also referred to as the "book accumulated depreciation" or the "accumulated provision for depreciation," is a running total of historical depreciation activity. It is equal to the historical depreciation accruals, less retirements and cost of removal, plus historical gross salvage. The book reserve also represents a reduction to the original cost of plant when calculating rate base.

Q. What is the theoretical reserve?

A. The theoretical reserve is an estimate of the accumulated depreciation based on the current plant balances and depreciation parameters (service life and net salvage estimates) at a specific point in time. It is equal to the portion of the depreciable cost of plant that will not be allocated to expense through future whole life depreciation accruals based on the current forecasts of service life and net salvage. The theoretical reserve is also referred to as the "Calculated Accrued Depreciation" or "CAD."

Q. Is the theoretical reserve the "correct" reserve?

A. No, the theoretical reserve is an estimate at a given point in time based on the current plant balances and current life and net salvage estimates. It can provide a benchmark of a Company's reserve position, but it is should not be thought of generally as the "correct" reserve amount.

In Wolf and Fitch's Depreciation Systems, this point is explained as follows on page 86:

> The CAD is not a precise measurement. It is based on a model that only approximates the complex chain of events that occur in an actual property group and depends upon forecasts of future life and salvage. Thus, it serves as a guide to, not a prescription for, adjustments to the accumulated provision for depreciation.

Q. Can the reserve imbalance change from one study to the next?

A. Yes. Reserve imbalances generally change from study to study as more

information becomes available. Indeed, this is the case for CL&P. While a reserve "surplus" was estimated in the 2009 Depreciation Study, reserve "deficiencies" resulted from the 2013 Depreciation Study and the 2016 Depreciation Study.

Q. If a TRI exists, does a utility normally take specific action to address the imbalance?

A. No. In most jurisdictions, an explicit adjustment to the book reserve is not made. Instead, the remaining life technique is used. When using remaining life technique, there is an automatic adjustment, or self-correcting mechanism, that will increase or decrease depreciation expense to account for any imbalances between the book and theoretical reserves.

Q. Please explain the reserve amortizations currently in place for CL&P.

A. The 2009 Depreciation Study resulted in an estimated theoretical reserve imbalance calculated to be $380.5 million (or a reserve "surplus" of $380.5 million).[7] The Authority established two separate amortizations of this reserve imbalance that have been in place since the conclusion of Docket No. 09-12-05. For the first amortization, the Company was to amortize a portion of this reserve imbalance over a seven-year period, which resulted in a reduction to depreciation expense of approximately $10.6 million per year. This seven-year amortization will expire in June of 2017. Because the seven-year amortization reduced depreciation expense to a level below what would normally result from the

[7] See p. 72 of the Final Decision in Docket No. 09-12-05.

service life and net salvage estimates for the Company's assets, it was a credit to customers for the past seven years. Thus, while the expiration of this amortization results in a higher level of depreciation expense, this is the result of ending this credit and bringing depreciation more in line with what is supported by a depreciation study.

The remaining portion of the reserve imbalance was to be amortized over a period of approximately 35 years, which corresponded to the remaining lives of the assets estimated in the 2009 Depreciation Study.[8] Thus, the 35-year amortization was in effect consistent with the use of the remaining life technique. Because the book reserve was larger than the theoretical reserve in the 2009 Depreciation Study, the 35-year amortization also was a credit to depreciation expense. As with the seven-year amortization, the 35-year amortization was also continued in the 2013 Depreciation Study. Thus, customers have received reduced depreciation expense through both of these credits for the past seven years.

Q. What is the theoretical reserve imbalance based on the results of your study?

A. Based on the survivor curve and net salvage estimates in my study, the theoretical reserve imbalance as of December 31, 2016 is approximately negative $434 million (or a reserve "deficiency" of approximately $434 million). Thus, from the 2009 Study to the current the study, the theoretical reserve

[8] See p. 76 of the Final Decision in Docket No. 09-12-05.

imbalance has changed from a reserve "surplus" to a reserve "deficiency."

Q. What have you recommended in the current Depreciation Study?

A. For the current study, I have recommended the use of the remaining life technique. The remaining life technique simply allocates the unrecovered depreciable base (i.e., original cost less net salvage less accumulated depreciation) over the estimated remaining life for each depreciable group. This technique, which has been used in Connecticut for many years,[9] automatically adjusts the depreciation rate to account for any reserve imbalances.

As noted previously, the seven-year amortization will expire in June of 2017, and therefore there will no longer be the $10.6 million credit in depreciation expense resulting from this amortization. Further, the 35-year amortization from the 2009 Depreciation Study was based on the remaining lives of the assets estimated in that study. The remaining life depreciation rates calculated in the depreciation study incorporate the impact of any estimated reserve imbalances in the current study, and thus the 35-year amortization is no longer necessary. In total, the combination of the conclusion of these credits, as well as the impact on the current theoretical reserve "deficiency" on the calculation of remaining life depreciation rates, results in an increase in depreciation expense of $26.9 million.

[9] Ibid.

V. ACCOUNT 303 MISCELLANEOUS INTANGIBLE PLANT - SOFTWARE

Q. Please address the depreciable lives for Account 303, Miscellaneous Intangible Plant – Software.

A. In Docket No. 14-05-06, the Authority directed the Company to "perform a complete and well documented analysis of expected service periods for its existing and new software systems prior to its next rate proceeding."[10] The Company has performed this analysis and has revised the lives for software assets accordingly. For most software systems, the current 5 and 10 year lives were determined to be appropriate. However, going forward, the Company is proposing to use a 15-year life for certain major software systems. The Company's analysis is provided as Exhibit NWA-4 to my testimony.

Q. Does this conclude your direct testimony?

A. Yes.

[10] See p. 40 of the Final Decision in Docket No. 14-05-06.