MISSOURI PUBLIC SERVICE COMMISSION

COMMISSION STAFF DIVISION

ENGINEERING ANALYSIS DEPARTMENT

SURREBUTTAL TESTIMONY

OF

STEPHEN B. MOILANEN

LIBERTY UTILITIES (MIDSTATES NATURAL GAS) CORP., d/b/a LIBERTY UTILITIES

CASE NO. GR-2018-0013

Jefferson City, Missouri
May 2018

1   **TABLE OF CONTENTS OF**

2   **SURREBUTTAL TESTIMONY OF**

3   **STEPHEN B. MOILANEN**

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5   **d/b/a LIBERTY UTILITIES**

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15

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Q.   Please state your name and business address.

A.   My name is Stephen B. Moilanen. My business address is Missouri Public

Service Commission, P.O. Box 360, Jefferson City, MO 65102.

Q.   What is your position at the Commission?

A.   I am a Utility Regulatory Engineer in the Engineering Analysis Unit,

Operational Analysis Department, Commission Staff Division.

EXECUTIVE SUMMARY

Q.   What is the purpose of your surrebuttal testimony?

A.   The purpose of my Surrebuttal Testimony is to respond to the rebuttal

testimony of Company Witness Dane A. Watson, OPC witness John A. Robinett, and

Company Witness James A. Fallert. In addition, I will use my testimony to provide

additional details of the depreciation study I performed on Liberty Midstates – MO's

property and how it compares to the depreciation study that Liberty Midstates – MO

provided in direct and rebuttal testimony. Finally, I will explain updated proposed life

parameters for property owned by Liberty Midstates – MO and why I chose to update the

parameters.

1   Q.   What specific component of Mr. Watson's rebuttal testimony are you

2   responding to?

3   A.   In his rebuttal testimony, Mr. Watson provided an updated depreciation

4   study that only includes property located in Missouri and also incorporates additional

5   mortality data up to December 31, 2017. In addition, Mr. Watson highlighted the

6   accounts to which Staff and the Company disagreed regarding proposed depreciation

7   rates at the time of his Rebuttal Testimony, and provided detailed explanation supporting

8   the Company's position for each contested parameter. Also, Mr. Watson proposed an

9   amortization of the imbalance between theoretical and book depreciation reserve.

10   In response, I will describe my general approach in my depreciation study. In

11   addition, I will provide updated depreciation parameters I am proposing based on updates

12   to my study. Finally, I will provide my rationale regarding why I am opposed to the

13   Company's proposal to collect an amortization of theoretical and book depreciation

14   reserve imbalances.

15   Q.   What specific component of Mr. Robinett's rebuttal testimony are you

16   responding to?

17   A.   In his rebuttal testimony, Mr. Robinett expresses concerns regarding my

18   previous depreciation study. I will address these concerns. In addition, I'll respond to

19   OPC's adverseness to the use of General Plant Amortization.

20   Q.   What specific component of Mr. Fallert's Rebuttal will you respond to?

21   A.   I will respond to a comment Mr. Fallert made regarding depreciation rates

22   of assets in the Shared Services 399 subaccounts.

UPDATES TO STAFF DEPRECIATION STUDY

1

2   Q.   Did you perform updates to the depreciation study described in the Cost of

3 Service Report submitted by Staff on March 2, 2018, and if so, why did you perform

4 updates?

5   A.   Yes, I updated the depreciation study I performed. There are two reasons I

6 updated the study. First, I received responses to Staff Data Request Nos. 97.3 and 318 on

7 April 5th and April 3rd, respectively, which provided new information regarding mortality

8 history and net salvage history. These DRs and my reasons for submitting them are

9 included in Staff's Cost of Service Report on pages 84 and 86. Second, prior data

10 contained errors, which the Company subsequently corrected.

11   Q.   Can you describe the errors you referenced?

12   A.   Yes, but to avoid confusion I feel it is prudent to first explain what data I

13 utilized for my original study described in Staff's Cost of Service Report, prior to

14 updates. I required data to estimate two parameters: average service life and net salvage.

15 As explained in the Cost of Service Report, average service life and net salvage are the

16 two parameters used to calculate depreciation rates.

17   First, to determine Staff's proposed average service life parameters, I originally

18 used a data set sent to me by the Company via email on January 4, 2018. It included

19 Missouri-specific data ranging from the 1950's to September 30, 2015. It is my

20 understanding Company witness Dane A. Watson put the data set together, and it was

21 then forwarded to me by Company witness Charles Evans.

22   To add, there were additional documents submitted to Staff containing Missouri-

23 specific data between the dates of October 1, 2015 and December 31, 2017, in response

24 to Staff's DR 97.1. I requested this information so I could incorporate all available data

1 into my study; however, I elected not to use all of the data provided in response to

2 DR 97.1 because I recognized inconsistencies between it and the data that was sent to me

3 by Mr. Evans on January 4th. This is described in the Cost of Service Report on page 84,

4 lines 18 to 29.

5   Second, to examine net salvage history I utilized three files. To begin, I used the

6 Missouri-specific salvage data provided by Mr. Watson in exhibit DAW-3 of his direct

7 testimony, which provided available salvage data up to September 30, 2015. In addition, I

8 utilized the response to Staff's DR 301, which provided specific information regarding

9 cost of removal and gross salvage between the dates of October 1, 2015 and December

10 31, 2017. Finally, I used portions of the response to DR 97.1, which included retirement

11 information between the dates of October 1, 2015 and December 31, 2017. Despite the

12 concerns I had at the time regarding the vintage information in the response to DR 97.1, I

13 made the assumption that the retirement year and account information provided in the

14 response were correct.

15   Now, I will explain the errors. First, in its response to DR 97.3, the Company

16 corrected certain errors it had located in the data set originally sent in response to

17 DR 97.1. It appears to me from comparing the updated and original data sets that several

18 errors were logged that incorrectly reflected accounts and vintage years.

19   Second, the Company corrected a small error involving the cost of removal

20 booked in account 376.0. This correction was applied to the Company's response sent to

21 Staff's DR 301.

22   Finally, I recently noted additional apparent errors in the data set that was sent to

23 me on January 4. I asked the Company to explain and expand on these apparent errors in

24 its response to DR 365, which was due May 3.

1   Q.   Can you explain what you mean by "apparent errors" you believe are

2   present in the original data set that was sent on January 4th to estimate average service

3   life?

4   A.   After I applied corrections to the data that was previously supplied to me,

5   the Company sent me a new data set on April 7, 2018 to conduct an analysis on average

6   service life. This data set was supposed to contain the same information contained in the

7   first data set sent to me on January 4th, with the exception of the inclusion of new plant

8   records for the years 2015, 2016, and 2017. Upon performing a consistency check

9   between the two data sets, however, I observed that many records prior to 2015 were not

10   consistent between the two data sets. After examining the data set sent on January 4th

11   more closely, I believe the January 4th data set has errors that stem from the records for

12   the vintage plant balances ending on September 30, 2015. For my study updates, I made

13   the logical assumption that the data set sent on April 7th accurately depicts plant history

14   as intended, and submitted DR 365 to the Company to verify this.

15   Q.   In regards to your new depreciation study, were the updates to your study

16   significant?

17   A.   The updates to my study were very significant; I essentially re-analyzed

18   each account from scratch using the updated data sent to me on April 7th. Given the

19   apparent errors in the data set sent to me on January 4th, which was the sole data set I

20   originally used to estimate average service life, I considered my original estimates for

21   average service life questionable.

22   The updates to net salvage estimations were less robust, but some significant

23   updates did occur due to corrections applied to the data sent to me previously. In

1   addition, I caught an error of my own for Account 367.0, and updated the proposed net

2   salvage accordingly.

3   I'd also like to mention that net salvage for account 376.2 (Plastic Main Pipes)

4   changed significantly, due to the fact that I provided separate rates for Account 376.2 and

5   376.0/376.1 in my updated study, versus my original study in which I supplied a single

6   proposed rate for all three 376 subaccounts.

7   Q.   How do the results of your study compare to that of the Company now that

8   you've provided updates?

9   A.   The average life parameters I am proposing in my updated study are more

10   closely aligned with those originally proposed by the Company.

11   **DESCRIPTION OF STAFF DEPRECATION STUDY**

12   Q.   Why are you providing a description of Staff's depreciation study?

13   A.   After receiving and reflecting upon feedback from my relevant sections of

14   Staff's Cost of Service Report, I feel I need to provide more detail regarding how I

15   developed my proposed depreciation parameters so others can understand the relevance

16   of the parameters. I am including this discussion in my Surrebuttal Testimony and have

17   also provided an attachment detailing each account assigned a depreciation rate and my

18   reasons for assigning the parameters I chose.

19   Q.   Could you provide a reminder of what variables a depreciation rate is

20   dependent on?

21   A.   For this case, and for each plant account, Staff used two variables to

22   calculate proposed depreciation rates. These variables are (1) average service life and

23   (2) net salvage. As expressed in the Cost of Service Report, depreciation rates are

24   calculated with the following equation:

1   *Depreciation Rate = (100% - Net Salvage %) ÷ Average Service Life*

2   These variables are estimated for each plant account. Each variable proposed by Staff

3   was determined by studying records of observed additions and retirements to plant

4   accounts and records of observed net salvage maintained by the Company.

5   Q.   Could you provide a simplified overview of how you developed proposed

6   average service lives of plant accounts intended for individuals that aren't familiar with

7   depreciation analysis?

8   A.   In general, it was a four step process for each account.

9   First, I analyzed available data using Staff's computer software to determine what

10   percentage of property was retired during each year of service life. This information was

11   tabulated into a "life table" by the software.

12   Second, I plotted the results from the life table onto a graph. Along the x-axis of

13   the graph, each consecutive age of plant property was presented. Along the y-axis of the

14   graph, the amount of plant property still in service, as a percentage of the original cost of

15   the plant property, was shown (called "percent surviving" for short). Each age along the

16   x-axis had a point plotted from the life table showing the percent surviving at that

17   specific age; collectively, these points are called a "survivor curve".

18   Third, I fit a model curve to the survivor curve. When I say I "fit", I mean I chose

19   a model curve that shows a similar retirement pattern as shown on the survivor curve.

20   The model curves, called "Iowa Curves", are empirical (meaning they were developed

21   using observations rather than scientific method or theory) and were created in an

22   academic setting. Each model curve is assigned an average service life.

23   Fourth, I used the average service life assigned to the fitted Iowa Curve as the

24   assumed average service life of the plant account being analyzed, and then judged its

1 reasonableness. If I believed the average life was reasonable, I assigned it to the account

2 as the depreciation parameter for average service life.

3   Some accounts didn't have enough information to plot a survivor curve to which I

4 could reliably fit a model curve. In these cases I used judgement as described in Schedule

5 SBM-s1.

6   Q.   Why are Iowa curves fit to the plot of retirement data?

7   A.   There are two primary reasons.

8   First, the retirement data, as shown on the plot, may not reach 0% surviving. For

9 example, if the utility first put property into service in the year 1980, and there is still

10 property in that account that was placed in service in 1980, the plot ends before reaching

11 "0" on the y-axis. The model curve completes the full retirement pattern – from 100%

12 surviving all the way to 0% surviving, even if the survivor curve does not.

13   Second, tabulation of the life table is a statistical process. It uses observed plant

14 retirements and plant additions to plot the percent surviving at each age; however, there is

15 always variability in statistical data. The Iowa Curve "smooths" the plot variability so

16 that retirements in the account can be assumed to follow a clear pattern.

17   Q.   How did you fit the Iowa curve to the plot of retirement data?

18   A.   The software uses a mathematical fitting process called the "mean of the

19 squares" method. This method takes the difference between the y-axis value of each point

20 on the survivor curve and the Iowa curve, and then squares that difference. The average

21 (mean) of the squared differences is calculated, and the Iowa Curve that has the lowest

22 value from the calculation is chosen as the model curve, because it is the model curve

23 that has the least overall variation between the survivor curve and the Iowa Curve.

1   I generally did not fit to the entire survivor curve; Staff's software allows me to fit

2 an Iowa curve to the survivor curve only up to a preselected age; any point past the

3 selected age is omitted from the fitting process.

4   Q.   Why did you omit some points on the survivor curve from the fitting

5 process, and how did you decide what age to fit to?

6   A.   Generally speaking, the older ages on a survivor curve represent a lower

7 statistical sample size, making those points more subject to variation and more likely to

8 go several years without retirements. For this reason, I used my best judgement to decide

9 what age to fit the curve to.

10   Q.   Are your chosen Iowa curves included with your testimony?

11   A.   Yes. Schedule SBM-s1 includes a brief description of why I chose the

12 depreciation parameters I did for each account, and includes a screenshot of my curve

13 matching software for the accounts in which it was relevant. For reference, I also

14 included the Iowa Curve chosen by the Company for the same account.

15   Q.   How did you decide if there was not enough data to fit an Iowa Curve?

16   A.   My approach was to fit a curve if there was 85% or less surviving at the

17 final point on the survivor curve. When I selected an age to fit to, I attempted to ensure

18 there was 85% surviving or less.

19   Q.   How did you determine the net salvage parameter for each account?

20   A.   Using Staff software, I tabulated the net salvage data from each account

21 into various averages: a five year average (2013 to 2017), three-year rolling band

22 averages, and a total average of all available data. I used this information to choose a net

23 salvage rate I thought was reasonable given the known and measureable history. My

24 choices for net salvage are explained in Schedule SBM-s1.

1   I placed the most emphasis on the total average and the five year average. I

2 considered the rolling bands, but they did not weigh heavily on my ultimate

3 determination.

4   Q.   What are three-year rolling bands and why did you not weight them

5 heavily?

6   A.   Three-year rolling bands for net salvage are the average net salvage value

7 over the past three years, for each year. For example, a quantity of four three-year rolling

8 bands could include the average net salvage values in 2012 to 2014, 2013 to 2015, 2014

9 to 2016, and 2015 to 2017. The rolling bands are meant to identify trends in observed net

10 salvage.

11   I chose not to weight the bands heavily due to the limitations of available data.

12 Data was only available from 2005 to 2010 and from 2013 to 2017; it is my

13 understanding from discussions with Liberty personnel the years 2011 and 2012 did not

14 have any net salvage data available and therefore could not be included in identifying

15 trends. In addition, many accounts had a low number of retirements which I felt made

16 any trends obscure and undeterminable.

17   Q.   What data was used for Staff's depreciation study?

18   A.   Staff used data provided by Liberty for both net salvage estimations and

19 average service life estimations. The data provided mortality characteristics from the

20 1950's to 2017, as well as net salvage data as described above. The data includes records

21 from all of the predecessor companies that owned the assets prior to Liberty, including

22 the most recent predecessor, Atmos Energy Corporation.

1   Q.   Are there any caveats regarding the available data the Commission should

2   be aware of?

3   A.   Yes. I recently performed more research regarding the records of annual

4   additions and retirements of Liberty property. From reading past case records and internal

5   Staff communications, it appears that a portion of the data that Liberty obtained from

6   Atmos has simulated vintages.

7   Q.   What are "vintages"?

8   A.   A "vintage" is the year a piece of property went into service.

9   Q.   What does it mean to have "simulated" vintages?

10   A.   It means that some of the property that is included in the mortality records

11   of Liberty's Missouri plant did not have recorded vintages when Atmos acquired the

12   property, so vintage information for the property was assumed.

13   I do not know the specific details of the vintage simulation, although I do know

14   from internal Staff records that Iowa Curves and known plant records were used in the

15   simulation. From reading records from past cases, not all of the plant records were

16   simulated – in fact the majority come from actuarial records.

17   Q.   How did this affect the updates to your depreciation study?

18   A.   It didn't, however, I did note in my study when I observed records that

19   appeared to be simulated. I treated the vintage-simulated information as actuarial plant

20   records in my analysis because, according to record documents, the simulated

21   information was approved by Staff and recorded onto Liberty's books as a result of the

22   Unanimous Stipulation and Agreement in the Atmos-Liberty acquisition case, Case No.

23   GM-2012-0037.

1   Q.   What Commission records did you use to make this determination?

2   A.   In case number GE-2009-0443, in the "Staff Recommendation in Support

3   of Waiver" dated July 8, 2009, the record shows that Atmos was required to determine

4   vintages for asset records that had no previously-recorded vintages. The Staff

5   Recommendation states: "For the acquired assets with no vintage record, Atmos

6   attempted a re-vintaging process. Atmos reviewed with Commission Staff the re-

7   vintaging process and the process for retirement value related to assets that will continue

8   to have no vintage. Atmos was able to extract information from legacy accounting

9   systems to allow re-vintaging of 7,742 of 8,848 records."

10   Furthermore, from reading past emails between members of Staff and between

11   members of Staff and Atmos, it was ascertained that at a later time "older data was

12   vintaged based on Iowa Curves & surviving plant records" and "entries were recorded at

13   acquisition vintage, (however) then reclassified to original plant in service based on

14   surviving records."[1]

15   In addition, the Unanimous Stipulation and Agreement in Case No. GM-2012-

16   0037, in which Liberty purchased all Atmos Missouri assets, states the following in Part

17   10(e): "The signatories recommend the Commission order Atmos to record the entries

18   determined in its Missouri depreciation study submitted on June 1, 2011, prior to the

19   close of the Transaction." The Unanimous Stipulation and Agreement was approved by

20   the Commission on March 14, 2012.

21   These documents show that, although some plant records contain simulated

22   vintages, the records were previously accepted by Staff and approved by the Commission

23   as acceptable plant records.

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[1] Email from Staff employee Guy Gilbert to Atmos Employee John Johnson, September 22, 2011.

1 **RESPONSE TO COMPANY WITNESS DANE A. WATSON**

2   Q.   What did Mr. Watson say regarding the quantity of available data?

3   A.   On page 5 of his rebuttal testimony, in regards to the use of Missouri-

4 specific retirement and salvage data, Mr. Watson states: "Due to the lower number of

5 transactions within a single state, in some cases the information was not as statistically

6 significant so the depreciation parameter estimation of necessity relied more heavily on

7 expert judgement and Company specific information. Both Staff and I use informed

8 judgment but for several accounts we reach different conclusions. Staff's informed

9 judgement appears to consider the parameters of other Missouri gas utilities more heavily

10 where my recommendations are more reliant on Company Subject Matter Expert

11 opinions on the operations, specifically of Liberty Utilities Missouri."

12   Q.   Do you agree with Mr. Watson's description of his approach and how it

13 differed from your own?

14   A.   Yes. Mr. Watson's approach considered the available data, but I opine that

15 his approach was more liberal in using professional judgement based on experience and

16 company communications than my approach, which relied more heavily on the data

17 available.

18   My approach was to consider known and measureable data even if it was

19 recognized that the retirement history of the account was limited. Even with a low

20 number of retirements, I attempted to fit a model Iowa Curve to each data plot when there

21 was as high as 85% surviving according to the plot.

22   Q.   Did Mr. Watson make any statements regarding what constitutes adequate

23 or sufficient history regarding the percent surviving at the last point on the survivor

24 curve?

1   A.   Yes. Mr. Watson referenced the NARUC Public Utility Depreciation

2 Practices, which states "it is generally considered desirable to have the stub curve drop

3 below 50% surviving."[2]

4   For clarity, a "stub curve" is a term used to describe a survivor curve that does not

5 reach 0% surviving.

6   Q.   If you fit model Iowa Curves to stub curves (survivor curves) higher than

7 50% surviving, how do you know your selected model Iowa Curves were reasonable?

8   A.   I compared the average life associated with the selected Iowa Curve to the

9 average service lives established for the same account at other Missouri gas companies. If

10 the average life of the selected curve was near that of Liberty Midstates - MO's peers, I

11 considered it reasonable. I took this approach because I believe it removes subjectivity

12 from the process of selecting average service lives. Rather than relying on expert opinion

13 to decide if an average service life is reasonable, my approach weighs the selected

14 average service life against a value known and measureable that has already been

15 established by the Commission as being reasonable for those types of assets.

16   Q.   Why is it appropriate to consider other Missouri gas companies in judging

17 reasonableness of average service life selections, rather than other known and

18 measureable sources?

19   A.   It is appropriate because other Missouri gas companies operate in the same

20 regulatory atmosphere as Liberty Midstates - MO. In addition, these other companies

21 utilize assets that operate in the climate and soil conditions known to Missouri.

22   Q.   Did your approach, although it differed from that of Mr. Watson, yield

23 significantly different results?

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[2] Rebuttal Testimony of Dane A. Watson, Appendix B, page 3. Missouri Public Service Commission, Case
No. GR-2018-0013

1   A.   Generally, the selected average service lives and net salvage values I

2 selected were very close to those suggested by Mr. Watson. However, there were a

3 handful of accounts where there was a large difference based on our approach.

4   Q.   Can you provide an example of where your approach and that of

5 Mr. Watson caused a largely different proposed depreciation parameter?

6   A.   A good example is the model Iowa Curves proposed for Accounts 383.0

7 and 384.0 – House Regulators and House Regulator Installations. Mr. Watson's proposed

8 life for these assets is based on his selected 27 L0 Iowa Curve, which has an associated

9 average service life of 27 years. My selected Iowa Curve is a 44 R3 curve, which has an

10 associated average service life of 44 years. My proposed average service life would result

11 in a depreciation expense that is much lower than that proposed by Mr. Watson.

12   My approach for the accounts was as follows: I mathematically fit the 44 R3 Iowa

13 Curve to the plot of Account No. 384, which dropped to about 80% surviving. I did not

14 fit a curve to Account 383 because the plot did not drop to 85% surviving. Knowing that

15 the accounting system prescribed to Missouri gas companies allows for combining the

16 assets from the two accounts into a single account (which is what most other Missouri

17 gas utilities do), I adopted the same 44 R3 model Iowa Curve for Account 383.0. I then

18 compared the proposed average service life of 44 years to the range of other Missouri gas

19 utilities, which spans 40 to 51 years. Therefore, despite there being limited retirement

20 history, I observed that my proposed average service life fell within the peer range and

21 was reasonable. This was a largely quantitative approach (with some qualitative

22 elements) that tied a reasonably estimated average service life to known and measureable

23 information.

1   Mr. Watson describes his approach on Page 33 in Appendix C of his rebuttal

2   testimony. In short, he uses qualitative judgement and ties the life of house regulators to

3   that of meter installations, and proposes the same life as Account 382.0 – Meter

4   Installations.

5   Q.   What if you are completely wrong, and the average service life of Account

6   Nos. 383.0 and 384.0 really is 27 years?

7   A.   Missouri state law requires Liberty Midstates - MO to maintain mortality

8   records in sufficient enough detail to perform analyses of retirement history.[3] In addition,

9   Missouri state law requires Liberty Midstates – MO to perform a new depreciation study

10   every five years (or three years prior to the next rate case).[4] If the estimated 44 year

11   average service life is incorrect, it can be corrected in subsequent depreciation studies

12   when more quantitative data is available.

13   Q.   Does Missouri state law advocate the use of quantitative data to determine

14   depreciation rates?

15   A.   I believe it does. As stated previously, 4 CSR 240.040(3) lists

16   requirements regarding records keeping, and 4 CSR 240.325(1) lists requirements

17   regarding periodic depreciation studies in which the collected quantitative data can be

18   analyzed.

19   Q.   Where can the Commission read a summary of each account where you

20   explain your reasoning for your average service life and net salvage selection?

21   A.   Schedule SBM-s1 to my Surrebuttal Testimony contains this information.

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[3] 4 CSR 240-40.040(3)(M)
[4] 4 CSR 240-3.235(1)(A)

1   Q.   What depreciation parameters is the Company proposing for shared

2   services account 399.5?

3   A.   In his rebuttal testimony, Mr. Watkins states the following: "For Account

4   399.5 – Software, currently, the Company has all software combined with one average

5   service life. The Company intends to track software separately in these subaccounts and

6   assign unique lives based on criteria such as amount of total investment, how quickly

7   technology is changing, and how closely integrated the software is with other Company

8   systems."

9   Q.   Does the Company list separate sub-accounts for each type of software (3-

10 year, 5-year, and 7-year)?

11   A.   It's not clear. In his testimony Mr. Watkins shows each of the three

12 subaccounts as Account 399.5 - He only changes the description of the account to

13 indicate whether it is 3-year, 5-year, or 7-year software.

14   Q.   Should Account 399.5 have three separate depreciation rates?

15   A.   Not according to Staff's methodology. Staff uses the broad-group

16 procedure in its depreciation system, meaning all assets in an account are assumed to

17 have an equal life. It is understood that in the broad-group procedure, different types of

18 assets in an account will have different service lives, but an average service life is

19 provided for the account as a whole. If the Commission decides to allow amortization of

20 software in the fashion the Company is proposing, I have the position that the Company

21 should be required to create three separate sub-accounts – both by account number and

22 account description – if they are to account for each type of software separately because

23 it will avoid confusion in the future.

1   Q.   Has the Company indicated what specific items in 399.5 will be allocated

2 to each proposed service life?

3   A.   Not that I am aware of. In response to Staff's DR No. 95, the Company

4 sent a property listing; however items in Account 399.5 do not have individual

5 designations indicating what service life the Company assigns to each item.

6   Q.   Does Staff agree to allow three separate depreciation rates representing

7 three different services lives for the assets in Account 399.5?

8   A.   Not at this time based on the provided information. The Company has not

9 been clear regarding how the subaccounts will be designated, and no property listing

10 placing each specific piece of software has been provided for review by Staff and the

11 Office of Public Counsel. Staff is opposed to having three separate depreciation rates for

12 Account No. 399.5.

13   Q.   What does Mr. Watson propose regarding amortization of the difference

14 between the theoretical and book depreciation reserve?

15   A.   On page 26 of his rebuttal testimony, Mr. Watson states the following: "I

16 proposed to use the whole life accrual as shown as Appendix A and a 10 year

17 amortization of the reserve difference for any account with a reserve excess or deficiency

18 over 10% based on the Company revised parameters."

19   Q.   What is book depreciation reserve, and what is theoretical depreciation

20 reserve?

21   A.   A depreciation reserve is a measure of the amount of money customers

22 have paid into a plant account for property that is currently in service. The amount in the

23 depreciation reserve increases by periodic installments that utility customers pay as part

24 of their utility bill, and decreases when a piece of utility property is retired from service.

1 In addition, net salvage corrections, which can be positive or negative, are also applied to

2 the depreciation reserve.

3   The "book depreciation reserve" is the current "real life" value of the depreciation

4 reserve account. Barring any errors or adjustments, it represents the actual payments

5 customers have made towards property in the associated plant account, as well as salvage

6 corrections from selling used materials or equipment or accruing costs of removal.

7   In layman's terms, the "theoretical depreciation reserve" is a measure of what the

8 depreciation reserve "should be". It is a calculation of the total accruals of payments that

9 customers would have made if the account had always been subject to a given set of

10 depreciation parameters.

11   Q.   What is the theoretical depreciation reserve dependent on?

12   A.   In simplified terms, it is dependent on the average age of the property in

13 the account, the depreciation parameters (average service life and net salvage), the Iowa

14 Curve type, and the plant balance.

15   Q.   What does a large difference between theoretical depreciation reserve and

16 book depreciation reserve suggest?

17   A.   A large difference between the theoretical and book depreciation reserve

18 of an account suggests that the amount of depreciation expense a company has been

19 receiving for the assets in that account does not match the retirement rate and/or observed

20 net salvage of the account.

21   A difference between the theoretical and book depreciation reserves can be

22 expected when the depreciation parameters are changing. Allow me to provide a very

23 simplified example: imagine a plant account with a single piece of property worth

24 $10,000. Also imagine that the average service life of the account is assumed to be

1   10 years with zero net salvage. This would make the depreciation rate 10% and the yearly

2   depreciation expense (which is charged yearly to the book reserve) $1,000.

3   Now imagine that the single asset retires after 5 years. This means that the

4   company only collected $5,000 when the original cost of the asset was $10,000, but

5   because the item is no longer in plant, the company is no longer collecting a return of the

6   original investment of $10,000. This means the company has experienced a loss of

7   $5,000 with the current depreciation rate.

8   Now assume the depreciation professional studying the account decides that the

9   average life is actually 5 years, rather than 10 years. This leaves a difference between

10 theoretical and book depreciation reserve of exactly $5,000 (the same amount the

11 company was short-changed). Over the course of the asset's life, the new average service

12 life and depreciation rate shows that the utility should have collected $2,000 a year for

13 the asset, rather than $1,000 a year.

14   Liberty Midstates - MO is proposing to amortize the reserve deficiency over a ten

15 year period. If this amortization proposal were applied to my simplified example, the

16 deficiency of $5,000 would be returned to the company by yearly payments of $500.

17   Q.   Did the Company state what it believes caused the reserve imbalance in

18 any of the plant accounts?

19   A.   From reviewing the rebuttal of Mr. Watson, although he acknowledges the

20 existence of reserve imbalances, I do not recall him explaining specifically what caused

21 the imbalance in each specific account.

22   Mr. Watson did however offer a passage from Public Utility Depreciation

23 Practices (1996) published by NARUC, which states: "Whole life depreciation results in

24 the allocation of a gross plant base over the total life of the investment. However, to the

1 extent that the estimate average service life assigned turns out to be incorrect, (and

2 precision in these estimates cannot reasonably be expected), the Whole Life technique

3 will result in a depreciation reserve imbalance." Mr. Watson also states on page 22 lines

4 17 and 18 of his rebuttal testimony: "In the NARUC publication, the inclusion of net

5 salvage in the depreciation accrual rate had not been introduced into the discussion."

6   These statements suggest the Company believes the imbalances occurred because

7 of incorrect average service life and/or net salvage estimates.

8   Q.   Since a reserve deficiency (when theoretical reserves are higher than book

9 reserves) indicates that depreciation rates aren't high enough for an account, does this

10 mean that Liberty is proposing to raise rates on all accounts where a deficiency exists?

11   A.   No. Let me use Account 380 – Services as an example. Mr. Watson states

12 on page 25 and lines 14-18 in his rebuttal testimony: "Account 380, where Staff and

13 the Company agree on life and net salvage parameters shows a theoretical reserve of

14 $14.4 million, as compared to a book reserve of $6.6 million. Thus the variance is a

15 shortfall of $7.7 million for this account."

16   A shortfall of this size suggests that the current depreciation rate of 5% is too low,

17 and that if the depreciation rate properly matched the retirement and net salvage behavior

18 of the account, the depreciation rate would be higher. However, this isn't the case. Both

19 Staff and the Company have studied Account 380, and have agreed on an average service

20 life of 33 years and a net salvage percentage of -50%. Using the whole life formula, this

21 yields a depreciation rate of 4.55%.

22   Notice this is a *decrease* in the depreciation rate. A reserve deficiency, as

23 previously mentioned, suggests the depreciation rate should *increase* because it isn't

24 high enough.

1   Q.   Did you observe any other anomalies regarding the book depreciation

2   reserve for Account 380?

3   A.   Yes. Mr. Watson included with his rebuttal testimony Appendix A,

4   which shows a book reserve of approximately $6.65 million as of September 30, 2015 for

5   Account No. 380 - Services. However in Liberty Midstates - MO's last rate case,

6   Case No. GR-2014-0152, Staff Accounting Schedule No. 6 showed a total depreciation

7   reserve of -$3.08 million as of March 31, 2014.

8   Note this is a difference of over $9.5 million with a difference in time of only

9   18 months.

10   Q.   Is it possible that the depreciation reserve increased about $9.5 million

11   over 18 months?

12   A.   No, unless there was a very large adjustment for some reason. To add, for

13   the current rate case, Staff's accounting schedules show that the depreciation reserve as

14   of December 31, 2017 is only about $1.05 million.

15   Q.   What concerns does this cause you?

16   A.   Given the observations of inconsistencies previously described regarding

17   the depreciation reserve of Account 380, I have concerns that the book depreciation

18   reserve is not properly accounted for.

19   Q.   How does the imbalance in Account 380 weigh against imbalances in

20   other accounts?

21   A.   According to Staff's depreciation software, which calculated the

22   theoretical depreciation reserve, and the book depreciation reserve as shown in the Cost

23   of Service Report, the imbalance in Account 380 is approximately -$14.31 million. By

24   comparison, the next largest depreciation reserve imbalance is in Account 376.1 – Steel

1 Distribution Mains, which shows a depreciation reserve imbalance of approximately -

2 $1.76 million.

3   To add, when strictly considering the Accounts in which I am recommending new

4 depreciation parameters, the total reserve imbalance is approximately -$14.06 million,

5 showing that the reserve deficiency in Account 380 is more than the reserve deficiency as

6 a whole.

7   Q.   Did you have time to investigate other accounts to check for anomalies?

8   A.   No. Given the amount of updates I thought were necessary for my

9 depreciation study, I didn't have time to investigate everything. I do think other accounts

10 should be investigated before accepting an amortization of the reserve difference of those

11 accounts, especially if the proposed change in depreciation rate does not align with the

12 reserve difference. I feel that if the Company intends to request additional revenue due to

13 a reserve imbalance, it needs to be clear why an imbalance exists in the first place.

14   Q.   Would you expect that there is an overall depreciation reserve deficiency?

15   A.   Yes. Both my proposal and that of the Company raise the depreciation

16 expense by approximately $500,000 using the whole-life formula. This *suggests* previous

17 accruals weren't adequate to keep up with retirement rates and net salvage. However,

18 given the observations previously described, I have concerns the amount Liberty is

19 requesting be amortized would not be appropriate.

20   Q.   Do you think the Company's proposal for amortization of the reserve

21 difference should be accepted, and why do you have this position?

22   A.   I don't believe it should be accepted at this time. Observations from

23 Account 380 show that concerns regarding the book reserve should be investigated. As

24 previously stated, the amortization would depend on the difference between the

1 theoretical and book reserve, so if the book reserve contains errors, so does the

2 amortization amount.

3   In addition, it is important to understand that the theoretical depreciation reserve

4 is dependent upon estimated average service life, Iowa Curve selection, and net salvage

5 values. As previously discussed, the available data provided by the Company for this

6 study was limited for many accounts. The average service life and net salvage

7 parameters, in many cases, were less informed by actual retirement experience, and more

8 accurately represent subjective estimates of future retirement characteristics. If the

9 depreciation parameters are subjective estimates based on future expectations, so is the

10 theoretical depreciation reserve.

11   For this reason, I don't believe any account that has limited retirement history

12 should be allowed an amortization of the reserve imbalance, because there is a high

13 likelihood the theoretical depreciation reserve will change when there is sufficient known

14 and measureable retirement data. In the event that there is sufficient known and

15 measureable retirement data, I believe the average service life and net salvage parameters

16 should be primarily based off actuarial data for amortization of a reserve imbalance to be

17 acceptable.

18   Q.   What does the Company say regarding the reliability of retirement data in

19 selecting average service lives?

20   A.   In footnote 2 on Page 8 of Mr. Watson's testimony, he quotes NARUC

21 Public Utility Depreciation Practices, which states: "It is generally considered desirable

22 to have the stub curve drop below 50% surviving."

1   Q.   What accounts have survivor curves that drop below 50% surviving?

2   A.   This depends on the placement and experience bands used (banding is

3   used to determine what vintages to include in the analysis, and also which period of years

4   retirements should be considered). Using the bands which I chose for my proposed

5   average service life, the following accounts have survivor curves that reach 50%

6   surviving: 375.0, 376.1, 378.0, 380.0, 381.0, 382.0, general plant accounts 390.0 through

7   398.0 (including all subaccounts), 399.3, 399.4, and 399.5.

8   Q.   Are there any other comments you'd like to make to the Commission

9   regarding theoretical depreciation reserve?

10   A.   Yes, I have two comments.

11   First, I observed that there is a line item in Staff's Accounting Schedule 6

12 described as "Legacy Atmos Accrued Cost of Removal" which shows an amount of

13 approximately $6.48 million in the depreciation reserve. I did not see this amount

14 accounted for directly in Appendix A of Mr. Watson's testimony, however that's not to

15 say it hasn't been allocated to plant accounts shown in Appendix A. This amount will

16 need to be factored into the amortization of reserve imbalances if they are to occur.

17   Second, if at the end of this rate case the depreciation of plant assets includes a

18 plant amortization for reserve differences, I also recommend that the amortization amount

19 be re-examined at the next depreciation study.

20   Q.   Why should the amortization be re-examined?

21   A.   The theoretical reserve is dependent on average service life, Iowa

22 Curve type, and net salvage. These variables change over time, and the changes are

23 proposed at the time of the study. If any of the depreciation parameters change, so will

24 the theoretical reserve.

1   Q.   In conclusion, can you restate your position regarding amortization of

2   depreciation reserve differences?

3   A.   I am opposed at this time to an amortization of depreciation reserve

4   imbalances as described by the Company, because there remains a question regarding the

5   book reserve balances and many of the selected Iowa Curves chosen by Staff or the

6   Company are heavily based on professional judgement of future retirement behavior

7   rather than observed retirement history.

8   **RESPONSE TO OPC WITNESS JOHN A. ROBINETT**

9   Q.   What depreciation rates is OPC recommending?

10   A.   On page 1, lines 18-19 of his rebuttal testimony, Mr. Robinett states:

11   "OPC recommends the continued use of depreciation rates from Case NO. GR-2014-

12   0152…"

13   Q.   Why do you disagree with this recommendation?

14   A.   It is clear that the current rates have not considered a full depreciation

15   study including actuarial analysis in about 20 years. This is a long period of time in

16   which average life characteristics and net salvage characteristics could have changed.

17   In Case No. GR-2006-0387, Atmos (the predecessor company of Liberty

18   Midstates) was ordered to continue using previously ordered depreciation rates.[5] As

19   explained by Staff witness Guy Gilbert, the origin of the previously ordered rates were

20   from rate cases that dated back to 1997 or earlier.[6]

21   In Case No. GE-2009-0443, Atmos filed an Application for Variance and Waiver

22   from the requirements of 4 CSR-240-3.235 requiring Atmos to file a new depreciation

23   study. The Commission granted the Variance and Waiver on the condition that the

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[5] Partial Non-Unanimous Stipulation and Agreement, page 5. Case No. GR-2006-0387
[6] Gilbert, Direct Testimony, page 4, lines 1-8. Case No. GR-2006-0387

1   Company not propose changes to depreciation rates in their next rate case (Case No. GR-

2   2010-0192).

3   In Case No. GM-2012-0037, all Missouri-based assets of Atmos were purchased

4   by Liberty Midstates. Depreciation rates were ordered to stay the same, despite a study

5   having recently been submitted by John Spanos of Gannet Flemming on behalf of

6   Atmos.[7] The tariffs the Commission approved for Atmos were also approved for use by

7   Liberty Midstates - MO.[8] It has been my experience that new depreciation rates are not

8   proposed during acquisition cases, due to the level of required analysis and the fact that a

9   change in depreciation rates would require a change in rates. For this reason, I believe it

10   is clear the new study was not considered in the decision to continue the currently

11   ordered rates.

12   In the most recent rate case, Case No. GR-2014-0152, Staff proposed

13   consolidating the rates from seven districts into 3 districts, but proposed no changes to

14   average service life and/or net salvage parameters.[9] As explained in the Report and Order

15   of the same case, existing depreciation rates were maintained with the exception of a

16   small number of subaccounts in the Shared Services Division.[10] I saw no indication that

17   Staff performed a depreciation study, or that the study of Mr. Spanos, which was

18   submitted a few years earlier, was considered.

19   Depreciation rates are calculated based on average service life and net salvage

20   parameters, which are determined with an actuarial analysis utilizing known and

21   measureable data. The current schedule of depreciation rates doesn't have average life or

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[7] Staff Memorandum in Support of Unanimous Stipulation and Agreement, page 6, item 18. Case No. GM-2012-0037.
[8] Staff Memorandum in Support of Unanimous Stipulation and Agreement, page 5, item 17. Case No. GM-2012-0037.
[9] Staff Report – Revenue Requirement Cost of Service, pages 71 – 73. Case No. GR-2014-0152.
[10] Report and Order, pages 4 and 38, December 3, 2014. Case No. GR-2014-0152.

1 net salvage listed, and from investigating PSC records it is clear new life and net salvage

2 parameters haven't been proposed based on a Staff or Company study since the 1990s.

3   Q.   What will happen if depreciation parameters are not updated?

4   A.   A depreciation reserve imbalance will develop. This means that

5 retirement of property is occurring at a rate that is significantly faster or slower than that

6 represented by the depreciation rates. If this occurs, an amortization may be required to

7 fix the imbalance.

8   There is evidence such an imbalance has already occurred, given the differences

9 between theoretical depreciation reserve and book depreciation reserve discussed earlier.

10 The imbalance between theoretical and book depreciation reserves is the source of

11 Liberty's proposal to amortize reserve imbalances over 10 years.

12   Q.   What files did you send Mr. Robinett in response to DR requests

13 submitted on March 27, 2018?

14   A.   I sent files relating to the software runs I performed to determine my basis

15 for proposing depreciation parameters as described in Staff's Cost of Service report

16 submitted on March 2, 2018. I also sent documents detailing the data sets I used and

17 model curve selections.

18   The documents I sent on April 10, 2018 in response to the OPC DRs are

19 now obsolete. Prior to filing my Surrebuttal Testimony, I updated my proposed

20 depreciation parameters due to receiving new information and recognizing errors as

21 previously mentioned. I provided updated responses to OPC's DRs on May 1, 2018 and

22 May 2, 2018.

1   Q.   What other information was provided to OPC?

2   A.   In Staff's Cost of Service Report, I described my general methodology

3 regarding my selection of proposed average service lives and net salvage values. I

4 also provided information regarding the calculation used to determine depreciation rates

5 and the parameters used in that calculation. Staff's Cost of Service Report was filed on

6 March 2, 2018.

7   Q.   What did Mr. Robinett state regarding the depreciation software used by

8 Staff?

9   A.   On page 2 lines 26 to 28 and page 3 lines 1 to 3 of his Rebuttal Testimony,

10 Mr. Robinett states: "Staff indicates that it did not utilize their depreciation software that

11 calculates depreciation rates based on the selected average service lives, Iowa Curves,

12 and recommended salvage values. Staff's manual calculation as described in response to

13 Data Request No. 0351 was also not provided as a work paper supporting Staff

14 depreciation recommendation in the Staff Cost of Service Report."

15   On page 3, lines 9 to 11 Mr. Robinett goes on to state: "This application provides

16 the ability to compare the theoretical reserves based on vintage data to the actual to

17 determine if adjustments to increase (or) decrease depreciation expense are needed for the

18 studied accounts."

19   Q.   Did Staff provide information to OPC regarding how depreciation rates

20 were calculated?

21   A.   Yes. Staff's Cost of Service Report shows the whole-life equation used to

22 calculate depreciation rates. As it states on page 83, line 13 of the Report, the

23 depreciation rate is calculated with the following equation:

24   *Depreciation Rate = (100% - Net Salvage %) ÷ Average Service Life*

1   The two parameters used to calculate the depreciation rate for each account were

2 also included in Staff's Cost of Service Report in Appendix 3, Schedule SBM-d1.

3   It is true I did not provide an excel spreadsheet as a work paper with the

4 calculations along with Staff's Cost of Service Report, due to the simplicity of the

5 calculation.

6   Q. Why did Staff not use software for calculation of depreciation rates?

7   A. Use of the software was unnecessary because the whole life calculation is

8 relatively simple. In fact, using the software to calculate the whole-life rate would have

9 been more tedious due to the need to formulate an input file.

10   As Mr. Robinett states, the software would be required to easily formulate precise

11 theoretical reserve values based on the selected Iowa Curves, salvage values, and

12 actuarial data.

13   I did not originally formulate precise theoretical reserve balances because it is my

14 understanding that it is not Staff's common practice to use theoretical reserve to

15 determine depreciation rates or perform reserve adjustments. For gas companies, Staff

16 uses the whole life technique to calculate rates, which does not consider depreciation

17 reserves in the calculation of depreciation rates. Staff does sometimes provide

18 depreciation reserve corrections when there is a clear anomaly in the reserve balance

19 (such as when a reserve balance is negative).

20   Q. Why does OPC not support the use of General Plant Amortization?

21   A. Mr. Robinett states on page 3, lines 21 and 22 of his rebuttal testimony:

22 "General Plant amortization threatens the ability to perform any sort of prudence

23 review of plant added into these accounts because it fails to track retirement units and

24 original costs."

1   Q.   What is a prudence review?

2   A.   I do not generally deal with prudence reviews, however, from discussions

3 with Staff Witness Lisa Ferguson, it is my understanding a prudence review is a type of

4 audit intended to investigate if a purchase a utility makes is appropriate.

5   Allow me to provide an extreme example of a prudence review from my

6 discussions with Ms. Ferguson: imagine a utility has a receipt to show it paid $5,000 for a

7 wrench, when a wrench typically only costs $20. After reviewing the receipt more

8 closely, Staff realizes that the wrench is made of pure gold. Staff could make the

9 argument that the utility doesn't need a gold wrench, and the ratepayer should not be

10 required to cover its $5,000 cost.

11   If there had not been documentation showing that the company paid $5,000 for a

12 single wrench, Staff would not have realized that the company made an inappropriate

13 purchase. Thus illustrates the importance of tracking property units and the original cost

14 associated with those units.

15   Q.   Do you agree with Mr. Robinett that the Company should be required to

16 maintain records of additions that unitize purchases and show original cost?

17   A.   Yes. However, I am still unopposed to the use of General Plant

18 Amortization, as long as sufficient documentation is available for prudence reviews.

19   Q.   Why are you unopposed to General Plant Amortization?

20   A.   As discussed in Staff's Cost of Service report and the Direct Testimony of

21 Company witness Mr. Watson, General Plant Amortization is approved by FERC. In

22 addition, it's my understanding General Plant Amortization has already been approved

23 for the general plant accounts of several Missouri utilities.

1   Q.   What is another concern OPC expressed regarding implementation of

2 General Plant Amortization?

3   A.   Mr. Robinett stated the following: "OPC is of the understanding that if

4 the method is approved, Liberty Utilities should retire all assets in each requested account

5 that exceeds the amortization period…OPC states that additional amortizations may

6 be needed on an account-by-account basis to correct for reserve imbalances associated

7 with this change in method. OPC did not see any recommendations by Staff addressing

8 these concerns."

9   Q.   What will occur if General Plant Amortization is authorized?

10   A.   As Mr. Robinett stated, any plant property over the average service life of

11 the plant will be retired on the books; this will result in a drop in depreciation reserve and

12 total plant. In addition, any plant that is taken out of service before the average service

13 life has been reached will continue to accumulate depreciation until the average service

14 life is reached. This will affect the depreciation reserve.

15   Q.   Have you addressed your position regarding reserve imbalances, and any

16 associated amortization periods that may be necessary?

17   A.   Yes, it was addressed earlier in my testimony. Staff is not proposing a

18 reserve imbalance amortization at this time. This does not mean Staff will maintain this

19 position in future rate cases or in this case if new information is received.

20 **RESPONSE TO COMPANY WITNESS JAMES R FALLERT**

21   Q.   What portion of Mr. Fallert's testimony are you responding to?

22   A.   In his Rebuttal Testimony, Mr. Fallert asserts "Staff simply applied rates

23 to the existing accounts, which do not include the necessary split between system and

24 PC assets."

1   Q.   Are depreciation rates assigned to assets?

2   A.   Not directly. Depreciation rates are applied to accounts. Depreciation rates

3   are not assigned to specific assets. Those assets must be organized into the account (and

4   the depreciation rate) to which they belong.

5   Q.   How are depreciation rates determined for Accounts?

6   A.   Staff uses what is called the "broad-group procedure". This means that for

7   a single account, a single depreciation rate is applied that is based on a single average

8   service life and a single average net salvage. The depreciation rate (and the associated

9   net salvage and average service life parameters) is intended to represent all property in

10 the account.

11 **<u>ACCOUNTING ERRORS REGARDING PLANT ACCOUNTS 381.0 and 382.0</u>**

12   Q.   Please explain the Accounting errors that are part of Accounts 381.0 and

13 382.0.

14   A.   In response to DR No. 318, the Company indicated that booking errors

15 had occurred in Accounts 381.0 – Meters and 382.0 – Meter Installations. Specifically,

16 the Company indicated that retirements that were recorded on the books in 2016 and

17 2017 in reality had occurred in 2013 to 2015.

18   Staff sent DR No. 318.1 to clarify if Staff's interpretation of the response was

19 correct, and to send updated data with corrections if it was necessary.

20   The Company responded to DR No. 318.1 on May 1, 2018, stating that there were

21 indeed errors regarding the years in which retirements were booked.

22   Q.   Did the Company provide corrected retirement data?

23   A.   No. Company witness Charlie Evans called me on May 1, 2018 and

24 explained that providing updated retirement data would require a large volume of manual

1   corrections that would take a long time to implement. Given the limited timeframe of the

2   case schedule, I told Mr. Evans I could continue with the updates to my proposed

3   depreciation parameters, but that corrections to the accounts would still need to be

4   performed at a later time and that all parties relevant to the rate case would need to be

5   made aware that the errors were still in place.

6   Q.   What effect will this have on the average service life recommendations for

7   Accounts 381.0 and 382.0?

8   A.   Because the book retirement of these items occurred in years after the

9   actuarial retirement occurred, the ages of some unknown number of retirements in the

10   depreciation analysis will be inflated by 1 to 4 years. Considering the volume of

11   retirement data and the range of differences between book retirement age and actual

12   retirement age, I don't expect the effect on my proposed service lives to be substantial.

13   Q.   Are you making any recommendations regarding this error?

14   A.   Yes. I recommend that the errors be corrected prior to the next rate case,

15   and the corrected data be provided to Staff.

16   **CONCLUSION AND SUMMARY**

17   Q.   In summary, what are your recommendations regarding depreciation in

18   this case?

19   A.   First, I propose that the Company adopt the updated depreciation

20   parameters as shown in updated Schedule SBM-d1 that is attached to my Surrebuttal

21   Testimony as Schedule SBM-s2.

22   Second, I recommend that no amortization of the difference between theoretical

23   and book depreciation reserves occur prior to a fuller investigation of current depreciation

1 reserve values, and that no amortization of depreciation reserve imbalances occur for

2 Accounts that do not have an adequate retirement history.

3   Third, I agreed with OPC's proposal that, as a condition of applying General Plant

4 Amortization, the Company be required to maintain records showing itemized costs of

5 additions, maintained in such a fashion that prudence reviews can be performed of new

6 property.

7   Q.   Does this conclude your testimony?

8   A.   Yes.

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

In the Matter of Liberty Utilities	)	
(Midstates Natural Gas) Corp. d/b/a	)	Case No. GR-2018-0013
Liberty Utilities' Tariff Revisions	)	
Designed to Implement a General Rate	)	
Increase for Natural Gas Service in the	)	
Missouri Service Areas of the Company	)	

AFFIDAVIT OF STEPHEN B. MOILANEN, PE

STATE OF MISSOURI	)	
	)	ss.
COUNTY OF COLE	)	

COMES NOW STEPHEN B. MOILANEN, PE, and on his oath declares that he is of sound mind and lawful age; that he contributed to the foregoing Surrebuttal Testimony, and that the same is true and correct according to his best knowledge and belief.

Further the Affiant sayeth not.

STEPHEN B. MOILANEN, PE

JURAT

Subscribed and sworn before me, a duly constituted and authorized Notary Public, in and for the County of Cole, State of Missouri, at my office in Jefferson City, on this _____ day of May, 2018.
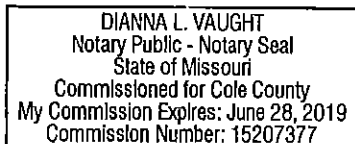
_____
Notary Public

Depreciation Study Summary

Surrebuttal Testimony of

Stephen B. Moilanen, P.E.

Staff of the Missouri Public Service Commission

Case No. GR-2018-0013

Description of Attachment

The following document discusses each account in detail and addresses why Staff chose the depreciation parameters it is proposing. Where relevant, Staff explains selections for average service life, selections of net salvage, and discussion of the available data, lists caveats to the chosen values, and shows life tables and/or survivor curve depictions and depictions of Staff's recommended Iowa Curves.

Where relevant, Staff also states the Company's position regarding depreciation parameters and briefly quotes or outlines the Company's reasons for its selection. Where relevant, Staff also depicts the Company's curve selection as compared to that of Staff.

Account 366/366.1 – Transmission Structures and Improvements

This account logged zero retirements. For life characteristics, Staff went with the company proposal because it falls within the peer range of other Missouri Gas Utilities. Depreciation rate is also in line with peers.

The Company asked for -5% net salvage. Staff's original position was to accept the company's proposal for life and net salvage. Since Staff has received no new information about this account specifically regarding retirements, our position hasn't changed.

Account 367.0 – Transmission Mains – Cathodic Protection

Staff observed from the output file "audit7.prn", that average age of property in this account is 24.7 years using dollar units, yet only less than 2% of additions have been retired. This suggests either a much higher life than the proposed 25 year life suggested by the company, or that the company has not been recording retirements properly. Compared to the other subaccounts the company has set up under FERC USOA Account 367, the dollar value in Account 367.0 is only about 1% of the total dollar value in 367.1. Staff opted to keep the model curve for Account 367.1 and apply it to this account, unless more substantial evidence of observed life can be offered.

Company claimed its proposed 25 SQ model curve "…aligns with engineering perspective, (and) aligns with the operational processes of the company…".

Staff took the average of all the 367 accounts to develop an equal net salvage for accounts 367.0, 367.1, and 367.2. The more recent history (five year average) showed a net salvage of about -10% after calculating for all accounts, as did the full history. This is higher than the previous proposed net salvage of -1% because it appears there was an error in Staff's previous suggestion from omitting a cost of removal booked in Account 367.2. For this reason Staff updated its proposed net salvage to -10%.

The company is requesting a 0% net salvage for this specific account, claiming the assets "decay in place" and have no net salvage cost. The Company also did not consider all of the 367 accounts together as Staff did in its analysis.

Account 367.1 – Transmission Mains – Steel

This account had a low number of retirements, with only the full experience band reaching less than 85% surviving. Staff's attempt to fit a curve mathematically yielded unreasonable results, given the poor retirement history. However, the Company's suggested curve (70 R1.5) is a reasonable match to the data visually. Also, it fits within the peer range for mains.

For net salvage, Staff proposes -10% as discussed on the previous page.

The Company is proposing a -20% net salvage for this account, "to model the fact that there will be removal cost in the future and recognizing that Staff recommends a negative 33 percent for distribution mains".
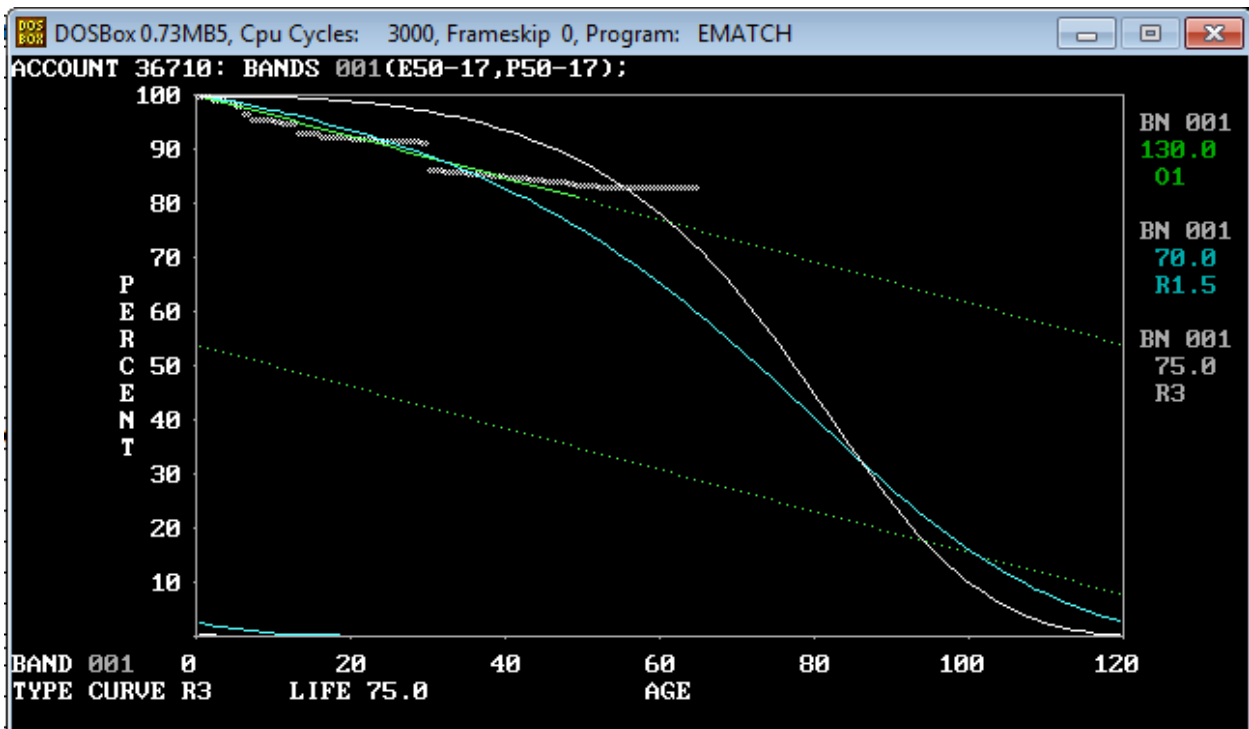
Account 367.2 – Transmission Mains – Plastic

Although the company intends to remove this account off the schedule, Staff proposes maintaining the existence of this account in case plastic transmission mains are installed in the future. Proposed life and salvage parameters conform to Account 367.1.

Account 369 – Measuring and Regulating Station Equipment

Current retirement data is poor, due both to the volume of retirements and the fact that some of the sporadic retirements seem to have possibly been vintage-simulated. Staff chose the 49 S0.5 curve, which was fitted mathematically to age 27 using the 1974-2017 experience band. The 49 year average life fits within the peer range and is close to the proposed average lives (by both Company and Staff) for other Measuring and Regulating Station Equipment accounts (Accounts 378 and 379). Staff's attempt to fit curves to other ages yielded unreasonable results. The 40 R2.5 model curve proposed by the Company is reasonable given the retirement history available, however, Staff decided to sponsor its own curve for the reasons stated above.

Previously, the company suggested a 40 R2.5 curve (shown) but didn't object to Staff's previous recommendation of a 44 year average life. Visually, the 40 R2.5 curve fits reasonably well to about age 30 on the stub curve.

For net salvage, there was only one retirement logged for this account and it had no associated cost of removal or gross salvage. Three other Missouri gas companies have this account on their schedule, and each net salvage rate for those companies is 0%. For these reasons, I'm also proposing 0% net salvage until more retirement history is available.

The Company is proposing a -10% net salvage, because as stated in Mr. Watson's rebuttal testimony: "It is not logical to anticipate there will be no net salvage costs in the future for transmission station equipment given that distribution stations will incur removal cost".
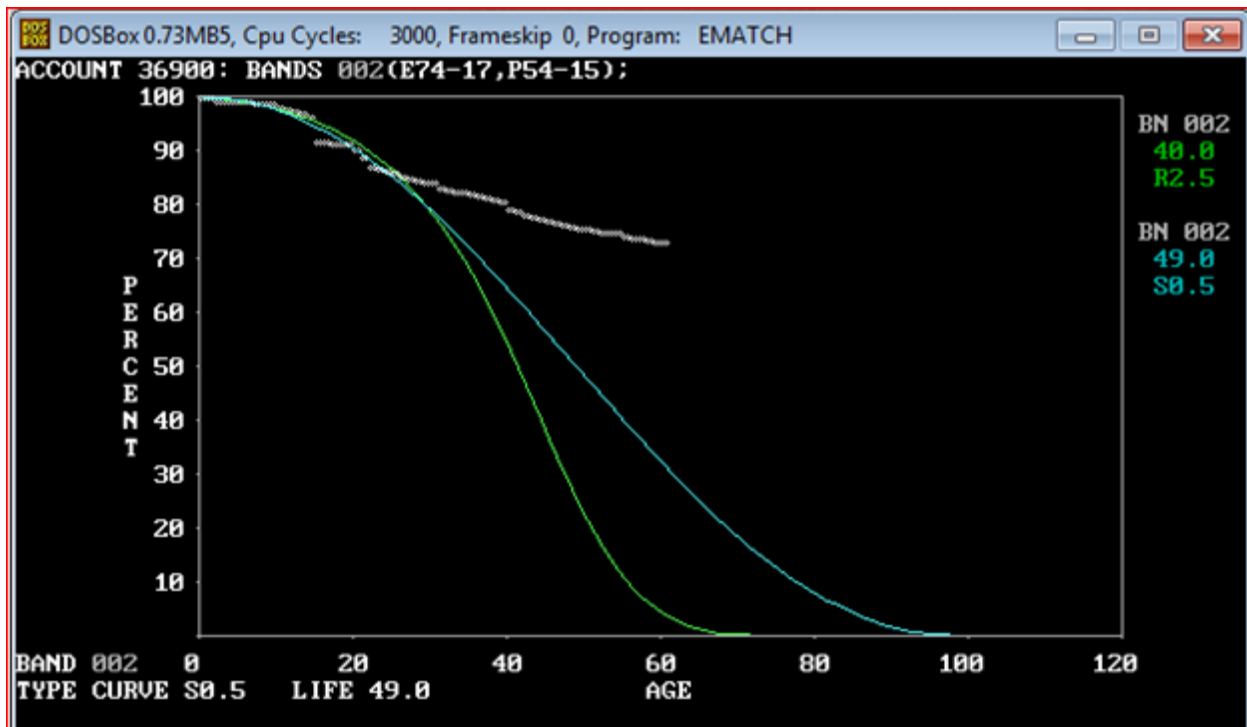
Account 370 – Communication Equipment

Staff suggested a 23 year life with no selected curve, due to insufficient retirement data. Proposed life is intended to maintain the existing depreciation rate with assumed 0% net salvage. A 23 year life is in the peer range for Account 397 (General Plant Communication Equipment), but no peer range was available for Account 370.

Company proposed a 25 S2.5 curve but did not previously object to Staff's proposed average life.

Account 375 – Structures and Improvements

A low volume of data was available, but Company's curve fit reasonably well visually despite the data available. Also the Company's recommendation is within peer range. Staff suggests a 45 R2 curve.
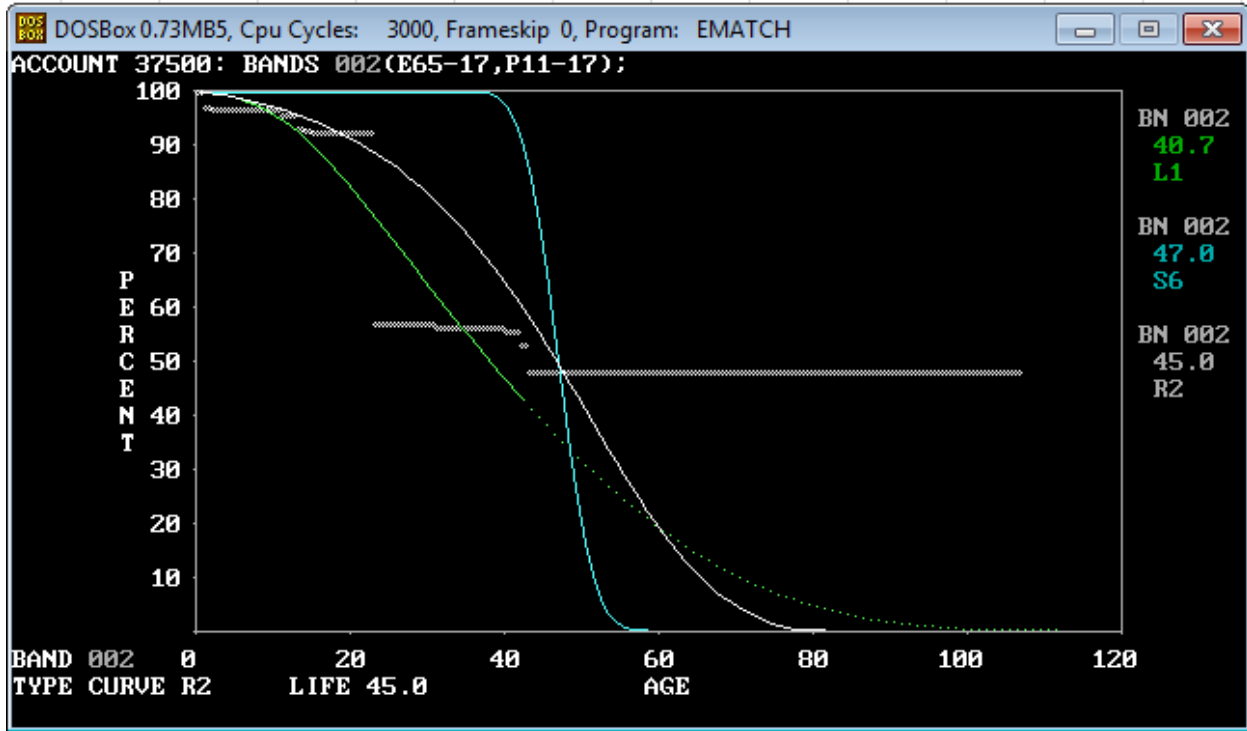
Account 376.0 – Distribution Mains – Cathodic Protection

Average age of property in this account, by dollar units, is 16.6 years. Only about one percent of property has been retired thus far. Most property is newer, with a very large addition performed in 2002. Because of the lack of retirement history, and the results of studying the data in Account 367.0 (which contains similar assets), Staff is suggesting this account adopt the same model curve as Account 376.1 – 68 R2. Staff did analyze accounts 376.0 and 376.1 as a combined entity as well, and after viewing the results continues to suggest a 68 R2 model curve.

Like Account 367.0, the Company is proposing a 25 SQ model curve for this account "based on operational input and the life characteristics of the assets."

For net salvage, Staff calculated the 5 year average and the total average net salvage for both accounts 376.0 and 376.1 together. Staff proposed -34% net salvage for both accounts, which is the total average. The more recent bands (where data is available) suggest net salvage moving closer to zero going forward.

The company is proposing 0% net salvage for this account, but considered accounts 376.0 and 376.1 separately, unlike Staff's proposal which considered them together. In rebuttal testimony, the company did not object to Staff's recommendation at the time of -33% salvage.

Account 376.1 – Distribution Mains - Steel

This account has a high balance ($19 million, approximately) and is therefore worth a lot in depreciation expense – even small changes in average life could affect total expense significantly. Staff mathematically fit curves to an age of 63 years, as the volume of available data drops significantly in following ages. The best mathematically fit curves for the two shortest experience bands (1993 to 2017, and 2003 to 2017) show an average life of approximately 68 years. Staff applied the 68 R2 curve because it was fit to the longer experience band and therefore represents more retirement experience (about 25 years). The average life of the best mathematically fit curve for each of the four experience bands did not change significantly. Staff finds the company selected curve is reasonable; however, Staff chose to sponsor the 68 R3 curve because the software shows that curve is a better fit mathematically based on the mean of the summed squares method, and is a good fit visually as well.

The Company is proposing a 63 R2.5 curve, which is a good fit visually and is reasonable. The two shortest experience bands used in Staff's analysis are shown below, showing the company selected curve and Staff's fit curve for each of the two experience bands.

For net salvage, Staff proposed -34% as discussed on the previous page for Account 367.0.

The company proposed -20% net salvage originally, but did not oppose Staff's previous proposal of -33% net salvage.
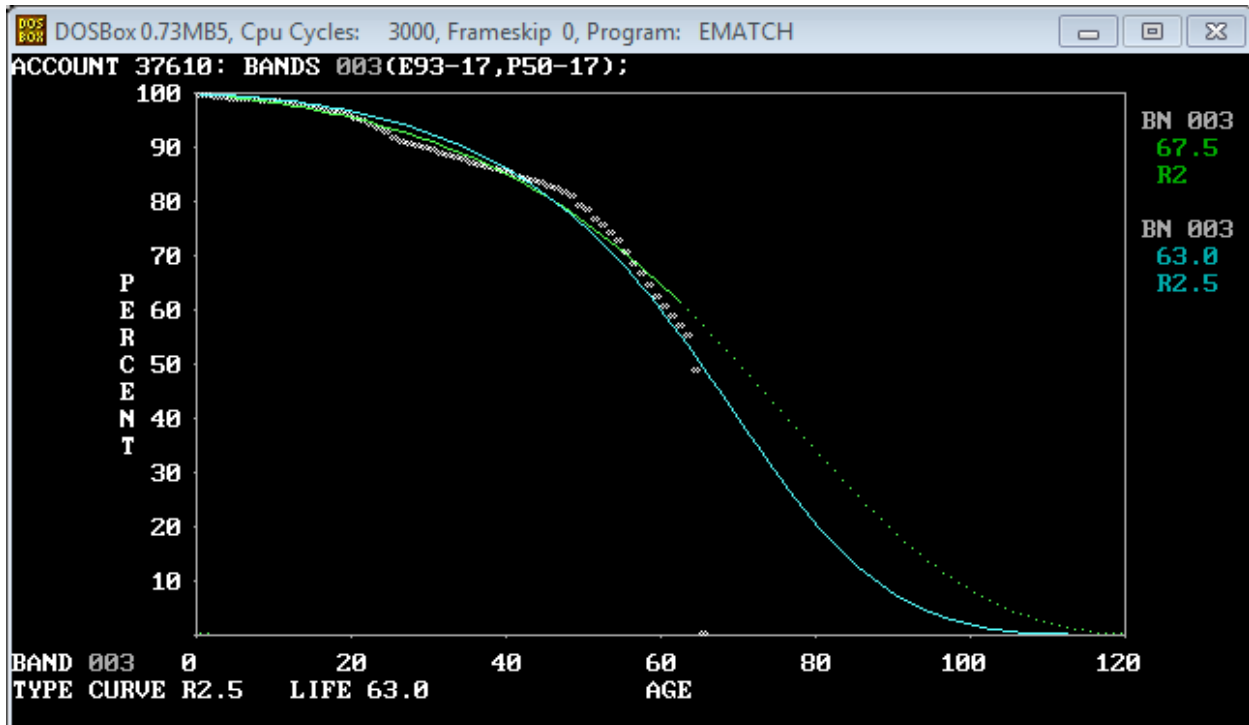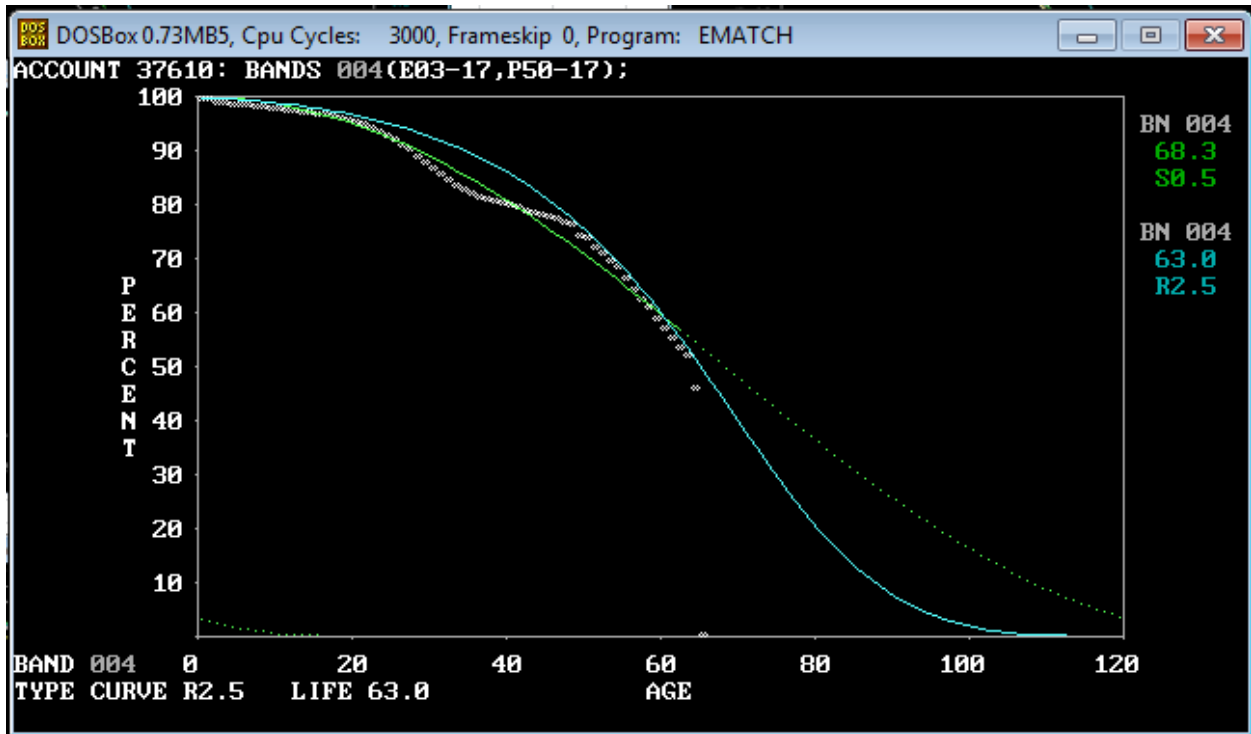
Account 376.2 – Distribution Mains – Plastic

The balance in this account is high ($33 million, approximately) and is therefore worth a lot in depreciation expense. Even small changes in average life could affect depreciation expense significantly. Staff didn't fit curves mathematically past 50 years because the volume of retirement data decreased significantly after 50 years (as shown in screenshots below). It's important to note that changing the placement band to 1970 decreases the average life significantly (as Mr. Watson pointed out in his Rebuttal Testimony). This suggests that going forward, average life will drop significantly. L, R, and S curves were all decent fits mathematically, as can be seen from the RETRATE curve fitting table shown below. Staff chose the 64 S0.5 curve because it was very nearly (within 0.04 of the mean square of the differences) the best fit, but also has a slightly lower life than the best mathematically fit curve (69 L2) and the trends observed by shortening experience and placement bands seem to show a decreasing life. Staff would expect the life to be lowered in the future giving the observed trend in placement bands.

The company chose a 65 R2.5 curve, which visually fits reasonably well to the full stub curve. However, the retirement table shows a low volume of exposures past age 50, so Staff chose not to include exposures past age 50 in its curve fitting. Despite this, the proposed average lives are close to one another. For this reason, Staff doesn't intend to object to using the 65 R2.5 curve after future discussion with the parties.

For net salvage, Staff proposed a -23% net salvage which was both the five year average and the full average of available data. The bands do not appear to show any trends. Staff would expect the net salvage percentage on plastic mains to be less than that of steel mains because the mains tend to be newer.

The company previously proposed a -5% net salvage and didn't object to Staff's previously proposed -33%.

Liberty Gas

376.2 MAINS - CONTESTED $33.5MIL

SUMMARY OF CURVE FITTING RESULTS - PCT SURV BALANCED AREAS

PLACEMENT BAND 1951-2017   3   EXPERIENCE BAND 2000-2017

SURVIVOR CURVE	RESID MEAS	RANGE OF FIT	SURVIVOR CURVE	RESID MEAS	RANGE OF FIT*
91.6-S0	3.66	0 - 50		NOT FITTED	
79.3-S0.5	3.06	0 - 50		NOT FITTED	
69.7-S1	2.19	0 - 50		NOT FITTED	
63.7-S1.5	1.80	0 - 50		NOT FITTED	
58.9-S2	1.87	0 - 50		NOT FITTED	
55.8-S2.5	2.48	0 - 50		NOT FITTED	
131.6-R0.5	5.21	0 - 50		NOT FITTED	
103.2-R1	4.88	0 - 50		NOT FITTED	
84.5-R1.5	4.39	0 - 50		NOT FITTED	
70.5-R2	3.44	0 - 50		NOT FITTED	
62.4-R2.5	2.66	0 - 50		NOT FITTED	
56.5-R3	2.02	0 - 50		NOT FITTED	
50.7-R4	3.55	0 - 50		NOT FITTED	
47.6-R5	8.20	0 - 50		NOT FITTED	
131.6-L0	4.40	0 - 50		NOT FITTED	
107.9-L0.5	3.92	0 - 50		NOT FITTED	
89.8-L1	2.96	0 - 50		NOT FITTED	
78.1-L1.5	2.45	0 - 50		NOT FITTED	
68.8-L2	1.76	0 - 50		NOT FITTED	
63.0-L2.5	1.91	0 - 50		NOT FITTED	
58.2-L3	2.80	0 - 50		NOT FITTED	
164.1-O1	5.35	0 - 50		NOT FITTED	
184.5-O2	5.35	0 - 50		NOT FITTED	
269.6-O3	5.38	0 - 50		NOT FITTED	

* SEGMENT BETWEEN 85.0 AND 15.0 PERCENT SURVIVING.⚲
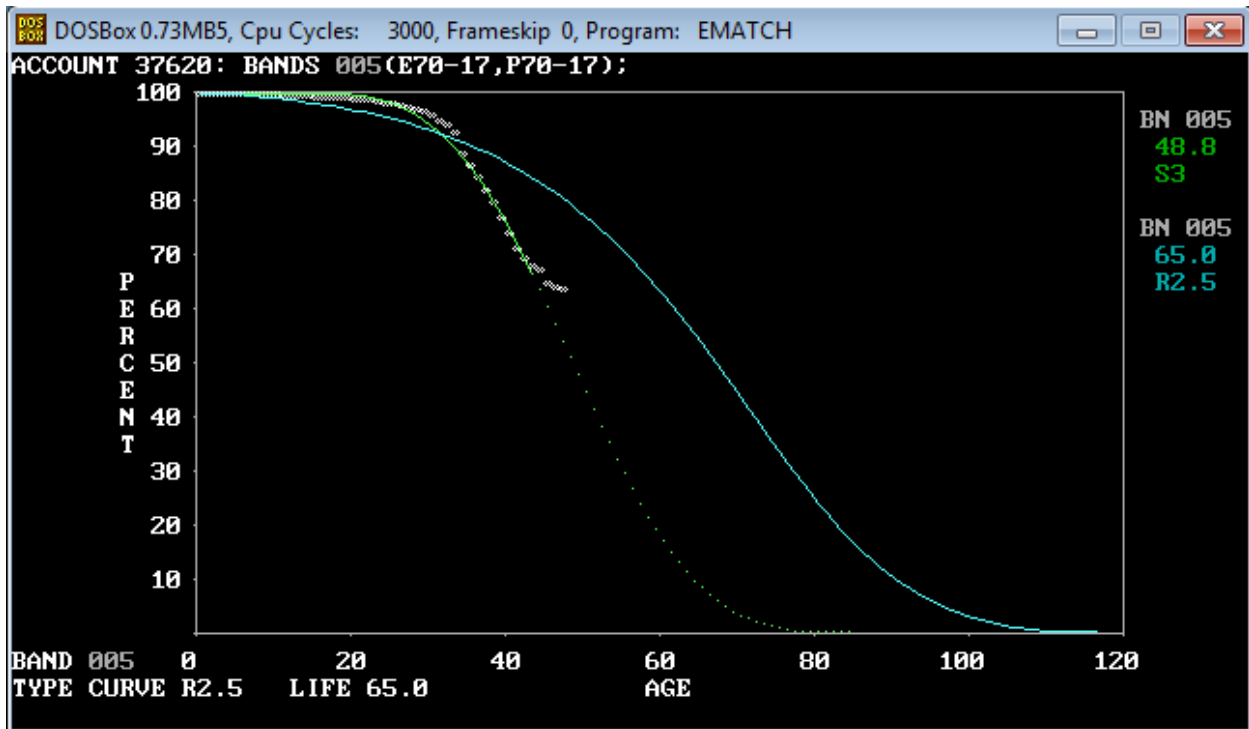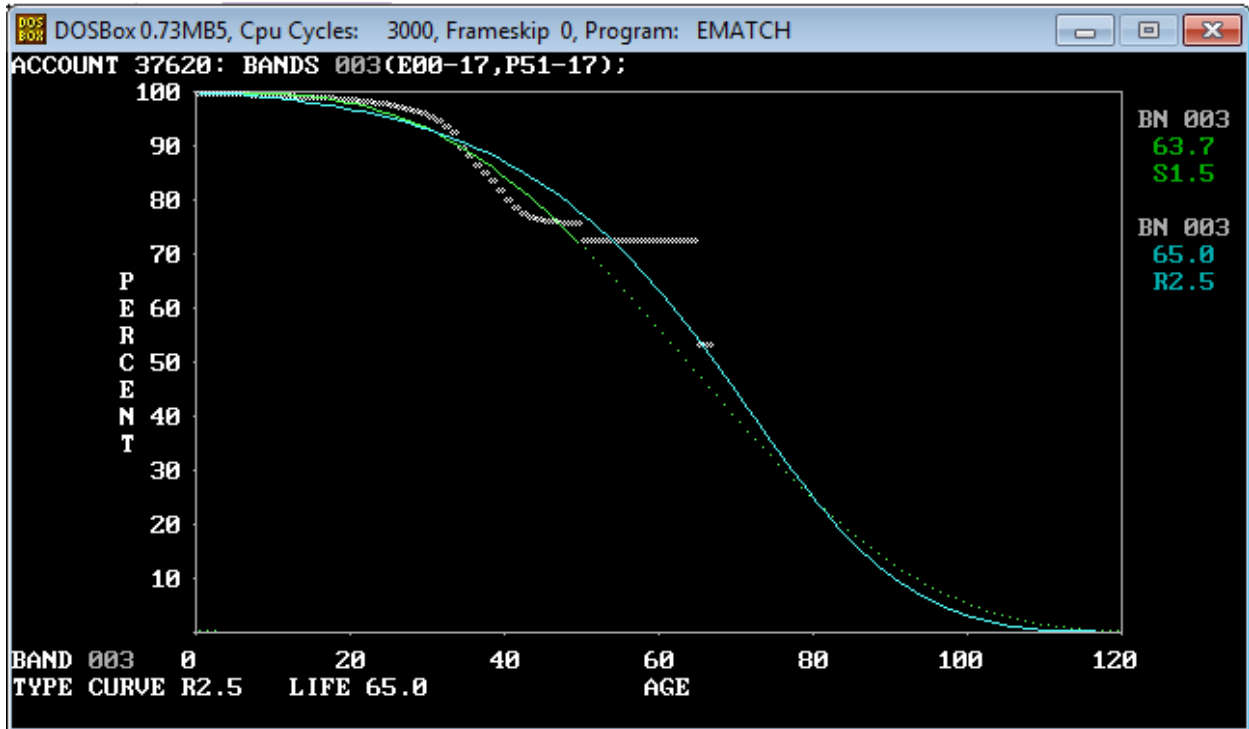
Account 378 – Measuring and Regulating Equipment – General

Staff's best fit curve, fit mathematically to about age 60, yielded a 47 R3 curve on an experience band from 2001 to 2017. This was close to the company's proposed curve (as updated with rebuttal testimony) of 48 R4. Many of the retirements in this account do appear to have vintages simulated. Proposed life is in the range of its peers. Staff doesn't intend to object to using the Company's proposed 48 R4 curve after future discussion with all the parties.

For net salvage, Staff was previously proposing -15%, but is now proposing -25%. This is because an adjustment was made to the retirement data since Staff's previous proposal, which significantly changes the calculated net salvage. The five year average was -88% net salvage, but the full average was -21%. Staff's estimate of -25% falls within the peer range.

The company proposed -10% net salvage but did not oppose Staff's previous proposal of -15%.
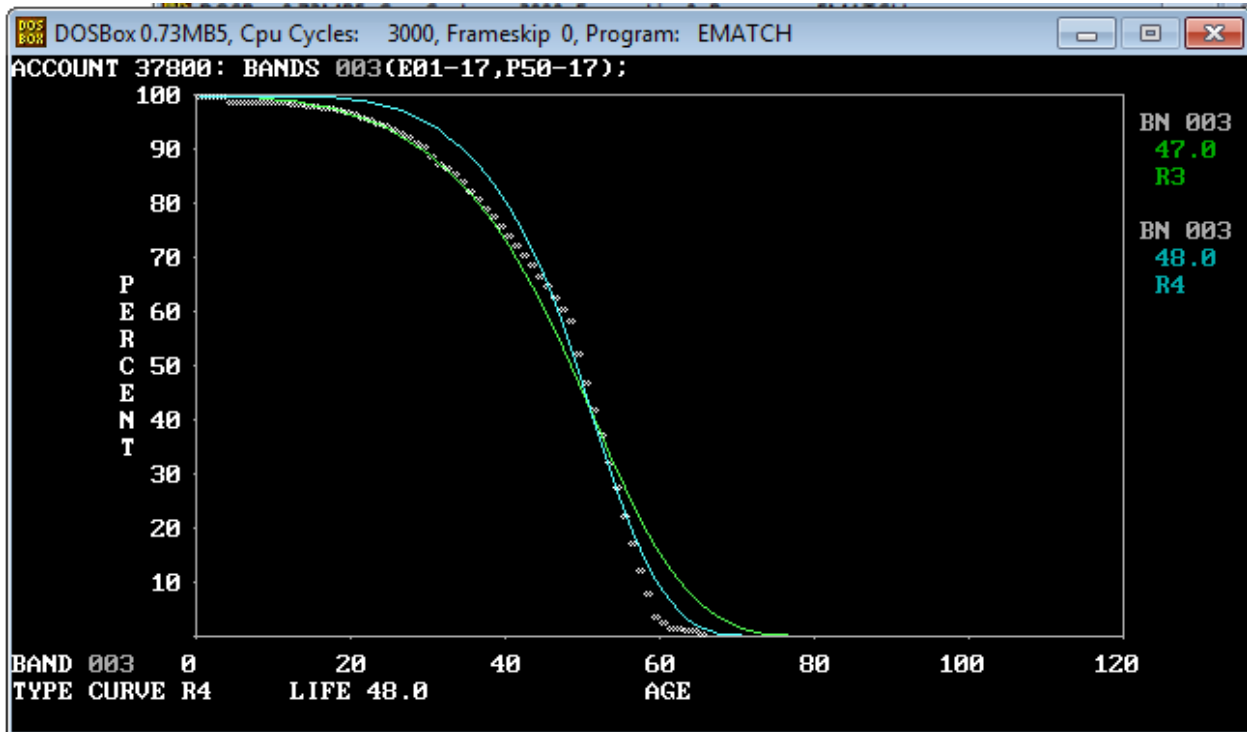
Account 379 – Measuring and Regulating Station Equipment – City Gate

A low volume of retirements makes this account hard to analyze. Mathematically fit curves were far outside the peer range and therefore deemed unreasonable, and the Company's proposed curve only fit the data well visually to about 85% surviving. Staff's original estimate for average life was based on the existing rate, but the stub curb (although having a low volume of retirements) suggests a longer average life. In addition, the Company's proposed life parameter of 45 S3 is closer to the life proposed for similar accounts and is within the peer range. For these reasons, Staff considered the company's estimate more reasonable than its original proposed life parameter. Staff used a longer experience band to achieve less than 15% retired, as shown in the plot below.

For net salvage, Staff still suggests -25%. This was both the five year and the total calculated average. It falls within the peer range. Staff did not find that there was sufficient information to consider banding.

The company proposed -10% net salvage but did not previously object to Staff's proposed -25%.

Account 380 - Services

This account has a high balance ($30 million, approximately), so even a small change in average life can cause a large change in depreciation expense. A large volume of data was available, however, it appears a large portion of it may have simulated vintages. Average age of property, by dollar units, is 16.4 years. A large number of retirements have occurred in the last ten years or so; in addition, Mr. Watson mentioned in his direct testimony that there is a copper service replacement program in place and that many inactive services were scheduled for replacement in 2016. These facts caused me to believe it is reasonable to go with the larger experience band from 1982 to 2017, which shows Staff's chosen model curve of 33 R1. The shorter experience bands show the life growing smaller.

The company is proposing a 33 L0 curve, which is shown on the plot below. Because the proposed model curves of Staff and the Company have an equal average life, Staff would not object to using the Company's model curve after future discussion with all the parties.

For net salvage, Staff continues to propose -50%. The total average was -26%, but the more recent 5 year average showed a higher net salvage of -73%. The bands indicated net salvage is moving closer to zero.

The Company agreed to -50% net salvage in its analysis.
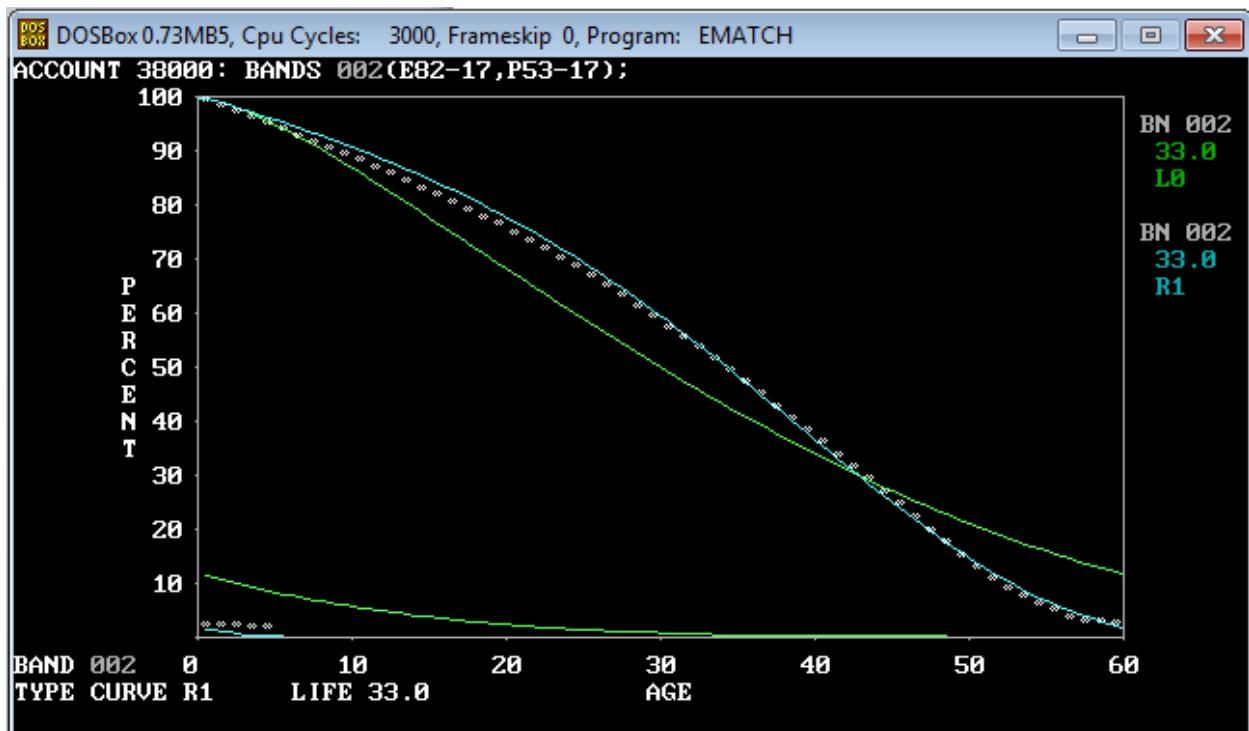
Account 381 – Meters

This account has a high plant balance (approximately $10 million) so even small changes in depreciation rates can cause a large change in depreciation expense. Staff chose the 28 O4 curve, based on the best fit curve to 35 years of age on the 1998 to 2017 experience band. Staff is under the understanding that outdated meters are currently being replaced by AMR devices, which seems to be causing shorter experience bands to show shorter lives that may not necessarily be representative of the long-term life characteristics. Staff's chosen curve is significantly below the peer range, but there is a large amount of data supporting it. Although Staff's curve is a better fit mathematically, the curve shape indicates the highest proportion of retirements occur in the first years of life, which is unexpected with meters; this may be a result of the meter replacements with AMR. I don't find the Company's selected curve unreasonable, particularly since the curve shape makes more logical sense from a qualitative standpoint; however Staff still elected to stick to the model curve fit by Staff's software.

According to the responses provided for Staff DR Nos. 318 and 318.1, some retirements in this account are erroneously logged. Due to the nature of the error, Staff expects the average service life would only be increased a slight amount if the error isn't corrected. Staff used the data available to reach its conclusions.

The company is suggesting a 33 L1 model curve, shown below.

For net salvage, the five year average was -28% while the total average was -40%. Staff is unopposed to the Company's proposal of a -35% net salvage. This is far below the peer range; however, there is a large volume of data and the Company submitted a response to Staff DR 318 explaining how the cost of removal expenses were incurred and allocated. After reviewing the DR response and accounting standards within 18 CFR 201, Staff agrees that this net salvage rate is reasonable.
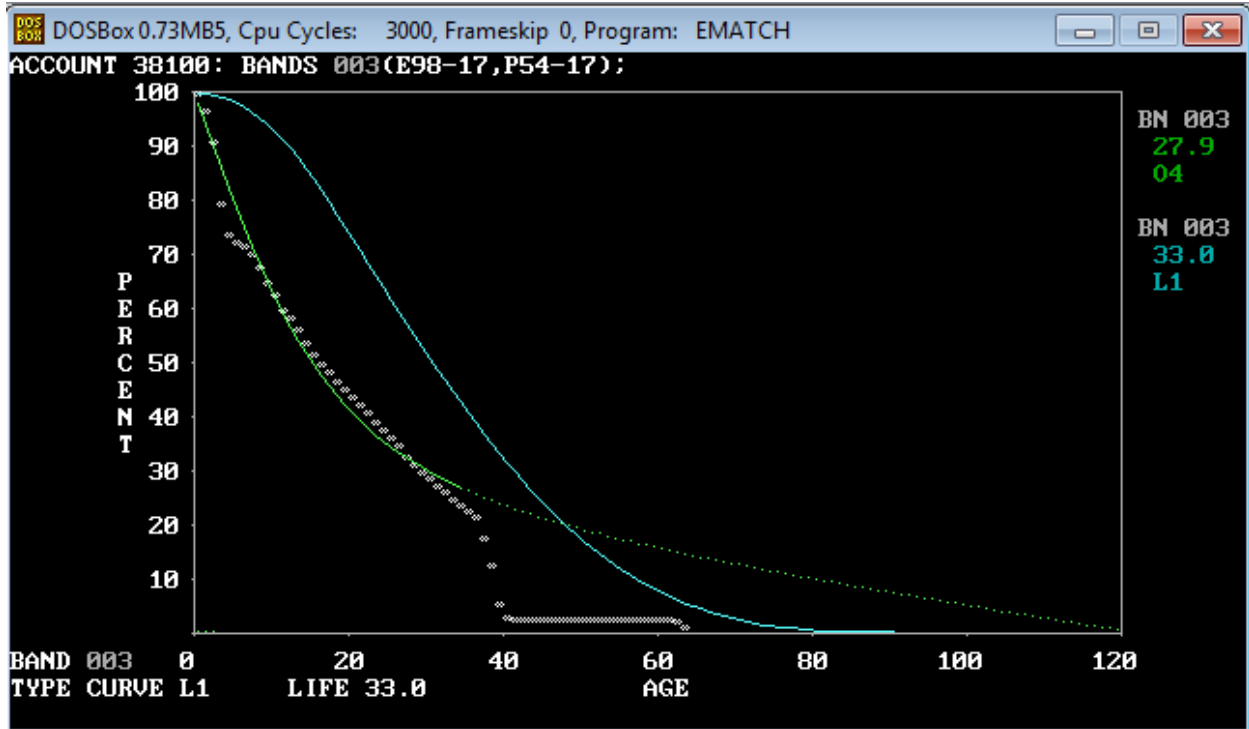
Account 382 – Meter Installations

This account has a high plant balance (approximately $11 million), so even small changes in depreciation rate will have a large effect on depreciation expense. Staff chose a 25 L1 curve which was fit to the 1995 to 2017 experience band to the age of 50. For all three experience bands Staff studied, it fit model curves that all had average lives in the mid 20's. Staff does not find the Company suggested curve unreasonable, as it is a fair fit visually.

According to the responses provided for Staff DR Nos. 318 and 318.1, some retirements in this account are erroneously logged. Due to the nature of the error, Staff expects the average service life would only be increased a slight amount if the error isn't corrected. Staff used the data available to reach its conclusions.

The company selected a 27 L0.5 model curve, as shown below. Given the closeness in life and shape characteristics between Staff's selected model curve and that of the Company, Staff does not intend to object to using the Company proposed curve after future discussion with all the parties.

For net salvage, the five year average is -28% while the total average is -60%. Staff is unopposed to the Company's proposal of -35% net salvage. This is far below the peer range; however, there is a large volume of data and the Company submitted a response to Staff DR 318 explaining how the cost of removal expenses are incurred and allocated. After reviewing the DR response and accounting standards within 18 CFR 201, Staff agrees that this net salvage rate is reasonable.
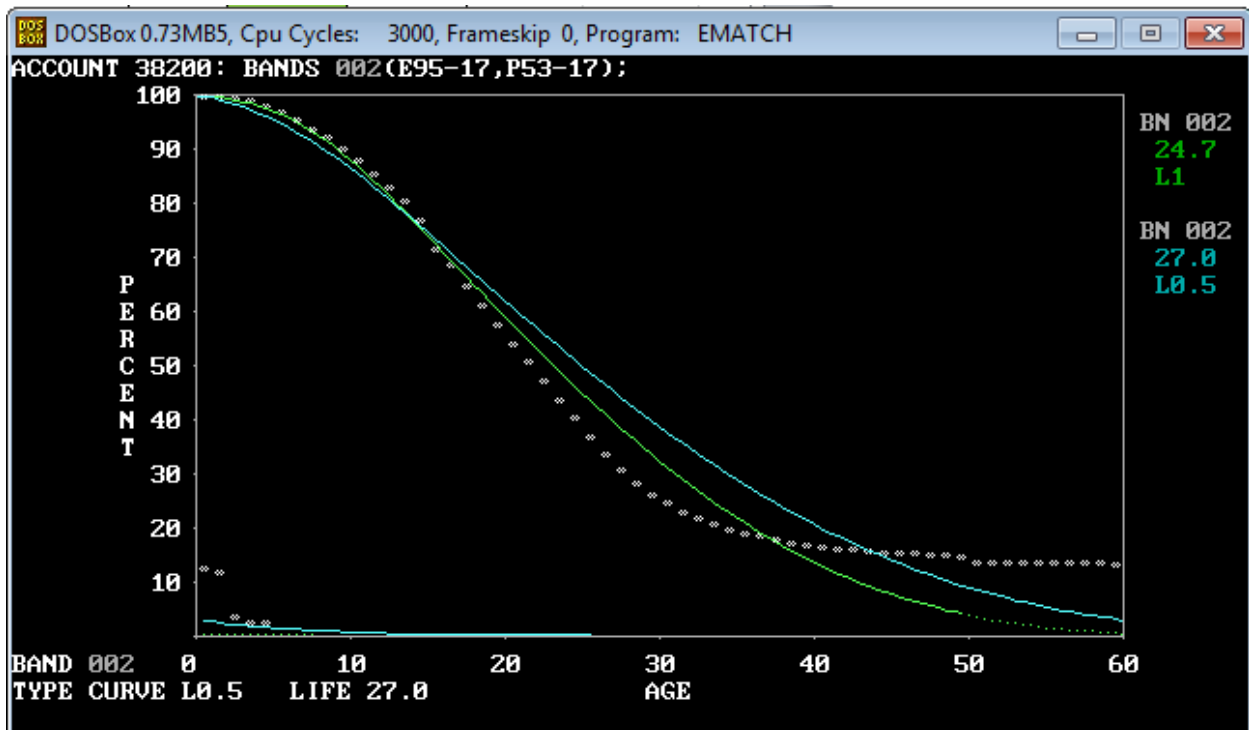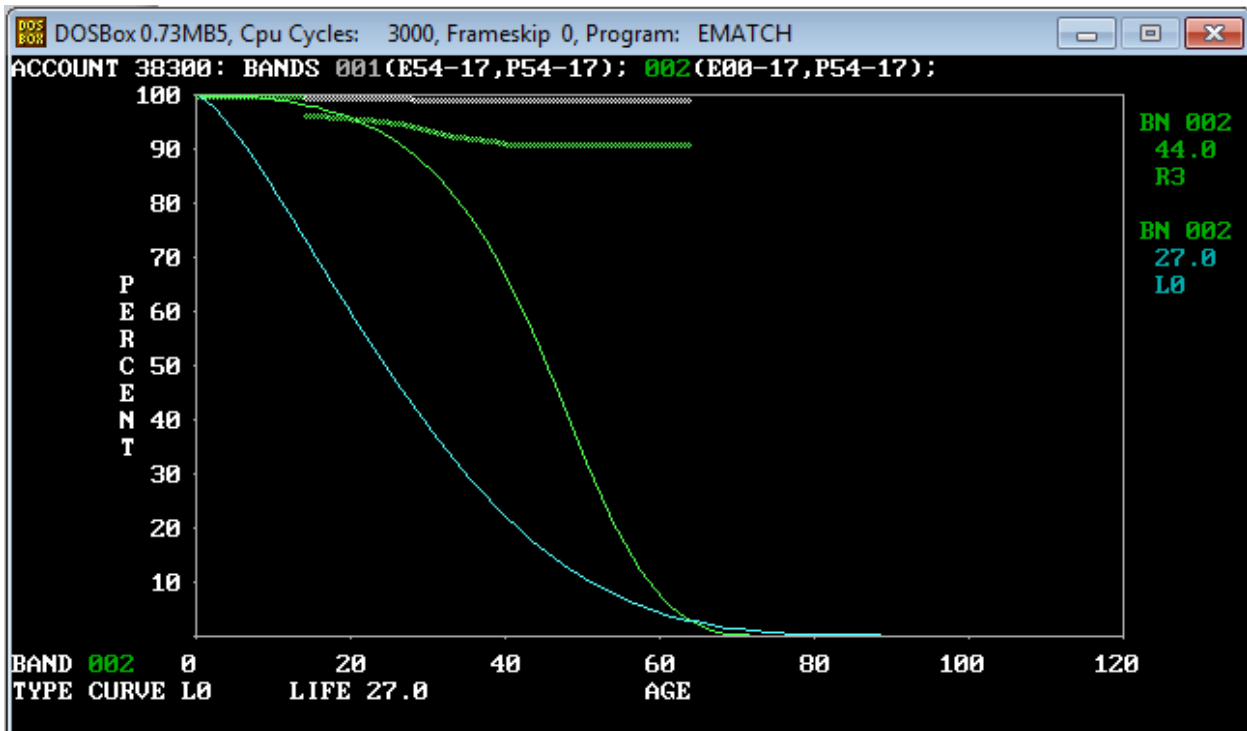
Account 383 – House Regulators

Since this account has limited retirements, Staff is proposing to set the rate equal to Account 384 with a 44 R3 model curve. It is important to note that in the 2011 depreciation study carried out by Atmos, the company consultant (Mr. John Spanos with Gannet Flemming) suggested a 45 year life in lieu of retirement data. In addition, this rate conforms to the peer range. Staff's previous proposal for an average life was 22 years for this account.

The company proposed a 27 L0 year life, "based on judgement" and is "the same as account 382.0". Mr. Watson also stated that "typically, regulators are replaced when the meter loop is replaced. Based on that understanding, the regulator life and regulator installation life are reasonably set to match the meter installation life."

Both Staff and the Company agree to 0% net salvage for this account, which fits in the peer range. There were previous costs of removal entries logged by Atmos for net salvage; however, some of the entries were logged as negative amounts with no associated retirements, so Staff is not sure how to interpret them.

Account 384 – House Regulator Installations

Staff fit a curve to approximately age 35; after this age the volume of data decreases and becomes less reliable. Staff's selected curve of 44 R3 is within the peer range (most Missouri gas utilities lump accounts 383 and 384 together).

Company's selected curve is 27 L0 and is shown on the plot below. The company's proposed model curve as stated by Mr. Watson is "based on judgement" and is "the same as account 382.0". Mr. Watson also stated that "typically, regulators are replaced when the meter loop is replaced. Based on that understanding, the regulator life and regulator installation life are reasonably set to match the meter installation life."

Both Staff and the Company agree to 0% net salvage. This conforms to the peer range. Limited retirement data was available.
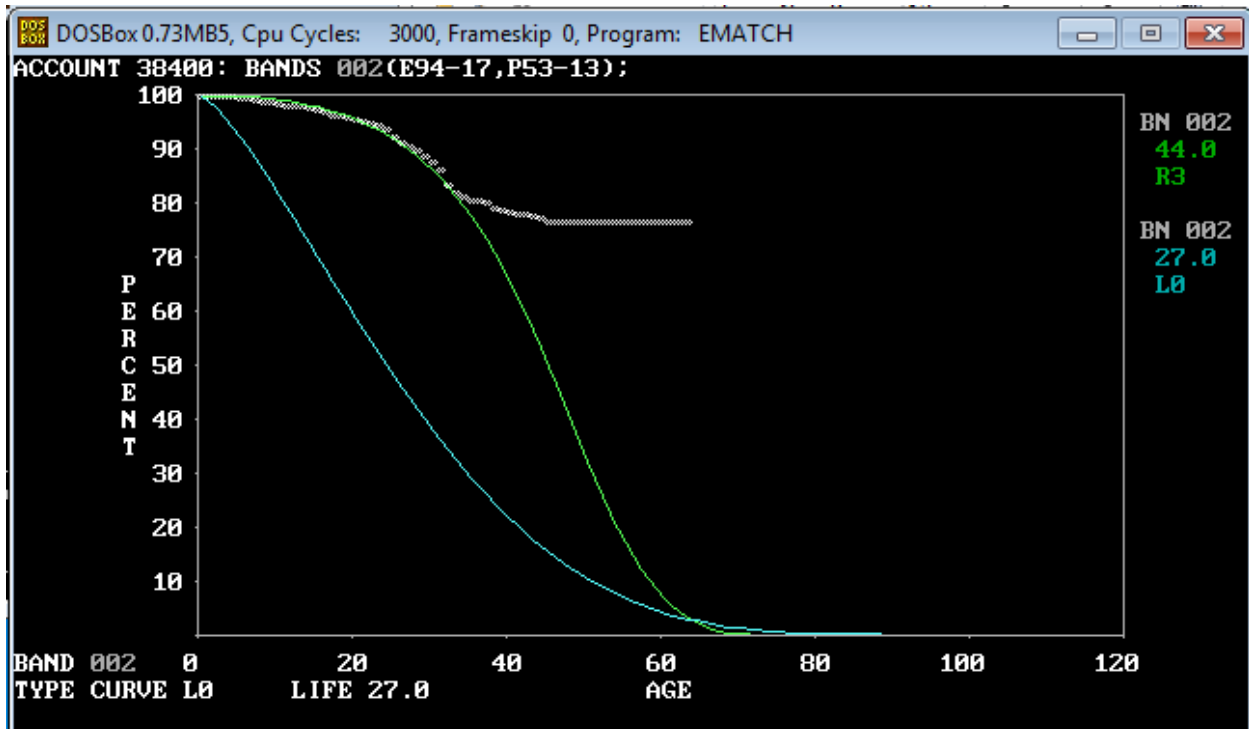
Account 385 – Industrial Measuring and Regulating Station Equipment

Staff fit a curve to approximately age 50, and received a 45 S0.5 model curve as the best fit. This life also fits in the peer range.

The company is proposing a 45 R3 curve, shown below. Since the average lives are the same between the Company's proposed model curve and Staff's proposed model curve, Staff does not intend to object to adopting the Company's proposed model curve after future discussion with all the parties.

For net salvage, Staff continues to propose -2% net salvage. Atmos previously logged costs of removal as negative numbers, and it is unclear if these amounts were actually gross salvage or simply accounting errors in which a negative sign was applied. The five year average is -2%, although retirements are very limited. The peer range includes both positive and negative net salvage, and -2% is near the middle.

The company is continuing to propose -10% net salvage, because "the equipment is smaller (than district regulator stations and city gates) and removal cost would be required to remove or replace the assets in each of the three categories".
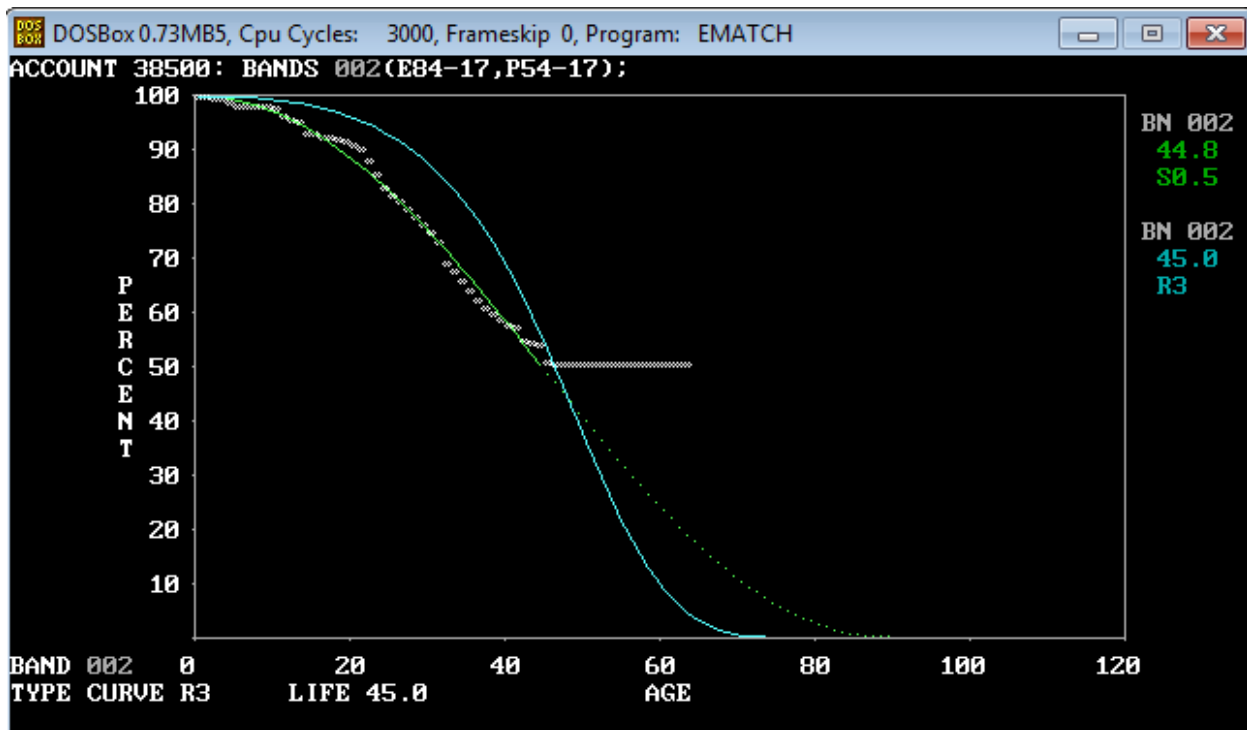
Account 390.0 – Structures and Improvements (General Plant)

All experience bands had fit curves between 36 and 40 years. Staff went with a 39 R2.5 curve which was very close fit mathematically and visually. This is higher than Staff's previous proposed life of 33 years, and fits within the peer range.

Company proposed average life is 33 with a L0 model curve.

For net salvage, Staff and the Company agree to 0%.
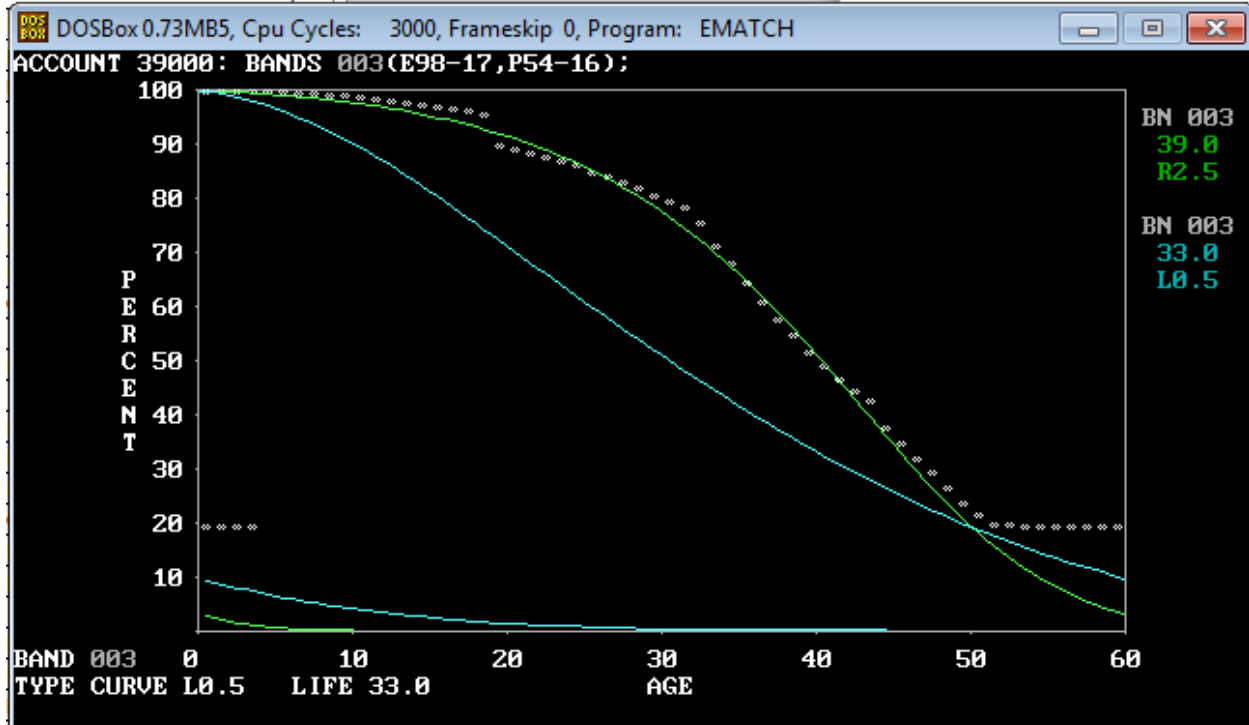
Account 391.0 – Office Furniture and Equipment

The shortest experience band shows a shorter average life of 18 years, but the middle band (from 1995 to 2017), which includes more retirement data, shows a model curve of 22 L2 as the best fit. This was Staff's selection, which falls in line with the peer range.

Company proposed a 15 L3 curve, included in plot below. Staff previously suggested a 20 year average life, which the Company didn't object to.
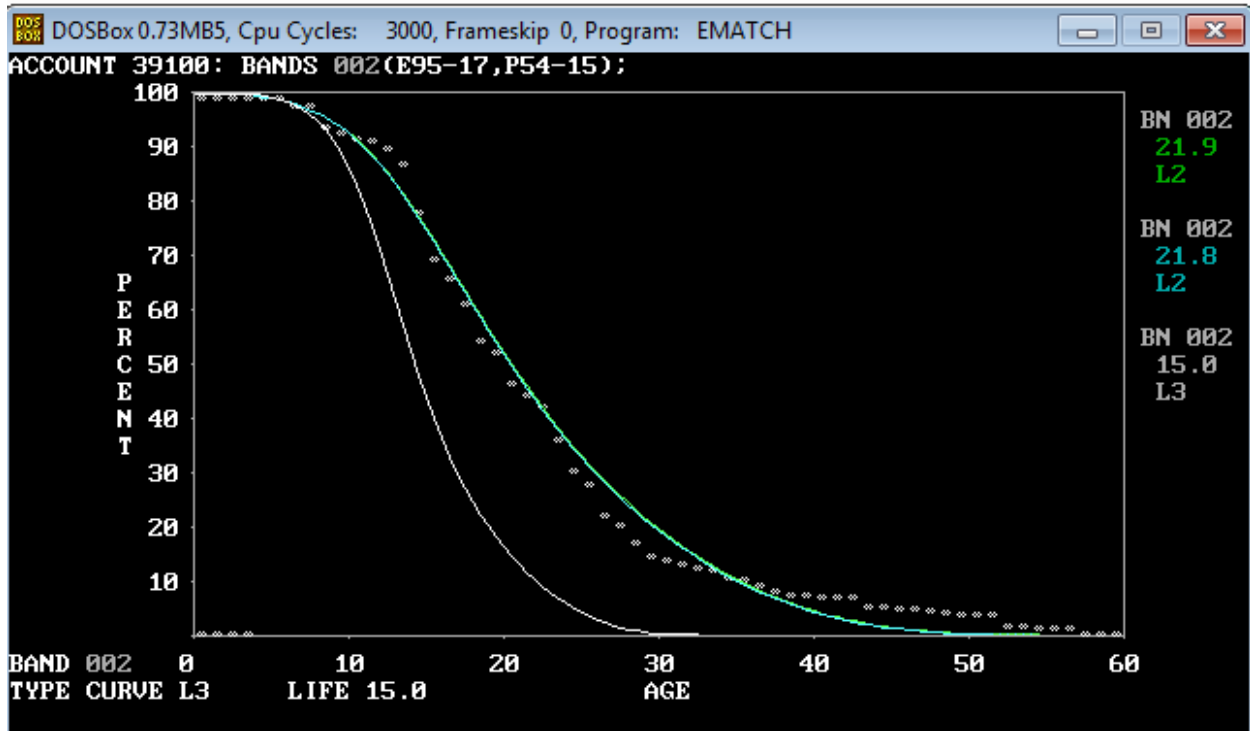
Account 392 – Transportation Equipment

Staff and the company selected the same curve for this account – 8 L3. It was a good fit mathematically and visually and falls in range of peers.

For net salvage, Staff and the Company agree to 6% which is the long term average. This is slightly below the peer range but still acceptable due to the quantity of available data.
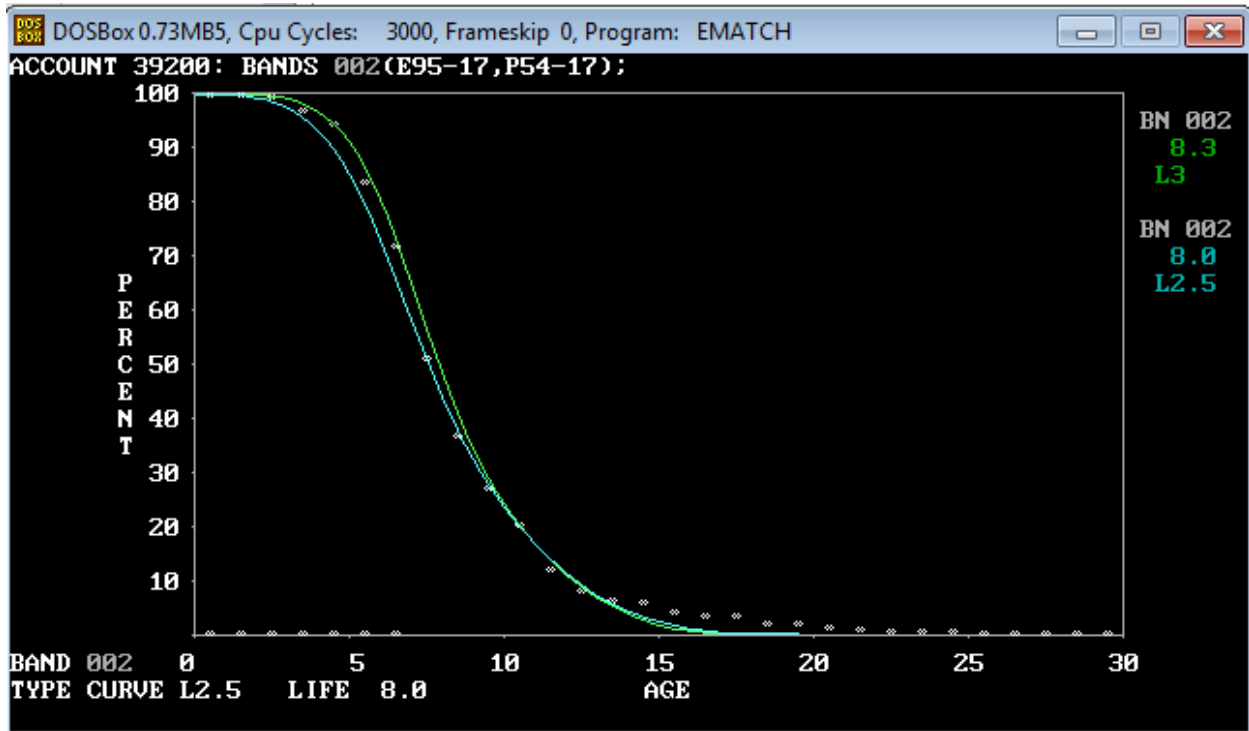
Account 393 – Stores Equipment

This account has a very low dollar value – less than $1,000. Staff selected a 23 L4 curve based on best fit curve mathematically. The Company did not object to Staff's previous proposal of 22 years. This 23 year average life is below the peer range, but higher than the Company's proposed average life and the presumed existing average life.

Company proposed an 18 L3 curve, shown below.
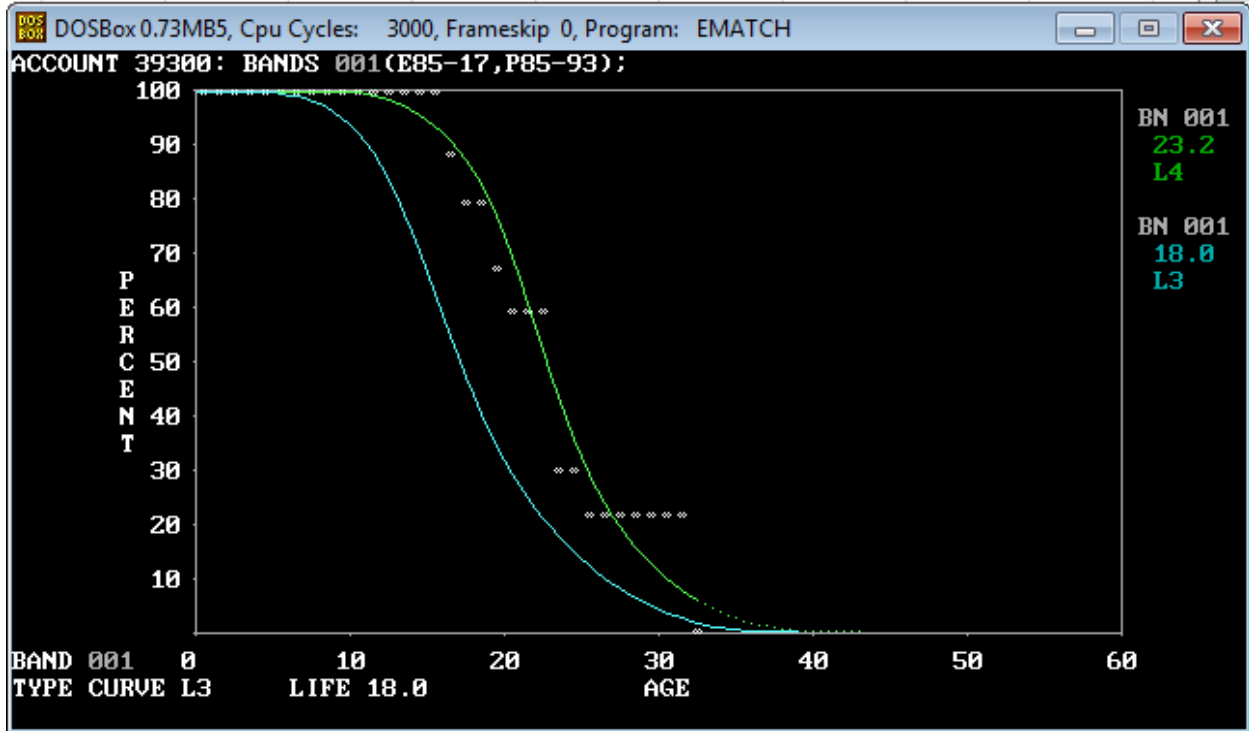
Account 394 – Tools, Shop, and Garage Equipment

Staff fit an 18 O2 curve mathematically. This is slightly higher than Staff's previously proposed average life of 17 years, which the company did not object to. An 18 year average life is very slightly below the peer range by one year.

The company originally proposed a 13.0 L0 curve.

The total cost of removal/gross salvage history shows a net salvage of 0%. Both Staff and the Company agree to 0% net salvage.
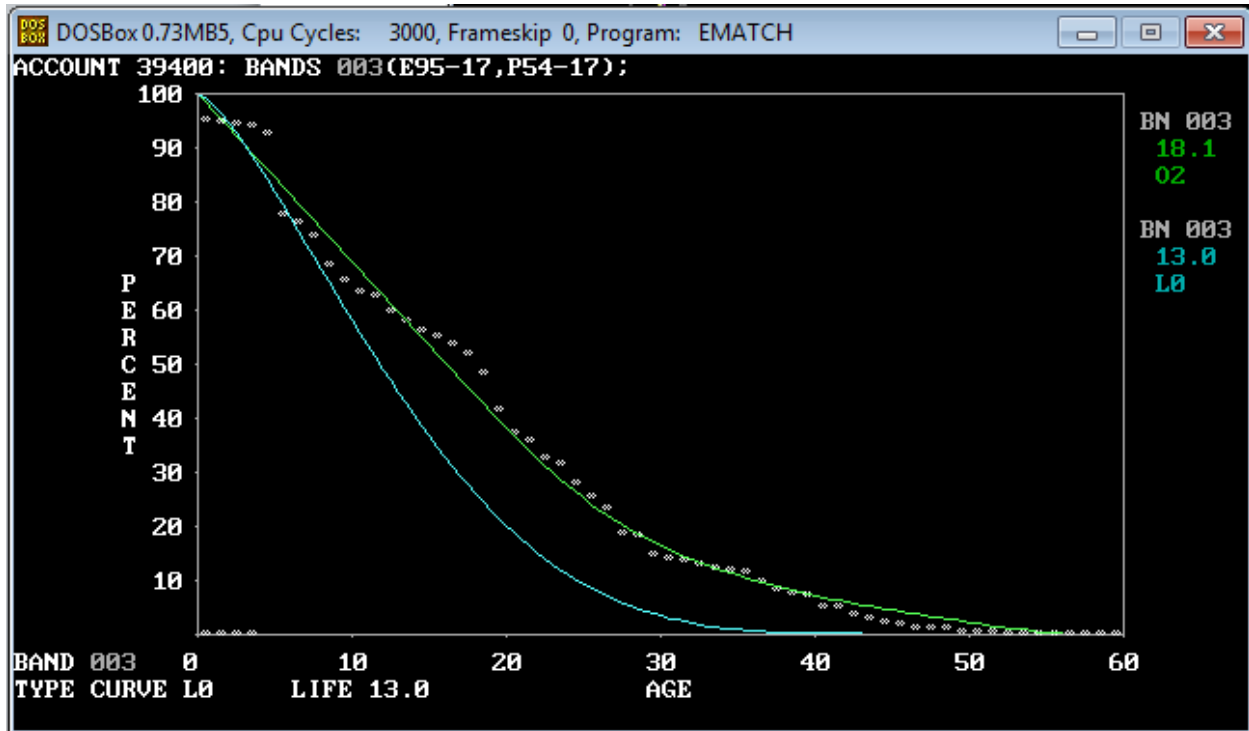
Account 395 – Laboratory Equipment

This account has a very low dollar value – less than $1,000. Although the retirement volume is low, the stub curve is complete and ends at 0% surviving. The best mathematically fit curve was the 28 R1. Staff used a 1970 to 2017 placement band to represent newer technology, as any new additions into the account will be better represented by a shorter placement band. This life falls in the range of peers.

Company proposed a 15 L3 curve, but had not objected to Staff's previous proposed average life of 25 years.
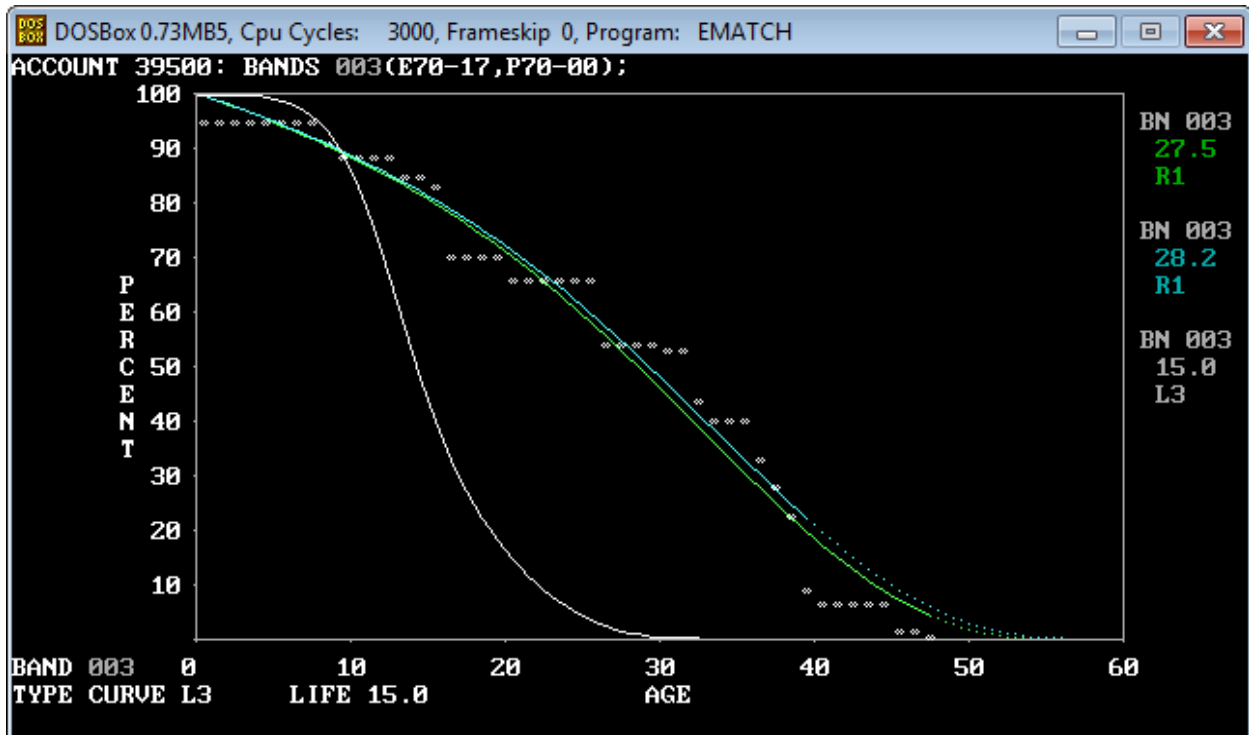
Account 396 – Power Operated Equipment (including all subaccounts)

Staff agrees with the company-selected 12 L0 model curve. Retirement history was complete to 0% surviving and the selected curve was a good fit mathematically and visually for all subaccounts. Plots are shown below. Proposed life is in range with peers.

For net salvage, Staff continues to propose 18%. This is the total average, and is near the upper limit of the peer range, but within the peer range. The five year average shows a higher positive net salvage of 42%. It's Staff's opinion that the bands don't show a trend.
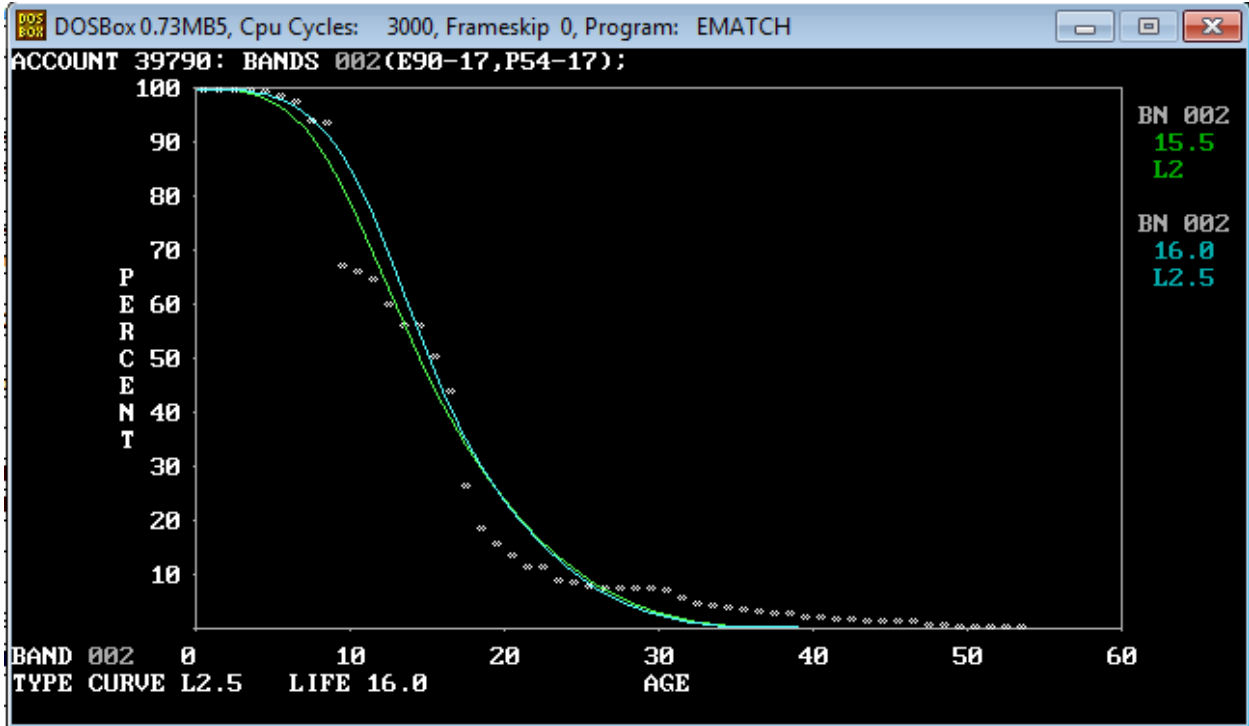
The Company originally proposed 10% net salvage, but didn't object to Staff's proposed 18%.
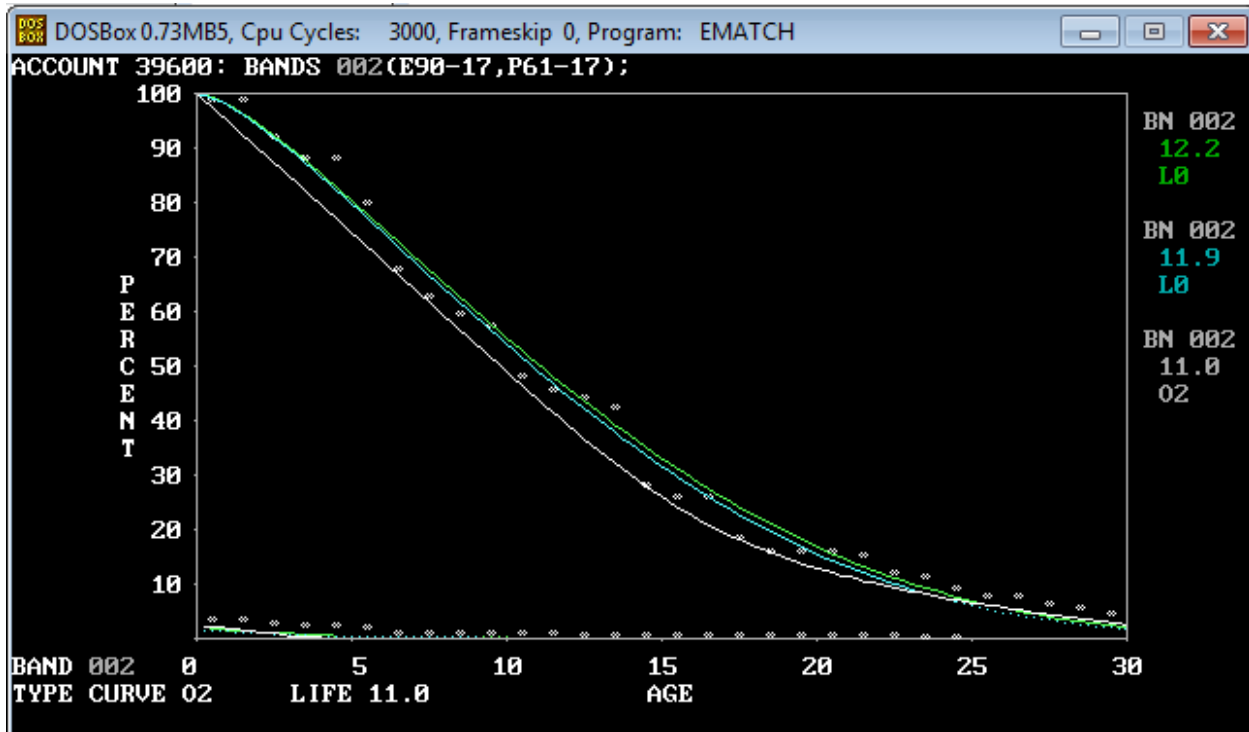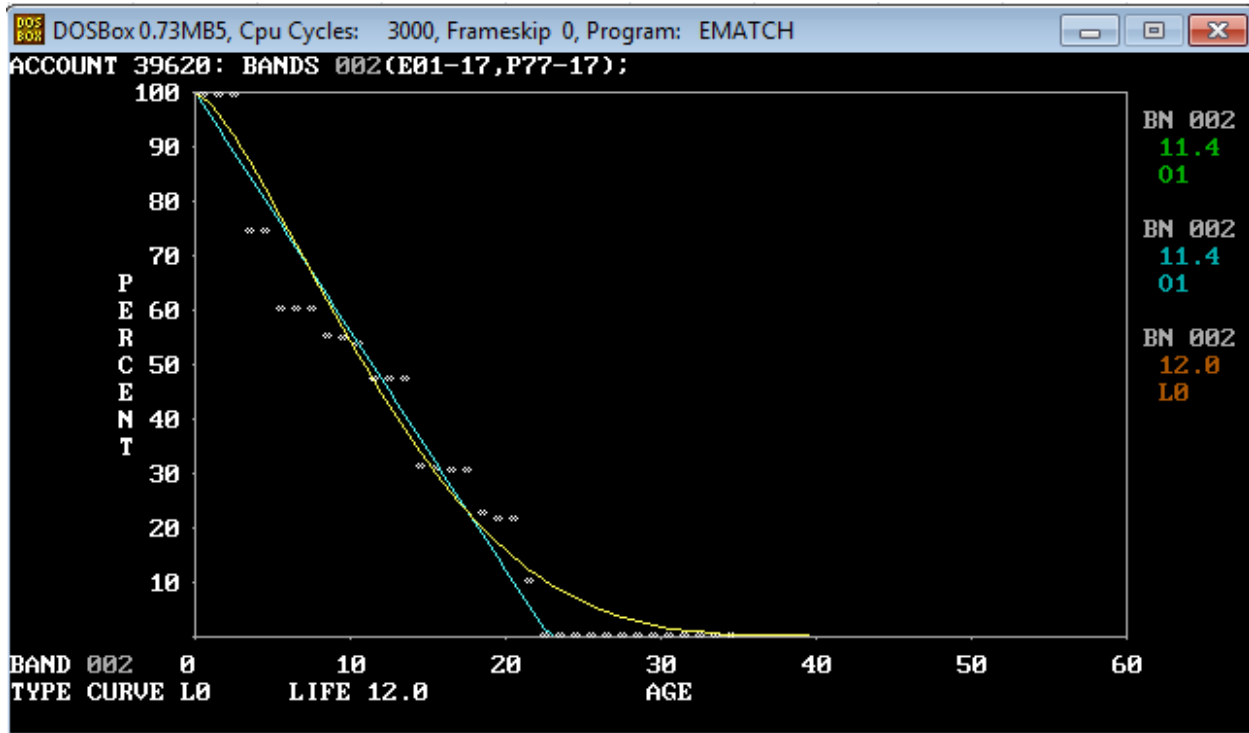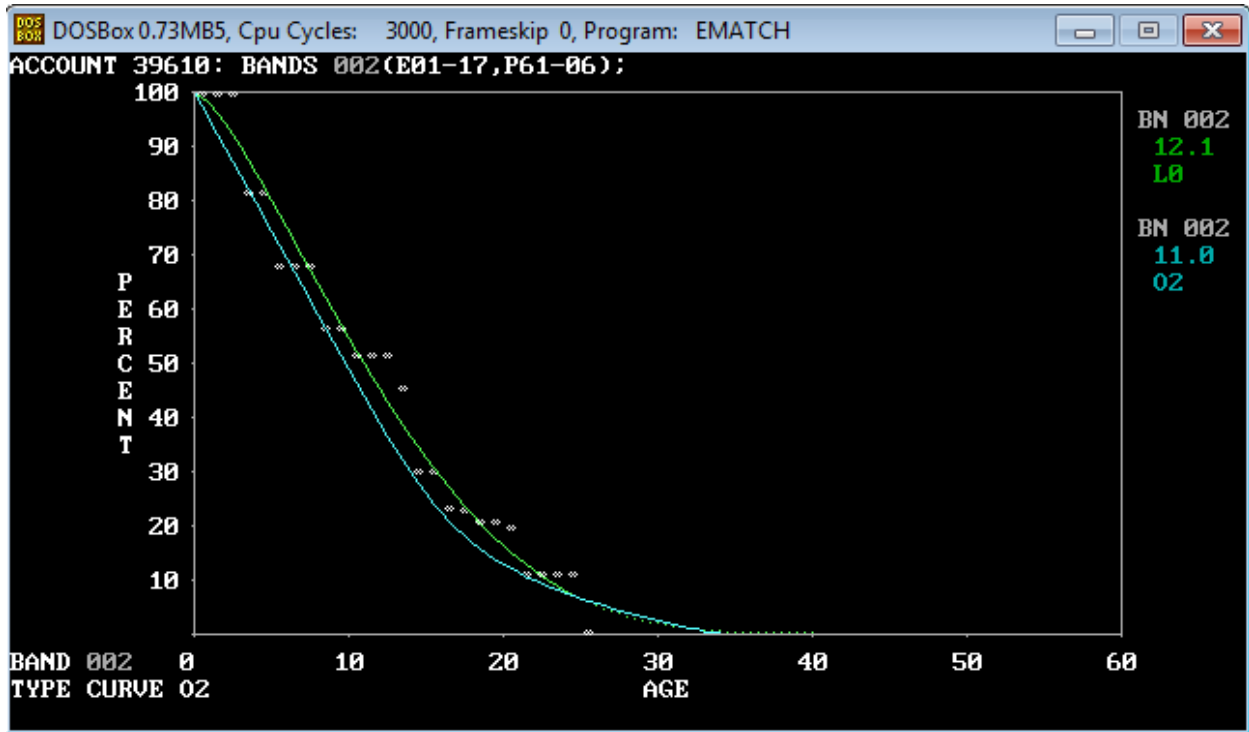
Account 397 – Communication Equipment

Staff's selected curve, based on mathematical fit, was 16 L2. This is very similar to the company's proposed curve of 16 L2.5, which is shown below. For this reason Staff is also proposing the 16 L2.5 curve.

Account 398 – Miscellaneous Equipment

Fit to age 35, the 20 L2 curve is the best fit mathematically. Staff used a full experience band for the maximum volume of retirement data. This average life falls in range with peers.

The company's proposed life parameter uses the 16.0 R1.5 curve, depicted below.
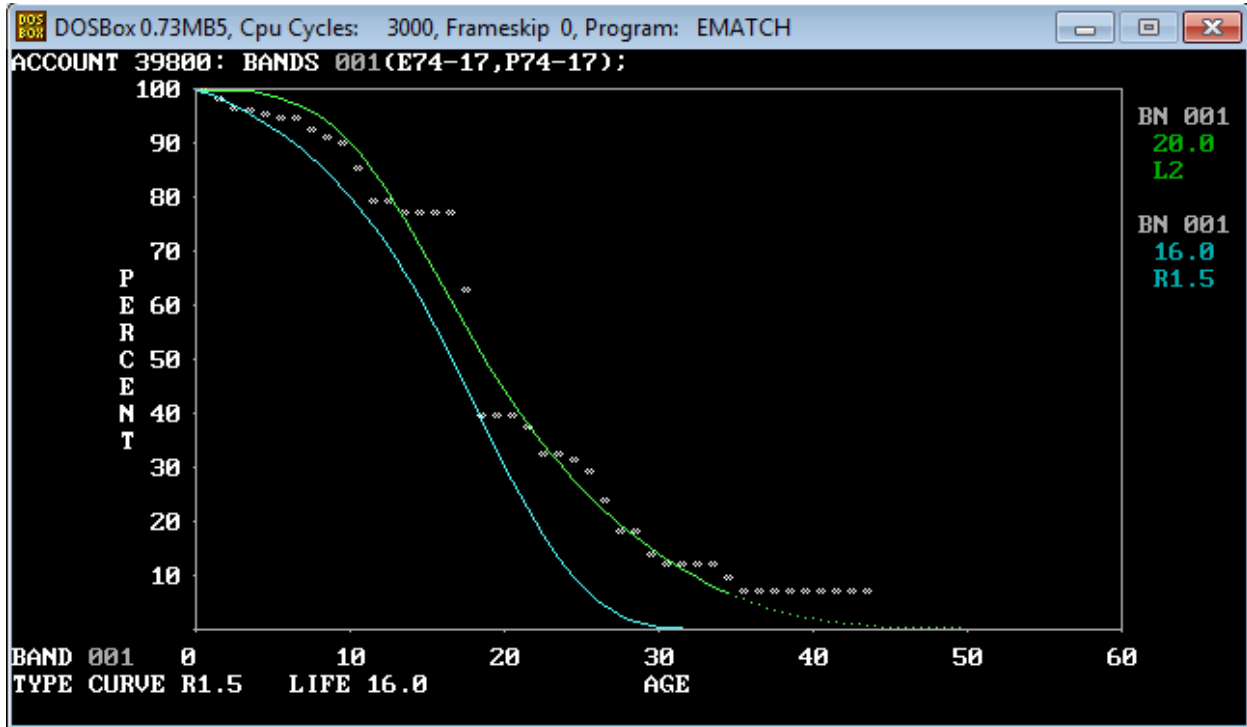
Account 399.0 – Other Tangible Property

There is no balance in this account. Given the nature of the account that the wide variety of items that could go into it, Staff is proposing a 0% depreciation rate for new property placed into the account until the nature of the property can be reviewed by Staff in the next rate case.

Account 399.3 – Other Tangible Property – Network Hardware

This account has very few retirements, but shows that by dollar unit, the average life is about 8 years. This is the same as Staff's previous proposal. The company did not object to Staff's previous proposal of 8 years. Staff recommends a square curve (8 SQ).

Account 399.4 – Other Tangible Equipment – PC Hardware

This account has a low volume of retirements but does form a full curve ending at 0% surviving. Staff fit a 7 L0 model curve to the stub curve. This is the same average life Staff proposed previously, which the Company did not object to.
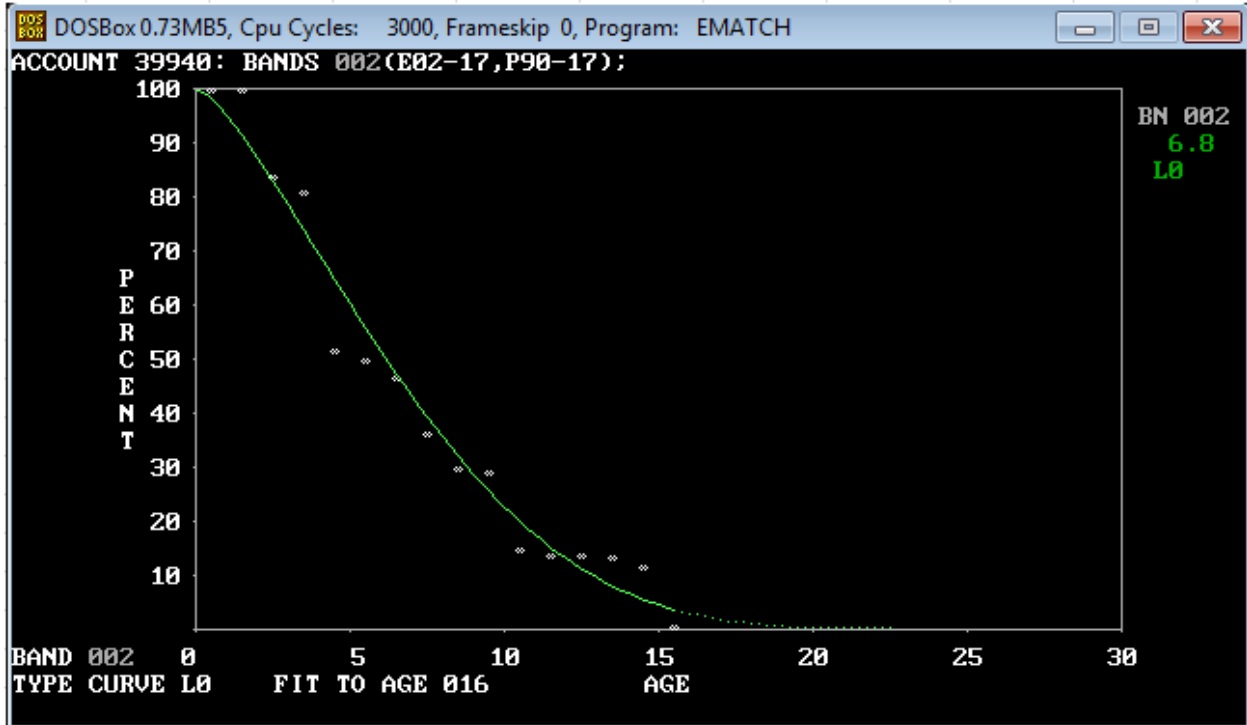
Account 399.5 – Other Tangible Property – PC Software

The volume of retirements in this account is very low, with only five retirement entries in the data set. By dollar value the data shows the best fit model curve mathematically is a 9 R2.5 curve. However, given the choppy dispersion of the limited retirements, 8 years is also reasonable. For this reason, Staff is upholding its original proposed model curve of 8 SQ.

The company is proposing a 5 SQ curve "based on judgement". A 5 S6 model curve, which is graphically similar to a 5 SQ curve (Staff's software does not plot square curves) is shown in reference.
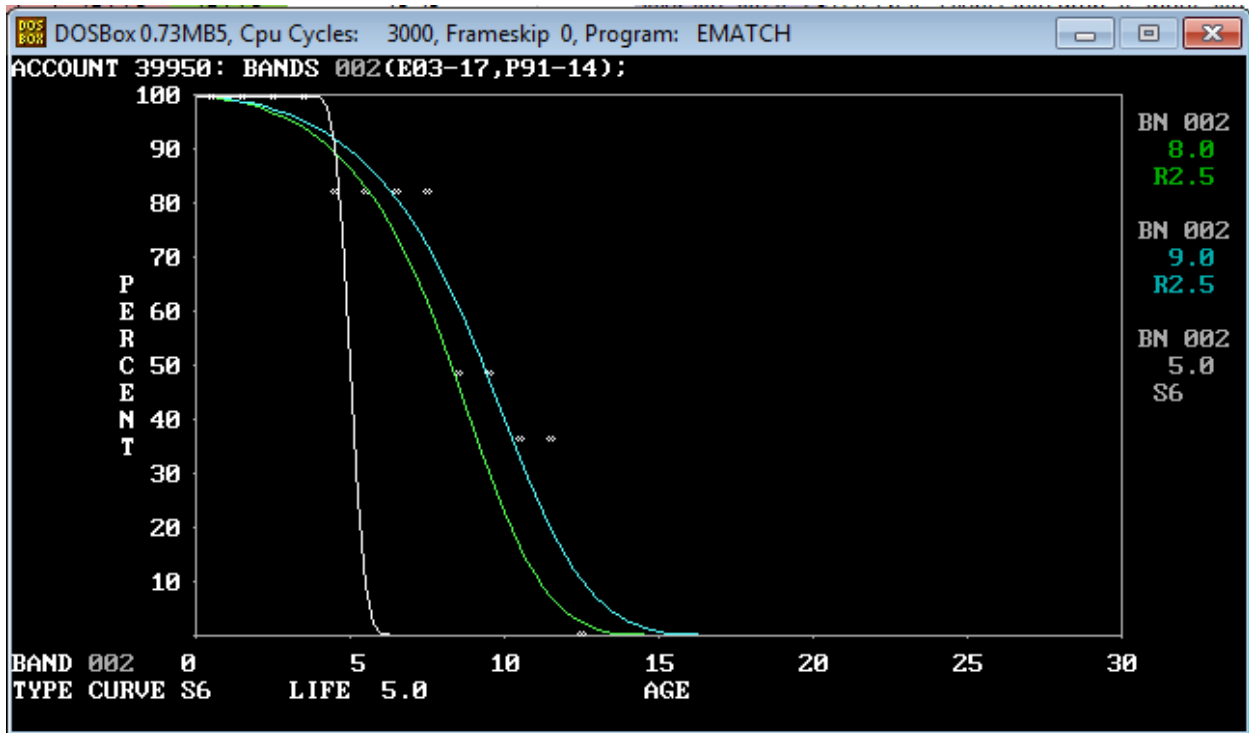
Liberty Utilities (Midstates Natural Gas) Corp.
Depreciation Rates
GR-2018-0013

Account Number	Plant Description	Depreciation Rate (WEMO, SEMO, and NEMO)	Average Service Life	Net Salvage Rate
365	**Land - Transmission**	0.00%		
365.1	**Land and Land Rights**	0.00%		
365.2	**Rights-of-Way**	0.00%		
366	**Structures and Improvements**	2.10%	50	-5%
366.1	**Structures and Improvements (T&D other structures)**	2.10%	50	-5%
367	**Mains - Transmission - Cathodic Protection**	1.57%	70	-10%
367.1	**Mains - Transmission - Steel**	1.57%	70	-10%
367.2	**Mains - Transmission - Plastic**	1.57%	70	-10%
369	**Measuring & Regulating Station Equipment**	2.04%	49	0%
370	**Communication Equipment**	4.35%	23	0%
374	**Land and Land Rights**	0.00%		
375	**Structures and Improvements**	2.22%	45	0%
376	**Mains - Distribution - Cathodic Protection**	1.97%	68	-34%
376.1	**Mains - Distribution - Steel**	1.97%	68	-34%
376.2	**Mains - Distribution - Plastic**	1.92%	64	-23%
377	**Compressor Station Equipment**	0.00%		
378	**Measuring & Regulating Station Equipment- General**	2.66%	47	-25%
379	**Measuring & Regulating Station Equipment- City Gate**	2.78%	45	-25%
380	**Services**	4.55%	33	-50%
381	**Meters**	4.82%	28	-35%
382	**Meter Installations**	5.40%	25	-35%
383	**House Regulators**	2.27%	44	0%
384	**House Regulators Installations**	2.27%	44	0%
385	**Industrial Measuring & Regulating Station Equipment**	2.27%	45	-2%
387	**Other Equipment**	4.55%	22	0%
389	**Land and Land Rights**	0.00%		
390	**Structures and Improvements**	2.56%	39	0%
390.1	**Structures and Improvements - Structure Frame**	2.56%	39	0%
390.2	**Structures and Improvements - General Improvements**	2.56%	39	0%
390.3	**Structures and Improvements - Improvements Leased Premises**	2.56%	39	0%
391	**Office Furniture and Equipment**	4.55%	22	0%
392	**Transportation Equipment**	11.75%	8	6%
392.1	**Transportation Equipment less than 12,000 lbs.**	11.75%	8	6%
393	**Stores Equipment**	4.35%	23	0%
394	**Tools, Shop, and Garage Equipment**	5.56%	18	0%
395	**Laboratory Equipment**	3.57%	28	0%
396	**Power Operated Equipment**	6.83%	12	18%
396.1	**Power Operated Equipment - Ditchers**	6.83%	12	18%
396.2	**Power Operated Equipment - Backhoes**	6.83%	12	18%
396.3	**Power Operated Equipment - Welders**	6.83%	12	18%
397	**Communication Equipment**	6.25%	16	0%
397.1	**Communication Equipment - Mobile Radios**	6.25%	16	0%
397.2	**Communication Equipment - Fixed Radios**	6.25%	16	0%
397.3	**Communication Equipment - Telemetering**	6.25%	16	0%
398	**Miscellaneous Equipment**	5.00%	20	0%
399	**Other Tangible Property**	0.00%		
399.3	**Other Tangible Prop - Network - H/W**	12.50%	8	0%
399.4	**Other Tangible Prop - PC Hardware**	14.29%	7	0%
399.5	**Other Tangible Prop - Software**	12.50%	8	0%

Corporate Allocated Plant Depreciation Rates

Account Number	Plant Description	Depreciation Rate (WEMO, SEMO, and NEMO)	Average Service Life	Net Salvage Rate
374	**Land and Land Rights - Corporate**	0.00%		
390	**Structures and Improvements - Corporate**	2.50%	40	0%
391	**Office Furniture and Equipment - Corporate**	5.00%	20	0%
392.1	**Transportation Equipment less than 12,000 lbs - Corporate**	9.40%	10	6%
394	**Tools, Shop, and Garage Equipment - Corporate**	5.00%	20	0%
398	**Miscellaneous Equipment - Corporate**	5.00%	20	0%
399	**Other Tangible Property - Corporate**	14.29%	7	0%
399.1	**Other Tangible Property - Servers - H/W - Corporate**	20.00%	5	0%
399.3	**Other Tangible Property - Network - H/W - Corporate**	14.29%	7	0%
399.4	**Other Tangible Property - PC Hardware - Corporate**	20.00%	5	0%
399.5	**Other Tangible Property - Software - Corporate**	14.29%	7	0%