

**BEFORE THE TENNESSEE REGULATORY AUTHORITY
NASHVILLE, TENNESSEE**

IN RE:

PETITION OF ATMOS ENERGY)	
CORPORATION FOR APPROVAL OF)	
ADJUSTMENT OF ITS RATES AND)	
REVISED TARIFF)	DOCKET NO. 12-_____

**PRE-FILED TESTIMONY OF THOMAS H. PETERSEN
ON BEHALF OF ATMOS ENERGY CORPORATION**

I. INTRODUCTION OF WITNESS

Q. PLEASE STATE YOUR NAME, TITLE AND BUSINESS ADDRESS.

A. My name is Thomas H. Petersen. I am Rates Director for Atmos Energy Corporation (“Atmos Energy” or the “Company”). My business address is 5420 LBJ Freeway, Dallas, Texas 75240.

II. SUMMARY OF TESTIMONY

Q. PLEASE SUMMARIZE THE TESTIMONY THAT YOU INTEND TO GIVE IN THIS PROCEEDING.

A. My testimony will cover three areas:

1. Calculation of the Company’s projected revenue deficiency for the attrition year that ends November 30, 2013. The total projected revenue deficiency for that year is approximately \$10.8 million, as shown in the attached revenue requirements study.

- 1 2. Calculation of an average rate base for that same period. The projected
2 attrition year rate base is approximately \$209 million as shown in
3 Schedule THP-7.
- 4 3. Calculation of cash working capital requirements in the attached lead-lag
5 study. Cash working capital is the capital investment in addition to other
6 rate base items that is required to bridge the gap between when cash is
7 paid for the expenses necessary to provide service and when cash is
8 received from customers for that service. That amount should be
9 included in the rate base that is used to set rates in this proceeding. Based
10 upon my lead-lag study, the Company has a cash working capital
11 requirement of approximately \$653 thousand.

12 **Q. WHAT CALCULATIONS HAVE YOU PERFORMED FOR YOUR**
13 **TESTIMONY IN THIS PROCEEDING?**

14 A. I have calculated the Company's projected revenue deficiency for the attrition
15 year ended November 30, 2013. I also have calculated an average rate base for
16 the period. My calculations incorporate the capital structure and rate of return
17 presented by Dr. James Vander Weide, the revenue at present rates from Mr. Josh
18 Densman and the expense projections presented by Mr. Greg Waller. The
19 deficiency and rate base calculations are shown in attached Schedules THP-1
20 through THP-10 and related work papers. I also have performed a lead-lag
21 analysis to calculate the cash working capital used to provide utility services. The
22 calculation of cash working capital to be included in rate base is shown in
23 attached Schedules THP-CWC1 through THP-CWC10.

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III. WITNESS QUALIFICATIONS

3 **Q. WHAT IS YOUR EDUCATIONAL BACKGROUND AND**
4 **PROFESSIONAL EXPERIENCE?**

5 A. I received a Bachelor of Science degree in accounting from the University of
6 Nebraska at Omaha and a Master of Arts degree with a major in finance from the
7 University of Iowa. I am a Chartered Financial Analyst. From July 1980 through
8 March 1989, I was employed in the Rates and Tariffs Division of the Kentucky
9 Public Service Commission. I was Manager of Rates and Revenue Requirements
10 for Atmos Energy from April 1989 through September 1997. I have been a
11 Director in Atmos Energy's Rate Department since October 1997.

12

13

IV. REVENUE DEFICIENCY

14 **Q. PLEASE EXPLAIN SCHEDULE THP-1.**

15 A. Schedule THP-1 summarizes the elements of the cost of service, including gas
16 cost expense, operation and maintenance expense, depreciation expense, taxes
17 other than income taxes, return on rate base, income tax, allowance for funds used
18 during construction ("AFUDC") and interest on customer deposits. Schedule
19 THP-1 compares the total cost of service to revenues at present rates in order to
20 calculate a net revenue deficiency.

21 **Q. PLEASE EXPLAIN SCHEDULES THP-2 AND THP-3.**

22 A. Schedule THP-2 shows per book revenues for the test year ended March 31, 2012
23 and the projected attrition year revenues from Mr. Densman's testimony.

1 Schedule THP-3 shows the test year per books gas cost and the projected cost of
2 gas, from Mr. Waller's testimony. The attrition year cost of gas is adjusted to
3 remove rent for inter-company leased storage property that is booked to gas cost.

4 **Q. PLEASE EXPLAIN SCHEDULE THP-4.**

5 A. Schedule THP-4 shows the test year per books operation and maintenance
6 expense, and the projected attrition year operation and maintenance expense from
7 Mr. Waller's testimony. I have adjusted the attrition year operation and
8 maintenance expense to remove rent on inter-company leased property and
9 include operating expenses for that property. I have adjusted the attrition year
10 taxes other than income taxes expense to include taxes for intercompany leased
11 property.

12 **Q. PLEASE EXPLAIN SCHEDULE THP-5.**

13 A. Schedule THP-5 shows the test year per books taxes other than income taxes
14 expense, and the projected attrition year taxes other than income taxes expense
15 from Mr. Waller's testimony.

16 **Q. PLEASE EXPLAIN SCHEDULE THP-6.**

17 A. Schedule THP-6 shows the test year per books depreciation and amortization
18 expense, and the projected attrition year depreciation and amortization expense.
19 The attrition year depreciation expense is adjusted to reflect the proposed
20 depreciation rates for Shared Services, and to reflect the net elimination of inter-
21 company leased property.

22 The depreciation rates currently used for Shared Services are based on a
23 depreciation study using data through fiscal year 2006. Last year, I arranged for

1 Alliance Consulting Group to prepare a depreciation study for the Shared Services
2 assets utilizing data through fiscal year 2010. A copy of that study, which has
3 been approved by Commissions in Louisiana, Mississippi and Virginia, is
4 attached to my testimony. The depreciation rates that are recommended in that
5 study result in an annual reduction to Tennessee jurisdictional depreciation
6 expense of approximately \$429,573. The Company is requesting approval of
7 those depreciation rates in this case.

8 The depreciation rates currently used for the Company's assets in its direct
9 Tennessee operations are based on a depreciation study using plant data through
10 fiscal year 2006 and were approved in the Company's 2007 rate case in
11 Tennessee. The depreciation rates currently used for the general office of the
12 Kentucky Mid-States operating division are based on a depreciation study using
13 data through fiscal year 2007 and were approved in the Company's 2008 rate case
14 in Tennessee. Consequently, the Company is not requesting any change to these
15 depreciation rates in this case.

16 **Q. PLEASE EXPLAIN SCHEDULE THP-7.**

17 A. Schedule THP-7 shows the calculation of the test year per books rate base, and
18 projected attrition year rate base. The rate base includes the projected thirteen
19 month averages of the original cost of plant, accumulated depreciation,
20 construction work in progress ("CWIP"), storage gas investment, materials and
21 supplies, cash working capital, accumulated deferred income tax ("ADIT"),
22 customer advances, customer deposits, accumulated interest on customer deposits
23 and deferred rate case expenses. The items included are generally consistent with

1 the items included in the rate base in the company's monthly 3.03 reports to the
2 TRA. However, in addition to the items included in the 3.03 reports, Schedule
3 THP-7 includes amounts for cash working capital and deferred rate case expenses.
4 The company has performed a new lead-lag study to identify its cash working
5 capital requirements. Rate base is adjusted to include the net book value of inter-
6 company leased property

7 The other rate base items were projected into the attrition year
8 individually. The projected plant amounts are based on projected capital
9 additions as discussed in Mr. Napier's testimony. The projected accumulated
10 depreciation incorporates the proposed depreciation rates. CWIP is projected to
11 remain at the March 2012 level through the attrition year as capital spending is
12 offset by completing projects and placing assets in service. The exception is the
13 major project to develop a new customer information system. Spending for that
14 project is shown as increasing CWIP until the new customer information system
15 is placed in service in April of 2013. Attrition year storage gas balances are based
16 on actual balances through March 2012 and forecast storage usage with future
17 injections priced at NYMEX futures prices as of May 2012. Materials and
18 supplies and customer advances are predicted to remain at the March 2012 level
19 through the attrition year. Cash working capital is calculated in a lead-lag study.
20 Attrition year accumulated deferred income taxes were calculated by the tax
21 department based on plant forecasts. Customer deposits are projected to increase
22 at 0.35% annually from test year levels. Attrition year average deferred rate case
23 expenses include the projected average unamortized balance from the current

1 case. Projected investment in intercompany leased property incorporates
2 depreciation and an estimated \$500,000 investment in April 2013.

3 **Q. WERE THERE ANY ADJUSTMENTS TO BOOKED OR PROJECTED**
4 **RATE BASE AMOUNTS?**

5 A. Yes. A non-utility item on shared services books was adjusted out of ADIT. The
6 adjustment is shown on WP 4-4. The Company's books and records reflect a new
7 deferred tax asset for tax net operating loss carryovers. The tax net operating
8 losses have been generated due to the bonus depreciation and other economic
9 stimulus measures enacted by Congress. These stimulus measures have allowed
10 the Company to claim sizable depreciation deductions for new capital
11 investments. Tax depreciation deductions in future years will be reduced as a
12 result of accelerating the claiming of bonus depreciation into the initial year of the
13 asset in service date. The reduced tax depreciation in future periods will result in
14 higher taxable income in those same periods. This future tax liability is recorded
15 on the Company's books and records as an ADIT liability. The ADIT liability is
16 recognized as a reduction to rate base.

17 These same bonus depreciation deductions have also generated
18 consolidated tax losses on the Company's recent tax filings. Excess tax net
19 operating losses may be carried forward to future periods and utilized to reduce
20 taxable income. The future tax effect associated with the consolidated tax net
21 operating losses is recorded on the Company's books and records as a net ADIT
22 asset in shared services. The Company has separated the ADIT associated with
23 the consolidated tax net operating loss between the utility and non-utility

1 operations based on the utility operation's stand-alone contribution to the creation
2 of the losses through tax depreciation deductions. The utility related ADIT
3 associated with the consolidated tax net operating loss is included in the rate base
4 calculation and the non-utility related ADIT associated with consolidated tax net
5 operating loss is not included in the rate base calculation.

6 **Q. PLEASE EXPLAIN SCHEDULE THP-8.**

7 A. Schedule THP-8 shows the calculation of state excise taxes and income taxes on
8 the required return on rate base for both the test year ended March 31, 2012, and
9 the attrition year ended November 30, 2013.

10 **Q. PLEASE EXPLAIN SCHEDULE THP-9.**

11 A. Schedule THP-9 shows the calculation of the overall cost of capital based on the
12 projected capital structure, debt cost rates and the required rate of return on equity
13 from Dr. Vander Weide's testimony. The resulting weighted average cost of
14 capital is 8.75%.

15 **Q. PLEASE EXPLAIN SCHEDULE THP-10.**

16 A. Schedule THP-10 shows the calculation of a rate of return on rate base and a rate
17 of return on the equity financed portion of rate base for the test period and the
18 attrition period, with costs and revenues as presented in schedules THP-2 through
19 THP-9. The resulting rate of return on rate base is approximately 6.9% for the
20 test year and 5.6% for the attrition year, and the rate of return on the equity-
21 financed portion of rate base is approximately 7.5% for the test year and 4.9% for
22 the attrition year.

23

1 **V. CASH WORKING CAPITAL**

2 **Q. WHAT IS THE PURPOSE OF THE LEAD-LAG ANALYSIS?**

3 A. Rate base is the value of invested capital, including all items used to provide
4 utility service. Cash working capital is the capital investment in addition to other
5 rate base items that is required to bridge the gap between when cash is paid for
6 expenses necessary to provide service and when cash is received from customers
7 for that service. As stated above, this amount is included in rate base. A lead-lag
8 analysis is a method of measuring the amount of cash working capital used to
9 provide utility service. This analysis compares two different lags. The lag
10 between (1) the provision of service to customers and the collection of cash from
11 customers is compared to the lag between (2) the recording of expenses and the
12 payment of cash by the company for those expenses.

13 **Q. DO YOU HAVE ANY PAST EXPERIENCE PERFORMING LEAD-LAG**
14 **STUDIES?**

15 A. Yes. I have prepared several lead lag studies for the Company over the years
16 including studies filed in Atmos Energy's rate cases in Tennessee.

17 **Q. DID YOU PREPARE THE LEAD-LAG STUDY USING A**
18 **METHODOLOGY THAT IS COMMONLY ACCEPTED IN REGULATED**
19 **GAS UTILITY RATE PROCEEDINGS?**

20 A. Yes. The lead lag study was prepared in using methods consistent with those
21 used in the Company's most recent previous filing. While maintaining the same
22 basic methods, there have been some improvements in the application of those

1 methods. For example, a random sampling technique was applied to the analysis
2 of O&M invoices to allow for a more thorough review of individual invoices.

3 **Q. PLEASE DESCRIBE SCHEDULE THP-CWC1.**

4 **A.** This Schedule actually consists of two parts – Schedule THP-CWC1 A and THP-
5 CWC1 B. Schedule THP-CWC1 A summarizes the results of the lead-lag
6 analysis for the attrition year that ends November 30, 2013. It shows the
7 calculation of the cash working capital requirement based on revenue and expense
8 lag days and projected expense amounts in the proposed revenue requirement.

9 Schedule THP-CWC1 B summarizes the results of the lead-lag analysis
10 for the test year ended March 31, 2012. It shows the calculation of the cash
11 working capital requirement based on revenue and expense lag days and actual
12 expenses for the test year.

13 The individual expense categories analyzed are listed in column (a) of Schedules
14 THP-CWC1 A and THP-CWC1 B. These include gas cost, operating and
15 maintenance expenses, taxes other than income taxes, federal income tax, state
16 excise tax, depreciation, interest on customer deposits, interest expense on long
17 term debt, and return on equity. Operating and maintenance (“O&M”) expenses
18 are divided into labor and other O&M costs. Taxes other than income taxes
19 include payroll taxes – FICA and unemployment, ad valorem taxes, gross receipts
20 taxes, TRA inspection fee, DOT fees, franchise taxes, and allocated taxes.

21 The amounts shown in column (b) of Schedule THP-CWC1 A are for the
22 attrition year ended November 2013 with adjustments. The amounts shown in
23 column (b) of Schedule THP-CWC1 B are for the test year ended March 2012.

1 The amounts in column (c) of each Schedule are calculated by dividing column
2 (b) by 365 days. The revenue and expense lag days in columns (d) and (e) of both
3 Schedules are calculated on Schedules THP-CWC2 through CWC9. Net lead-lag
4 days in column (f) of each Schedule are calculated by subtracting column (e) from
5 column (d). The cash working capital requirement in column (g) of each
6 Schedule is calculated by multiplying the average daily amount in column (c)
7 times the net lead-lag days in column (f). The net result, which is approximately
8 \$653 thousand of total cash working capital requirement for the attrition year,
9 appears at the bottom of column (g) of Schedule THP-CWC1 A.

10 **Q. PLEASE DESCRIBE SCHEDULE THP-CWC2.**

11 A. The average revenue lag is calculated on Schedule THP-CWC2. The revenue lag
12 is the average number of days from the time service is provided by the company
13 until revenue related to that service is available to pay bills. It consists of four
14 subparts: the service lag, the billing lag, the collection lag and the bank lag.

15 **Q. WHAT IS THE SERVICE LAG?**

16 A. The service lag is the average number of days from the time service is provided
17 until the meter is read. Since service is provided daily and meters are read
18 monthly, the service lag is one-half of a month or 15.21 days.

19 **Q. WHAT IS THE BILLING LAG?**

20 A. The billing lag is the time lag from meter reading to bill issuance. The average
21 billing lag based on all bills issued in a heating season month (January) and a non-
22 heating season month (September), was 1.55 days.

23 **Q. WHAT IS THE COLLECTION LAG?**

1 A. The collection lag is the average number of days between issuing a bill and
2 receiving payment. This was calculated by dividing the average daily accounts
3 receivable balance by the average daily revenue plus billed taxes. The collection
4 lag was calculated for the year ended March 2012. It resulted in a lag period of
5 18.72 days.

6 **Q. WHAT IS THE BANK LAG?**

7 A. The bank lag is the one-day lag between receiving payment and having funds
8 available to draw at the bank. Customer accounts receivable balances are credited
9 when payment is received.

10 **Q. WHAT IS THE TOTAL AVERAGE REVENUE LAG?**

11 A. The resulting total average revenue lag is 36.48 days, as shown on the last line of
12 Schedule THP-CWC2.

13 **Q. PLEASE DESCRIBE SCHEDULE THP-CWC3.**

14 A. Schedule THP-CWC3 shows the calculation of the average purchased gas cost
15 payment lag of 39.46 days from the delivery of the gas to the payment for the gas.
16 The schedule shows the service dates, the invoice date, and the payment date for
17 all gas invoices in the test year.

18 **Q. PLEASE DESCRIBE SCHEDULE THP-CWC4.**

19 A. Schedule THP-CWC4 shows the calculation of the average payroll lag, which is
20 the average number of days from the time service is provided until payroll related
21 to that service is paid. The payroll lag days consists of three subparts: the service
22 lag, the payment lag, and the check-clearing lag.

1 **Q. PLEASE DISCUSS EACH OF THE SUBPARTS OF THE PAYROLL**
2 **LAG?**

3 A. The service lag is the average number of days from the time service is provided
4 until the end of the pay period. With the Company's two-week pay period, the
5 service lag is seven days. The payment lag is the average number of days
6 between the end of the pay period and payment date. With the Company's
7 practice of paying on Friday for a pay period that ended the previous Friday, the
8 payment lag is seven days. Most employees use direct deposit, and therefore have
9 no check-clearing lag. However, the few employees that are paid by check result
10 in an average check-clearing lag of 0.14 days. The total average payroll lag is
11 14.14 days.

12 **Q. PLEASE DESCRIBE SCHEDULE THP-CWC5.**

13 A. Schedule THP-CWC5 shows the calculation of the average number of lag days
14 for other O&M expenses. The calculation is based on an analysis of payments for
15 the twelve months ended March 31, 2012. I analyzed a random sample of 300
16 invoices out of the 4,486 total Tennessee O&M invoices to determine the lag
17 between the date services were provided to the Company and the date the
18 Company paid the bill for those services. In most cases, the service period could
19 be determined from the invoice. If no information was available regarding the
20 date service was provided, then the date of the invoice was used. The resulting
21 weighted average lag from service to payment is 16.14 days. The payments
22 related to those invoices, checks, wires and direct deposits, were used to
23 determine the lag between the payment date and the date that the payment cleared.

1 The resulting weighted average check-clearing lag is 6.64 days. Therefore, the
2 total average lag for the other O&M expenses is 22.78 days.

3 **Q. PLEASE DESCRIBE SCHEDULE THP-CWC6.**

4 A. Schedule THP-CWC6 shows the calculation of the average payment lag days for
5 other taxes. The calculation of the lag is shown separately for each type of tax
6 (payroll taxes – FICA and unemployment, ad valorem taxes, gross receipts taxes,
7 TRA inspection fee, DOT fees, and franchise taxes).

8 **Q. PLEASE DISCUSS THE LAG RELATING TO PAYROLL TAXES.**

9 A. Payroll taxes consist of FICA taxes and unemployment taxes. FICA taxes are
10 paid by wire on the first banking day after each payday. Since paydays are
11 normally on Fridays, FICA lag days are equal to the payroll lag days for direct
12 deposit employees plus 3 days, for a total lag of 17.1 days. Unemployment taxes
13 are paid quarterly at the end of the month following each quarter. Therefore, for
14 unemployment taxes, the lag, as calculated from the mid-point of the quarter to
15 the payment date at the end of the following month, is 76 days.

16 **Q. PLEASE DISCUSS THE LAG RELATING TO AD VALOREM TAXES.**

17 A. Ad valorem taxes for a calendar year are paid on February 28 of the following
18 year. Therefore, the ad valorem tax lag, as calculated from the mid-point of the
19 calendar year to the payment date, is 241.50 days.

20 **Q. PLEASE DISCUSS THE LAG RELATING TO GROSS RECEIPTS**
21 **TAXES.**

1 A. Gross receipts taxes are paid annually on August 1, for the period of July 1 of the
2 current year through June 30 of the following year. Therefore, gross receipts
3 taxes are paid on a (151.50) day lead, as opposed to a lag.

4 **Q. PLEASE DISCUSS THE LAG RELATING TO THE TRA INSPECTION**
5 **FEE.**

6 A. The annual TRA Inspection Fee is paid on or before April 1 of each year, for the
7 revenue period January 1 through December 31 of the prior year. Therefore, the
8 TRA Inspection Fee lag, as calculated from the mid-point of the calendar year to
9 the payment date, is 272.50 days.

10 **Q. PLEASE DISCUSS THE LAG RELATING TO THE DOT FEE.**

11 A. The annual DOT fee lag of 60 days is calculated from the midpoint of the fiscal
12 year to the payment date on February 28th of the following calendar year.

13 **Q. PLEASE DISCUSS THE LAG RELATING TO THE STATE FRANCHISE**
14 **TAX.**

15 A. The franchise tax is paid in four quarterly payments during the year similar to the
16 state excise tax. The resulting lag is 37days.

17 **Q. PLEASE DESCRIBE SCHEDULE THP-CWC7.**

18 A. Schedule THP-CWC7 shows the calculation of the federal income tax lag.
19 Income taxes for the test year are paid in four quarterly payments during the year.
20 The average lag from the midpoint of the test year to the payment dates is 37
21 days. This is the lag for paying current taxes. Taxes that are deferred are
22 recorded as a rate base credit and thus have an expense lag of zero days.

23 **Q. PLEASE DESCRIBE SCHEDULE THP-CWC8.**

1 A. Schedule THP-CWC8 shows the calculation of the state excise tax lag. State
2 excise taxes for a fiscal year are paid on the same schedule as federal income
3 taxes. Therefore, the average lag from the midpoint of the tax year to the
4 payment dates is also 37 days for paying current taxes, and zero days for deferred
5 taxes.

6 **Q. PLEASE DESCRIBE SCHEDULE THP-CWC9.**

7 A. Schedule THP-CWC9 shows the calculation of the long-term debt lag. Long-
8 term debt interest expense includes monthly payments, quarterly payments, and
9 semi-annual payments. Interest is recorded on an accrual basis and paid in the
10 period it is due. The long-term debt lag, as calculated from the mid-point of the
11 accrual period to the payment date, averages 91.9 days.

12 **Q. PLEASE DESCRIBE SCHEDULE THP-CWC10.**

13 A. Schedule THP-CWC10 shows the calculation of the short-term debt lag. In the
14 test year short-term debt interest expense was for commercial paper. Most
15 commercial paper issued by the company is very short-term, often overnight. The
16 test year average maturity of 8.4 years is longer than normal due to refinancing
17 activity in May 2011. Commitment fees are generally paid at the end of the
18 quarter. Other test year short-term debt costs were prepaid. The weighted
19 average short-term debt cost payment lag in the test year was 24.05 days.

20 **Q. HOW IS THE RATE BASE TREATMENT OF PREPAYMENTS**
21 **CONSISTENT WITH THE CALCULATION OF CASH WORKING**
22 **CAPITAL?**

1 A. Prepayments relate to expenses that are paid before they are recorded as expenses.
2 They can be included in a cash working capital study in one of two ways. First,
3 they can be included with a negative lag to reflect the gap from the payment to the
4 recording of the expense. In this way both the lag from the payment to the
5 recording of the expense and the subsequent revenue lag from the provision of
6 service to the receipt of cash are recognized in rate base. Second, they can be
7 included as prepayments in rate base and then treated in the lead-lag study at a
8 zero lag as if the payment was made at the time that the expense was recorded.
9 This way the inclusion as prepayments recognizes the lag from payment to
10 recording of expense and the lead-lag study recognizes only the revenue lag. In
11 this filing I have used the first approach, calculating rate base by including
12 prepaid items in the lead-lag study with a negative lag and not separately
13 including prepayments.

14 **Q. DISCUSS THE TREATMENT OF DEPRECIATION EXPENSE IN THE**
15 **LEAD-LAG STUDY.**

16 A. Depreciation expense is treated similar to a prepayment. When a plant asset is
17 purchased, the expense is recognized over time as depreciation expense. The
18 payment for the asset precedes the receipt of service from the asset and the
19 recording of expense. The lag between payment for the asset and the recording of
20 depreciation expense is recognized by the inclusion in rate base of plant in
21 service.

1 **Q. DOES INCLUSION OF PLANT IN SERVICE IN RATE BASE SUFFICE**
2 **TO PROPERLY ACCOUNT FOR THE ENTIRE LAG RELATING TO**
3 **DEPRECIATION?**

4 A. No. The inclusion in rate base of plant in service does not recognize the
5 subsequent lag from the provision of service to the receipt of cash for that service.
6 By including depreciation expense in the lead-lag study with a zero expense lag,
7 the lead-lag study properly recognizes the subsequent revenue lag on recovering
8 cash related to investment in plant assets. In other words, the investment in an
9 asset is included in rate base as net plant in service until depreciation is recorded
10 on that asset. Recording depreciation removes the asset from rate base, even
11 though cash has not been received to pay for the service provided by the asset,
12 unless the revenue lag on depreciation expense is included in cash working capital
13 through the lead-lag study.

14 **Q. DOES THIS CONCLUDE YOUR TESTIMONY?**

15 A. Yes.

**BEFORE THE TENNESSEE REGULATORY AUTHORITY
NASHVILLE, TENNESSEE**

IN RE:

**PETITION OF ATMOS ENERGY
CORPORATION FOR APPROVAL OF
ADJUSTMENT OF ITS RATES AND
REVISED TARIFF**

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DOCKET NO.

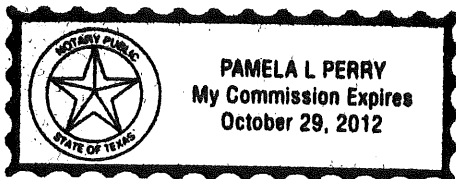
VERIFICATION

STATE OF TEXAS)
)
COUNTY OF DALLAS)

I, Thomas H. Petersen, being first duly sworn, state that I am Rates Director for Atmos Energy Corporation, that I am authorized to testify on behalf of Atmos Energy Corporation in the above referenced docket, that the Testimony of Thomas H. Petersen in Support of Atmos Energy Corporation's Petition and the Exhibits thereto pre-filed in this docket on the date of filing of this Petition are true and correct to the best of my knowledge, information and belief.

Thomas H. Petersen
Thomas H. Petersen

Sworn and subscribed before me this 19th day of June, 2012.



Pamela L. Perry
Notary Public

My Commission Expires: 10-29-12

**Tennessee Distribution System
Cost of Service
Twelve Months Ended November 30, 2013**

Line No.	Description (a)	Reference (b)	Amount (c)
1	Cost of Gas	Schedule 3	\$69,266,324
2			
3	Operation & Maintenance Expense	Schedule 4	20,869,756
4			
5	Taxes Other Than Income Taxes	Schedule 5	6,262,934
6			
7	Depreciation & Amortization Expense	Schedule 6	10,620,298
8			
9	Return	Schedule 7	18,257,841
10			
11	Federal Income and State Excise Tax	Schedule 8	7,606,162
12			
13	AFUDC	Wp 1-2	(28,577)
14			
15	Interest on Customer Deposits	Wp 1-1	<u>129,748</u>
16			
17	Total Cost of Service		<u>\$ 132,984,486</u>
18			
19			
20	Revenue at Present Rates	Schedule 2	<u>\$ 122,183,589</u>
21			
22	Net Revenue Deficiency		<u><u>\$ 10,800,897</u></u>

Atmos Energy Corporation
LEAD/LAG STUDY

Company Name:

Atmos Energy Corporation

Jurisdiction:

Tennessee

Test Year:

31-Mar-12

Attrition Year:

30-Nov-13

ATMOS ENERGY CORPORATION

SHARED SERVICES UNIT

DEPRECIATION RATE STUDY

As of September 30, 2010



<http://www.utilityalliance.com>

ATMOS ENERGY CORPORATION - SHARED SERVICES UNIT
DEPRECIATION RATE STUDY
EXECUTIVE SUMMARY

Atmos Energy Corporation (“Atmos” or “Company”) engaged Alliance Consulting Group to conduct a depreciation study of the Company’s Shared Services Unit (“SSU” or “Shared Services”) operations depreciable assets as of fiscal year end September 30, 2010. SSU provides support to Atmos Energy Corporation’s regulated utility divisions.

The regulated natural gas utility divisions during the year ended September 30, 2010 were:

- Atmos Colorado-Kansas Division
- Atmos Louisiana Division
- Atmos Kentucky Mid-States (Kentucky, Tennessee, Virginia, Iowa, Illinois, Missouri and Georgia) Division
- Atmos Mississippi Division
- Atmos Mid-Tex Division
- Atmos West Texas Division

The depreciation rates are based on the straight-line method, equal life group (“ELG”) procedure, and remaining-life technique. This study results in an annual depreciation expense accrual of \$19.8 million when applied to depreciable plant balances as of September 30, 2010.

The depreciation study we conducted analyzed and developed depreciation recommendations at an account level. The resulting annual depreciation accrual amounts and depreciation rates contained in this study are at the account level. The Company will accrue depreciation expense based on the account level depreciation rates developed in this study. Appendix A demonstrates the annual depreciation expense.

ATMOS ENERGY CORPORATION
ATMOS SHARED SERVICES UNIT
DEPRECIATION RATE STUDY
As of September 30, 2010
Table of Contents

PURPOSE	1
STUDY RESULTS	2
GENERAL DISCUSSION	3
DEFINITION	3
BASIS OF DEPRECIATION ESTIMATES	3
SURVIVOR CURVES	4
ACTUARIAL ANALYSIS	7
JUDGMENT.....	8
EQUAL LIFE GROUP DEPRECIATION	9
THEORETICAL DEPRECIATION RESERVE	9
DETAILED DISCUSSION.....	11
DEPRECIATION STUDY PROCESS	11
DEPRECIATION RATE CALCULATION	14
REMAINING LIFE CALCULATION	14
CALCULATION PROCESS	14
LIFE ANALYSIS	16
NET SALVAGE CONSIDERATIONS	17
APPENDIX A ANNUAL RATE AND ACCRUAL	29
APPENDIX B REMAINING LIFE CALCULATIONS	31
APPENDIX C MORTALITY CHARACTERISTICS.....	33
APPENDIX D NET SALVAGE ANALYSIS	35

PURPOSE

The purpose of this study is to develop depreciation rates for the depreciable property as recorded on Shared Services' books at September 30, 2010. The account based depreciation rates were designed to recover the total remaining undepreciated investment, adjusted for net salvage, over the remaining life of Shared Services' property on a straight-line basis. Non-depreciable property and property which is amortized, such as intangible software were excluded from this study.

Shared Services is a division of Atmos Corporation dedicated to providing various support services to its operating companies. As of the study date, Shared Services supported regulated gas utility divisions operating in 12 different states.

STUDY RESULTS

The existing and current study annual depreciation expense results from the use of Iowa Curve dispersion patterns with average service life, the equal life group ("ELG") procedure and remaining-life technique, and consideration of net salvage in the development of the study recommended depreciation rates. Detailed information for each of these factors will follow in this report.

Overall depreciation rates for Shared Services depreciable property are shown in Appendix A. These rates translate into an annual depreciation accrual of \$19.8 million based on Shared Services' depreciable investment at September 30, 2010.

Appendix A presents the recommended study annual accrual rates and amounts. Appendix B presents the development of the depreciation rates and annual accruals. Appendix C presents the recommended study mortality and net salvage parameters by account. Appendix D shows net salvage history by plant account.

GENERAL DISCUSSION

Definition

The term "depreciation" as used in this study is considered in the accounting sense, that is, a system of accounting that distributes the cost of assets, less net salvage (if any), over the estimated useful life of the assets in a systematic and rational manner. It is a process of allocation, not valuation. This expense is systematically allocated to accounting periods over the life of the properties. The amount allocated to any one accounting period does not necessarily represent the loss or decrease in value that will occur during that particular period. The Company accrues depreciation on the basis of the original cost of all depreciable property included in each functional property group. On retirement the full cost of depreciable property, less the net salvage value, is charged to the depreciation reserve.

Basis of Depreciation Estimates

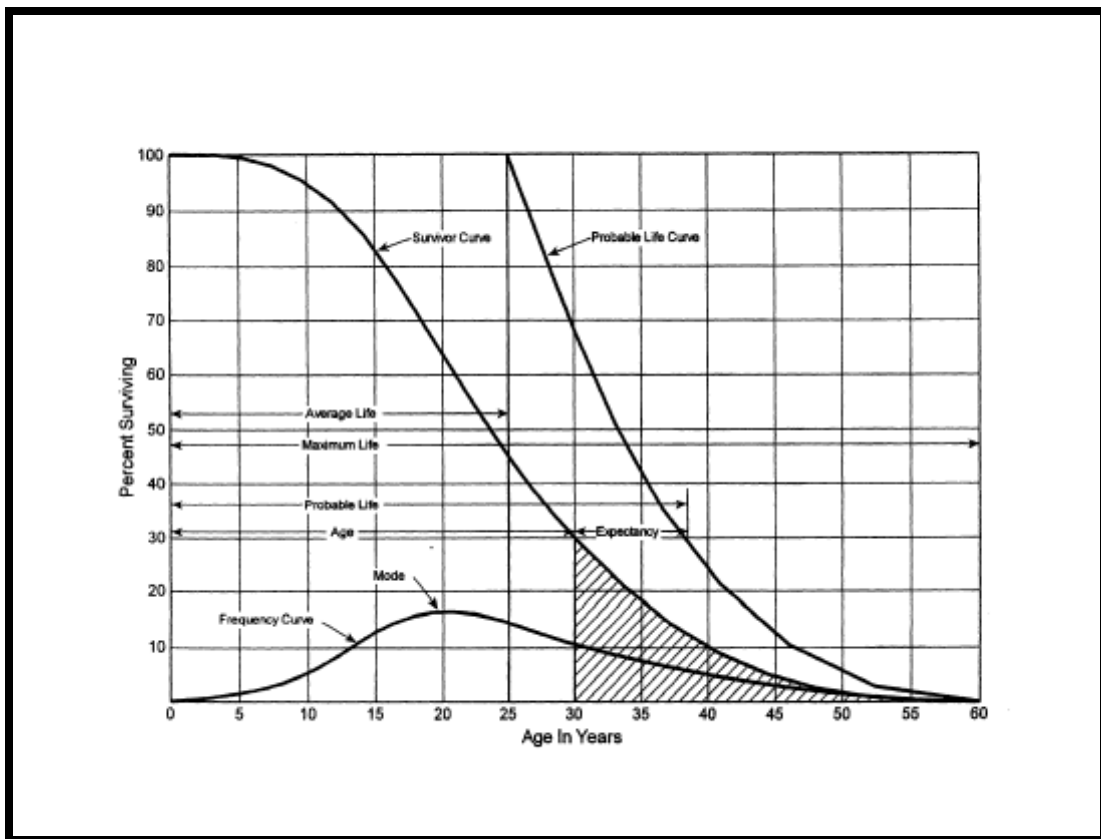
The straight-line, equal life group ("ELG"), remaining-life depreciation system was employed to calculate annual and accrued depreciation in this study. In this system, the annual depreciation expense for each group is computed by dividing the original cost of the asset less allocated depreciation reserve less estimated net salvage by its respective equal life group remaining life. The resulting annual accrual amounts of all depreciable property within a function were accumulated, and the total was divided by the original cost of all functional depreciable property to determine the depreciation rate. The calculated remaining lives and annual depreciation accrual rates were based on attained ages of plant in service and the estimated service life and salvage characteristics of each depreciable group. The computations of the annual depreciation rates are shown in Appendix B and remaining life calculations are provided in the workpapers.

Actuarial analysis was used with each account within a function where

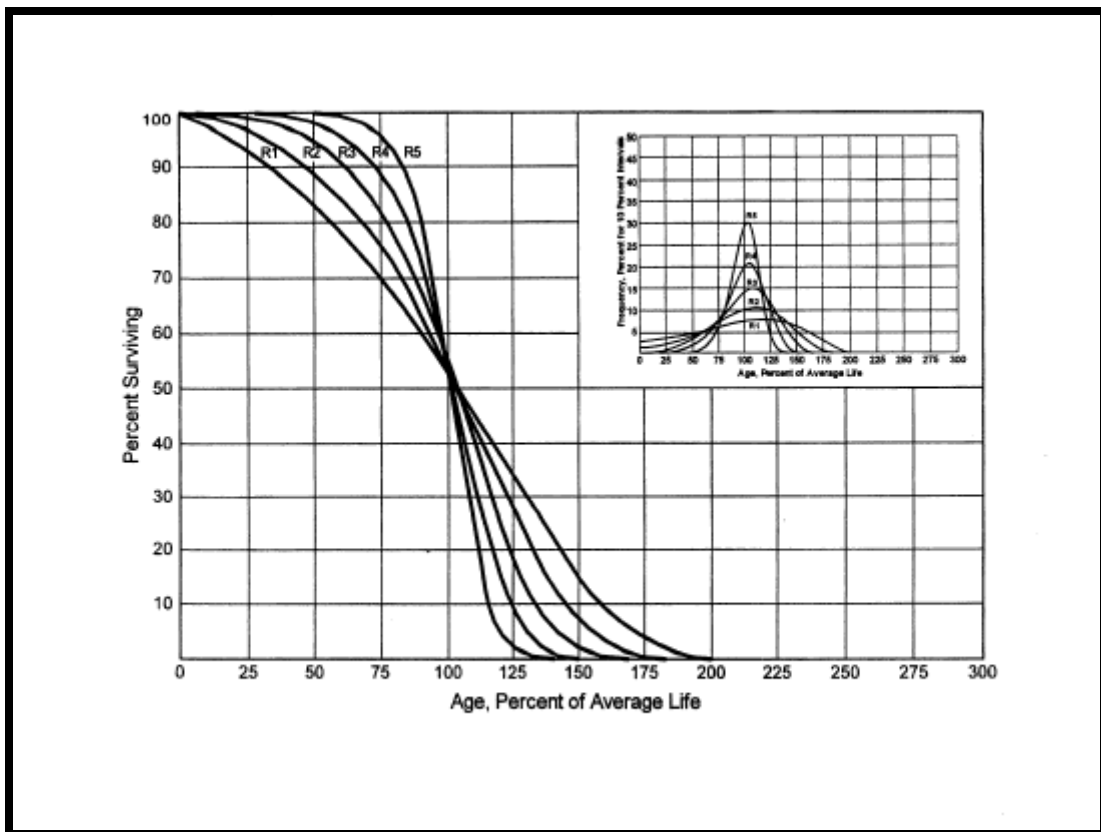
sufficient data was available, and judgment was used to some degree on all accounts.

Survivor Curves

To fully understand depreciation projections in a regulated utility setting, there must be a basic understanding of survivor curves. Individual property units within a group do not normally have identical lives or investment amounts. The average life of a group can be determined by first constructing a survivor curve which is plotted as a percentage of the units surviving at each age. A survivor curve represents the percentage of property remaining in service at various age intervals. The Iowa Curves are the result of an extensive investigation of life characteristics of physical property made at Iowa State College Engineering Experiment Station in the first half of the prior century. Through common usage, revalidation and regulatory acceptance, these curves have become a descriptive standard for the life characteristics of industrial property. An example of an Iowa Curve is shown below.



There are four families in the Iowa Curves that are distinguished by the relation of the age at the retirement mode (largest annual retirement frequency) and the average life. For distributions with the mode age greater than the average life, an "R" designation (i.e., Right modal) is used. The family of "R" moded curves is shown below.



Similarly, an "S" designation (i.e., Symmetric modal) is used for the family whose mode age is symmetric about the average life. An "L" designation (i.e., Left modal) is used for the family whose mode age is less than the average life. A special case of left modal dispersion is the "O" or origin modal curve family. Within each curve family, numerical designations are used to describe the relative magnitude of the retirement frequencies at the mode. A "6" indicates that the retirements are not greatly dispersed from the mode (i.e., high mode frequency) while a "1" indicates a large dispersion about the mode (i.e., low mode frequency). For example, a curve with an average life of 30 years and an "L3" dispersion is a moderately dispersed, left modal curve that can be designated as a 30 L3 Curve. An SQ, or square, survivor curve occurs where no dispersion is present (i.e., units of common age retire simultaneously).

Most property groups can be closely fitted to one Iowa Curve with a unique average service life. The blending of judgment concerning current conditions and

future trends along with the matching of historical data permits the depreciation analyst to make an informed selection of an account's average life and retirement dispersion pattern.

Actuarial Analysis

Actuarial analysis (retirement rate method) was used in evaluating historical asset retirement experience where vintage data were available and sufficient retirement activity was present. In actuarial analysis, interval exposures (total property subject to retirement at the beginning of the age interval, regardless of vintage) and age interval retirements are calculated. The complement of the ratio of interval retirements to interval exposures establishes a survivor ratio. The survivor ratio is the fraction of property surviving to the end of the selected age interval, given that it has survived to the beginning of that age interval. Survivor ratios for all of the available age intervals were chained by successive multiplications to establish a series of survivor factors, collectively known as an observed life table. The observed life table shows the experienced mortality characteristic of the account and may be compared to standard mortality curves such as the Iowa Curves. Where data was available, accounts were analyzed using this method. Placement bands were used to illustrate the composite history over a specific era, and experience bands were used to focus on retirement history for all vintages during a set period. The results from these analyses for those accounts which had data sufficient to be analyzed using this method are shown in the Life Analysis section of this report.

Judgment

Any depreciation study requires informed judgment by the analyst conducting the study. A knowledge of the property being studied, company policies and procedures, general trends in technology and industry practice, and a sound basis of understanding depreciation theory are needed to apply this informed judgment. Judgment was used in areas such as survivor curve modeling and selection, depreciation method selection, simulated plant record method analysis, and actuarial analysis.

Judgment is not defined as being used in cases where there are specific, significant pieces of information that influence the choice of a life or curve. Those cases would simply be a reflection of specific facts into the analysis. Where there are multiple factors, activities, actions, property characteristics, statistical inconsistencies, implications of applying certain curves, property mix in accounts or a multitude of other considerations that impact the analysis (potentially in various directions), judgment is used to take all of these factors and synthesize them into a general direction or understanding of the characteristics of the property. Individually, no one factor in these cases may have a substantial impact on the analysis, but overall, may shed light on the utilization and characteristics of assets. Judgment may also be defined as deduction, inference, wisdom, common sense, or the ability to make sensible decisions. There is no single correct result from statistical analysis; hence, there is no answer absent judgment. At the very least for example, any analysis requires choosing which bands to place more emphasis.

The establishment of appropriate average service lives and retirement dispersions for Shared Services' accounts requires judgment to incorporate the understanding of the operation of the system with the available accounting information analyzed using the Retirement Rate actuarial methods. The appropriateness of lives and curves depends not only on statistical analyses, but also on how well future retirement patterns will match past retirements.

Current applications and trends in use of the equipment also need to be factored into life and survivor curve choices in order for appropriate mortality characteristics to be chosen.

Equal Life Group Depreciation

Atmos agreed that the continued use of the ELG depreciation procedure was appropriate. This study uses the ELG depreciation procedure to group the assets within each account. After an average service life and dispersion were selected for each account, those parameters were used to estimate what portion of the surviving investment of each vintage was expected to retire. The depreciation of the group continues until all investment in the vintage group is retired. ELG groups are defined by their respective account dispersion, life, and net salvage estimates. A straight-line rate for each ELG group is computed and accumulated across each vintage. The resulting rate for each ELG group is designed to recover all retirements less net salvage as each vintage retires. The ELG procedure recovers net book cost over the life of each ELG group rather than averaging many components. It also closely matches the concept of component or item accounting found in all accounting textbooks.

Theoretical Depreciation Reserve

The Company's book depreciation reserves were reallocated based on the theoretical reserves for each account. This study used a reserve model that relied on a prospective concept relating future retirement and accrual patterns for property, given current life and salvage estimates. The theoretical reserve of a group is developed from the estimated remaining life, total life of the property group, and estimated net salvage. The theoretical reserve represents the portion of the group cost that would have been accrued if current forecasts were used throughout the life of the group for future depreciation accruals. The computation involves multiplying the vintage balances within the group by the theoretical reserve ratio for each

vintage. The equal life group method requires an estimate of dispersion and service life to establish how much of each vintage is expected to be retired in each year until all property within the vintage is retired. Estimated average service lives and dispersion determine the amount within each equal life group. The equal life group-remaining-life theoretical reserve ratio (RRELG) is calculated as:

$$RRELG = 1 - \frac{(ELG \text{ Remaining Life})}{(ELG \text{ Life})} * (1 - Net \text{ Salvage Ratio})$$

DETAILED DISCUSSION

Depreciation Study Process

This depreciation study encompassed four distinct phases. The first phase involved data collection and field interviews. The second phase was where the initial data analysis occurred. The third phase was where the information and analysis was evaluated. Once the first three stages were complete, the fourth phase began. This phase involved the calculation of depreciation rates and documenting the corresponding recommendations.

During the Phase I data collection process, historical data was compiled from continuing property records and general ledger systems. Data was validated for accuracy by extracting and comparing to multiple financial system sources. Audit of this data was validated against historical data from prior periods, historical general ledger sources, and field personnel discussions. This data was reviewed extensively to put in the proper format for a depreciation study. Further discussion on data review and adjustment is found in the Salvage Considerations Section of this study. Also as part of the Phase I data collection process, numerous discussions were conducted with engineers and field operations personnel to obtain information that would assist in formulating life and salvage recommendations in this study. One of the most important elements of performing a proper depreciation study is to understand how the Company utilizes assets and the environment of those assets. Interviews with engineering and operations personnel are important ways to allow the analyst to obtain information that is beneficial when evaluating the output from the life and net salvage programs in relation to the Company's actual asset utilization and environment. Information that was gleaned in these discussions is found both in the Detailed Discussion of this study in the life analysis and salvage analysis sections and also in workpapers.

Phase 2 is where the actuarial analysis is performed. Phase 2 and 3 overlap to a significant degree. The detailed property records information is used in phase 2 to develop observed life tables for life analysis. These tables are visually compared to industry standard tables to determine historical life characteristics. It is possible that the analyst would cycle back to this phase based on the evaluation process performed in phase 3. Net salvage analysis consists of compiling historical salvage and removal data by functional group to determine values and trends in gross salvage and removal cost. This information was then carried forward into phase 3 for the evaluation process.

Phase 3 is the evaluation process which synthesizes analysis, interviews, and operational characteristics into a final selection of asset lives and net salvage parameters. The historical analysis from phase 2 is further enhanced by the incorporation of recent or future changes in the characteristics or operations of assets that were revealed in phase 1. Phases 2 and 3 allow the depreciation analyst to validate the asset characteristics as seen in the accounting transactions with actual Company operational experience.

Finally, Phase 4 involved the calculation of accrual rates, making recommendations and documenting the conclusions in a final report. The calculation of accrual rates is found in Appendix B. Recommendations for the various accounts are contained within the Detailed Discussion of this report. The depreciation study flow diagram shown as Figure 1¹ documents the steps used in conducting this study. Depreciation Systems, page 289 documents the same basic processes in performing a depreciation study which are: Statistical analyses, evaluation of statistical analysis, discussions with management, forecast assumptions, write logic supporting forecasts and estimation, and write final report.

¹ Public Utility Finance & Accounting, A Reader

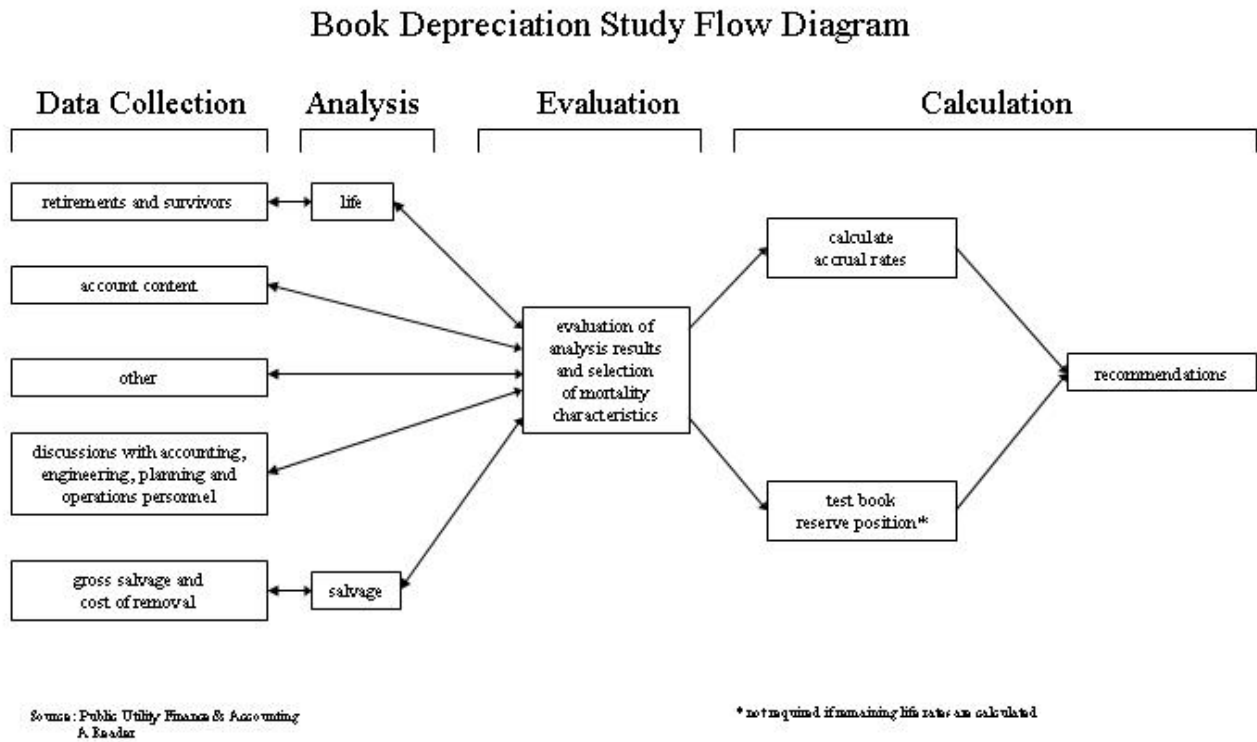


Figure 1

SHARED SERVICES DEPRECIATION STUDY PROCESS

Depreciation Rate Calculation

Annual depreciation expense amounts for the depreciable property accounts of Shared Services were calculated by the straight line, equal life group, and remaining-life system. With this approach, remaining lives were calculated according to standard ELG group expectancy techniques, using the Iowa Survivor Curves noted in the calculation. For each plant account, the difference between the surviving investment, adjusted for estimated net salvage and the allocated book depreciation reserve, was divided by the average remaining life to yield the annual depreciation expense. These calculations are shown in Appendix B.

Remaining Life Calculation

The establishment of appropriate average service lives and retirement dispersions for each account within a functional group was based on engineering judgment that incorporated available accounting information analyzed using the actuarial methods. After establishment of appropriate average service lives and retirement dispersions, remaining lives were computed for each account. The theoretical depreciation reserve with zero net salvage (used in calculating remaining life) was calculated using theoretical reserve ratios as defined in the theoretical reserve portion of the general discussion section. The difference between plant balance and theoretical reserve was then spread over the ELG depreciation accruals. After accumulating the ELG accruals across each vintage, the annual accrual was divided into the net balance to compute remaining life. Details of the theoretical reserve computations, ELG accruals, and remaining life are found by account within each division in the study workpapers.

Calculation Process

Annual depreciation expense amounts for all accounts were calculated by the straight line, remaining life procedure.

In a whole life representation, the annual accrual rate is computed by the

following equation,

$$\text{Annual Accrual Rate} = \frac{(100\% - \text{Net Salvage Percent})}{\text{Average Service Life}}$$

Use of the remaining life depreciation system adds a self-correcting mechanism, which accounts for any differences between theoretical and book depreciation reserve over the remaining life of the group. With the straight line, remaining life, average life group system using Iowa Curves, composite remaining lives were calculated according to standard broad group expectancy techniques, noted in the formula below:

$$\text{Composite Remaining Life} = \frac{\sum \text{Original Cost} - \text{Theoretical Reserve}}{\sum \text{Whole Life Annual Accrual}}$$

For each plant account, the difference between the surviving investment, adjusted for estimated net salvage, and the allocated book depreciation reserve, was divided by the composite remaining life to yield the annual depreciation expense as noted in this equation where the net salvage percent represents future net salvage.

$$\text{Annual Depreciation Expense} = \frac{\text{Original Cost} - \text{Book Reserve} - (\text{Original Cost}) * (1 - \text{Net Salvage \%})}{\text{Composite Remaining Life}}$$

Within a group, the sum of the group annual depreciation expense amounts, as a percentage of the depreciable original cost investment summed, gives the annual depreciation rate as shown below:

$$\text{Annual Depreciation Rate} = \frac{\sum \text{Annual Depreciation Expense}}{\sum \text{Original Cost}}$$

These calculations are shown in Appendix B. The calculations of the theoretical depreciation reserve values and the corresponding remaining life calculations are shown in workpapers. Book depreciation reserves were allocated to individual accounts and the theoretical reserve computation was used to compute a composite remaining life for each account.

LIFE ANALYSIS

The retirement rate actuarial analysis method was applied to all accounts for Shared Services. For each account, an actuarial retirement rate analysis was made with placement and experience bands of varying width. The historical observed life table was plotted and compared with various Iowa Survivor Curves to obtain the most appropriate match. A selected curve for each account is shown in the Life Analysis Section of this report. The observed life tables for all analyzed placement and experience bands are provided in workpapers.

For the overall band (i.e. placement from earliest vintage year which varied for each account through 2010) for each account, various dispersion curves were plotted. Frequently, visual matching would confirm one specific dispersion pattern (i.e. L, S. or R) as a better match than others. The next step would be to determine the most appropriate life using that dispersion pattern. Then, after looking at the overall experience band, different experience bands were plotted and analyzed, for instance 1950-2010, 1989-2010, etc. Next placement bands of varying width were plotted with each experience band discussed above. Repeated matching usually pointed to a focus on one dispersion family and small range of service lives. The goal of visual matching was to minimize the differential between the observed life table and Iowa curve in top and mid range of the plots. These results are used in conjunction with all other factors that may influence asset lives.

NET SALVAGE CONSIDERATIONS

When a capital asset is retired, physically removed from service and finally disposed of, terminal retirement is said to have occurred. The residual value of a terminal retirement is called gross salvage. Net salvage is the difference between the gross salvage (what the asset was sold for) and the removal cost (cost to remove and dispose of the asset).

Net Salvage Characteristics

The net salvage analysis, for each account, is shown in Appendix D. Moving averages for intervals are also included in Appendix D. The assets of Shared Services generally do not incur cost of removal and salvage has declined in recent years. In this study a 0 percent net salvage is recommended for each account.

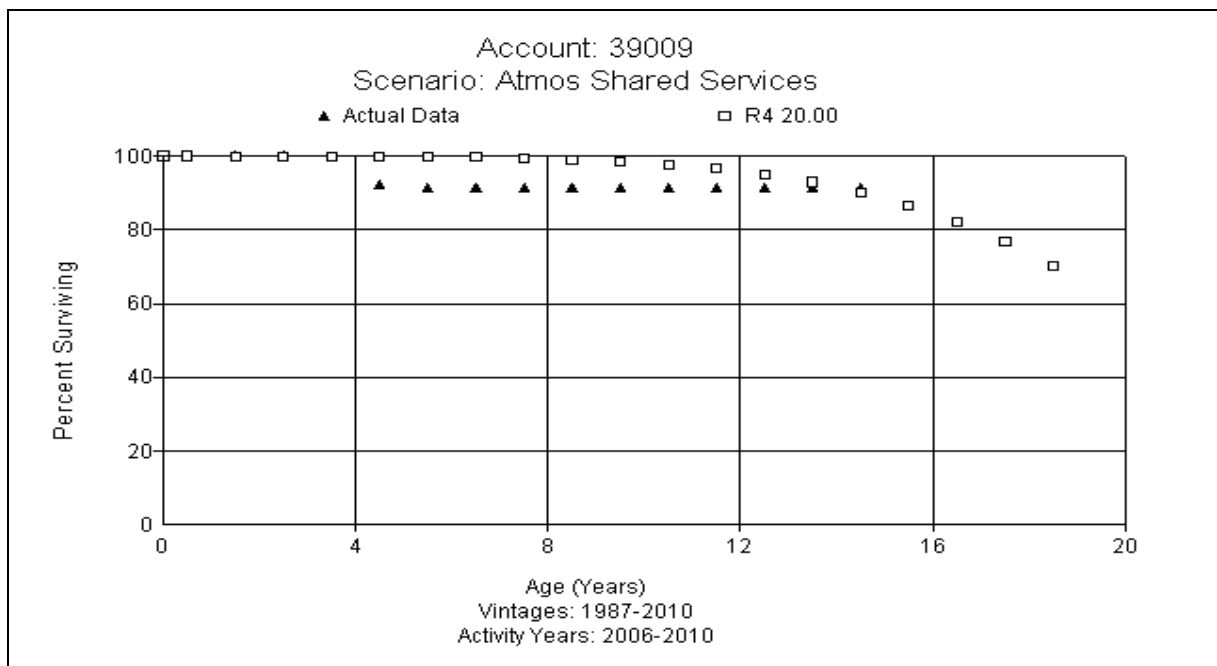
Account Life and Net Salvage Analysis

39000 – Structures & Improvements

This account includes the cost of buildings and improvements. The account balance is \$8.6 million. Costs associated with the Greenville operations center have been recorded in this account and the costs associated with the Charles K. Vaughn training center will be recorded in fiscal year 2011. The average age of investment is 1.5 years, so based on judgment and type of assets this study recommends a 40 year life with the R2 dispersion pattern. No graph is provided. A zero percent net salvage is recommended at this time.

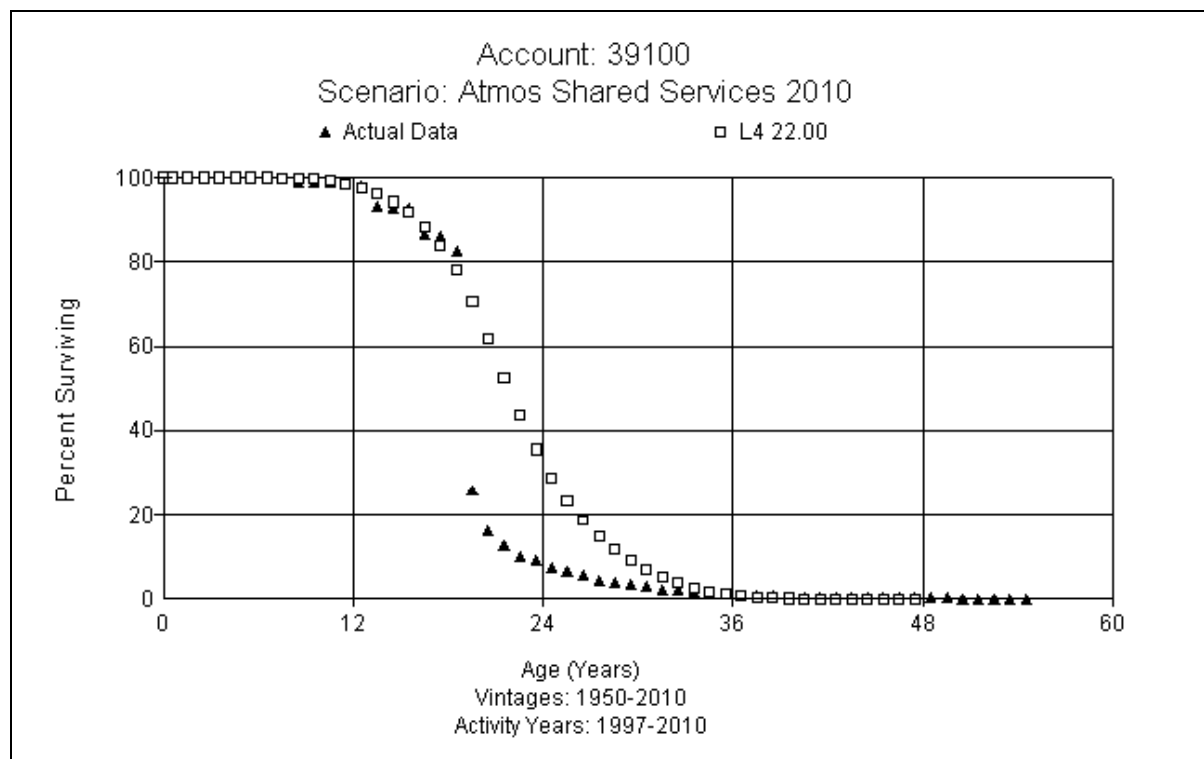
39009 – Improvements to Leased Premises

This account includes the cost of improvements to leased premises such as the Dallas office and call centers. The balance is \$12.7 million. Assets in this account are tied to the lease term, which is about 20 years. This study recommends moving from a 12 year life to a 20 R4 at this time. A graph of the observed life table and the recommended life and curve are shown below. No salvage or removal cost is currently expected for these improvements, therefore a zero percent net salvage is recommending for this account.



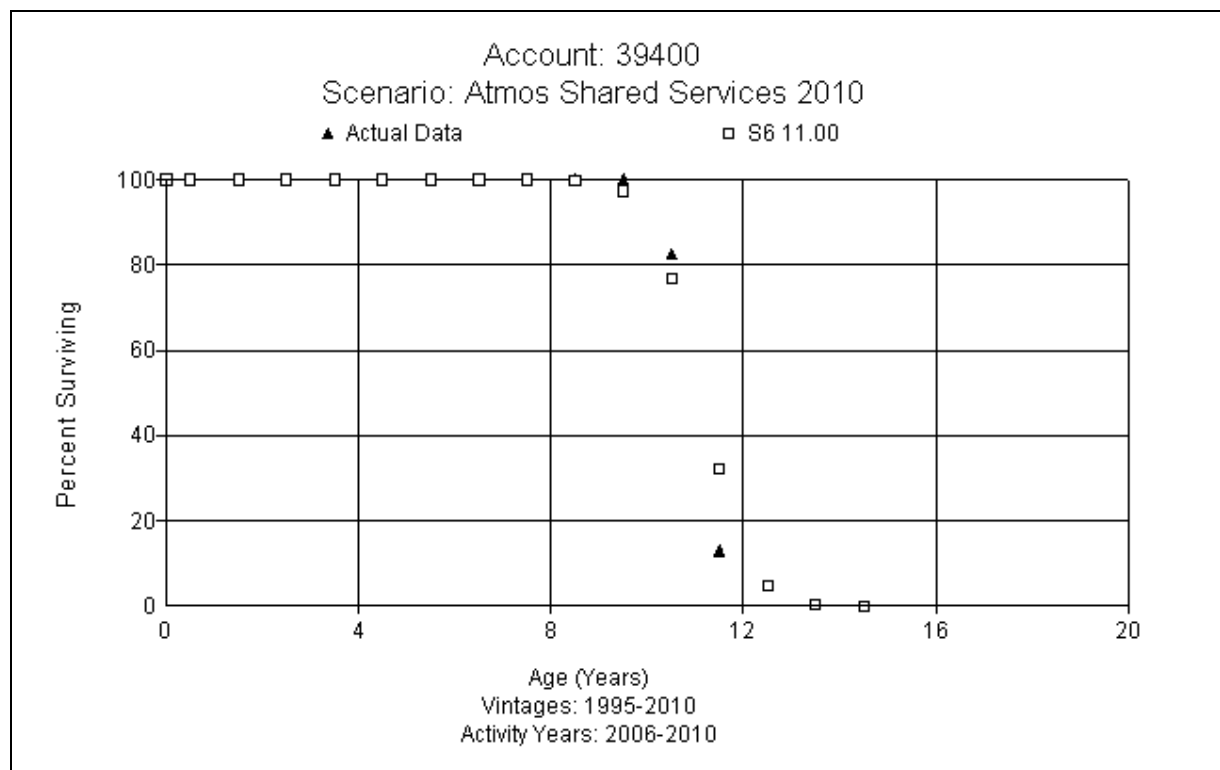
39100 – Office Furniture and Equipment

This account consists of modular furniture, desks, chairs, bookcases, credenzas, file cabinets, office machines and other miscellaneous equipment. The balance is \$11.9 million. An expected life range for the assets in this account is 20 to 25 years. This study recommends a 22 L4 dispersion pattern. A graph of the observed life table and the recommended life and curve are shown below. There is no cost of removal and salvage has declined to a negligible level. A zero percent net salvage rate is recommended for this account.



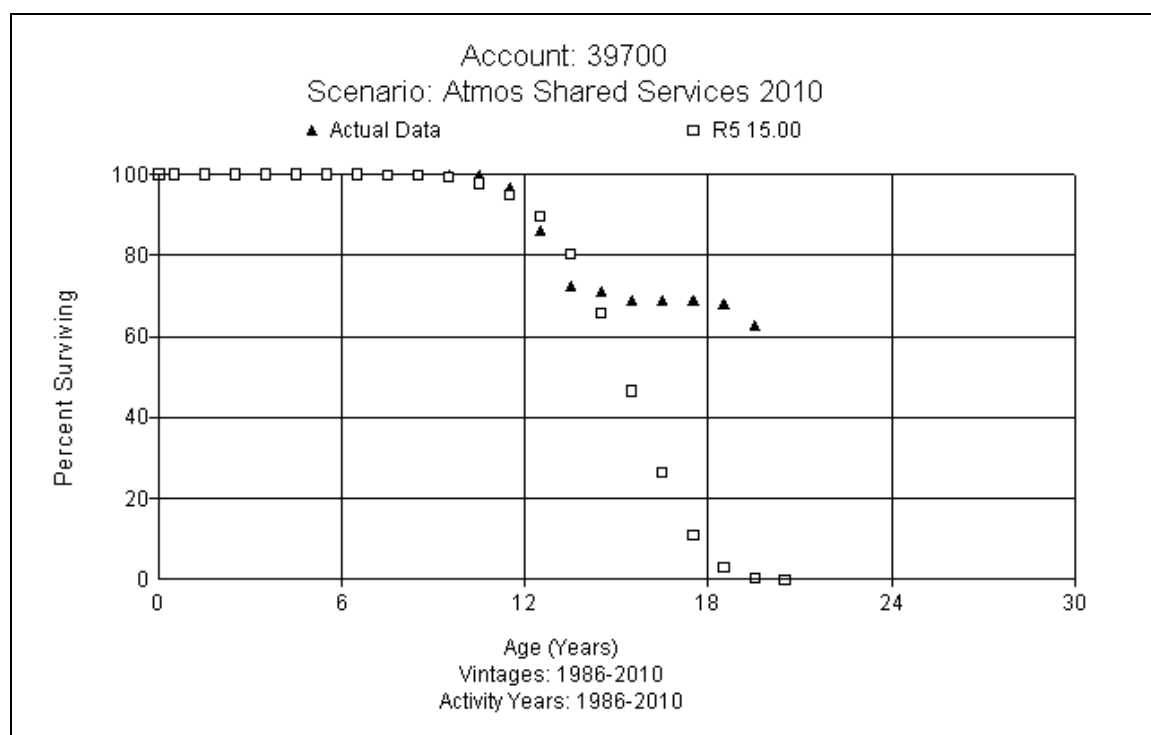
39400 – Tools, Shop & Garage Equipment

This account consists of various small tools and equipment used in an office. The balance is \$83 thousand in this account. The average age of investment is 1.5 years. Due to the type and use of the assets and the analysis, this study recommends an 11 S6 life and dispersion pattern. A graph of the observed life table and the recommended life and curve are shown below. There is generally little or no salvage and no cost of removal related to the equipment in the account. This study recommends a zero percent net salvage rate for this account.



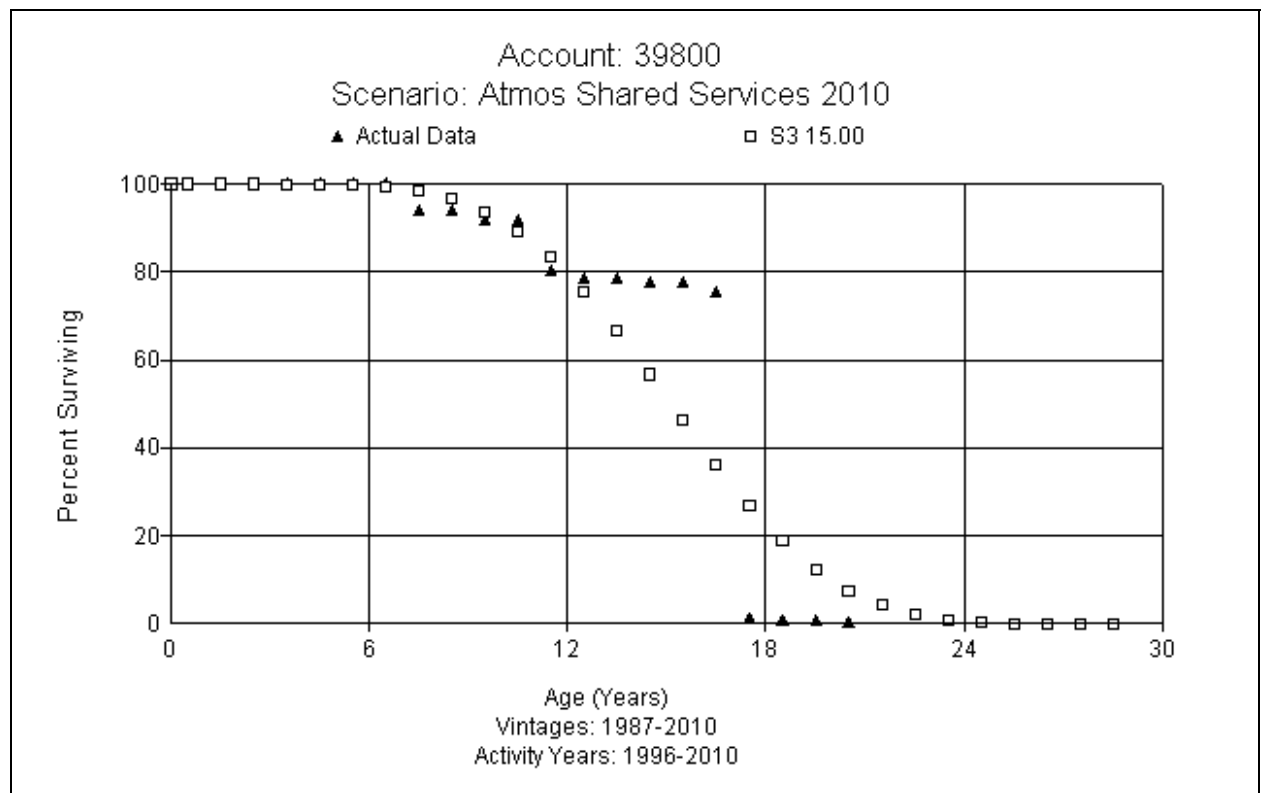
39700 – Communications Equipment

The communications equipment account includes communication, computer hardware, telephone, and radio equipment. It is used to account for the initial setup of the telephone and related telecom equipment and its attendant computer software. The balance is \$27.5 million in this account. Assets in this account have a life range between 10 and 15 years. A 15 year life with the R5 dispersion is recommended based on the fit using actuarial analysis and the type of assets and use. A graph of the observed life table and the recommended life and curve are shown below. There has been no recent salvage and removal cost experience. This study recommends a zero percent net salvage rate for this account.



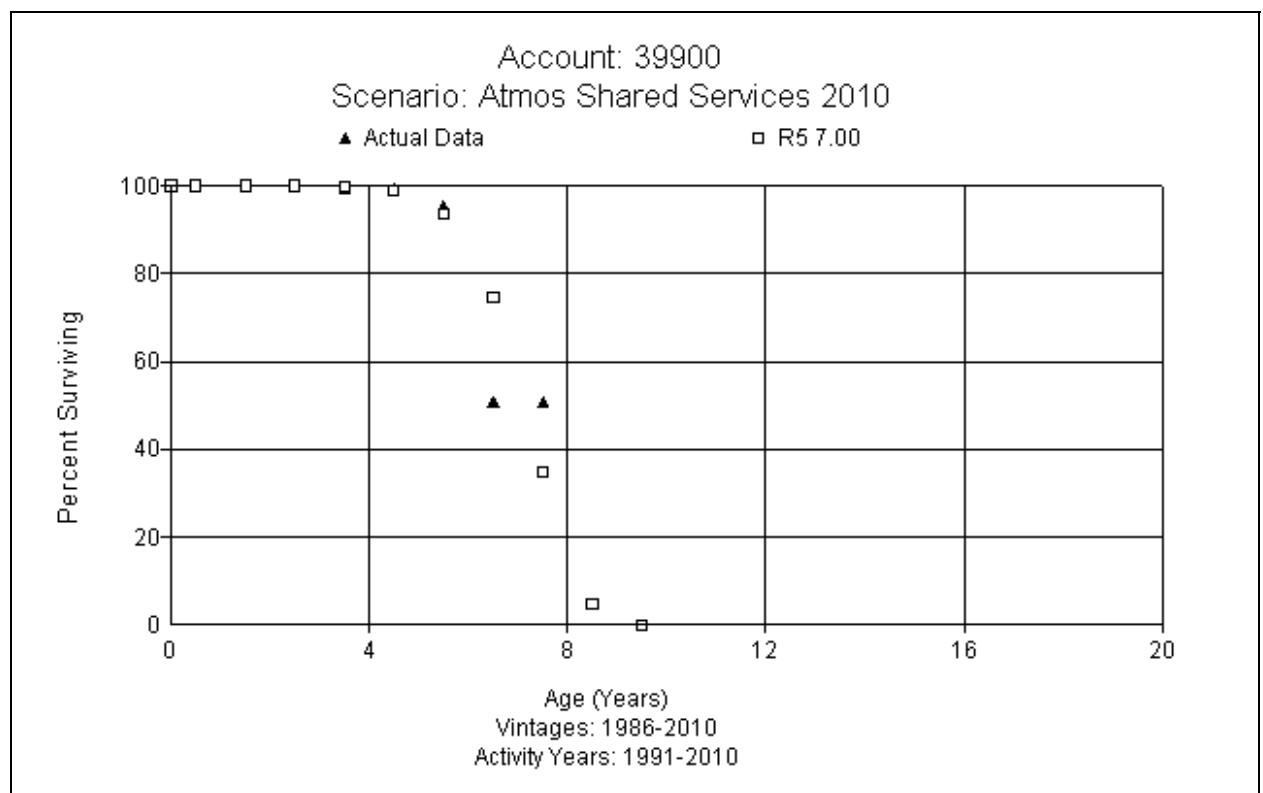
Account 39800 - Miscellaneous Equipment

This account consists of various small office equipment items, such as kitchen appliances, televisions and audio/video equipment that are not homogeneous with other plant accounts. The balance is \$214 thousand. Retirements of assets, as a group, in this account are demonstrating that a 15 year average service life with an S3 dispersion for assets in this account is appropriate. A graph of the observed life table and the recommended life and curve are shown below. This study recommends a zero percent net salvage rate for this account.



Account 39900 – Other Tangible Property

The other tangible property account holds some computer hardware and communication equipment. The account balance is \$162 thousand. The average age of the investment is 1.5 years and average age of retirements is 7.34 years. The recommended life is also 7 years with the R5 dispersion for this account. A graph of the observed life table and the recommended life and curve are shown below. This study recommends a zero percent net salvage rate for this account.



Account 39901 – Servers Hardware

This account consists of assets such as the HP 9000 RP 8420 servers, Oracle server, EMC DMX 3 disk array, Banner server, Markview servers and other server hardware and equipment. The balance is \$31.1 million. There have been no retirements and average age of the investment is 5.46 years. Based on discussions with Company personnel and future expectations and operation plans, this study recommends a 10 year average service life with the SQ dispersion pattern for this account. No graph is provided. No salvage or cost of removal is expected and a zero percent net salvage rate is recommended for this account.

Account 39902 – Servers Software

This account consists of assets such as the Banner, Oracle, VMWare, Appwork scheduling, Witness, Networker, and other server attendant software for billing and software licenses. The balance is \$19.6 million. There have been no retirements and the average age of investment is 5.55 years. Based on discussions with Company personnel and future expectations and operation plans, this study recommends a 10 year average service life with the SQ dispersion pattern for this account. No graph is provided. No salvage or cost of removal is expected and a zero percent net salvage rate is recommended for this account.

Account 39903 – Network Hardware

This account consists of assets related to networking activities such as routers, switches and miscellaneous networking equipment. The balance is \$4.2 million. The average age of retirements is 7.50 years and the average age of investment is 4.80 years. Based on discussions with Company personnel and future expectations and operation plans, this study recommends a 10 year average service life with the SQ dispersion, which is similar to server hardware and software accounts. No graph is provided. No salvage or cost of removal is expected and a zero percent net salvage rate is recommended for this account.

Account 39904 – CPU

This account consists of costs for an IBM 9762-R22 mainframe. The balance is \$1.1 million. This account is fully depreciated and was not analyzed in this study.

Account 39905 – Main Frame Hardware

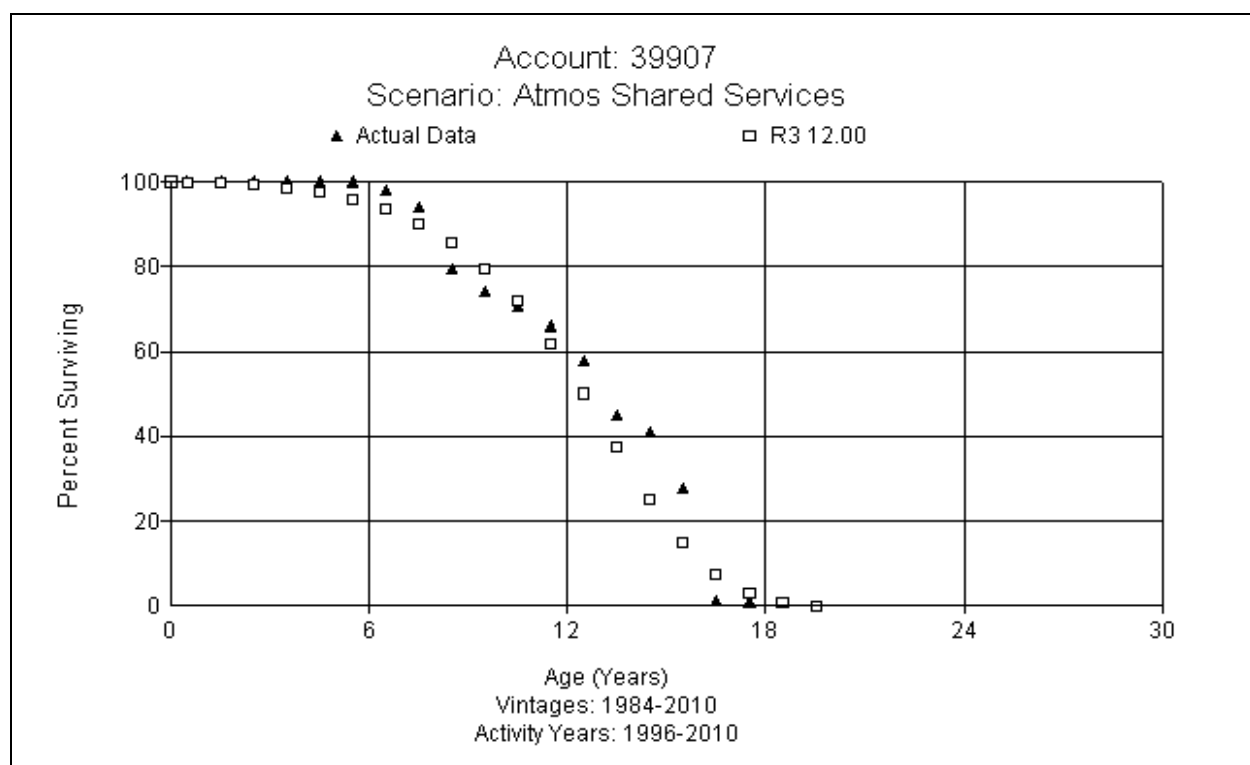
This account consists of costs for an upgraded CPU, disk storage, arrays, remote access server and other related mainframe equipment. The balance is \$1.2 million. This account is fully depreciated and was not analyzed in this study.

Account 39906 – PC Hardware

This account consists of costs for computer hardware, desktop and laptop computers, PC's for the call center, servers, and some costs associated with software licenses for PC's and servers.. The balance is \$9.6 million. The average age of investment is 5.85 years and average age of retirements is 6.55 years. The life indications in the actuarial analysis suggest a life of 9 years. The Company recently performed an inventory of these assets and note that approximately one-third of these assets should have already been retired. These retirements will be processed in 2011 and are not reflected in the data used in the life analysis. Due to the delayed retirements included in the data analysis, the observed 9 year life is not an accurate assessment of the life of these assets. However, based on discussions with Company personnel regarding current practices, future expectations and operational plans, the life of many of the remaining assets in this account will likely exceed a normal PC life expectation of 3 to 5 years. Therefore, using judgment, this study recommends a 7 year life with the S3 dispersion. Due to the processing of retirements outside of the study date, a graph of the observed life table and the recommended life and curve is not provided. This study recommends a zero percent net salvage rate for this account.

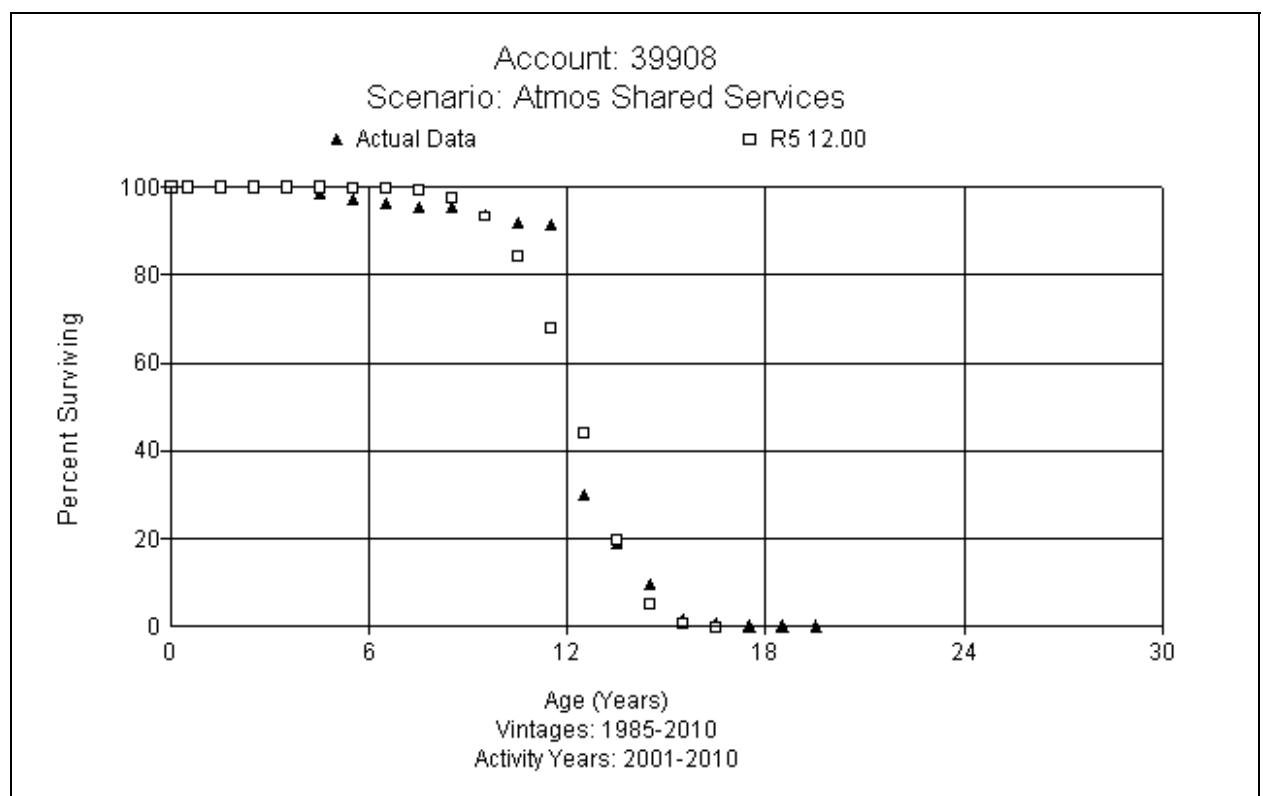
Account 39907 – PC Software

The PC software account holds booked investment and retirement activity for software assets including operating system software such as Windows 2000 or Windows XP, Microsoft Office, call center, Verizon dialer software, Genesys upgrade, MS Project and other related application software. The balance is \$4.8 million. The average age of investment is 6.54 years and average age of retirements is 9.52 years. Based on discussions with Company personnel regarding current practice, future expectations and operational plans, the life of many of the software assets in this account will likely exceed normal PC software life expectations. There has been retirement activity in this account and the life indications in the actuarial analysis confirm a longer life than what is typically expected. This study recommends using a 12 year average service life with the R3 dispersion. A graph of the observed life table and the recommended life and curve are shown below. This study recommends a zero percent net salvage rate for this account.



Account 39908 – Application Software

The applications software account holds booked investment and retirement activity for software assets including billing system software, electronic mapping and training software applications, Oracle upgrade, Banner, Data Mart System, PowerPlant System, Advantage System application and the Waco Call Center IT build. The balance is \$167.7 million. The average age of investment is 7.16 years and average age of retirements is 9.05 years. Based on discussions with Company personnel and future expectations and operation plans this study recommends a 12 year average service life with the R5 dispersion for this account. A graph of the observed life table and the recommended life and curve are shown below. This study recommends a zero percent net salvage rate for this account.



Account 39909 – Main Frame Software

This account consists of costs related to Oracle, assembler language, security control package, natural VSAM and other related software. The balance is \$2.6 million. This account is fully depreciated and was not analyzed in this study.

Account 39924 – General Startup Cost

This account holds the costs related to the CIS System and supportive assets. The balance is \$23.2 million. This activity accounts for one vintage investment in 1999. This account is considered fully depreciated and was not analyzed in this study.

APPENDIX A
Annual Rate and Accrual

Appendix A

Atmos Energy Corporation - Shared Services Unit
At September 30, 2010
Depreciation Study Annual Depreciation Rates and Accruals

Account	Description	Plant Balance	Annual	
			Accrual Rate	Accrual Amount
(a)	(b)	(c)	(d)	(e)
39000	Structures & Improvements	8,601,087.60	3.34%	287,326.17
39009	Improvement. to Leased Premises	12,690,502.89	4.06%	514,830.04
39100	Office Furniture & Equipment	11,972,180.63	4.03%	482,120.63
39400	Tools, Shop, & Garage Equipment	83,933.49	8.88%	7,450.68
39700	Communication Equipment	27,526,596.22	5.54%	1,526,160.50
39800	Miscellaneous Equipment	214,283.04	1.72%	3,675.77
39900	Other Tangible Property	162,267.97	13.84%	22,456.94
39901	Servers - Hardware	31,101,165.15	8.62%	2,680,840.65
39902	Servers - Software	19,569,699.13	8.78%	1,719,191.49
39903	Network - Hardware	4,166,729.38	8.72%	363,489.92
39906	PC Hardware	9,583,849.86	8.78%	841,383.02
39907	PC Software	4,824,824.46	6.64%	320,346.67
39908	Application Software	167,785,375.80	6.57%	11,024,831.77
	Total Depreciable Plant	<u>\$ 298,282,495.62</u>	6.64%	<u>\$ 19,794,104.25</u>

Note: The following accounts are fully depreciated and were not analyzed in the study.

39904	CPU	1,095,465.10
39905	Main Frame Hardware	1,159,964.38
39909	Mainframe Software	2,575,367.35
39924	General Startup Cost	<u>23,172,325.96</u>
		<u>28,003,122.79</u>
	Total Plant	<u><u>\$ 326,285,618.41</u></u>

APPENDIX B
Remaining Life Calculations

Appendix B

Atmos Energy - Shared Services
At September 30, 2010
Depreciation Accrual Calculation of Remaining Life
With Reserve Reallocation

Account	Description	Plant Balance	Allocated Book Reserve	Net Salvage %	Net Salvage Amount	Unaccrued Balance	Remaining Life	Annual Accrual Amount	Accrual Rate
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)
39000	Structures & Improvements	8,601,087.60	516,954.06	0	0	8,084,133.54	28.14	287,326.17	3.34%
39009	Improv. to Leased Premises	12,690,502.89	7,748,705.42	0	0	4,941,797.47	9.60	514,830.04	4.06%
39100	Office Furniture & Equipment	11,972,180.63	6,312,368.27	0	0	5,659,812.36	11.74	482,120.63	4.03%
39400	Tools, Shop, & Garage Equip.	83,933.49	13,679.16	0	0	70,254.33	9.43	7,450.68	8.88%
39700	Communication Equipment	27,526,596.22	16,038,475.59	0	0	11,488,120.63	7.53	1,526,160.50	5.54%
39800	Miscellaneous Equipment	214,283.04	201,310.26	0	0	12,972.78	3.53	3,675.77	1.72%
39900	Other Tangible Property	162,267.97	42,221.51	0	0	120,046.46	5.35	22,456.94	13.84%
39901	Servers - Hardware	31,101,165.15	17,778,530.61	0	0	13,322,634.54	4.97	2,680,840.65	8.62%
39902	Servers - Software	19,569,699.13	10,898,084.75	0	0	8,671,614.38	5.04	1,719,191.49	8.78%
39903	Network - Hardware	4,166,729.38	2,066,171.06	0	0	2,100,558.32	5.78	363,489.92	8.72%
39904	CPU	1,095,465.10	1,095,465.10	0	0	-			0.00%
39905	Main Frame Hardware	1,159,964.38	1,159,964.38	0	0	-			0.00%
39906	PC Hardware	9,583,849.86	7,503,090.92	0	0	2,080,758.94	2.47	841,383.02	8.78%
39907	PC Software	4,824,824.46	3,012,312.13	0	0	1,812,512.33	5.66	320,346.67	6.64%
39908	Application Software	167,785,375.80	110,309,082.09	0	0	57,476,293.71	5.21	11,024,831.77	6.57%
39909	Mainframe Software	2,575,367.35	2,575,367.35	0	0	-			0.00%
39924	General Startup Cost	23,172,325.96	23,172,325.96	0	0	-			0.00%
	Total Depreciable Plant	<u>326,285,618.41</u>	<u>210,444,108.63</u>		<u>-</u>	<u>115,841,509.78</u>		<u>19,794,104.25</u>	<u>6.07%</u>

APPENDIX C
Mortality Characteristics

Appendix C

Atmos Energy - Shared Services Unit
At September 30, 2010
Mortality Characteristics

Account	Description	Plant Balance 9/30/2010	Proposed		
			Life	Curve	Net Salvage
39000	Structures & Improvements	8,601,087.60	40	R2	0
39009	Improv. to Leased Premises	12,690,502.89	20	R4	0
39100	Office Furniture & Equipment	11,972,180.63	22	L4	0
39400	Tools, Shop, & Garage Equip.	83,933.49	11	S6	0
39700	Communication Equipment	27,526,596.22	15	R5	0
39800	Miscellaneous Equipment	214,283.04	15	S3	0
39900	Other Tangible Property	162,267.97	7	R5	0
39901	Servers - Hardware	31,101,165.15	10	SQ	0
39902	Servers - Software	19,569,699.13	10	SQ	0
39903	Network - Hardware	4,166,729.38	10	SQ	0
39906	PC Hardware	9,583,849.86	7	S3	0
39907	PC Software	4,824,824.46	12	R3	0
39908	Application Software	167,785,375.80	12	R5	0
Total Depreciable Plant		\$ 298,282,495.62			

Note: The following accounts are fully depreciated and were not analyzed in the study.

39904	CPU	1,095,465.10
39905	Main Frame Hardware	1,159,964.38
39909	Mainframe Software	2,575,367.35
39924	General Startup Cost	23,172,325.96
		<u>28,003,122.79</u>
Total Plant		\$ 326,285,618.41

APPENDIX D
Net Salvage Analysis

**ATMOS ENERGY - SHARED SERVICES
NET SALVAGE HISTORY AS ADJUSTED**

	Activity		Gross	Cost of	Net	Net	2-yr	3-yr	4-yr	5-yr	6-yr	7-yr	8-yr	9-yr	10-yr	11-yr	12-yr	13-yr	14-yr	15-yr	16-yr	17-yr	18-yr
Acct	Year	Retirement	Salvage	Removal	Salvage	Salv. %	Net Salv.	Net Salv.	Net Salv.	Net Salv.	Net Salv.	Net Salv.	Net Salv.	Net Salv.	Net Salv.	Net Salv.	Net Salv.	Net Salv.	Net Salv.	Net Salv.	Net Salv.	Net Salv.	Net Salv.
39000000	2007	0	-	-	0	NA																	
39000000	2008	0	-	-	0	NA	NA																
39000000	2009	0	-	-	0	NA	NA	NA															
39000000	2010	0	-	-	0	NA	NA	NA	NA														
39009000	2000	270,911	-	-	0	0.0%																	
39009000	2001	0	-	-	0	NA	0.0%																
39009000	2002	0	-	-	0	NA	NA	0.0%															
39009000	2003	0	-	-	0	NA	NA	NA	0.0%														
39009000	2004	0	-	-	0	NA	NA	NA		0.0%													
39009000	2005	0	-	-	0	NA	NA	NA	NA	NA	0.00%												
39009000	2006	178,757	-	-	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.00%	0.00%											
39009000	2007	0	-	-	0	NA	0.0%	0.0%	0.0%	0.0%	0.00%	0.00%	0.00%										
39009000	2008	0	-	-	0	NA	NA	0.0%	0.0%	0.0%	0.00%	0.00%	0.00%	0.00%									
39009000	2009	0	-	-	0	NA	NA	NA	0.0%	0.0%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%							
39009000	2010	0	-	-	0	NA	NA	NA	NA	0.0%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%						
39100000	1993	83,992	200	-	200	0.2%																	
39100000	1994	7,848	-	-	0	0.0%	0.2%																
39100000	1995	852	-	-	0	0.0%	0.0%	0.2%															
39100000	1996	92,361	-	-	0	0.0%	0.0%	0.0%	0.1%														
39100000	1997	0	-	(5,108)	5,108	NA	5.5%	5.5%	5.1%	2.9%													
39100000	1998	6,852	-	-	0	0.0%	74.5%	5.1%	5.1%	4.7%	2.77%												
39100000	1999	0	-	-	0	NA	0.0%	74.5%	5.1%	5.1%	4.73%	2.77%											
39100000	2000	0	-	-	0	NA	NA	0.0%	74.5%	5.1%	5.10%	4.73%	2.77%										
39100000	2001	0	-	-	0	NA	NA	NA	0.0%	74.5%	5.15%	5.10%	4.73%	2.77%									
39100000	2002	0	-	-	0	NA	NA	NA	NA	0.0%	74.55%	5.15%	5.10%	4.73%	2.77%								
39100000	2003	0	-	-	0	NA	NA	NA	NA	NA	0.00%	74.55%	5.15%	5.10%	4.73%	2.77%							
39100000	2004	0	-	-	0	NA	NA	NA	NA	NA	NA	0.00%	74.55%	5.15%	5.10%	4.73%	2.77%						
39100000	2005	0	-	-	0	NA	NA	NA	NA	NA	NA	0.00%	74.55%	5.15%	5.10%	4.73%	2.77%						
39100000	2006	1,420,965	-	-	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.00%	0.00%	0.00%	0.00%	0.36%	0.34%	0.34%	0.33%	0.33%				
39100000	2007	75,094	-	-	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.00%	0.00%	0.00%	0.00%	0.32%	0.32%	0.32%	0.32%	0.32%	0.31%			
39100000	2008	0	-	-	0	NA	0.0%	0.0%	0.0%	0.0%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.34%	0.32%	0.32%	0.32%	0.31%		
39100000	2009	225,893	-	-	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.30%	0.28%	0.28%	0.28%	0.28%	0.28%	
39100000	2010	95,413	-	-	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.28%	0.27%	0.27%	0.27%	0.26%
39101000	2007	0	-	-	0	NA																	
39101000	2008	0	-	-	0	NA	NA																
39101000	2009	0	-	-	0	NA	NA	NA															
39101000	2010	0	-	-	0	NA	NA	NA	NA														
39102000	2007	0	-	-	0	NA																	
39102000	2008	0	-	-	0	NA	NA																
39102000	2009	0	-	-	0	NA	NA	NA															
39102000	2010	25,380	-	-	0	0.0%	0.0%	0.0%	0.0%														
39103000	2007	387,812	-	-	0	0.0%																	
39103000	2008	0	-	-	0	NA	0.0%																
39103000	2009	0	-	-	0	NA	NA	0.0%															
39103000	2010	48,493	-	-	0	0.0%	0.0%	0.0%	0.0%														
39104000	2010	0	-	-	0	NA																	

**ATMOS ENERGY - SHARED SERVICES
NET SALVAGE HISTORY AS ADJUSTED**

Acct	Activity Year	Retirement	Gross Salvage	Cost of Removal	Net Salvage	Net Salv. %	2- yr Net Salv. %	3- yr Net Salv. %	4- yr Net Salv. %	5- yr Net Salv. %	6- yr Net Salv. %	7- yr Net Salv. %	8- yr Net Salv. %	9- yr Net Salv. %	10- yr Net Salv. %	11- yr Net Salv. %	12- yr Net Salv. %	13- yr Net Salv. %	14- yr Net Salv. %	15- yr Net Salv. %	16- yr Net Salv. %	17- yr Net Salv. %	18- yr Net Salv. %
39200000	2007	18,885	-	-	0	0.0%																	
39200000	2008	0	-	-	0	NA	0.0%																
39200000	2009	0	-	-	0	NA	NA	0.0%															
39200000	2010	0	-	-	0	NA	NA	NA	0.0%														
39300000	2007	0	-	-	0	NA																	
39300000	2008	0	-	-	0	NA	NA																
39300000	2009	0	-	-	0	NA	NA	NA															
39300000	2010	0	-	-	0	NA	NA	NA	NA														
39400000	2007	7,683	-	-	0	0.0%																	
39400000	2008	0	-	-	0	NA	0.0%																
39400000	2009	0	-	-	0	NA	NA	0.0%															
39400000	2010	0	-	-	0	NA	NA	NA	0.0%														
39500000	2007	0	-	-	0	NA																	
39500000	2008	0	-	-	0	NA	NA																
39500000	2009	0	-	-	0	NA	NA	NA															
39500000	2010	0	-	-	0	NA	NA	NA	NA														
39700000	1993	8,091	-	-	0	0.0%																	
39700000	1994	0	-	-	0	NA	0.0%																
39700000	1995	0	-	-	0	NA	NA	0.0%															
39700000	1996	0	-	-	0	NA	NA	NA	0.0%														
39700000	1997	0	-	-	0	NA	NA	NA		0.0%													
39700000	1998	0	-	-	0	NA	NA	NA	NA	NA	0.00%												
39700000	1999	0	-	-	0	NA	NA	NA	NA	NA	NA	0.00%											
39700000	2000	0	-	-	0	NA	NA	NA	NA	NA	NA	NA	0.00%										
39700000	2001	0	-	-	0	NA	NA	NA	NA	NA	NA	NA	NA	0.00%									
39700000	2002	0	-	-	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.00%								
39700000	2003	0	-	-	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.00%							
39700000	2004	34,015	26,609	3,107	23,502	69.1%	69.1%	69.1%	69.1%	69.1%	69.09%	69.09%	69.09%	69.09%	69.09%	69.09%	55.82%						
39700000	2005	0	-	-	0	NA	69.1%	69.1%	69.1%	69.1%	69.09%	69.09%	69.09%	69.09%	69.09%	69.09%	55.82%						
39700000	2006	792,568	-	-	0	0.0%	0.0%	2.8%	2.8%	2.8%	2.84%	2.84%	2.84%	2.84%	2.84%	2.84%	2.84%	2.84%	2.82%				
39700000	2007	0	-	-	0	NA	0.0%	0.0%	2.8%	2.8%	2.84%	2.84%	2.84%	2.84%	2.84%	2.84%	2.84%	2.84%	2.82%				
39700000	2008	16,530	-	-	0	0.0%	0.0%	0.0%	0.0%	2.8%	2.79%	2.79%	2.79%	2.79%	2.79%	2.79%	2.79%	2.79%	2.79%	2.76%			
39700000	2009	0	-	-	0	NA	0.0%	0.0%	0.0%	0.0%	2.79%	2.79%	2.79%	2.79%	2.79%	2.79%	2.79%	2.79%	2.79%	2.79%	2.76%		
39700000	2010	0	-	-	0	NA	NA	0.0%	0.0%	0.0%	0.00%	2.79%	2.79%	2.79%	2.79%	2.79%	2.79%	2.79%	2.79%	2.79%	2.79%	2.76%	
39800000	1996	149,090	9,000	-	9,000	6.0%																	
39800000	1997	0	-	-	0	NA	6.0%																
39800000	1998	0	-	-	0	NA	NA	6.0%															
39800000	1999	0	-	-	0	NA	NA	NA	6.0%														
39800000	2000	0	-	-	0	NA	NA	NA	NA	6.0%													
39800000	2001	0	-	-	0	NA	NA	NA	NA	NA	6.04%												
39800000	2002	0	-	-	0	NA	NA	NA	NA	NA	NA	6.04%											
39800000	2003	56,637	-	-	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.00%	4.37%											
39800000	2004	0	-	-	0	NA	0.0%	0.0%	0.0%	0.0%	0.00%	0.00%	4.37%										
39800000	2005	0	-	-	0	NA	NA	0.0%	0.0%	0.0%	0.00%	0.00%	0.00%	4.37%									
39800000	2006	0	-	-	0	NA	NA	NA	0.0%	0.0%	0.00%	0.00%	0.00%	0.00%	4.37%								
39800000	2007	0	-	-	0	NA	NA	NA	NA	0.0%	0.00%	0.00%	0.00%	0.00%	0.00%	4.37%							
39800000	2008	419,274	-	-	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.44%						
39800000	2009	0	-	-	0	NA	0.0%	0.0%	0.0%	0.0%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.44%						
39800000	2010	0	-	-	0	NA	NA	0.0%	0.0%	0.0%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.44%					

Item	Gross Salvage	Cost of Removal	Net Salvage	Net Salv. %	2-yr Net Salv. %	3-yr Net Salv. %	4-yr Net Salv. %	5-yr Net Salv. %	6-yr Net Salv. %	7-yr Net Salv. %	8-yr Net Salv. %	9-yr Net Salv. %	10-yr Net Salv. %	11-yr Net Salv. %	12-yr Net Salv. %	13-yr Net Salv. %	14-yr Net Salv. %	15-yr Net Salv. %	16-yr Net Salv. %	17-yr Net Salv. %	18-yr Net Salv. %
0	-	-	0	NA																	
0	-	-	0	NA	NA																
0	-	-	0	NA	NA	NA															
0	-	-	0	NA	NA	NA	NA														
9,471	-	-	0	0.0%																	
0	-	-	0	NA	0.0%																
0	-	-	0	NA	NA	0.0%															
0	-	-	0	NA	NA	NA	0.0%														
0	-	-	0	NA	NA	NA	NA	0.0%													
0	-	-	0	NA	NA	NA	NA	NA	0.00%												
0	-	-	0	NA	NA	NA	NA	NA	NA	0.00%											
0	-	-	0	NA	NA	NA	NA	NA	NA	NA	0.00%										
8,143	-	-	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.00%	0.00%	0.00%	0.00%									
0	-	-	0	NA	0.0%	0.0%	0.0%	0.0%	0.00%	0.00%	0.00%	0.00%	0.00%								
0	-	-	0	NA	NA	0.0%	0.0%	0.0%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%							
0	-	-	0	NA	NA	NA	0.0%	0.0%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%						
0	-	-	0	NA	NA	NA	NA	0.0%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%					
24,866	-	-	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
0	-	-	0	NA	0.0%	0.0%	0.0%	0.0%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
0	-	-	0	NA	NA	0.0%	0.0%	0.0%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
0	-	-	0	NA	NA	NA	NA	0.0%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
0	-	-	0	NA	NA	NA	NA	0.0%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
0	-	-	0	NA	NA	NA	NA	0.0%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
0	-	-	0	NA	NA	NA	NA	0.0%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
0	-	-	0	NA	NA	NA	NA	0.0%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
0	-	-	0	NA	NA	NA	NA	0.0%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
0	-	-	0	NA	NA	NA	NA	0.0%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
0	-	-	0	NA	NA	NA	NA														

Item	Gross Salvage	Cost of Removal	Net Salvage	Net Salv. %	2-yr Net Salv. %	3-yr Net Salv. %	4-yr Net Salv. %	5-yr Net Salv. %	6-yr Net Salv. %	7-yr Net Salv. %	8-yr Net Salv. %	9-yr Net Salv. %	10-yr Net Salv. %	11-yr Net Salv. %	12-yr Net Salv. %	13-yr Net Salv. %	14-yr Net Salv. %	15-yr Net Salv. %	16-yr Net Salv. %	17-yr Net Salv. %	18-yr Net Salv. %
38,759	-	-	0	0.0%																	
0	-	-	0	NA	0.0%																
0	-	-	0	NA	NA	0.0%															
0	-	-	0	NA	NA	NA	0.0%														
0	-	-	0	NA	NA	NA	NA	0.0%													
0	-	-	0	NA	NA	NA	NA	NA	0.00%												
0	-	-	0	NA	NA	NA	NA	NA	NA	0.00%											
0	-	-	0	NA	NA	NA	NA	NA	NA	NA	0.00%										
61,539	-	-	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.00%	0.00%	0.00%	0.00%									
0	-	-	0	NA	0.0%	0.0%	0.0%	0.0%	0.00%	0.00%	0.00%	0.00%	0.00%								
0	-	-	0	NA	NA	0.0%	0.0%	0.0%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%							
0	-	-	0	NA	NA	NA	0.0%	0.0%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%						
6,495	-	-	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%					
0	-	-	0	NA	0.0%	0.0%	0.0%	0.0%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%				
0	-	-	0	NA	NA	0.0%	0.0%	0.0%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%			
0	-	-	0	NA	NA	NA	0.0%	0.0%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%		
0	-	-	0	NA	NA	NA	NA	0.0%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
5,256	-	-	0	0.0%																	
0	-	-	0	NA	0.0%																
0	-	-	0	NA	NA	0.0%															
0	-	-	0	NA	NA	NA	0.0%														
0	-	-	0	NA	NA	NA	NA	0.0%													
32,596	-	-	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.00%												
0	-	-	0	NA	0.0%	0.0%	0.0%	0.0%	0.00%	0.00%											
73,067	-	-	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.00%		0.00%										
0	-	-	0	NA	0.0%	0.0%	0.0%	0.0%	0.00%	0.00%	0.00%										
0	-	-	0	NA	NA	0.0%	0.0%	0.0%	0.00%	0.00%	0.00%	0.00%									
0	-	-	0	NA	NA	NA	0.0%	0.0%	0.00%	0.00%	0.00%	0.00%	0.00%								
31,136	-	-	0	0.0%	0.0%	0.0%	0.0%	0.0%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%						
0	-	-	0	NA	0.0%	0.0%	0.0%	0.0%	0.00%	0.00%</											

33,186,461	38,809	(1,956)
33,186,461	38,809	(1,956)
0		