CALCULATION OF EQUAL LIFE GROUP DEPRECIATION RATES

It is the group concept of depreciation that leads to the existence of the ELG procedure of calculating depreciation rates. This concept has been an integral part of utility depreciation accounting practices for many years. Under the group concept, there is no attempt to keep track of the depreciation applicable to individual items of property. This is not surprising, in view of the millions of items making up a utility system. Any item retired is assumed to be fully depreciated, no matter when retirement occurs. The group of property would have some average life. "Average" is the result of an arithmetic calculation, and there is no assurance that any of the property in the group is average.

The term "average service life" used in the context of book depreciation is well known, and its use in the measurement of the mortality characteristics of property carries with it the concept of retirement dispersion. If every item were average, thereby having exactly the same life, there would be no dispersion. The concept of retirement dispersion recognizes that some items in a group live to an age less than the average service life and that other items live longer than the average. Retirement dispersion is often identified by standard patterns.

The Iowa-type dispersion patterns that are widely used by electric and gas utilities were devised empirically about 60 years ago to provide a set of standard definitions of retirement dispersion patterns. Figure 1 shows the dispersion patterns for three of these curves. The L series indicates the mode is to the Left of average service life, the R series to the Right and the S series at average service life, and therefore, Symmetrical. There is also an O series, which has the mode at the Origin, thereby identifying a retirement pattern that has the maximum percentage of original installations retired during the year of placement.

The subscripts on Figure 1 indicate the range of dispersion, with the high number (4) indicating a narrow dispersion pattern and the low number (1) indicating a wide dispersion pattern. For example, the R1 curve shown on the figure indicates retirements start immediately and some of the property will last twice as long as the average service life. The dispersion patterns translate to survivor curves, which are the most widely recognized form of the Iowa curves. Other families of patterns exist, but are not as widely used as the Iowa type.

The methods of calculating depreciation rates are categorized as straight-line and non-straight-line.

Non-straight-line methods can be accelerated or deferred. There are three basic procedures for calculating straight-line book depreciation rates:

Units-of-Production

Average Life Group

Equal Life Group

Each of these procedures can be calculated using either the whole life or the remaining life technique.

Productive life may be identified by (a) a life span or (b) a pattern of production or usage. If production or usage is the suitable criterion, depreciation should be straight-line over life measured by time. Units-of-production is straight-line over production or usage, while the others are straight-line over life measured by time. ALG is straight-line over the average life of the group, while ELG is straight-line over the actual life of the group.

The formulas for the whole life and remaining life techniques are shown on Table 1. For the ELG calculation procedure, Formulas 1 and 3 are applied to the individual equal life components of the property group. For the ALG calculation, the formulas are applied to the property group itself. Formula 2 is applied to the property group for either ELG or ALG. Use of the units (percent and years) in the formulas results in rates as a percent of the depreciable plant balance. The depreciable plant balance is the surviving balance at the time the rate is calculated and is expressed as a percentage (always 100) of itself. Salvage and reserves are expressed as a percent of the depreciable plant balance. For example, a property group having a 35-year average service life and negative 5% salvage would have an ALG whole life rate of (100 + 5)/35, or 3.00%.

The first term of Formula 2 is identical to Formula 1 for the whole life rate. The second term of Formula 2 illustrates that the difference between a remaining life rate and whole life rate is the allocation of the difference between the book and calculated theoretical reserves over the remaining life by a remaining life rate.

The widely used ALG procedure of depreciation rate calculation does not recognize the existence of retirement dispersion in the calculation. The difference between the ALG and ELG procedures is the recognition of the existence of retirement dispersion in the ELG rate calculation. ELG is a rate calculation procedure, nothing more. The data required to make the ELG calculation are average service life, retirement dispersion, net salvage and the age distribution of the property. The depreciation study required to determine the applicable mortality characteristics is independent from the calculation of the depreciation rates. The resulting mortality characteristics can be used to calculate either ALG or ELG rates, both with either the whole life technique or the remaining life technique. Any set of mortality characteristics that is suitable for calculating ALG rates is just as suitable for calculating ELG rates. Conversely, any set that is not suitable for ELG is not suitable for ALG either.

The ELG procedure calculates the depreciation rates based on the expected life of each equal life component of the property rather than the average life of all components. As discussed earlier, "average" is the result of a calculation, and there may not be any average property. When curves are used to define retirement dispersion, the average service life and the retirement dispersion pattern define the equal life groups and the expected life applicable to each group.

When retirement dispersion does not exist, the ELG rate is identical to the ALG rate. When dispersion exists, the ELG rate for recently installed property is higher than the ALG rate and for old property is lower.

<u>A Simple Illustration ELG</u>

This illustration provides a framework for visualizing the ELG methodology. Table 2 assumes 20% of the $5,000 investment is retired at the end of each year following placement. The retirement frequencies are shown on Line 7. As shown in Columns 2 through 6, this means $1,000 of investment is retired each year, with the retirement at Age 1 being recovered in its entirety during Year One, at Age 2 in Years One and Two, etc. The depreciation rate applicable to each equal life group is shown on Line 8. The annual provision in dollars for Year One shown in Column 7 is made up of the Age 1 annual amounts shown on Line 1, Columns 2 through 6. As shown on the table, the annual provision for Age 2 is equal to the annual provision for Age 1 less the amount collected during Year One applicable to the group retired during Year One. Thus, the annual provisions can be thought of as a matrix, with the provision for any given year being produced by a portion of the matrix.

The depreciation rates in Column 9 are determined by dividing the annual provisions in Column 7 by the survivors in Column 8. The rate formula shown on Table 2 can also be used to calculate the rates and is used on the table to illustrate the working of the matrix by calculating the depreciation rates for Year One and Year Three. For Year One, the numerator and denominator both consist of five terms. Each year, the left-hand terms of both numerator and denominator drop off. It should be noted that the reverse summation of retirement ratios (starting with Column 6 and moving left on Line 7) is equal to the survivor ratio at the beginning of the period shown in Column 10.

The formula can illustrate how the matrix can be thought of in terms of a depreciation rate. If the multiplier of 100 is incorporated in each element of the numerator of the formula, such as (100 x 0.2)/2, it can be seen that 100/2 is a rate and the retirement frequency (0.2) is a weighting factor. This particular rate (50%) is the one shown for Age 2 property on Line 8, Column 3.

It can be seen that the only data required for the ELG rate calculation are the retirement frequencies for each year. These frequencies are defined by the average service life and the shape of the dispersion pattern.

A Real Illustration of ELG

The depreciation analyst deals with much larger groups of property than those appearing on Table 2. Table 3 contains an ELG rate calculation for an actual depreciable property group of an electric utility. The retirement frequencies shown in Column 4 are defined by the 38-year average service life and the L5 Iowa-type dispersion pattern. The ALG rate without salvage for this property is 2.632% (100%/38 years), while the ELG rate varies from 2.704% at age 0.5 years to 1.471% at the age just prior to the last retirement, 67.5 years.

The rate listed in Column 5 at each age is the weighted summation of individual rates applicable to that portion of the surviving property that the retirement frequencies in Column 4 indicate will be retired in each following year. This combination of average service life and dispersion pattern means that the first retirement will be from the age 18.5-year property during the following year at an age of 19 years; therefore, it will require a rate of 5.263% (100%/19 years). (This example does not have any surviving balance at age 18.5.) The last retirement will be from age 67.5-year property; consequently, it will require a rate of 1.471% (100%/68 years). The vintage composite rate shown in Column 5 at age 0.5 years is the weighted summation of rates varying from 5.263% to 1.471%.

Since this example is for a narrow dispersion pattern, the first retirement occurs at age 19 years, and the vintage composite rate remains at 2.704% at age 19.5 years, because the first retirement drops the 5.263% rate from the summation.

A wider dispersion pattern would result in a wider range of vintage composite rates than defined by the L5 curve (2.704% to 1.471%).

All that is necessary for calculating the depreciation rates applicable to each age of property are the retirement frequencies. These frequencies are defined by the average service life and the retirement dispersion pattern. The determination of average service life requires the determination of the dispersion pattern, since without dispersion, there would be no "average."

Depending on the dispersion pattern, the number of retirement frequencies making up the complete Iowa curve can be up to about 4.4 times the number of years of average service life. Thus, for an account whose number of retirement frequencies is three times average service life and whose average service life is 30 years, the rate applicable to the Age 1 property will be made up of the weighted summation of 89 components, etc. Thus, the rate calculation process is complex, but certainly not complicated. It is this complexity that makes the rate calculations much more practical using a computer.

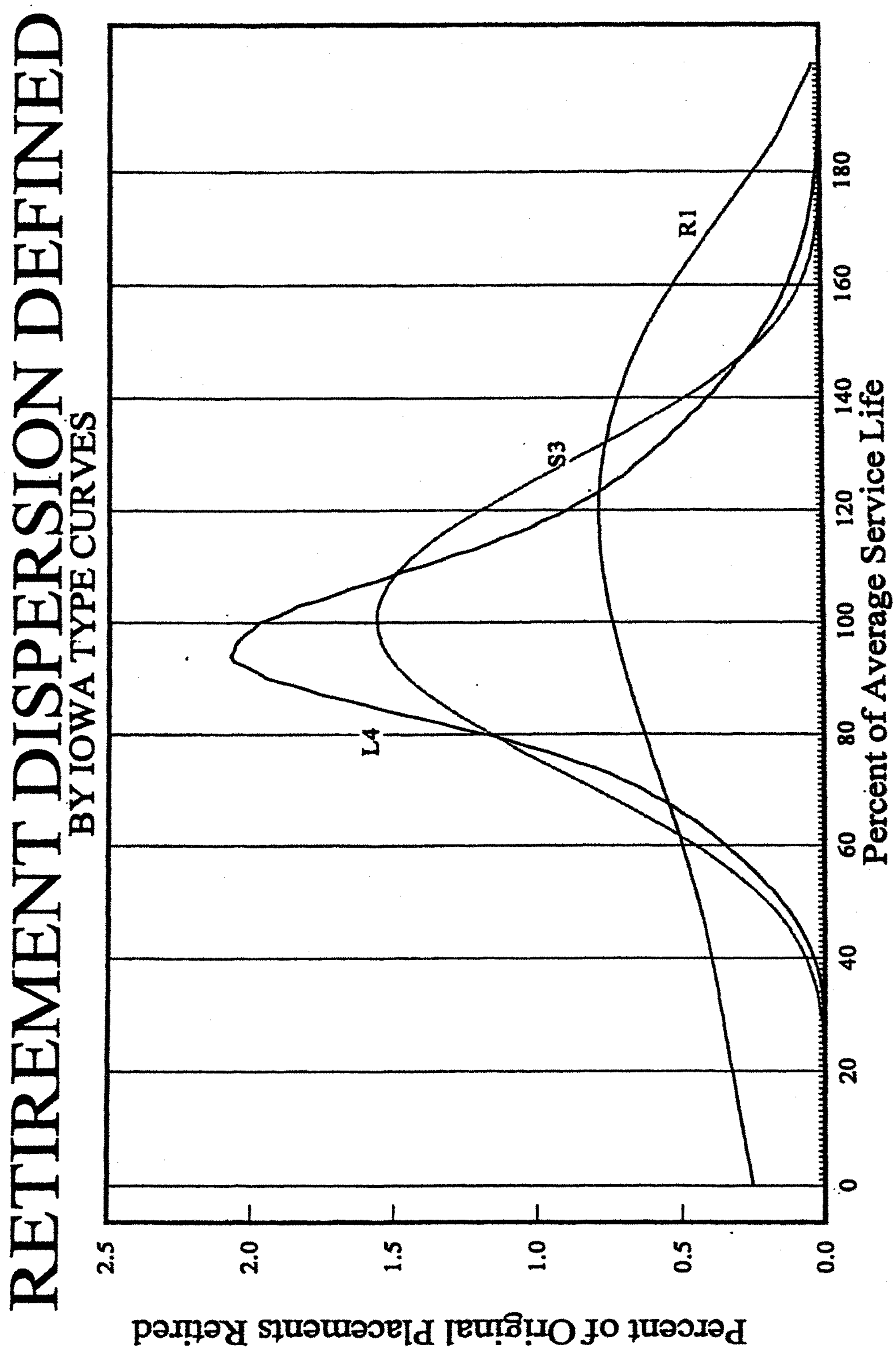

RETIREMENT DISPERSION DEFINED
BY IOWA TYPE CURVES
Percent of Original Placements Retired
2.5
2.0
1.5
1.0
0.5
0.0
Percent of Average Service Life
0
20
40
60
80
100
120
140
160
180
L4
S3
R1

TABLE 1

DEPRECIATION RATE CALCULATION PROCEDURES

Whole Life

$$\text{Rate (\%)} = \frac{PB - AS}{ASL} \qquad \text{Formula 1}$$

Remaining Life

$$\text{Rate (\%)} = \frac{PB - FS}{ASL} - \frac{BR - CTR}{ARL} \qquad \text{Formula 2}$$

$$\text{Rate (\%)} = \frac{PB - FS - BR}{ARL} \qquad \text{Formula 3}$$

Where

PB	is Depreciable Balance, %
AS	is Average Net Salvage, %
FS	is Future Net Salvage, %
ASL	is Average Service Life, years
BR	is Depreciation Reserve, %
CTR	is Calculated Theoretical Reserve, %
ARL	is Average Remaining Life, years

TABLE 2

DEVELOPMENT OF EQUAL LIFE GROUP CAPITAL RECOVERY RATE

Line	(1) Age Years	(2) Group 1 $	(3) Group 2 $	(4) Group 3 $	(5) Group 4 $	(6) Group 5 $	(7) Annual Provision $	(8) Beginning Survivors $	(9) Rate %	(10) Survivor Factor
1	1	1,000.00	500.00	333.33	250.00	200.00	2,283.33	5,000.00	45.67	1.00
2	2		500.00	333.33	250.00	200.00	1,283.33	4,000.00	32.08	0.80
3	3			333.33	250.00	200.00	783.33	3,000.00	26.11	0.60
4	4				250.00	200.00	450.00	2,000.00	22.50	0.40
5	5					200.00	200.00	1,000.00	20.00	0.20
6	Retirements	1,000.00	1,000.00	1,000.00	1,000.00	1,000.00				
7	Frequency	0.20	0.20	0.20	0.20	0.20				
8	Rate	100%	50%	33.33%	25%	20%				

$$\text{Rate, \%} = \frac{\dfrac{\text{Retirements Frequencies}}{\text{Age at Retirement}}}{\text{Reverse of Retirement Frequencies}} \times 100$$

$$\text{Year One Rate} = \frac{\dfrac{0.2}{1} + \dfrac{0.2}{2} + \dfrac{0.2}{3} + \dfrac{0.2}{4} + \dfrac{0.2}{5}}{0.2 + 0.2 + 0.2 + 0.2 + 0.2} \times 100 = 45.67\%$$

$$\text{Year Three Rate} = \frac{\dfrac{0.2}{3} + \dfrac{0.2}{4} + \dfrac{0.2}{5}}{0.2 + 0.2 + 0.2} \times 100 = 26.11\%$$

TABLE 3

DETERMINATION OF DEPRECIATION RATES BY ELG PROCEDURES

[1] Age Years	[2] Year	[3] Vintage Balance $	[4] Retirement Frequency ASL 38 Curve L5	[5] Rate	[6] Amount $
0.5	1993	4,244,285	0.0000	0.02704	114,758.36
1.5	1992	800,784	0.0000	0.02704	21,651.86
2.5	1991	60,016	0.0000	0.02704	1,622.73
3.5	1990	43,455,063	0.0000	0.02704	1,174,952.00
4.5	1989	81,456	0.0000	0.02704	2,202.43
5.5	1988	172,463	0.0000	0.02704	4,663.11
6.5	1987	2,098,991	0.0000	0.02704	56,753.20
7.5	1986	2,685,949	0.0000	0.02704	72,623.55
9.5	1984	1,642,443	0.0000	0.02704	44,408.90
10.5	1983	222,602	0.0000	0.02704	6,018.78
11.5	1982	85,661	0.0000	0.02704	2,316.13
12.5	1981	4,985	0.0000	0.02704	134.79
13.5	1980	72,942	0.0000	0.02704	1,972.23
14.5	1979	219,163	0.0000	0.02704	5,925.80
15.5	1978	120,665	0.0000	0.02704	3,262.58
16.5	1977	37,042	0.0000	0.02704	1,001.55
17.5	1976	339,236	0.0000	0.02704	9,172.21
19.5	1974	336,723	0.0001	0.02703	9,101.41
20.5	1973	10,375,359	0.0004	0.02702	280,292.86
21.5	1972	4,481,906	0.0009	0.02699	120,963.25
22.5	1971	5,923,340	0.0018	0.02695	159,618.98
23.5	1970	78,848	0.0030	0.02689	2,119.97
24.5	1969	305,178	0.0047	0.02681	8,180.42
25.5	1968	10,312,586	0.0069	0.02670	275,375.94
26.5	1967	2,754,067	0.0094	0.02658	73,203.24
27.5	1966	9,558,788	0.0123	0.02644	252,715.77
29.5	1964	5,556,083	0.0194	0.02610	144,995.54
30.5	1963	23,383	0.0242	0.02589	605.42
31.5	1962	3,313,564	0.0305	0.02566	85,012.50
32.5	1961	32,271	0.0386	0.02538	819.15
33.5	1960	151,658	0.0482	0.02507	3,802.24
34.5	1959	171,483	0.0583	0.02472	4,238.70
35.5	1958	167,116	0.0674	0.02433	4,065.35
36.5	1957	70,420	0.0740	0.02390	1,683.22
37.5	1956	1,792,312	0.0768	0.02345	42,036.33
39.5	1954	2,270,555	0.0701	0.02252	51,131.79
40.5	1953	187	0.0622	0.02208	4.13
41.5	1952	20,185	0.0531	0.02161	436.14
42.5	1951	12,860	0.0442	0.02118	272.40
43.5	1950	706	0.0362	0.02078	14.67
44.5	1949	2,652	0.0296	0.02041	54.13
45.5	1948	6,422	0.0245	0.02006	128.81
46.5	1947	19,573	0.0205	0.01972	386.07
47.5	1946	323,058	0.0173	0.01940	6,268.69
49.5	1944	2,285,041	0.0123	0.01879	42,943.47
50.5	1943	15,614	0.0103	0.01850	288.86
51.5	1942	620,752	0.0085	0.01821	11,306.36
53.5	1940	684,610	0.0055	0.01766	12,090.28
54.5	1939	47,173	0.0043	0.01740	820.76
55.5	1938	22,725	0.0033	0.01714	389.52
56.5	1937	560	0.0025	0.01689	9.46
57.5	1936	722	0.0019	0.01664	12.02
59.5	1934	3,065	0.0005	0.01573	48.21
61.5	1932	944,400	0.0005	0.01573	14,853.98
67.5	1926	2	0.0000	0.01471	0.03
Totals		119,029,691			3,133,730.27
				SALVAGE (%) =	-5.0
				AFTER SALVAGE =	3,290,417
				ANNUAL DEPRECIATION RATE =	2.76

::ODMA\PCDOCS\DALLAS\30706\1 09/24/04 2:03 PM AB

APPENDIX B

ATLANTA GAS LIGHT COMPANY

Description of Study Results

PRODUCTION PLANT

ACCOUNT 304.1, LAND RIGHTS

Content:

Clayton land rights for transmission lines, 45%.
Right of way for Augusta Plant, 12%.
Carrollton (Manufacturing Plant), 43%.

Life Analysis:

The existing rate was based on a forecast of the terminal retirement date. The selected life is tied to the estimated remaining life of LPG equipment at the associated facilities. We recommend 40 years with an SQ dispersion.

Salvage and Cost of Removal Analysis:

No retirements have been recorded. No salvage or cost of removal is expected, making zero net salvage appropriate.

ACCOUNT 305, STRUCTURES AND IMPROVEMENTS

Content:

Approximately 15% structures, 85% improvements and landscaping.

Life Analysis:

The existing life is 50 years with an R3 dispersion. No change is required at this time.

Salvage and Cost of Removal Analysis:

Zero net salvage is reflected in the existing rate. Reliance on the most recent activity supports retention of zero net salvage.

ACCOUNT 311, LPG EQUIPMENT

Content:

Boilers, tanks, piping, pump and vaporizers.

Life Analysis:

The existing life is 35 years with an R3 dispersion. We recommend an increase of five years, and no change in dispersion is recommended at this time.

Salvage and Cost of Removal Analysis:

The existing net salvage factor is zero. Recent history indicates that zero should be used for both salvage and cost of removal.

ACCOUNT 320, OTHER EQUIPMENT

Content:

Gas detection and fire protection equipment.

Life Analysis:

The existing life is 20 years with an L1.5 dispersion. Based on the age of survivors, some increase in ASL is appropriate. Our recommendation is 25 years and retention of the L1.5 curve.

Salvage and Cost of Removal Analysis:

The existing net salvage factor is zero. There has been no activity, and there is no basis for change.

STORAGE PLANT

ACCOUNT 361.0, STRUCTURES AND IMPROVEMENTS

Content:

Approximately 80% structures; 20% improvements.

Life Analysis:

The existing life is 30 years. The selected average life of 30 years is based upon a weighting of the expected lives of the component assets. There is no basis for change, so continue the use of 30-S4.

Salvage and Cost of Removal Analysis:

The existing net salvage factor is zero. There has been no activity, so we recommend retention of a net salvage factor of zero.

ACCOUNT 361.1, STRUCTURES AND IMPROVEMENTS (LNG)

Content:

Structure, gates, fences, paving, security system, and plant control systems.

Life Analysis:

The existing life is 45 years with an R3 dispersion and is retained.

Salvage and Cost of Removal Analysis:

The existing net salvage factor is zero and continues to be appropriate based on history.

ACCOUNT 362.1, GAS HOLDERS (LNG)

Content:

Two tanks at Riverdale, one at Macon and one in Cherokee County, and associated piping, valves and controls.

Life Analysis:

The existing life is 45 years with an R4 dispersion. The Company expects a life span no less than 50 years for these tanks. Recognizing the effect of component replacements, the 45 years and R4 dispersion are retained.

Salvage and Cost of Removal Analysis:

The existing net salvage factor is negative 15%, which we recommend changing to negative 20% due to Company expectations and history, indicating that COR will exceed salvage.

ACCOUNT 363.0, PURIFICATION EQUIPMENT (LNG)

Content:

Liquified Natural Gas Plant #1, CO_2 absorber beds, regeneration heaters, dehydrators and various purification racks, vessels, exchangers and filters.

Life Analysis:

The existing life is 40 years. Based upon a 50-year life span, and recognizing the effect of component replacement, an average service life of 40 years is retained with an R4 dispersion.

Salvage and Cost of Removal Analysis:

The existing net salvage factor is zero, and with no historical cost of removal or salvage activity, but some COR is expected. Our recommendation is a net salvage factor of negative 5%.

ACCOUNT 363.1, LIQUEFACTION EQUIPMENT (LNG)

Content:

Inlet separators, absorber, regeneration, odorizing and liquefaction equipment.

Life Analysis:

The existing life is 25 years. These facilities are expected to be replaced once over the 50-year span life. Our recommendation is no change in average service life, and an R4 pattern is selected.

Salvage and Cost of Removal Analysis:

The existing net salvage factor is zero, but some COR is expected, so we recommend a net salvage factor of negative 5%.

ACCOUNT 363.2, VAPORIZING EQUIPMENT (LNG)

Content:

Vaporizers and piping.

Life Analysis:

The existing life is 30 years. We recommend no change in average service life or the R4 dispersion pattern.

Salvage and Cost of Removal Analysis:

No salvage or cost of removal activity has occurred. A net salvage factor of zero is existing, but our recommendation is to change it to negative 5% due to the expectation that COR is expected.

ACCOUNT 363.3, COMPRESSOR EQUIPMENT (LNG)

Content:

Compressor, valves and piping.

Life Analysis:

The existing life is 45 years. Based upon a 50-year life span and recognizing the effect of component replacement, an average service life of 45 years is retained with an R4 dispersion. This selection reflects the limited historical activity.

Salvage and Cost of Removal Analysis:

No salvage or cost of removal activity has occurred, but some COR is expected. Negative 5% net salvage is our recommendation.

ACCOUNT 363.4, MEASURING AND REGULATION EQUIPMENT (LNG)

Content:

Valves and regulator equipment.

Life Analysis:

The existing life is 43 years. The study recommendation is 48 years with an R1 dispersion. This selection reflects the combined M&R equipment results due to their similarity.

Salvage and Cost of Removal Analysis:

No salvage or cost of removal activity has occurred. Zero net salvage is appropriate and is our recommendation.

ACCOUNT 363.5, OTHER EQUIPMENT (LNG)

Content:

Switchgear, instrumentation equipment, fire protection equipment, instrument air compressor and intelliflex Relco cameras.

Life Analysis:

The existing life is 30 years with an R3 curve, which are retained.

Salvage and Cost of Removal Analysis:

Minimal activity has occurred. Our recommendation is a negative 5% net salvage due to some COR expected.

TRANSMISSION PLANT

ACCOUNT 365.1, LAND RIGHTS

Content:

Easements, legal fees and recording costs.

Life Analysis:

Only one retirement has been recorded. The existing rate is based on an estimate of terminal retirement date. These costs relate to the transmission mains, and the recommended average service life of 75 years is 10 years greater than the life selected for the associated facilities. The selected dispersion pattern is R5.

Salvage and Cost of Removal Analysis:

The property will not produce salvage or cost of removal, so zero net salvage is appropriate.

ACCOUNT 365.2, RIGHTS OF WAY

Content:

Easements, legal fees and recording costs.

Life Analysis:

No retirements have been recorded. The existing rate is based on an estimate of terminal retirement date. These costs relate to the transmission mains, and the recommended average service life of 75 years is ten years greater than the life selected for the associated facilities. The selected dispersion pattern is R5.

Salvage and Cost of Removal Analysis:

The property will not produce salvage or cost of removal, so zero net salvage is appropriate.

ACCOUNT 366.0, MEASURING AND REGULATION STATION STRUCTURES

Content:

Buildings, fences and landscaping.

Life Analysis:

The existing life is 40 years. We are recommending no change in average service life or the R5 dispersion pattern.

Salvage and Cost of Removal Analysis:

No salvage or cost of removal activity has occurred. A net salvage factor of zero is retained.

ACCOUNT 367, MAINS

Content:

Mains and cathodic protection; approximately 700 miles of pipe with 80% greater than 10 inches.

Life Analysis:

The existing life is 65 years with an R5 dispersion, which are retained.

Salvage and Cost of Removal Analysis:

The existing net salvage factor is negative 1%. Terminal retirements will produce some removal cost, but many are abandoned in place, and some economies of scale exist. A net salvage factor of negative 2% is recommended based on history.

ACCOUNT 369, MEASURING AND REGULATING STATION EQUIPMENT

Content:

Measuring equipment, piping and valves.

Life Analysis:

The existing life is 43 years with an R1 dispersion. An analysis of all Measuring and Regulating equipment accounts (Account 369, Transmission Measuring and Regulating Station Equipment; Account 378, Distribution Measuring and Regulating Station Equipment; Account 379, Distribution City Gate Equipment; and Account 385, Distribution Industrial Measuring and Regulating Equipment) produced indications of a longer average service life. An average service life of 48 years with an R1 dispersion was selected for all Measuring and Regulating equipment accounts, based upon the analysis indications of increasing life.

Salvage and Cost of Removal Analysis:

There has been only one cost of removal entry. The analysis was based on the activity for all Measuring and Regulating equipment accounts combined. Zero net salvage is appropriate and is our recommendation.

DISTRIBUTION PLANT

ACCOUNT 374.1, LAND RIGHTS

Content:

Easements.

Life Analysis:

The existing life is 65 years with an R5 dispersion. There is limited retirement experience, so tie the ASL to the life of the associated mains plus 10 years, coupled with an R5 dispersion pattern.

Salvage and Cost of Removal Analysis:

The property will not produce salvage or cost of removal, so zero net salvage is appropriate.

ACCOUNT 375, STRUCTURES AND IMPROVEMENTS

Content:

Buildings, fences, improvements and landscaping.

Life Analysis:

The existing life is 40 years. Based upon the indications, a modest increase in average life to 45 years with an R4 dispersion is selected.

Salvage and Cost of Removal Analysis:

A net salvage factor of negative 15% is existing. However, recent experience suggests zero to be more appropriate.

ACCOUNT 376, MAINS

Content:

Approximately 28,000 miles of main, steel mains, plastic mains, cast iron mains and cathodic protection.

Life Analysis:

Growth has been considerable, and plastic is rapidly replacing steel as the dominant material. Only 10% of recent retirements have been plastic; therefore, the life indications reflect the experienced life of cast iron and steel mains. Company expectations are that the life of plastic should be equivalent to that of cathodically protected steel mains. The existing life of 55 years and an R2.5 dispersion are retained. The Bare Steel, Cast Iron replacement program is approximately half complete.

Salvage and Cost of Removal Analysis:

The existing net salvage factor is negative 8%. History indicates a negative 60% net salvage composed almost entirely of cost of removal, but our recommendation is to use negative 30%. The negative 30% selection reflects what would be considered normal activity before the pipe replacement program was begun, and it helped mitigate the depreciation expense request.

ACCOUNT 378, MEASURING AND REGULATING STATION EQUIPMENT

(See Account 369)

ACCOUNT 379, CITY GATE EQUIPMENT

(See Account 369)

ACCOUNT 380, SERVICES

Content:

Steel, plastic and copper services.

Life Analysis:

The existing life is 38 years and an R2.5 curve. Historical indications suggest a slightly longer ASL to 42 years is recommended, with a slight change to an R2 curve.

Salvage and Cost of Removal Analysis:

The existing net salvage factor is negative 11%. Salvage is virtually zero. There is a trend to higher cost of removal, as illustrated by the shrinking band results. As a movement toward terminal cost of removal, the selected cost of removal is 60% with zero salvage.

ACCOUNT 381.1, METERS

Content:

Meters.

Life Analysis:

The existing life is 35 years with an R2.5 pattern. Our recommendations are to increase the ASL to 40 and retain the curve to an R2.5.

Salvage and Cost of Removal Analysis:

The existing net salvage factor is zero and should be retained.

ACCOUNT 381.2, AUTOMATED METERS (ERTS)

Content:

Approximately 680,000 automated meters.

Life Analysis:

This account was new in 1988. The ERT meter when attached is retired with the main meter. Batteries are replaced after 15 years. These should have a life closer to that of a meter but are technology-driven. Therefore, our recommendation is a move downward to a 12-year average service life with an R3 dispersion.

Salvage and Cost of Removal Analysis:

No salvage value is evident in recent years, along with zero cost of removal. We suggest moving the net salvage factor to zero.

ACCOUNT 381.3, METRETEKS

Content:

Metreteks (approximately 618 AGL and 63 CGC).

Life Analysis:

This account was new in 1987. An average service life of 30 years with an R5 pattern is selected. These are a change from the existing 20 years and R1.5 curve.

Salvage and Cost of Removal Analysis:

Zero net salvage is appropriate and retained.

ACCOUNT 382, METER INSTALLATIONS

Content:

Cost of installing meters.

Life Analysis:

The existing life is 60 years. Much longer lives are indicated from the analyses, but we have retained the existing life due to the type of assets. An S-.5 dispersion is existing, which we recommend changing to an S0.5 dispersion.

Salvage and Cost of Removal Analysis:

The existing net salvage factor is zero and is retained.

ACCOUNT 383, HOUSE REGULATORS

Content:

House regulators.

Life Analysis:

The existing life is 50 years. Historical life indications suggest that this is reasonable to retain, along with an R3 dispersion.

Salvage and Cost of Removal Analysis:

The existing net salvage factor is zero and is retained.

ACCOUNT 384, HOUSE REGULATOR INSTALLATIONS

Content:

Cost of installing house regulators.

Life Analysis:

The existing life is 70 years. Longer lives are indicated, but the existing ASL is already at the upper end of reasonableness. Retain existing 70-R2.

Salvage and Cost of Removal Analysis:

The existing net salvage is zero and is retained.

ACCOUNT 385, INDUSTRIAL MEASURING AND REGULATING EQUIPMENT

(See Account 369)

ACCOUNT 386, OTHER EQUIPMENT ON CUSTOMER PREMISE

Content:

NGV Refueling Stations.

Life Analysis:

The existing ASL is 10 years with an R4 curve. Based on our analysis and evaluation, we recommend an ASL of 15 years and retaining the R4 curve.

Salvage and Cost of Removal Analysis:

The existing net salvage is zero and should be retained.

ACCOUNT 387, OTHER EQUIPMENT

Content:

Fire extinguishers, pipe locators, other miscellaneous equipment.

Life Analysis:

The existing life is 30 years with an L1 pattern. We retain the ASL of 30 years and change from an L1 dispersion to an R3.

Salvage and Cost of Removal Analysis:

The existing net salvage factor is zero and should be retained.

GENERAL PLANT—DEPRECIATED

ACCOUNT 390, STRUCTURES AND IMPROVEMENTS

Content:

Approximately 85% structure, 15% improvements, landscaping and HVAC.

Life Analysis:

The existing life is 45 years. We suggest retention of both the average life of 45 years and the R2 dispersion.

Salvage and Cost of Removal Analysis:

The existing net salvage factor is zero and should be retained.

ACCOUNT 391.1, OFFICE FURNITURE AND EQUIPMENT

Content:

67% furniture, 33% equipment.

Life Analysis:

The existing life is 12 years and is amortized by use of an SQ dispersion pattern.

Salvage and Cost of Removal Analysis:

No salvage or cost of removal, so use zero.

ACCOUNT 391.2, DATA PROCESSING EQUIPMENT

Content:

Mainframe and peripherals, personal computers and printers.

Life Analysis:

The existing life is 8 years with an R2 curve and should be retained.

Salvage and Cost of Removal Analysis:

No salvage or COR was recorded recently, so move to zero net salvage.

ACCOUNT 393, STORES EQUIPMENT

Content:

Miscellaneous warehouse and inventory items.

Life Analysis:

The existing life and curve are 35-SQ and should be retained.

Salvage and Cost of Removal:

The existing net salvage factor is zero and should be retained.

ACCOUNT 394, TOOLS, SHOP AND GARAGE EQUIPMENT

Content:

Tools and garage equipment.

Life Analysis:

The existing life is 16 years and an R2 curve. Due to the mix of assets, a life of 16 years is retained with the R2 curve.

Salvage and Cost of Removal Analysis:

The existing net salvage factor is positive 5%. Salvage has exceeded cost of removal, but past history and recent experience indicate an increase in salvage. Our recommendation is a net salvage factor of positive 10%.

ACCOUNT 395, LABORATORY EQUIPMENT

Content:

Miscellaneous lab equipment.

Life Analysis:

The existing life and curve, 25-SQ, are retained.

Salvage and Cost of Removal:

The existing net salvage factor is zero and should be retained.

ACCOUNT 396, POWER OPERATED EQUIPMENT

Content:

Air compressors, backhoes, lift trucks and trenchers.

Life Analysis:

The existing life is eight years. Based upon the type of equipment retired and surviving and the analysis indications, an average service life of 6 years with an L2 pattern is retained.

Salvage and Cost of Removal Analysis:

The existing net salvage factor is positive 20%. Historical indications are salvage with little or no cost of removal. The net salvage factor recommended is positive 15% based on the recent five-year band.

ACCOUNT 397, COMMUNICATION EQUIPMENT

Content:

Radios, pagers and telephone system.

Life Analysis:

The existing life is 20 years. An increase in average service life is reflected in our recommendation of 25 years with an S0 dispersion.

Salvage and Cost of Removal Analysis:

The existing net salvage factor is zero and is retained.

ACCOUNT 398, MISCELLANEOUS EQUIPMENT

Content:

Maps, video equipment, kitchen equipment and print shop equipment.

Life Analysis:

The existing life is 14 years with an S1 dispersion and is retained.

Salvage and Cost of Removal Analysis:

Salvage and cost of removal activity has been minimal. The existing zero net salvage is retained.

GENERAL PLANT—AMORTIZED

The assets in this category have an amortization period that reflects the type of assets, current trends, and the Company's own experience and expectations. A listing of the accounts and their respective amortization life are shown on Schedule 3 of this report.

BEFORE THE

VIRGINIA STATE CORPORATION COMMISSION

DOCKET NO. PUE 2003-00507

DIRECT TESTIMONY

OF

DONALD S. ROFF

ON BEHALF

OF

ATMOS ENERGY CORPORATION

Q. Please state your name, occupation and business address.

A. My name is Donald S. Roff and I am a Director with the public accounting firm of Deloitte & Touche LLP ("Deloitte"). My business address is JPMorgan Chase Tower, Suite 1600, 2200 Ross Avenue, Dallas, Texas 75201-6778.

Q. Please describe your background and experience.

A. My background and experience are described on Exhibit DSR-1.

Q. **Have you ever testified before this or any other regulatory body?**

A. Yes. A list of my regulatory appearances is contained on Exhibit DSR-2.

Q. What is the purpose of your testimony?

A. I have been asked by Atmos Energy Corporation ("Atmos" or "the Company") to conduct a depreciation study of its Virginia Properties and to provide recommendations regarding depreciation rates and depreciation accounting practices. Exhibit DSR-3 is the report of my findings and recommendations prepared by me or under my supervision.

Q. Please describe exhibit DSR-3.

A. Exhibit DSR-3 presents a discussion of depreciation accounting principles, presents the depreciation study methodology, summarizes the results and itemizes recommendations.

Q. What were your findings and recommendations?

A. I found that changes were needed to the mortality characteristics (average service life, retirement dispersion and net salvage allowance) of a number of asset categories resulting in revised depreciation rates. A summary comparison of the existing and recommended depreciation rates follows:

Function	Existing %	Recommended %
Transmission	2.73	1.57
Distribution	3.33	3.36
General	8.03	9.48
Total Gas Plant	3.48	3.54

Q. Have you quantified the impact on annual depreciation expense due to your recommended changes?

A. Yes. The above summary is taken from Schedule 1 of Exhibit DSR-3. Using September 30, 2003 depreciable plant in service balances, the effect of the above changes in depreciation rates results in an increase in annual depreciation of about $28,500, or less than 2%.

Q. What are the primary forces that drive this change in annual depreciation expense?

A. The decrease in annual depreciation expense is affected by changes in average service life; by changes in retirement dispersion; by the depreciation procedure utilized; by changes in net salvage allowances; and the respective reserve position for each asset category. The Transmission, Distribution and General Plant functional categories are impacted by a combination of these factors.

Q. **Have you attempted to quantify the effect of each of these factors on annual depreciation expense?**

A. Yes. Exhibit DSR-4 has been prepared to summarize the various components of the depreciation rate changes and the effect on annual depreciation amounts.

Q. **Please explain Exhibits DSR-R.**

A. Exhibit DSR-4 summarizes at the functional level the various components of a depreciation rate and their effect on the annual depreciation amount. There are four primary elements shown respectively in Columns [8], [9], [10], and [11], change in average service life ("ASL"), change in net salvage, change in depreciation procedure and the effect of reserve position. The final Column, labeled "Inter-relations", indicates that separate parameters interact.

As shown in Column [8], the greatest change in annual depreciation is due to the effect of longer lives. This decrease is offset by changes in net salvage, the change in depreciation procedure and the effect of reserve position or past depreciation accruals.

Q. **Can you explain the column entitled "Inter-Relations"?**

A. Yes. Assume that we have an asset category with a balance of $1,000. Assume that my recommendation is an average service life of 25 years and the existing average service life is 20 years. Further assume that I recommend a positive 10% net salvage factor and the existing net salvage factor is positive 20%. The difference in annual depreciation due to the increase in average service life is ($1,000/25 = $40) minus ($1,000/20 = ($50), for a decrease of $10. The difference due to the change in net salvage would be calculated as ((100%-10%)/25 = 3.2%) minus ((100%-20%)/25 = 3.6%), times the $1,000 balance, or an increase of $4. The existing depreciation rate would be ((100%-20%)/20), or 4.00%.

My recommended depreciation rate would be ((100%-10%)/25), or 3.60%. The total change in depreciation expense is a decrease of $4. Therefore, the components of the depreciation change are: a decrease of $10, for an increase average service life; an increase of $4 for less positive net salvage; a total decrease of $4; and an inter-relationship effect of positive $2, representing the combination of change in life and change in net salvage. The inter-relationships magnify as the number of changing elements increases.

Q. **What does the column entitled "Change in Procedure" refer to?**

A. The depreciation procedure refers to the grouping of assets for depreciation rate calculation purposes. The nature of the group varies with the form of the depreciable base. The most basic depreciable group is a single item. Because utilities have thousands of items, group procedures are utilized. In the past a broad group procedure or Average Life Group ("ALG") procedure has been used. Other types of groups include vintage group and Equal Life Group ("ELG"). The ELG procedure will be discussed in detail later in my testimony.

Q. **What are mortality characteristics?**

A. Mortality characteristics are the basic parameters necessary to calculate depreciation rates. They encompass average service life, retirement dispersion (the various ages at which assets within a group retire) defined by Iowa type curves, and net salvage allowance. Net salvage is the difference between salvage and cost of removal. If cost of removal exceeds salvage, negative net salvage occurs.

Q. **What is Depreciation?**

A. The most widely recognized accounting definition of depreciation is that of the American Institute of Certified Public Accountants, which states:

> Depreciation accounting is a system of accounting which aims to distribute the cost or other basic value of tangible capital assets, less salvage (if any), over the estimated useful life of the unit (which may be a group of assets) in a systematic and rational manner. It is a process of allocation, not of valuation.[1]

Q. **What is the significance of this definition?**

A. This definition of depreciation accounting forms the accounting framework under which my depreciation study was conducted. Several aspects of this definition are particularly significant. Salvage (net salvage) is to be recognized. The allocation of costs is over the useful life of the assets. Grouping of assets is permissible. Depreciation accounting is not a valuation process. And the cost allocation must be both systematic and rational.

Q. **Please explain the importance of the terms "Systematic and Rational".**

A. Systematic implies the use of a formula. The formula used for calculating the recommended depreciation rates is shown on Page 10 of Exhibit 3. Rational means that the pattern of depreciation, in this case, the depreciation rate itself, must match either the pattern of revenues produced by the asset, or match the consumption of the asset. Since revenues are determined through regulation (versus produced by the asset), asset consumption is directly measured and reflected in the calculation of depreciation rates. This measurement of asset consumption is accomplished by conducting a depreciation study.

Q. **Are there other definitions of depreciation?**

---

[1] Accounting Research Bulletin No. 43, Chapter 9, Paragraph 5 (June 1953).

A. Yes. The Federal Energy Regulatory Commission ("FERC") Uniform System of Accounts provides a series of definitions related to depreciation as shown on Page 4 of Exhibit DSR-3. These definitions of depreciation make reference to asset consumption, and therefore relate very well to the accounting framework for depreciation. These definitions form the regulatory framework under which my depreciation study was conducted.

Q. **Why are you recommending remaining life depreciation rates?**

A. Remaining life depreciation rates are recommended because such depreciation rates provide for full recovery of net investment adjusted for net salvage over the future useful life of each asset category. Use of the remaining life technique is consistent with the technique utilized in developing the existing depreciation rates.

Q. **How does your depreciation study recognize asset consumption?**

A. Asset consumption (retirement dispersion) is defined by the use of Iowa type curves and related average service lives.

Q. **What is retirement dispersion?**

A. Retirement dispersion merely recognizes that groups of assets have individual assets of different lives, i.e., each asset retires at differing ages. Retirement dispersion is the scattering of retirements by age around the average service life for each group of assets.

Q. **Please describe how these elements were determined and utilized in your depreciation study.**

A. A depreciation study consists of four distinct, yet related phases - data collection, analysis, evaluation and rate calculation. Data collection refers to the gathering of historical accounting information for use in the other phases. Company personnel were responsible for this effort. Analysis refers to the statistical processing of the data collected in the first phase. There are two separate analysis procedures, one for life, and one for salvage and cost of removal, and was conducted by Deloitte personnel. The evaluation phase incorporates the information developed in the data collection and analysis phases to determine the applicability of the historical relationships developed in these phases to the future, and was conducted jointly by Deloitte personnel and Company personnel. The rate calculation phase merely utilizes the parameters developed in the other phases in the computation of the recommended depreciation rates, and was accomplished by Deloitte personnel.

Q. **Please discuss the life analysis process utilized for transmission, distribution and general plant.**

A. Life analysis was conducted using two different approaches, depending upon the type of data available. Where the age of retirements was known, the Actuarial Method of Life analysis was employed. In general, for actuarial analysis, retirement experience was collected for the period 1986 through 2003 updating the historical data files used for the prior depreciation study. These data were arrayed into a format suitable for life analysis. Life tables were developed and Iowa type curves were fitted to the historical summaries.

Where the age of retirement was not known, the Simulated Plant Record ("SPR") Method of life analysis was utilized. The SPR method determines retirement dispersion and average service life combinations for various bands of years which best match the actual retirements and balances for each asset category. The simulated balances procedure consists of applying survivor ratios (portion surviving at each age) from Iowa-type dispersion patterns in order to calculate annual balances, and then comparing the calculated balances with the actual balances for several periods, followed by statistical comparisons of differences in balances. The simulated retirements procedure is similar, except that the retirement frequency rates of the Iowa patterns are utilized to calculate annual retirements, and the comparisons are to actual retirements rather than to balances. Tabulations of the best ranking curves were made and this became the starting point for the evaluation phase of my review. In most cases, retirement history for a thirty-year period was available.

Q. **Please describe the life analysis phase of your depreciation study for transmission, distribution and general plant.**

A. Life analysis measures history and results in the determination of an estimate of average service life for each asset category. The actual analysis involves "converting" historical accounting data into mortality tables. In very simple terms, one is looking at the portion (or percent) surviving at each age for every asset category. This is true for which aged accounting data are available.

Q. **How is this "Conversion" accomplished?**

A. Because the age of retirement is known, as well as the age of the surviving balances, retirements of like ages are related to the asset amounts available to be retired at the same age. These retirement ratios are then related to the portion (percent) surviving at the beginning of each successive age, thus building what is known as the observed life table. When converted to a graphical format, this plot becomes the observed survivor curve. For example, let us assume that ten items are all placed in service in the same year. Further assume that one item is retired every year for the next ten years. The observed life table would be developed as follows:

Age	Retirements	Exposures	Retirement Ratio	Survivor Ratio	Life Table
0					
1	1	10	10.0%	90.0%	100.%
2	1	9	11.1%	88.9%	90.0%
3	1	8	12.5%	87.5%	80.0%
4	1	7	14.3%	85.7%	70.0%
5	1	6	16.7%	83.3%	60.0%
6	1	5	20.0%	80.0%	50.0%
7	1	4	25.0%	75.0%	40.0%
8	1	3	33.3%	66.7%	30.0%
9	1	2	50.0%	50.0%	20.0%
10	1	1	100.0%	0.0%	10.0%
					0.0%
			ASL =		5.50

Q. What is an observed survivor curve?

A. An observed survivor curve is a plot, or graph of the recorded retirement and survivor history as a function of age. This observed curve is essentially a graphical representation of history and is developed from the observed life table shown above.

Q. How is the observed curve useful?

A. The observed curve is useful for two reasons. The area underneath the survivor curve is, by definition, equal to average service life. First, if one could find a matching empirical curve, such as the Iowa-type curves, an estimate of average service life can be made. Second, this estimate then becomes the starting point in the evaluation phase of a depreciation study.

Q. Why do you say that this observed curve is only the starting point in the evaluation process?

A. The observed curve is only the starting point in the evaluation process because it only represents a pictorial view of history. In order to develop appropriate average service lives for depreciation rate calculation purposes, this history must be understood, and combined with expectations for the future.

Q. How is the survivor curve used in your study?

A. The observed survivor curve derived from the Company history is matched to generalized known curves, such as the Iowa-type curves to provide an estimate of average service life. Survivor curves were also utilized in the Simulated Plant Balances Method analysis process.

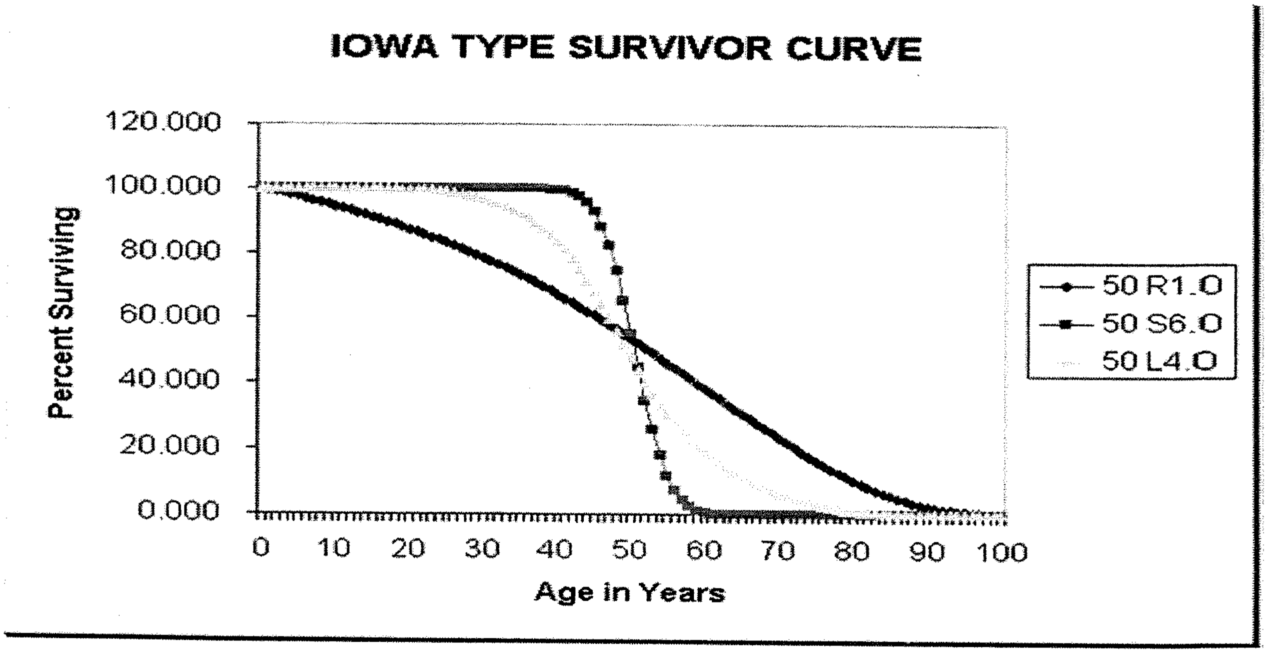
Q. What are Iowa-Type curves?

A. The Iowa-type curves were devised empirically over 70 years ago by the Engineering Research Institute at what is now Iowa State University to provide a set of standard definitions of retirement dispersion. Retirement dispersion merely recognizes that groups of assets have individual assets of different lives, i.e., each asset retires at differing ages. Retirement dispersion is the scattering of retirements by age around the average service life for each group of assets. Standard dispersion patterns are useful because they make calculations of the remaining life of existing property possible and allow life characteristics to be compared.

The Engineering Research Institute collected dated retirement information on many types of industrial and utility property and devised empirical curves that matched the range of patterns found. A total of 18 curves were defined. There were six left-skewed, seven symmetrical and five right-skewed curves, varying from wide to narrow dispersion patterns. The Iowa-curve naming convention allows the analyst to relate easily to the patterns. The left-skewed curves are known as the "L series", the symmetrical as the "S series" and the right-skewed as the "R series." A number identifies the range of dispersion. A low number represents a wide pattern and a high number a narrow pattern. The combination of one letter and one number defines a unique dispersion pattern.

Q. **How do Iowa-Type curves provide an estimate of average service life?**

A. Iowa-type curves and average service lives are inseparable. That is, the shape of the survivor curve defines the average service life. As mentioned above, the area underneath the survivor curve is equal to average service life. Thus the average service life cannot be described without also defining an Iowa-type curve, i.e., shape. An example is shown below:



Q. **What does this chart illustrate?**

A. This chart illustrates that Iowa type survivor curves are composed of two elements, the curve shape and the average service life. Each of the above survivor curves (R1, S6 and L4) has the same average service life, in this case 50 years.

Q. **How were the Iowa curve shapes and average service life selections made?**

A. Summaries of the individual asset category life analysis indications were prepared and discussed with Atmos personnel. Anomalies and trends were identified and engineering and operations input were requested where necessary. A single average service life and Iowa curve was selected for each asset category reflecting the combination of the historical results and the additional information obtained from the engineering, accounting and operations personnel. This process is a part of the evaluation phase of the depreciation study.

Q. **What is the evaluation phase of a depreciation study?**

A. The evaluation phase of a depreciation study combines the results of historical analyses with information regarding the age of property retired, the age of property surviving, knowledge of the types of assets surviving and being retired, and Company experience and expectations, all coupled with the knowledge, experience and judgment of the depreciation analyst. The goal is to give recognition to these factors and their influence upon historical indications and the applicability of such historical indications to plant surviving into the future. Both Atmos and Deloitte personnel participated in this process.

Q. **What types of information are discerned in this phase of the depreciation study?**

A. Information discerned includes the specific types of equipment being retired and added, the relative age of property surviving and retiring and Company plans and expectations regarding the property being evaluated, as well as forces influencing the salvage obtainable and removal costs associated with retired assets.

Q. **Can you provide specific examples of the information that was utilized in your study?**

A. Yes. One example would be the unit cost associated with testing meters which influenced the net salvage selection for that account.

Q. **How was net salvage determined for transmission, distribution and general plant?**

A. Historical retirement, salvage and cost of removal activity was collected and analyzed for the period 2000-2003 for each asset category. Both salvage and cost of removal were divided by retirements on an annual basis to develop salvage and cost of removal percentages. Shrinking and rolling band analyses were also conducted to illustrate any trends that might exist. A single net salvage percentage was developed for each asset category reflecting the history, trends and Company expectations.

Q. **What are shrinking and rolling band analyses?**

A. There are two techniques to help discern trends in the historical data. A shrinking band begins with the full experience period and successively eliminates the oldest year's activity, thus illustrating trends as one moves through time. Rolling bands are useful because salvage, cost of removal and retirements are not always recorded in the same accounting period. Rolling band analysis combines activity for fixed periods, in the case of this study, three years. Three years was selected because virtually all salvage and cost of removal activity occurs within three years of the recording of the retirement. These three-year combined activities are then "rolled" forward one year at a time, and similarly aid in identifying trends as with the shrinking bands. Examples of rolling bands would be 1999-2001, 2000-2002, etc.

Q. **Were there any trends evident from the data contained in the salvage and cost of removal analysis?**

A. In general, salvage is declining and cost of removal is increasing.

Q. Why is this the case?

A. I believe that there are two reasons for this occurrence. First, both salvage and cost of removal are a function of the age of property retired. Younger property is more valuable as it can be reused. In general, we have seen longer lives for most of the mass assets contained in the Transmission and Distribution Plant functions. Older property retirements have less salvage value and cost more to remove relative to their original cost due to cost escalation over time. The second reason is there are just more environmental requirements that impact the level of cost of removal. This creates additional costs that are not reflected in the existing depreciation rates.

Q. What are the results of your depreciation study for transmission plant?

A. For the Transmission Plant function, the depreciation rate decreases from 2.73% to 1.57%. A portion of the decrease in depreciation rate is attributable to the reserve position, whereby the accumulated depreciation to date is higher than it should be, presuming that assets retiring in the future follow the selected patterns. The net dollar impact of the change in depreciation rate is a decrease in annual depreciation expense of approximately $6,000.

Q. What are the results of your depreciation study for distribution plant?

A. For the Distribution Plant function, the depreciation rate increases from 3.33% to 3.36%. Based upon a review of the 1990 depreciation study, both average service lives and net salvage factors have changed. The primary cause of the modest increase in annual depreciation expense is a decrease in net salvage (more negative). The impact of the change in rate is an increase in annual depreciation expense of approximately $12,000.

Q. What are your depreciation study results for general plant?

A. The composite depreciation rate increases from 8.03% to 9.48%. In general, average service lives have been shortened. The impact of the change in rate is an increase in annual depreciation expense of approximately $22,000.

Q. **What depreciation procedure are you recommending in this proceeding?**

A. I am recommending the use of the ELG procedure.

Q. **Why are you recommending the ELG procedure?**

A. There are three reasons for recommending the ELG procedure. First, the ELG procedure provides the best matching of the recording of depreciation with the consumption of the depreciable assets. Such a matching is desirable from both an accounting and a regulatory perspective. The second reason is to provide consistency with the methodology used by Atmos in other jurisdictions. The third reason is to provide consistency with proposed accounting requirement changes relative to Property, Plant and Equipment ("PP&E"). The actual decision regarding the use of the ELG procedure was made by Atmos management, after careful review and consideration of the concepts, advantages and shortcomings of various depreciation methodologies.

Q. **Please briefly explain the ELG procedure.**

A. Certainly. The ELG procedure merely recognizes that assets within a group have different service lives. The ELG calculation procedure divides each category of assets into components of estimated equal life and depreciates these components over their respective lives. This is also one goal of the proposed Statement of Position ("SOP") on PP&E now under consideration by the Financial Accounting Standards Board ("FASB"). While I admit that this proposal has not yet been approved, the intent of this SOP is clear, to depreciate assets over their estimated lives. The ELG procedure best accomplishes this.

Q. **Can you provide a simple example of the difference between the ELG procedure and the existing procedure?**

A. Yes, I can. But first let me describe the existing procedure. The existing procedure is referred to as the broad group procedure or average life group ("ALG") procedure. The broad group is generally the primary asset account, e.g., Account 376, Mains. This procedure effectively treats all the assets within the group as if they have the same life, that is, the average life.

Let us assume that we have a two unit asset group. Each unit costs $10 and was installed in the same period. Unit 1 has a life of 2 years and Unit 2 has a life of 8 years. The average service life of this group is 5 years. The ALG depreciation rate is 20.00% (100% / 5 years). For purposes of this example, we shall ignore salvage and/or cost of removal. The following Table illustrates the difference between the ALG procedure and the ELG procedure:

	ALG				ELG			
	Accrual		EOY Reserve		Accrual		EOY Reserve	
Period	Asset "A"	Asset "B"	Asset "A"	Asset "B"	Asset "A"	Asset "B"	Asset "A"	Asset "B"
1	2	2	2	2	5	1.25	5	1.25
2	2	2	-6	4	5	1.25	0	2.50
3	0	2	-6	6	0	1.25	0	3.75
4	0	2	-6	8	0	1.25	0	5.00
5	0	2	-6	10	0	1.25	0	6.25
6	0	2	-6	12	0	1.25	0	7.50
7	0	2	-6	14	0	1.25	0	8.75
8	0	2	-6	6	0	1.25	0	-

Q. **What does this example illustrate?**

A. This example illustrates a number of facts. First, there is retirement dispersion, which is recognized in the determination of the average service life. Second, neither asset has a life equal to the average service life. Third, and most important, there is a deferral of depreciation under the ALG procedure. The longer lived asset must over-accrue to make up for the under-accrual on the shorter lived asset. This is evident by the reserve position at the end of period two for the ALG procedure. It is negative! Fourth, the depreciation under the ELG procedure reflects the life of each asset appropriately and effectively replicates item depreciation. Fifth, the ELG depreciation rate declines over time and changes to match the mix of assets surviving.

Q. **Does the use of the ELG procedure versus the ALG procedure have any impact on revenue requirements?**

A. Yes. The above example is expanded below to include the impact on revenue requirements due strictly to depreciation expense and return:

	ALG			ELG		
Period	Rate Base	Return @ 12%	Rev. Reqs.	Rate Base	Return @ 12%	Rev. Reqs.
1	20.00	2.40	6.40	20.00	2.40	8.65
2	16.00	1.92	5.92	13.75	1.65	7.90
3	12.00	1.44	3.44	7.50	0.90	2.15
4	10.00	1.20	3.20	6.25	0.75	2.00
5	8.00	0.96	2.96	5.00	0.60	1.85
6	6.00	0.72	2.72	3.75	0.45	1.70
7	4.00	0.48	2.48	2.50	0.30	1.55
8	2.00	0.24	2.24	1.25	0.15	1.40
Totals			29.36			27.20

Thus, the ELG procedure produces a lower, total-life revenue requirement of approximately 7.5% in this example.

Q. **What are the benefits of the ELG procedure?**

A. First and foremost, the individual asset categories are depreciated over their respective lives. This is consistent with item depreciation, and this allocation of cost provides the most appropriate matching between the recording of depreciation and asset consumption. Second, the ELG procedure gives appropriate recognition to the fact that assets within a group retire at different ages. Third, the ELG procedure produces a lower total life revenue requirement to the benefit of customers. Fourth, the ELG procedure produces a systematic and rational allocation of cost in a straight-line method over the life of each asset, consistent with generally accepted accounting principles ("GAAP").

Q. Are there criticisms of the ELG procedure?

A. Yes, there are, but in my view these criticisms are either misplaced or asserted due to a lack of understanding of the ELG procedure.

Q. What are these criticisms and why are they misplaced or asserted due to misunderstanding?

A. One common criticism is that the ELG procedure is not widely accepted. This may be true for certain segments of the utility environment, but should certainly **not** be used as a basis for denying its use. Atmos has ELG approved depreciation rates in roughly ¼ of its jurisdictions. The beneficial features of the ELG procedure as described above should be the basis for its acceptance and approval. A second common criticism is that the ELG procedure results in accelerated depreciation. This is patently incorrect and is demonstrated in the above example. While the ELG depreciation rate in early years may be higher than the ALG depreciation rate, this does not equate to accelerated depreciation. In fact, the ELG rate in later years is less than the ALG rate. Using the same logic, this would say that the ALG procedure produces accelerated depreciation. I believe that the ELG procedure produces the correct depreciation expense.

Q. Are there other features of the ELG procedure that are desirable?

A. Yes. Robley Winfrey, the "father" of the Iowa curves, in a letter dated February 1, 1975 to Dr. W. Chester Fitch, Center for Depreciation Studies, Western Michigan University, wrote:

> "In the 43 years, 1932 to 1975, that have passed since I developed the concepts and procedures that led to the publication in 1942 of *Depreciation of Group Properties*, I have continued to have faith that the unit summation procedure of applying the concept of the so-called average life method of computing annual depreciation cost for accounting purposes would someday prevail. Now, the discussion and publications of the past ten years are giving evidence that my 1932 expectations are being upheld.
>
> The beginning of my study of group property depreciation was undertaken in the belief that the commonly applied method of applying the straight line method to group properties, as contrasted to single units of property in which terms the

method is usually defined and explained, results in inappropriate answers. But the analysts and accountants were not aware of the true character of their results and their effects on the depreciation reserve balance. But the publication in 1942 created no awareness and made no impression on the legal and business actions involving depreciation within the subjects of accounting, property valuation, utility rate making, income tax, and depreciation reserves.

What kept me on course 1928 to 1932 was the firm conviction that any depreciation procedure using a zero discount rate and the concept of average life as applied to single units of property, should produce for a fully stabilized property, a depreciation reserve credit balance of 50 percent of the cost new (depreciation base) of the surviving property. The unit summation procedure **(ELG)** (emphasis by Mr. Roff) gives that 50 percent result for all properties regardless of the character of the distribution of the retirement over total life of a vintage group.

I think of no reasons why the unit summation method should not be used by public utilities, private industries, for income tax returns, and other uses. On the other hand, I can think of good reasons for using the unit summation procedure in cost accounting applications to the preference of other methods and procedures. Now that we are in the computer age, the details of the calculation can no longer be supported as an administrative objection to using the unit summation procedure.

The Portland (Oregon) General Electric Court Case and the recent proposal by the American Telephone and Telegraph Company of their equal life group (a different name for unit summation) procedure are evidence that the unit summation procedure is now an accepted and legally approved method of cost accounting for depreciation expense. We can look ahead for wider adoption of the procedure in public utility regulation and in private business."[2]

Q. **Please summarize again why the Company is seeking the approval of the use of the ELG procedure.**

A. First, Atmos Energy believes that the ELG procedure provides the best matching between the recording of depreciation with asset consumption. This was the finding before the Railroad Commission of Texas in the Lone Star Pipeline Case (Docket No. GUD 8664). Second, Atmos Energy desires consistency in depreciation methodology for each of its jurisdictions. Third, Atmos Energy and I believe that the ELG procedure more correctly allocates cost over the life of the assets. Finally, Atmos and I believe the ELG procedure better comports with the objectives of the proposed SOP on PP&E.

Q. **What are the results of your study for the total company?**

A. At the total Company depreciable level, the composite depreciation rate increases from 3.48% to 3.54%, or approximately $28,000 more depreciation expense on an annual basis.

Q. **Please summarize your recommendations.**

A. I recommend that Atmos adopt the depreciation rates shown on Schedule 1 of Exhibit DSR-3 and that this Commission approves their use. I base this recommendation on the fact that I have conducted a comprehensive depreciation study, giving appropriate recognition to historical experience, recent trends and Company expectations. My study results in a fair and reasonable level of depreciation expense which, when incorporated into a revenue stream, will provide the Company with adequate capital recovery until such time as a new depreciation study indicates a need for change.

Q. **Does this complete your direct testimony?**

A. Yes, it does.

---

[2] *The Estimation of Depreciation*, Fitch, Wolf and Bissinger, Center for Depreciation Studies, Western Michigan University, 1975, pages 45 and 46.

Academic Background

Donald S. Roff graduated from Rensselaer Polytechnic Institute with a Bachelor of Science degree in Management Engineering in 1972.

Mr. Roff has also received specialized training in the area of depreciation from Western Michigan University's Institute of Technological Studies. This training involved three forty-hour seminars on depreciation entitled "Fundamentals of Depreciation", "Fundamentals of Service Life Forecasting" and "Making a Depreciation Study" and included such topics as accounting for depreciation, estimating service life, and estimating salvage and cost of removal.

Employment and Professional Experience

Following graduation, Mr. Roff was employed for eleven and one-half years by Gilbert Associates, Inc., as an engineer in the Management Consulting Division. In this capacity, he held positions of increasing responsibility related to the conduct and preparation of various capital recovery and valuation assignments.

In 1984, Mr. Roff was employed by Ernst & Whinney and was involved in several depreciation rate studies and utility consulting assignments.

In 1985, Mr. Roff joined Deloitte Haskins & Sells (DH&S), which, in 1989, merged with Touche Ross & Co. to form Deloitte & Touche. In 1995, Mr. Roff was appointed as a Director with Deloitte & Touche.

During his tenure with Gilbert Associates, Inc., Ernst & Whinney, DH&S and Deloitte & Touche, Mr. Roff has participated in or directed depreciation studies for electric, gas, water and steam heat utilities, pipelines, railroad and telecommunication companies in over 30 states, several Canadian provinces and Puerto Rico. This work requires an in-depth knowledge of depreciation accounting and regulatory principles, mortality analysis techniques and financial practices. At these firms, Mr. Roff has had varying degrees of responsibility for valuation studies, development of depreciation accrual rates, consultation on the unitization of property records, and other studies concerned with the inspection and appraisals of utility property, preparation of rate case testimony and support exhibits, data responses and rebuttal testimony, in addition to appearing as an expert witness.

Industry and Technical Affiliations

Mr. Roff is a registered Professional Engineer in Pennsylvania (by examination).

Mr. Roff is a member of the Society of Depreciation Professionals and a Certified Depreciation Professional, and a Technical Associate of the American Gas Association (A.G.A.) Depreciation Committee. He currently serves as the lead instructor for the A.G.A.'s Principles of Depreciation Course.

DONALD S. ROFF

TESTIMONY EXPERIENCE

CASE NO.	DATE	COMPANY	JURISDICTION	SUBJECT
Docket No. 93-3005	July 1993	Southwest Gas Corporation	Nevada	Gas Depreciation Rates
Docket No. 93-3025	July 1993	Southwest Gas Corporation	Nevada	Gas Depreciation Rates
Docket No. 12820	June 1994	Central Power and Light Company	Texas	Electric Depreciation Rates
Case No. U-10380	Dec 1994	Consumers Power Company	Michigan	Gas Depreciation Rates and Accounting
Cause No. 39938	April 1995	Indianapolis Power & Light Company	Indiana	Electric Depreciation Rates
Case No. U-10754	July 1995	Consumers Power Company	Michigan	Electric Depreciation Rates and Accounting
Docket No. 13369	Aug 1995	West Texas Utilities Company	Texas	Electric Depreciation Rates
Docket No. 95-02116	Sept 1995	Chattanooga Gas Company	Tennessee	Gas Depreciation Rates
Docket No. 95-715-G	Oct 1995	Piedmont Natural Gas Company	South Carolina	Gas Depreciation Rates
Docket No. 14965	Dec 1995	Central Power and Light Company	Texas	Electric Depreciation Rates
Cause No. 40395 (I)	Feb 1996	Wabash Valley Power Association, Inc.	Indiana	Electric Depreciation Rates
GUD NO. 8664	Oct 1996	Lone Star Pipeline Company	Texas	Gas Depreciation Rates
Docket No. 96-360-U	Nov 1996	Entergy Arkansas Inc.	Arkansas	Electric Depreciation Rates
Docket No. 16705	Nov 1996	Entergy Gulf States Inc.	Texas	Electric Depreciation Rates/Competitive Issue:
Docket No. ER-97-394	Mar 1997	Missouri Public Service	Missouri	Electric Depreciation Rates/Competitive Issue:
Docket No. U-22092	Mar 1997	Entergy Gulf States Inc.	Louisiana	Electric Depreciation Rates/Competitive Issue:
Docket No. 97-00982	May 1997	Chattanooga Gas Company	Tennessee	Gas Depreciation Rates
Cause No. 40395 (II)	June 1997	Wabash Valley Power Association, Inc.	Indiana	Electric Depreciation Rates
Case No. U-11509	Sept 1997	Consumers Energy Company	Michigan	Gas Depreciation Rates and Accounting
Docket No. ER98-11	Sept 1997	Long Island Lighting Company	FERC	Electric Depreciation Rates
Docket No. 8390-U	Dec 1997	Atlanta Gas Light Company	Georgia	Gas Depreciation Rates and Accounting
Cause No. 41118	Mar 1998	Wabash Valley Power Association, Inc.	Indiana	Electric Depreciation Rates
Case No. U-11722	Oct 1998	Detroit Edison Company	Michigan	Electric Depreciation Rates
Docket No. 98-2035-03	Nov 1998	PacifiCorp	Utah	Electric Depreciation Rates
Docket No. 99-4006	April 1999	Nevada Power Company	Nevada	Electric Depreciation Rates
GUD Docket No. 9030	March 2000	Atmos Energy Corporation	Texas	Gas Depreciation Rates and Accounting
GUD Docket No. 9145	April 2000	TXU Gas Distribution	Texas	Gas Depreciation Rates
City of Tyler	Dec 2000	Reliant Energy Entex	Texas	Gas Depreciation Rates and Accounting
Docket No. U-24993	March 2001	Entergy Gulf States Inc.	Louisiana	Electric Depreciation Rates and Accounting
Docket Nos. GR01050328/GR0105029'	May 2001	Public Service Electric & Gas	New Jersey	Gas Depreciation Rates and Accounting
Case No. U-12999	July 2001	Consumers Energy Company	Michigan	Gas Depreciation Rates and Accounting
Docket No. 01-10002	Oct 2001	Nevada Power Company	Nevada	Electric Depreciation Rates
Docket No. 14618-U	Nov 2001	Savannah Electric and Power Company	Georgia	Electric Depreciation Rates
Docket No. 01-11031	Dec 2001	Sierra Pacific Power Company	Nevada	Electric Depreciation Rates
Docket No. 010949-EL	Jan 2002	Gulf Power Company	Florida	Electric Depreciation Rates
Docket No. 14311-U	Jan 2002	Atlanta Gas Light Company	Georgia	Gas Depreciation Rates and Accounting
Docket No. UD-00-2	March 2002	Entergy New Orleans, Inc.	New Orleans	Electric Depreciation Accounting
Cause No. PUD200200166	May 2002	Reliant Energy Entex	Oklahoma	Gas Depreciation Rates and Accounting
Docket No. 01-243-U	June 2002	Reliant Energy Entex	Arkansas	Gas Depreciation Rates and Accounting
Docket No. 02-035-12	Oct 2002	PacifiCorp	Utah	Electric Depreciation Rates
Docket No. 20000-ER-2-192	Oct 2002	PacifiCorp	Wyoming	Electric Depreciation Rates
Docket No. UE-021271	Oct 2002	PacifiCorp	Washington	Electric Depreciation Rates
Docket No. UM-1064	Oct 2002	PacifiCorp	Oregon	Electric Depreciation Rates
Docket No. PAC-E-02-5	Oct 2002	PacifiCorp	Idaho	Electric Depreciation Rates
Docket No. 02-0391	Oct 2002	Hawaiian Electric Company, Inc	Hawaii	Electric Depreciation Rates and Accounting
Cause No. 42458	Nov 2003	Wabash Valley Power Association, Inc.	Indiana	Electric Depreciation Rates
Docket No. 03-ATMG-1036-RTS	Nov 2003	Atmos Energy Corporation	Kansas	Gas Depreciation Rates and Accounting
Case No. U-12999	Dec 2003	Consumers Energy Company	Michigan	Gas Depreciation Rates and Accounting

ATMOS ENERGY CORPORATION - VIRGINIA (DIV 96)
Comparison of Annual Depreciation Amounts

EXHIBIT DSR-4

[1] Function	[2] 9/30/2003 Balance $	[3] Existing Rate %	[4] Annual Amount $	[5] Study Rate %	[6] Annual Amount $	[7] Increase or (Decrease) $	[8] Change in Life $	[9] Change in Net Salv. $	[10] Change in Procedure $	[11] Reserve Position $	[12] Inter-Relations $
Transmission	524,420	2.73	14,336	1.57	8,257	(6,079)	(1,185)	219	222	(5,398)	63
Distribution	44,477,149	3.33	1,480,722	3.36	1,493,181	12,459	(309,389)	48,647	75,237	76,717	121,247
General	1,516,538	8.03	121,707	9.48	143,831	22,124	(6,015)	1,869	(5,747)	14,751	17,266
Total Gas Plant	46,518,107	3.48	1,616,765	3.54	1,645,269	28,504	(316,589)	50,735	69,712	86,070	138,576

STATE OF MICHIGAN

BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION

In the Matter of the Application of CONSUMERS ENERGY COMPANY for Accounting and Ratemaking Approval of Depreciation Rates for Gas Utility Plant	)))))	Case No. U-12999

REBUTTAL TESTIMONY

OF

DONALD S. ROFF

ON BEHALF OF

CONSUMERS ENERGY COMPANY

February, 2004

DONALD S. ROFF
REBUTTAL TESTIMONY

Q. Please state your name, employer and business address.

A. Donald S. Roff, Deloitte & Touche LLP, 2200 Ross Avenue, Dallas, Texas 75201.

Q. Are you the same Donald S. Roff who presented direct testimony in this case on behalf of Consumers Energy Company?

A. Yes, I am.

Q. What is the purpose of your rebuttal testimony?

A. I am presenting testimony to rebut various positions taken by Attorney General ("AG") witness Charles W. King, Michigan Public Service Commission ("MPSC") Staff witness William G. Aldrich and the Association of Businesses Advocating Tariff Equity ("ABATE") witness James T. Selecky.

Q. Have you prepared any exhibits to accompany your rebuttal testimony?

A. Yes. I am sponsoring the following exhibits:

Exhibit A-___ (DSR-3)	Comparison of the Book Depreciation Rates and the Annual Level of Expense
Exhibit A-___ (DSR-4)	Comparison of Annual Depreciation Expense on an Average Life Group ("ALG") Basis

Q. Please explain Exhibit A-___ (DSR-3).

A. Rebuttal Exhibit A-___ (DSR-3) summarizes depreciation rates and annual depreciation expense for each functional category of Consumers' Gas Plant in service at December 31, 2002 using rates approved in Case No. U-11509, the Consumers Energy gas depreciation case prior to the current case, and depreciation rate proposals made by myself, AG witness Mr. King, Staff witness Mr. Aldrich, and ABATE witness Mr. Selecky.

Column (a) contains a description of the functional category; Column (b) shows the December 31, 2002 depreciable balance; Column (c) shows the composite depreciation rate from Case U-11509; Column (d) shows the annual depreciation expense amount developed by applying those depreciation rates (by account) to the December 31, 2002 balances.

Columns (e) and (f) show the composite depreciation rates that I am recommending and the annual depreciation expense amount developed by application of my recommended depreciation rates to the December 31, 2002 balances.

Columns (g) and (h) show the composite depreciation rates proposed by Mr. Aldrich and the annual depreciation expense amount developed by application of the Staff proposed depreciation rates to the December 31, 2002 balances.

Columns (i) and (j) show the composite depreciation rates proposed by Mr. King and the annual depreciation expense amount developed by application of Mr. King's proposed depreciation rates to the December 31, 2002 balances.

Columns (k) and (l) show the composite depreciation rates proposed by Mr. Selecky and the annual depreciation expense amount developed by application of the ABATE proposed depreciation rates to the December 31, 2002 balances. For purposes of comparison I have allocated Mr. Selecky's $8.321 million net salvage expense to the functional categories.

Q. What is revealed by Exhibit A-___ (DSR-3)?

A. The depreciation rates that I have proposed would result in an increase of roughly $11.9 million when compared with the level of annual depreciation expense resulting from rates approved in Consumers' last gas depreciation case. The proposals of the witnesses for the other parties all result in significant decreases in depreciation expense when compared with the level of annual depreciation expense resulting from rates approved in Consumers' last gas depreciation case. Note all these differences are relative to the level of annual depreciation expense developed by application of the depreciation rates approved in Case No. U-11509 to the December 31, 2002, plant balances. The exhibit reveals the significant impact that results from the other parties straying from fundamental principles that are applicable to depreciation accounting.

Q. What are the primary issues that produce the difference in annual depreciation between your recommendations and the proposals of the other parties?

A. The primary issues involve the treatment of net salvage and the use of the Equal Life Group ("ELG") depreciation procedure. The majority of the decreases that result from the proposals of the witnesses for the other parties is a result of their use of methodologies for determining net salvage that violate established principles of depreciation accounting.

NET SALVAGE

Q. Are the adjustments to net salvage proposed by witnesses for other parties based on traditional depreciation accounting principles?

A. No. At their root, the adjustments are based on a concern that net salvage percentages are too high. The result is that they propose use of simplified five-year averages for cost of removal. Mr. Selecky and Mr. King propose further adjustments which have the effect of substituting a present expense approach for net salvage costs in place of a depreciation approach. The net salvage proposals made by witnesses for the other parties involve significant changes from the traditional methodology used to compute depreciation rates.

Their approaches have no basis in depreciation theory. This is particularly true for the proposals of witnesses for the Attorney General and ABATE.

Q. You stated that the proposals of the witnesses for other parties are inconsistent with fundamental principles applicable to depreciation accounting. Please explain what you mean.

A. Let me begin with the GAAP definition of depreciation accounting:

> Depreciation accounting is a system of accounting which aims to distribute the cost or other basic value of tangible capital assets, less salvage value (if any), over the estimated useful life of the unit (which may be a group of units) in a systematic and rational manner. It is a process of allocation, not of valuation.[1]

A number of important aspects to this definition need to be emphasized:

- Salvage (net salvage) is to be recognized;
- Depreciation accounting is a system of cost allocation;
- Depreciation accounting does **not** encompass valuation; and
- The allocation of cost must be systematic **and** rational.

Q. How do these aspects relate to proposals of witnesses for the other parties?

A. Mr. King, Mr. Selecky, and Mr. Aldrich all recommend basing net salvage on ratios calculated using the most recent five years of actual salvage experience to plant in service. Their proposals (i) fail to properly reflect net salvage by using limited, non-representative data, (ii) allocate costs in a way that results in intergenerational inequity, and (iii) result in a net salvage that is not systematic and rational. The recommendations of Mr. King, Mr. Selecky, and Mr. Aldrich would have the effect of inappropriately lowering the assumed net salvage costs with the result of keeping current depreciation rates artificially low and shifting costs to future generations of customers that should be paid by current customers. Cause and effect are not appropriately related. The proposals

[1] Accounting Research Bulletin No. 43, Chapter 9, Paragraph 5 (June 1953).

of Mr. King and Mr. Selecky, in addition, introduce an element of valuation into the depreciation process by attempting to remove the effects of inflation. Their proposals are based on what I would refer to as cash accounting.

Q. Why do you refer to proposals of Mr. King and Mr. Selecky as involving cash accounting?

A. Their proposals seek to develop a level of depreciation expense for net salvage equal to the actual cash outlays for salvage and cost of removal. This is accomplished by developing an annual average of recent experience.

Q. Has cash accounting for net salvage been utilized by Consumers Energy's gas depreciation rates in the past?

A. No. Prior and current practice has been to use accrual accounting. Accrual accounting reflects the fundamental accounting principle of matching. The matching principle requires the proper determination of costs in each accounting period. This includes accrual for investment costs and net salvage costs. Accrual accounting recognizes the cause and effect relationship between retirements and net salvage. Cash accounting is inconsistent with the accrual accounting provisions of the Uniform System of Accounts, is inconsistent with traditional depreciation accounting and past practices approved by this Commission for Consumers Energy's gas business, and is unfair to customers as only the last generation of customers associated with an asset pays for related net disposal costs.

Q. Does the fact that your recommended depreciation rates are higher than those of witnesses for other parties mean that your recommended rates are too high?

A. No. The position I support regarding calculation of net salvage costs is consistent with prior Commission-approved depreciation practice for Consumers Energy and sound depreciation accounting practices. The proposals of the other parties result in an inadequate level of depreciation expense, violate precepts of intergenerational equity, and have no basis in established depreciation theory. The changes they propose are not necessary or appropriate.

Q. Mr. Selecky asserts at page 4 of his testimony that the net salvage component that you calculate "is significantly greater than actual net salvage experience." Is this assertion valid?

A. No. The cost of removal that I use is based upon a review of ten years of actual historical data using traditional accepted depreciation methodology. The other parties have failed to adequately evaluate the applicability of the five-year period they propose using.

Q. What are some of the problems with determining net salvage using a five-year average based on the annual report?

A. Using a five-year average on a total Company basis inappropriately oversimplifies the cost of removal relationship. One significant problem is that the other parties have not evaluated the data by function. It is necessary to go beyond the summary level of data contained in utility annual reports. Using a total Company averaging approach can mask functional disparities that exist and skew results. The cause (retirement) and effect (net salvage) relationships within accounts are dampened by use of Company totals instead of examining data on a functional basis. The effect of this skewing and dampening on the use of data for the last five years is reflected in Mr. Simonsen's testimony and exhibits, where he shows the effect of reviewing the five-year data used by other parties at a functional level. Further, there may be significant transactions "hidden" within the totals that are better understood with an account-by-account analysis. For example, there was an $11 million retirement in the year 2000 with the Services account (Account 380) that was a cumulative effect adjustment relating to risers. Mitigating this significant retirement increases the composite negative net salvage figure. Not making this adjustment understates negative net salvage. Also, analyzing a longer period of years, as I have done, helps to minimize timing mismatches and smoothes results.

Q. Mr. King states at page 13 of his testimony that you ignored evidence of recent removal costs for Transmission Plant. Is he correct?

A. No. While it is unclear what is meant by the term "recent", the net salvage percentages experienced for the last three years (2000, 2001 and 2002) are negative 1,230%, negative 106% and negative 22%. I was told that mains classified as Transmission were operated like Distribution mains, and therefore made an informed judgment to use the same net salvage allowance as for Account 376, Distribution Mains. I ignored no historical evidence, but rather relied on historical evidence where the Company had more experience.

Q. Mr. Aldrich mentions at pages 3-4 of his testimony that your proposal includes a level of negative net salvage that exceeds depreciable plant. Does this indicate that the level is too high?

A. No. The depreciable plant is determined based on original cost. The negative net salvage is determined at the time plant is retired. Consequently, the cost of removal reflects the inflationary effects that have occurred while the property was in use. The 1996 National Association of Regulatory Utility Commissioners ("NARUC") publication <u>Public Utility Depreciation Practices</u> addresses this issue at page 19:

> "In an increasing number of instances, the average net salvage is estimated to be a large number when expressed as a percentage of original cost, sometimes in excess of 100%. This may look unrealistic but is appropriate and necessary so that the required cost allocation occurs."

The negative net salvage is not an indication that the level is too high.

Q. At page 4 of his testimony Mr. Aldrich compares Consumers' requested negative net salvage to negative net salvage of three other utilities. Does comparison to other utilities provide a valid basis for determining an appropriate level for Consumers Energy's negative net salvage?

A. In general, I prefer not to make such comparisons. Over the course of my thirty-one year career I have found that asset information and related depreciation parameters are impacted by a wide variety of factors and forces, making comparisons precariously specious. As such, direct comparisons of individual utilities or select account parameters are misleading at best.

Q. What is the basis for the "cash" basis approach proposed by the AG and ABATE?

A. Both AG witness Mr. King and ABATE witness Mr. Selecky express a concern for inclusion of inflation in the traditional net salvage analysis process. Mr. King claims that future inflation will be significantly different from past inflation and Mr. Selecky asserts that Consumers has improperly included future inflation in its calculations.

Q. Are their criticisms valid?

A. No. Depreciation accounting is a cost allocation concept not a valuation concept. The approaches that Mr. King and Mr. Selecky use introduce the element of valuation into the depreciation process. This is improper. Their proposals represent substantial changes in the long-standing methodology used to establish depreciation rates for gas utilities.

Q. What is the normal treatment of net salvage in common depreciation practice?

A. Current depreciation rates for Consumers Energy were determined using the remaining life technique. The remaining life formula as set forth in the publication Public Utility Depreciation Practices (1968 edition) by the National Association of Regulatory Utility Commissioners ("NARUC") on pages 91 and 92 and at page 64 of the 1996 edition use the term "Future Net Salvage." The use of "future net salvage" recognizes that the new salvage properly allocable to customers is the net salvage at the time of plant retirement. All parties in this proceeding have proposed remaining life depreciation rates. The net salvage required for this calculation by definition is the future net salvage expected at the end of life. This allocates the cost that will be incurred among the generations of customers that will benefit from the property.

Q. How did you reflect this future net salvage in your depreciation rate calculations?

A. For purposes of my calculations, I used selections based upon the actual net salvage experience. This reflects the historical cost changes that have occurred and what the cause and effect relationship would be if the plant were retired today.

Q. Mr. Selecky states at page 2 that net salvage should reflect actual experience and not a forecast of future inflationary cost. Did you adjust this relationship to reflect future changes in cost?

A. No. Current indicated net salvage percentages were not adjusted to reflect anticipated future inflation. To the extent that the percentage changes in the future, such changes will be reflected in future depreciation studies. Further, there is no need to attempt to "remove" inflation from the historical costs. The MPSC Uniform System of Accounts contains no references to present value or deflated costs. The cash approach effectively employed by both Mr. King and Mr. Selecky is improper, unfair, results in a deferral, and should be rejected. Their proposals inappropriately lower the assumed net salvage costs with the result of keeping depreciation rates artificially low.

Q. Why is deferral of cost improper?

A. There is no question that depreciation rates should include provisions for cost of removal and salvage. There appears to be no dispute that actual net salvage costs are recoverable through depreciation rates as noted. The remaining life technique used by all parties incorporates future net salvage into the determination of depreciation rates. Thus, the proper determination of net salvage is essential to the calculation of appropriate depreciation accrual rates. The proposals of witnesses for the other parties set depreciation rates at a level that is too low.

Q. What is the effect of setting depreciation rates too low?

A. The following statement from the NARUC publication Public Utility Depreciation Practices, 1968, page 33, addresses this issue:

> "The regulatory body prescribing depreciation rates is thus confronted with a decision which affects both the short-run and the

> long-run interest of the customer who pays rates for utility service. If the commission consistently prescribes (depreciation) rates below the lower limit of the zone of reasonableness, this results immediately in lower revenue requirements. But in the long run the requirements for income taxes and return more than offset the apparent savings in depreciation expense, so the rates for service must be higher than if depreciation rates had been more adequate."

Q. Is the concept of gradualism pertinent?

A. Yes. Mr. Aldrich's proposal would reduce depreciation expense by over 1/3. Proposals of Mr. Selecky and Mr. King would reduce depreciation expense by larger amounts. I urge the judge and the Commission to carefully consider the absolute magnitude of the differences in annual depreciation expense between not only my recommendation and those of the other parties, but also the relative magnitude of the existing annual depreciation expense contrasted with the proposals of the other parties. If the Commission concludes some adjustment should be made to cost of removal, it should be more modest than proposed by the other parties. While the purpose of depreciation is cost allocation, one purpose of capital recovery in the ratemaking process is to help insure financial integrity. And while depreciation is not a cash expense, it does have an impact on cash flow. The reduction in depreciation expense proposed by the other parties would have a detrimental effect on Consumer's cash flow, making it difficult to internally fund infrastructures, improvements and replacements.

Q. What about Mr. King's claim that the traditional method fails to recognize the present value of future costs?

A. For depreciation accounting purposes there is no need to "measure" the present value of future costs, nor recognize them as claimed by Mr. King. So from a cost allocation standpoint, (i.e., depreciation accounting) the traditional method provides the appropriate process for recognizing net salvage in depreciation rate calculations. Such inclusion in the traditional depreciation accounting allocation also produces some desirable effects from the standpoint of customer equity.

The following excerpt from the 1996 NARUC publication <u>Public Utility Depreciation Practices</u> addresses this concept:

> "Under presently accepted concepts, the amount of depreciation to be accrued over the life of an asset is its original cost less net salvage. Net salvage is the difference between the gross salvage that will be realized when the asset is disposed of and the cost of retiring it... The goal of accounting for net salvage is to allocate the net cost of an asset to accounting periods, making due allowance for the net salvage, positive or negative that will be obtained when the asset is retired. This concept carries with it the premise that property ownership includes the responsibility for the property's ultimate abandonment or removal. Hence if current users of the property benefit from its use, they should pay their pro rata share of the cost involved in the abandonment or removal of property and also receive their pro rata share of the benefits of the proceeds realized.
>
> This treatment of net salvage is in harmony with generally accepted accounting practices and tends to remove from the income statement fluctuations caused by erratic, although necessary, abandonment and removal operations. It also has the advantage that current consumers pay a fair share of costs associated with the property devoted to their service, even though the costs may be estimated."

This is the correct combining of regulatory accounting and ratemaking principles.

Q. Is there any validity to Mr. King's assertion at page 24, line 30, that your recommendations with respect to net salvage are based upon judgment and speculation, not hard data?

A. Sound engineering judgment is an element of any depreciation study. But absolutely ***none*** of these judgments were based upon speculation, and absolutely ***all*** of these judgments were based upon hard data.

Q. Mr. King states at page 17, line 6 that neither you nor Mr. Simonsen compared current removal costs with current construction costs. Is such a comparison necessary or useful?

A. No. Such a comparison is not necessary or useful. Both cost of removal and embedded plant costs are recorded at price levels in effect at the date of their recording. The fact that these amounts may or may not be similar in magnitude has nothing to do with depreciation accounting. Such a comparison has no valid use in developing an appropriate net salvage allowance.

Q. Mr. King states at page 20, lines 15-18 of his testimony that the traditional method of calculating depreciation (i) fails to recognize the present value of future costs, (ii) results in a permanent and growing loan from ratepayers to the Company, and (iii) may be precluded by changes in accounting rules. Are his arguments valid?

A. I have already addressed why the first argument is wrong. The second and third are also invalid.

Q. Why is Mr. King incorrect when he states that using the current methodology results in a permanent and growing loan?

A. From the standpoint of current depreciation expense, the customer is only paying his pro rata share of the total cost of an asset over its life. Further, as accumulated depreciation is increased, this results in a declining rate base and a declining revenue requirement for that property. The fact that the depreciable rate base is growing is irrelevant, because the depreciation expense and return component of revenue requirement are fixed. Mr. King's approach under-collects costs that should be paid currently, shifting those costs to future generations of customers. Despite Mr. King's response to the question at page 26, line 1 of his testimony, his approach is nothing more than the expensing of cost of removal as incurred. Under Mr. King's approach, rate base will be higher in future years than it would otherwise be causing increased costs to customers in the future.

Q. How would you reply to Mr. King's statement that the traditional method of calculating depreciation may be precluded by changes in accounting rules?

A. There are considerable differences between the requirements of financial reporting (Generally Accepted Accounting Principles ("GAAP")), the regulatory accounting requirements of the MPSC Uniform System of Accounts ("USOA"), and the ratemaking associated with these requirements. Mr. King and Mr. Selecky both improperly commingle these separate concepts.

Financial reporting deals with the preparation of GAAP-based financial statements as mandated by the Securities and Exchange Commission for public companies. Regulatory accounting is reflective of the applicable regulatory rules and reporting requirements.

Q. Why are these distinctions important to this proceeding?

A. These distinctions are significant to this proceeding because Mr. King and Mr. Selecky have provided testimony wherein these separate principles are intertwined and used interchangeably, implying there are no differences.

Q. Is there any merit to Mr. King's argument that the FERC Uniform System of Accounts will require Consumers to separately account for removal costs for this property?

A. Consumers Energy Gas operation is not subject to the FERC USOA and, despite Mr. King's incorrect interpretation there is no requirement under the FERC USOA to separately account for removal costs. Mr. King's argument is misplaced.

Q. Do Mr. King's other arguments support a conclusion that accounting rules may preclude continued use of the traditional methodology?

A. It is essential to understand what Statement of Financial Accounting Standards No. 143, *Accounting for Asset Retirement Obligations* ("SFAS No. 143") means and requires, and equally important to understand what it does **not** mean and does **not** require, coupled with a collateral understanding of what Federal Energy Regulatory Commission ("FERC") Order No. 631, *Accounting, Financial Reporting and Ratemaking Requirements for Asset Retirement Obligations* means and requires and what it does **not** mean and does **not** require. It is significant to note that even the title of Order No. 631 recognizes a difference between regulatory accounting, financial reporting and ratemaking.

SFAS No. 143 is a financial reporting requirement, and deals with the identification, measurement and recording of legal liabilities and offsetting costs associated with asset retirement.

Q. Does Order No. 631 require the approach Mr. King advocates?

A. No. Order No. 631 was developed as a rulemaking to address, primarily, the accounting requirements of SFAS No. 143. Despite Mr. King's incorrect interpretation of this Order, all Order No. 631 accomplished from the standpoint of regulatory accounting was the establishment of new accounts to record asset retirement obligations ("AROs"), asset retirement costs ("ARCs')[2], and accretion expense within the Uniform System of Accounts. It did **not** mandate any other accounting for non-legal AROs. This is quite evident from the following two paragraphs:

---

[2] ARCs are the offsetting assets to ARO liabilities.

> "The Commission did not propose any changes to its existing **accounting** requirements for cost of removal for non-legal retirement obligations."[3]
>
> "The **accounting** for removal costs that do not qualify as legal retirement obligations falls outside the scope of this rule. The Commission is aware that there is an ongoing discussion in the accounting community as to whether the cost of removal should be considered as a component of depreciation. However, this issue is beyond the scope of this rule and we are not convinced that there is a need to fundamentally change **accounting concepts** at this time."[4] (Emphasis added)

This challenges the assertions made by Mr. King at page 4, lines 4-7, and again at page 6, lines 12-14. While Order No. 631 contains language about the need for utilities to maintain separate subsidiary records to identify cost of removal, there is no explicit **accounting** change or requirement. There is a significant difference between accounting for cost of removal and maintaining subsidiary records. Thus the declaration by Mr. King at page 6, line 16, is incorrect, as the fundamental accounting for cost of removal in depreciation rates and expense is unchanged. Further, the MPSC Chart of Accounts has not been modified. Finally, the FERC has no accounting jurisdiction over Consumers Energy's gas operations.

Q. Does SFAS 143 have any relevance to non-legal retirement obligations?

A. SFAS No. 143 has no applicability to non-legal retirement obligations. Further, use of the SFAS 143 methodology for depreciation accounting is not appropriate or required. SFAS 143 does not deal with regulatory accounting. There is an enormous difference between financial reporting requirements and regulatory accounting requirements. Use of Mr. King's alternative "SFAS 143 methodology" would not be appropriate.

---

[3] Order No. 631, Paragraph 36.
[4] Ibid, Paragraph 37.

Q. Mr. Selecky states that if Consumers does not have a legal obligation to retire assets it would not incur any net salvage expense. Is this a valid conclusion?

A. No. It would still incur expense. The net salvage expense I have used is based on historical experience and reflects the fact that not all pipes are removed.

Q. Are there other problems with Mr. Selecky's proposals?

A. Yes. Mr. Selecky's approach also inappropriately seeks to remove net salvage costs from depreciation rates. Shifting these costs from depreciation expense to operational expense would be contrary to fundamental principles of depreciation, as well as being a violation of the MPSC accounting requirements. In addition, it loses an important benefit of the remaining life methodology.

Q. Please explain.

A. There can be large variations in negative net salvage from year to year. Negative net salvage in three of the years used by Mr. Selecky and other witnesses was higher than the average for the five-year period. Two of the years had negative net salvage over 100%. One year had an adjustment for retirement activity that would not be typical. Under the remaining life methodology, the rates are self-correcting at each review period if net salvage assumptions used were too high or too low since rates reflect actual retirement experience in determining amounts that need to be collected over the remaining life of plant in service. This benefit would be lost if net salvage costs were treated as an operational expense. Net salvage should continue to be recovered as part of depreciation expense.

Q. At page 9 of his testimony Mr. Selecky sets out a quote from Public Utility Depreciation Practices which he argues supports his position. Do you agree?

A. The quotation indicates that some commissions have moved to current period accounting for gross salvage and/or cost of removal. However, it does not indicate an endorsement of that approach. The paragraph immediately before the paragraphs quoted by Mr. Selecky states:

> "Historically, most regulatory commissions have required that both gross salvage and cost of removal be reflected in depreciation rates. The theory behind this requirement is that, since most physical plant placed in service will have some residual value at the time of retirement, the original cost recovered through depreciation should be reduced by that amount. Closely associated with this reasoning are the accounting principle that revenues be matched with costs and the regulatory principle that utility customers who benefit from consumption of plant pay for the cost of that plant, no more, no less. The application of that principle also requires that the cost of removal be recovered over its life."

Use of the historical approach for Consumers Energy's gas depreciation rates should be continued.

EQUAL LIFE GROUP ("ELG") PROCEDURE

Q. Does any party endorse the ELG procedure?

A. No. Mr. King suggests that the ELG procedure represents "specious precision" and is generally not used by gas distribution companies. Mr. Aldrich suggests that there is no mechanism for adjusting the depreciation rate under the ELG procedure. Mr. Selecky claims that the ELG procedure implies a precision that does not exist and unnecessarily raises rates to current ratepayers.

Q. Are these valid criticisms?

A. No.

Q. Please explain.

A. The determination of average service life and retirement dispersion life and curve is independent of the depreciation rate calculation. The ELG procedure utilizes the information contained in the survivor curve estimate to determine groups of estimated useful life. These groups are then depreciated over their respective useful lives. Such a process has the desirable attribute of depreciating each sub-asset category over its individual life. The actual requirement is not to precisely determine the exact timing and magnitude of each and every future retirement, but rather to determine a reasonable estimate of the future retirement pattern. While nominal changes to individual retirement patterns have been proposed, there is little question that such reasonable estimates can, and have been made. This is in contrast to the ALG procedure, where there is a dependency on over-accruals for long-lived assets to compensate for the under-accruals on short-lived assets. The better matching of capital recovery to asset consumption achieved by the ELG procedure, coupled with the lower total life revenue requirements, results in the conceptual superiority of the ELG procedure, as well as providing a balance between the interests of the Company and the interests of the ratepayers.

Q. Mr. Aldrich indicates that there is no process under ratemaking to recognize the declining depreciation rate feature of the ELG procedure. Is his observation significant?

A. Mr. Aldrich would be correct if we had a static asset base comprised of only one group, in which case his observation would be significant. In theory, the composite ELG rate would change over time, steadily declining until the last asset in a group is retired. But we are dealing with large asset groups with many assets of different individual lives, with additional assets constantly being added. As a result, the individual account ELG rate changes very little. As such, a need for annual depreciation adjustments is unnecessary.

Q. Are you aware of any states that have allowed gas utilities to use an ELG method for gas depreciation?

A. I am aware that there are gas companies in Texas, Tennessee, Kentucky, Kansas, Oklahoma, Louisiana, California, and Connecticut that have been permitted to adopt an ELG method.

Q. Please explain Exhibit A-_____ (DSR-4).

A. Exhibit A-_____ (DSR-4) presents a comparison of the depreciation rates approved in Case U-11509 and annual amounts with depreciation rates and annual amounts developed using the ALG procedure. Had my study utilized the ALG procedure, a reduction in annual depreciation expense of about $7 million would be the result.

Q. Why have you included this exhibit?

A. As I indicated earlier in my testimony, the primary issues that produce differences in annual depreciation between my recommendations and proposals of the other parties are treatment of net salvage and use of the ELG method. This exhibit allows a comparison of the impacts of each of these two primary issues on annual depreciation expense. Exhibit A-___ (DSR-4) shows that if the traditional approach is used for determining net salvage, the impact of using the ALG method instead of the ELG method on depreciation expense would be to decrease depreciation expense about $7.0 million below the expense using rates approved in Case U-11509 and about $18.9 million below rates that result from use of the ELG method. In addition, the exhibit shows that even if the Commission were to agree with the other parties that the ALG method should continue to be used, this would not justify use of their recommended depreciation rates. The composite rates for each of the functional categories is significantly negatively impacted by use of the alternative net salvage methods other parties recommend.

Q. Mr. Aldrich states at page 6 of his testimony that use of the ELG procedure would result in excess depreciation during the time these depreciation rates would be in effect. Does Exhibit A-___ (DSR-4) support this statement?

A. No. I believe that the ELG procedure is superior and provides a better matching of the recording of depreciation with asset consumption, as well as fulfilling objectives of depreciation accounting. This exhibit shows that using the ALG approach would understate the appropriate levels of depreciation expense and shows the detrimental impact that would occur from using the ALG method.

Q. Does this conclude your rebuttal testimony?

A. Yes, it does. However, I would like to mention the fact that if I have not addressed an issue raised by Mr. King, Mr. Aldrich or Mr. Selecky it does not signify my acceptance or agreement with those topics.

STATE OF MICHIGAN

BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION

In the Matter of the Application of CONSUMERS ENERGY COMPANY for Accounting and Ratemaking Approval of Depreciation Rates for Gas Utility Plant	)))))	Case No. U-12999

EXHIBITS

OF

DONALD S. ROFF

ON BEHALF OF

CONSUMERS ENERGY COMPANY

February, 2004

Case No. U-12999
Exhibit No. A-___(DSR-3)
Witness: DSRoff
Date: February 2004
Page: 1 of 1

CONSUMERS ENERGY COMPANY

Comparison of the Book Depreciation Rates
and the Annual Level of Expense for CECo,
MPSC, Staff, the Attorney General, and ABATE

Line No.	Functional Category	Plant Balance at Dec. 31, 2002	U-11509 Composite Rate	Annual Expense	CECo Proposal[2] (ELG Methodolgy) Composite Rate	CECo Proposal[2] (ELG Methodolgy) Annual Expense	MPSC Staff Proposal[3] (ALG Methodolgy) Composite Rate	MPSC Staff Proposal[3] (ALG Methodolgy) Annual Expense	Attorney General Proposal[4] (ALG Methodolgy) Composite Rate	Attorney General Proposal[4] (ALG Methodolgy) Annual Expense	ABATE Proposal[5] (ALG Methodolgy) Composite Rate	ABATE Proposal[5] (ALG Methodolgy) Annual Expense
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)
1	Underground Storage Plant	$ 185,741,370 [1]	2.65% [1]	$ 4,928,952 [1]	3.39%	$ 6,294,550	2.78%	$ 5,159,133	2.41%	$ 4,468,305	1.99%	$ 3,692,235
2	Transmission Plant	279,045,740 [1]	1.79% [1]	5,004,992 [1]	3.43%	9,566,951	1.34%	3,744,291	1.79%	4,989,850	1.17%	3,254,967
3	Distribution Plant	1,896,878,349 [1]	5.05% [1]	95,886,152 [1]	5.34%	101,318,145	3.11%	58,932,230	2.31%	43,861,079	1.36%	25,741,941
4	General Plant	47,238,772 [1]	4.61% [1]	2,175,807 [1]	5.85%	2,764,574	5.65%	2,669,212	5.54%	2,618,663	5.61%	2,651,200
5	Total	$ 2,408,904,231	4.48%	$ 107,995,903	4.98%	$ 119,944,220	2.93%	$ 70,504,866	2.32%	$ 55,937,897	1.47%	$ 35,340,343
6	Annual Expense Variance from using U-11509 Rates (Col (d))					$ 11,948,317		$ (37,491,037)		$ (52,058,006)		$ (72,655,560)

Footnotes
ELG - Equal Life Group Procedure
ALG - Average Life Group Procedure
Both Columns (j) and (l) include a net salvage expense component
[1] Exhibit A-___(TLS-1).
[2] Exhibit A-___(DSR-2), Schedule-1.
3 Exhibit S -___(WGA-1), Page 1 of 1, Column Labelled "Accrual Amount", summation by function.
4 Exhibit I-___(CKW-1), Page 2 of 2, Column E and Exhibit I-____(CKW-7), Column C.
[5] Exhibit ___ (JTS-2), page 1 of 1, Column 8, plus Exhibit A - ____(TLS-3), 5-year average functional net salvage amounts.

Case No.	U-12999
Exhibit	A-____(DSR-4)
Witness	D S Roff
	Page 1 of 1
Date	February 2004

CONSUMERS ENERGY COMPANY

Comparison of Depreciation Rates and Annual Amounts

Gas Book Depreciation Study as of December 31, 2002

[1] Account Number	[2] Description	[3] 12/31/2002 Balance $	[4] U-11509 Rate %	[5] Annual Amount $	[6] ALG Rate %	[7] Annual Amount $	[8] Increase or (Decrease) $
	UNDERGROUND STORAGE						
350.2	Rights of Way	1,321,117	1.72	22,723	1.60	21,138	(1,585)
351.2	Compressor Station Structures	7,676,757	2.34	179,636	2.43	186,545	6,909
351.3	M&R Station Structures	4,607	1.73	80	2.72	125	46
351.4	Other Storage Structures	3,337,803	2.87	95,795	2.62	87,450	(8,345)
352.1	Leaseholds and Rights	5,336,673	1.72	91,791	1.60	85,387	(6,404)
352.3	Well Construction	32,974,906	1.74	573,763	3.40	1,121,147	547,383
352.4	Well Equipment	16,388,907	4.08	668,667	3.44	563,778	(104,889)
353.0	Lines	22,020,895	2.88	634,202	3.52	775,136	140,934
354.0	Compressor Station Equipment	78,065,203	2.65	2,068,728	2.98	2,326,343	257,615
355.0	M&R Station Equipment	2,083,799	2.84	59,180	2.83	58,972	(208)
356.0	Purification Equipment	13,376,874	3.04	406,657	3.68	492,269	85,612
357.0	Other Storage Equipment	3,153,829	4.05	127,730	3.77	118,899	(8,831)
	Total Underground Storage	185,741,370	2.65	4,928,952	3.14	5,837,189	908,237
	TRANSMISSION PLANT						
365.2	Rights of Way	15,624,024	1.22	190,613	1.39	217,174	26,561
366.0	Structures and Improvements	10,063,270	1.93	194,221	1.94	195,227	1,006
367.0	Mains	183,611,384	1.56	2,864,338	3.18	5,838,842	2,974,504
368.0	Compressor Station Equipment	35,038,304	2.01	704,270	2.99	1,047,645	343,375
369.0	M&R Station Equipment	23,684,196	1.99	471,316	2.45	580,263	108,947
370.0	Communication Equipment	7,579,322	6.01	455,517	7.71	584,366	128,848
371.0	Other Equipment	3,445,240	3.62	124,718	3.68	126,785	2,067
	Total Transmission Plant	279,045,740	1.79	5,004,992	3.08	8,590,302	3,585,310
	DISTRIBUTION PLANT						
374.2	Rights of Way	6,960,315	1.54	107,189	1.31	91,180	(16,009)
375.0	Structures and Improvements	4,242,886	1.98	84,009	2.31	98,011	14,002
376.1	Bare Steel Mains	4,327,469	3.46	149,730	2.91	125,929	(23,801)
376.2	Coated and Wrapped Steel Mains	350,910,853	3.16	11,088,783	2.90	10,176,415	(912,368)
376.3	Cast Iron Mains	9,358,955	3.90	364,999	2.92	273,281	(91,718)
376.4	Copper Mains	16,968	3.05	518	3.46	587	70
376.5	Plastic Mains	541,424,815	3.72	20,141,003	3.71	20,086,861	(54,142)
378.0	M&R Station Equipment	32,498,406	2.75	893,706	2.56	831,959	(61,747)
380.1	Bare Steel Services	224,036	10.29	23,053	6.74	15,100	(7,953)
380.2	Coated and Wrapped Steel Services	72,006,386	6.49	4,673,214	5.14	3,701,128	(972,086)
380.4	Copper Services	27,245,781	9.29	2,531,133	5.38	1,465,823	(1,065,310)
380.5	Plastic Services	392,981,530	9.61	37,765,525	7.38	29,002,037	(8,763,488)
380.5	Plastic Services (Formerly C&W)	109,424,669	6.49	7,101,661	7.38	8,075,541	973,880
381.0	Meters	174,926,601	2.82	4,932,930	2.30	4,023,312	(909,618)
382.0	Meter Installations	151,913,431	3.68	5,590,414	3.59	5,453,692	(136,722)
383.0	House Regulators	18,415,248	2.38	438,283	1.87	344,365	(93,918)
	Total Distribution Plant	1,896,878,349	5.05	95,886,152	4.42	83,765,221	(12,120,930)
	GENERAL PLANT						
389.2	Rights of Way	1,516	0.00	0	2.40	36	36
390.0	Structures and Improvements	23,627,457	2.97	701,735	2.27	536,343	(165,392)
391.0	Office Furniture and Equipment	1,717,346	7.61	130,690	17.78	305,344	174,654
391.2	Computer Equipment	7,356,574	9.37	689,311	4.80	353,116	(336,195)
393.0	Stores Equipment	53,713	30.18	16,211	11.20	6,016	(10,195)
394.0	Tools, Shop and Garage Equipment	4,900,534	4.49	220,034	8.74	428,307	208,273
395.0	Laboratory Equipment	1,006,055	2.26	22,737	17.41	175,154	152,417
396.0	Power Operated Equipment	119,819	8.72	10,448	27.89	33,418	22,969
397.0	Communication Equipment	8,194,971	4.51	369,593	11.51	943,241	573,648
398.0	Miscellaneous Equipment	260,787	5.77	15,047	17.73	46,238	31,190
	Total General Plant	47,238,772	4.61	2,175,807	5.98	2,827,212	651,406
	Total Depreciable Plant	2,408,904,231	4.48	107,995,903	4.19	101,019,925	(6,975,978)
	St. Clair Unit of Production	3,393,226					
	So. Michigan Unit of Production	12,346,496					
	Kalkaska Unit of Production	16,816,513					
	Other Amort or Depr.	21,664,648					
	Non-Depreciable	39,884,637					
	Total Gas Plant	2,503,009,751					

STATE OF MICHIGAN

BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION

In the Matter of the Application of) CONSUMERS ENERGY COMPANY) for Accounting and Ratemaking Approval) of Depreciation Rates for Gas Utility Plant))	Case No. U-12999

REBUTTAL TESTIMONY

OF

THOMAS L. SIMONSEN

ON BEHALF OF

CONSUMERS ENERGY COMPANY

February, 2004

THOMAS L. SIMONSEN
REBUTTAL TESTIMONY

Q. Please state your name, employer and business address.

A. Thomas L. Simonsen, Consumers Energy Company (Consumers Energy or Company), One Energy Plaza, Jackson, Michigan 49201.

Q. Are you the same Thomas L. Simonsen who submitted direct testimony in the Consumers Energy's direct presentation in this proceeding?

A. Yes, I am.

Q. What is the purpose of your rebuttal testimony?

A. I am presenting rebuttal to the method that Staff's witness, Mr. Aldrich, used to calculate depreciation expense for Consumers Energy's Gas Utility Plant.

Q. Please identify the exhibits you are sponsoring.

A. I am sponsoring the following exhibits:

Exhibit A-____	(TLS-4)	"Comparison of the Book Depreciation Rates."
Exhibit A-____	(TLS-5)	"Comparison of Net Salvage Percentages."
Exhibit A-____	(TLS-6)	"Impact of Riser Retirement Correction."
Exhibit A-____	(TLS-7)	"Well Construction and Equipment Net Salvage."
Exhibit A-____	(TLS-8)	"Rate Base Impact of Depreciation Deduction."

Q. Were these exhibits prepared by you or under your direction and supervision?

A. Yes.

Q. Mr. Aldrich takes the position at page 4 of his testimony that the negative net salvage cost recovery should be set at 69% of depreciable plant based on use of an approach that was used in the Settlement Agreements with Aquila and SEMCO. Would use of this approach be appropriate for Consumers Energy?

A. No, this would not be appropriate for Consumers Energy.

Q. Why would this not be appropriate for Consumers Energy?

A. Reasons why the Staff's approach would not be appropriate for Consumers Energy include the following:

(1) Mr. Aldrich's approach is based on an over-simplification of the depreciation rate calculation process. This simplification results in invalid conclusions for Consumers Energy as a consequence of disregarding individual account and functional group relationships of net salvage to the assets retired.

(2) Mr. Aldrich's approach understates the appropriate cost of removal for Consumers Energy as a result of failing to adjust for unusual items that are known and in Form P-522, in particular the 2000 retirement of service risers.

(3) Mr. Aldrich incorrectly applied his approach to the net salvage data on Exhibit A-___ (TLS-2) that had already been adjusted instead of applying it to net salvage data on Exhibit A-____ (DSR-2).

(4) Mr. Aldrich's approach understates the appropriate cost of removal for Consumers Energy as a result of failing to make adjustments for accounts 352.3 and 352.4, Well Construction and Well Equipment. Historical data for those accounts is not representative of expected future cost of removal.

(5) Mr. Aldrich's approach will result in large increases to rate base in the future for Consumers Energy as a result of understating cost of removal and deferral of cost recovery.

Q. Why do you conclude that Mr. Aldrich's approach is an over-simplification of the depreciation rate calculation?

A. The MPSC Uniform System of Accounts (USoA) states in instruction B. of account 403, Depreciation Expense, that:

> "The utility shall keep such records of property and property retirements as will reflect the service life of property which has been retired and aid in estimating probable service life by mortality, turnover, or other appropriate methods; and also such records as will reflect the dollars and percentage of salvage and cost of removal <u>for property retired from each account, or subdivision thereof, for depreciable utility plant</u>." (Emphasis added)

As can be seen by this instruction it is the intent that depreciation rate factors be evaluated on an individual account basis and it has been the historical practice of the Commission to issue depreciation orders on this basis. Mr. Aldrich has accepted Mr. Roff's determination of average service lives on an individual account basis but has used a simplification method to determine net salvage that ignores individual account characteristics. Review of individual account characteristics shows that using the Staff's approach for Consumers Energy results in invalid conclusions.

Q. How significant is the impact of not evaluating data on a functional basis?

A. The impact is significant, as shown on Exhibits A-___ (TLS-4) and A-___ (TLS-5). Mr. Aldrich calculates overall negative net salvage of approximately negative 69% and overall depreciation expense of approximately $70.5 million. If the net salvage were calculated using a five-year average approach by function the overall negative net salvage would be approximately negative 92% and the overall depreciation expense would be approximately $85.5 million. Making this correction alone results in an annual depreciation expense that is approximately $15 million higher than calculated by Mr. Aldrich. I recommend that the Staff's recommendation to use a simplified five-year average instead of the traditional approach be rejected. However, if the Commission chooses to use a five-year approach in determining depreciation rates, then at a minimum the data needs to be determined by function.

Q. Mr. Aldrich shows net salvage percentages by account on his exhibit. Doesn't this indicate that there was an evaluation by account?

A. No. The net salvage in his analysis is simply the end result of a mathematical allocation of total dollars. It is an output instead of an input. Mr. Aldrich multiplied each net salvage ratio in Exhibit A-___ (TLS-2) by an allocation factor, 69.35% times total plant balance divided by total net salvage in dollars, to reduce the Company's net salvage ratio so that the composite net salvage ratio was 69%. It is not based on an analysis of the actual cost of removal and actual salvage by account or by function.

Q. Please describe Exhibit A-___ (TLS-4).

A. This exhibit compares the book depreciation rates by function using the depreciation rates approved by the Commission in Consumers Energy's last depreciation case, Case No. U-11509, the depreciation rates proposed by Mr. Aldrich, and the ALG depreciation rates proposed in Exhibit A-___ (TLS-2) that were calculated using a five year average of net salvage by function. The annual expense calculations are based on use of plant balance at December 31, 2002. In addition, I have shown the impact of using the ELG approach determined using a five-year average of net salvage by function.

Q. Please describe Exhibit A-___ (TLS-5).

A. This Exhibit A-___ (TLS-5) compares the net salvage percentages proposed by Mr. Roff in Exhibit A-___ (DSR-2R), the net salvage percentages proposed by me in Exhibit A-___ (TLS-1) and Exhibit A-___ (TLS-2), the net salvage percentages proposed by Mr. Aldrich in Exhibit S-___ (WGA-1). This exhibit shows the impact the different methods of evaluation have on composite net salvage. Columns a and b show the plant account numbers and the plant balances at December 31, 2002. Columns c and d show the determination of net salvage on an individual account analysis; columns e and f show the determination of net salvage on a functional analysis of net salvage and columns g and h show the Staff's approach where net salvage is analyzed only on a total company basis. This exhibit shows how you can take the same net salvage data and come to entirely different results as you move from the historical practice of individual account analysis.

Q. How does Mr. Aldrich's approach understate cost of removal for Consumers Energy as a result of ignoring unusual items that are in the Form P-522?

A. In 2000, Consumers Energy found that it had not been retiring risers installed on plastic services. The Company then conducted a study to determine the amount of risers that should be retired. Exhibit A-____ (TLS-6) shows the $11.1 million of riser retirements made in 2000 spread to the vintage year installed and to individual retirement years. If Mr. Aldrich's analysis is corrected to show the proper year of retirement, without making any other adjustments, the negative 69% used by him would become a negative 75% and annual depreciation expense would be increased by approximately $4 million, resulting in a total annual depreciation expense of $74,084,679.

Q. Please describe Exhibit A-___ (TLS-6).

A. Page 1 and 2 show the riser retirement information that was provided to Mr. Aldrich as part of his audit. Page 3 shows the statistical aging of the 2000 riser retirement to the vintage year installed and to individual retirement years. Page 4 shows the adjustment to 1998, 1999 and 2000 retirements reported in MPSC Form P-522. Page 5 shows the revised calculation of net salvage using a negative 74.89% total net salvage factor instead of a negative 69.35%. Page 6 shows the revised calculation of depreciation rates using the Staff's approach.

Q. Why do you say that Mr. Aldrich incorrectly applied his approach to Consumers data?

A. In the Aquila and SEMCO Settlement Agreements the Staff applied the five-year approach to adjust the utilities' net salvage factors. Mr. Roff's Exhibit A-____ (DSR-2) shows the net salvage factors calculated by him for Consumers Energy in this case. Instead of applying his approach to these net salvage factors, Mr. Aldrich applied his approach to the net salvage factors that were provided in Exhibit A-____ (TLS-1) and Exhibit A-____ (TLS-2). The net salvage factors shown in these two exhibits were calculated using Staff's approach on a functional basis instead of a total company basis.

Q. Why do you say Mr. Aldrich's approach understates the appropriate cost of removal as a result of not making adjustments for accounts 352.3 and 352.4, Well Construction and Equipment?

A. During the preparation of a depreciation study you find instances where the actual account history is incomplete or does not represent the future. This is much more prevalent for Electric Utilities than Gas Utilities where the demolition cost of electric production plants is estimated. However, this also occurs in the calculation of net salvage factor for accounts 352.3 and 352.4, Well Construction and Equipment. For these accounts, the current cost of removal is multiplied by the number of wells to determine the net salvage and net factors for these accounts. Mr. Aldrich's approach understates the appropriate cost of removal for Consumers Energy by failing to use data for these accounts that is determined based on estimates. Exhibit A-___ (TLS-7) shows

Mr. Roff's work papers used to calculate net salvage for accounts 352.3 and 352.4. Mr. Roff's resulting negative net salvage was negative 65%, while Mr. Aldrich used a negative 50%.

Q. Why do you say that use of Mr. Aldrich's approach will result in large future increases to rate base for Consumers Energy?

A. Mr. Aldrich is proposing a $37 million reduction to annual depreciation expense. On a going forward basis, each dollar reduction in depreciation expense will result in an increase in rate base compared to the result using Consumers Energy's actual depreciation expense. Exhibit A-___ (TLS-8) shows the impact a $37 million depreciation expense reduction would have if it had been applied to Consumers Energy existing plant, based on data reported in MPSC Form P-522 from 1993 to 2002. Page 1 of Exhibit A-____ (TLS-8) shows a comparison of net plant with and without the depreciation rate reduction. The net result of this calculation shows that Consumers Energy net plant would be $300 million higher as a result of the depreciation expense reduction. Page 2 of Exhibit A-____ (TLS-8) shows the calculation of the data shown on Page 1. This exhibit illustrates that the net result of Mr. Aldrich's depreciation expense reduction will be higher rate base in the future. This shifting occurs as a result of using an oversimplified approach that understates current depreciation expense. The annual depreciation expense reductions proposed by Mr. Selecky and Mr. King, if adopted, would result in an even higher rate base in the future since their reductions are higher then Mr. Aldrich's.

Q. Does this complete your rebuttal testimony?

A. Yes, it does.

STATE OF MICHIGAN

BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION

In the Matter of the Application of) CONSUMERS ENERGY COMPANY) for Accounting and Ratemaking Approval) of Depreciation Rates for Gas Utility Plant))	Case No. U-12999

EXHIBITS

OF

THOMAS L. SIMONSEN

ON BEHALF OF

CONSUMERS ENERGY COMPANY

February, 2004

Case No. U-12999
Exhibit No. A-___(TLS-4)
Witness: TLSimonsen
Date: February 2004
Page: 1 of 1

CONSUMERS ENERGY COMPANY

Comparison of the Book Depreciation Rates and the Annual Depreciation Expense for CECo Existing, MPSC Staff and the CECo's Alternative Methodolgies

					MPSC Staff Proposal[2] (ALG Methodolgy)		CECo Alternative[3] (ALG Methodology)		CECo Alternative[4] (ELG Methodolgy)	
Line No.	Functional Category	Plant Balance at Dec. 31, 2002	U-11509 Composite Rate	Annual Expense	Composite Rate	Annual Expense	Composite Rate	Annual Expense	Composite Rate	Annual Expense
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)
1	Underground Storage Plant	$ 185,741,370 [1]	2.65% [1]	$ 4,928,952 [1]	2.78%	$ 5,159,133	3.24%	$ 6,013,102	3.49%	$ 6,480,209
2	Transmission Plant	279,045,740 [1]	1.79% [1]	5,004,992 [1]	1.34%	3,744,291	1.43%	3,997,878	1.63%	4,552,712
3	Distribution Plant	1,896,878,349 [1]	5.05% [1]	95,886,152 [1]	3.11%	58,932,230	3.84%	72,917,971	4.67%	88,610,465
4	General Plant	47,238,772 [1]	4.61% [1]	2,175,807 [1]	5.65%	2,669,212	5.65%	2,668,679	5.49%	2,591,797
5	Total	$ 2,408,904,231	4.48%	$ 107,995,903	2.93%	$ 70,504,866	3.55%	$ 85,597,630	4.24%	$ 102,235,183
6	Annual Expense Variance from using U-11509 Rates (Col (d))					$ (37,491,037)		$ (22,398,273)		$ (5,760,720)

Footnotes
ELG - Equal Life Group Procedure
ALG - Average Life Group Procedure
[1] **Exhibit A-___(TLS-1).**
[2] **Exhibit S-___(WGA-1).**
[3] **Exhibit A-___(TLS-2).**
[4] **Exhibit A-___(TLS-1).**

Case No. U-12999
Exhibit No. A-___(TLS-5)
Witness: TLSimonsen
Date: February 2004

Consumers Energy Company
Case No. U-12999
Comparison of Net Salvage Percentages

(a) Acct No.	(b) Utility Plant	(c) CECo Net Salvage	(d) Total Net Salvage	(e) CECo Alt* Net Salvage	(f) Total Net Salvage	(g) MPSC Staff Net Salvage	(h) Total Net Salvage
350.2	1,321,117	0.00%	-	0.00%	-	0.00%	-
351.2	7,676,757	-5.00%	(383,838)	-6.00%	(460,605)	-5.00%	(383,838)
351.2	4,607	-5.00%	(230)	-6.00%	(276)	-5.00%	(230)
351.4	3,337,803	-25.00%	(834,451)	-28.00%	(934,585)	-20.00%	(667,561)
352.1	5,336,673	0.00%	-	0.00%	-	0.00%	-
352.3	32,974,906	-65.00%	(21,433,689)	-73.00%	(24,071,681)	-50.00%	(16,487,453)
352.4	16,388,907	-65.00%	(10,652,790)	-73.00%	(11,963,902)	-50.00%	(8,194,454)
353.0	22,020,894	-125.00%	(27,526,118)	-140.00%	(30,829,252)	-100.00%	(22,020,894)
354.0	78,065,202	-15.00%	(11,709,780)	-17.00%	(13,271,084)	-10.00%	(7,806,520)
355.0	2,083,799	-20.00%	(416,760)	-22.00%	(458,436)	-15.00%	(312,570)
356.0	13,376,874	-25.00%	(3,344,219)	-28.00%	(3,745,525)	-20.00%	(2,675,375)
357.0	3,153,829	-10.00%	(315,383)	-11.00%	(346,921)	-10.00%	(315,383)
	185,741,368	-41.25%	(76,617,258)	-46.35%	(86,082,267)	-31.69%	(58,864,278)
365.2	15,624,024	0.00%	-	0.00%	-	0.00%	-
366.0	10,063,270	-10.00%	(1,006,327)	-2.00%	(201,265)	0.00%	-
367.0	183,611,384	-125.00%	(229,514,230)	-26.00%	(47,738,960)	-20.00%	(36,722,277)
368.0	35,038,304	-5.00%	(1,751,915)	-1.00%	(350,383)	0.00%	-
369.0	23,684,196	-30.00%	(7,105,259)	-6.00%	(1,421,052)	-5.00%	(1,184,210)
370.0	7,579,322	-5.00%	(378,966)	-1.00%	(75,793)	0.00%	-
371.0	3,445,240	-5.00%	(172,262)	-1.00%	(34,452)	0.00%	-
	279,045,740	-85.98%	(239,928,959)	-17.85%	(49,821;905)	-13.58%	(37,906,487)
374.2	6,960,315	0.00%	-	0.00%	-	0.00%	-
375.0	4,242,886	-20.00%	(848,577)	-17.00%	(721,291)	-10.00%	(424,289)
376.1	4,327,468	-125.00%	(5,409,335)	-105.00%	(4,543,841)	-80.00%	(3,461,974)
376.2	350,910,853	-125.00%	(438,638,566)	-105.00%	(368,456,396)	-80.00%	(280,728,682)
376.3	9,358,954	-125.00%	(11,698,693)	-105.00%	(9,826,902)	-80.00%	(7,487,163)
376.4	16,968	-125.00%	(21,210)	-105.00%	(17,816)	-80.00%	(13,574)
376.5	541,424,815	-125.00%	(676,781,019)	-105.00%	(568,496,056)	-80.00%	(433,139,852)
378.0	32,498,407	-30.00%	(9,749,522)	-25.00%	(8,124,602)	-30.00%	(9,749,522)
380.1	224,035	-200.00%	(448,070)	-168.00%	(376,379)	-125.00%	(280,044)
380.2	72,006,386	-200.00%	(144,012,772)	-168.00%	(120,970,728)	-125.00%	(90,007,983)
380.4	27,245,781	-200.00%	(54,491,562)	-168.00%	(45,772,912)	-125.00%	(34,057,226)
380.5	502,406,199	-200.00%	(1,004,812,398)	-168.00%	(844,042,414)	-125.00%	(628,007,749)
381.0	174,926,601	0.00%	-	0.00%	-	0.00%	-
382.0	151,913,431	-90.00%	(136,722,088)	-76.00%	(115,454,208)	-50.00%	(75,956,716)
383.0	18,415,248	-5.00%	(920,762)	-4.00%	(736,610)	0.00%	-
Subtotal	1,896,878,347	-130.98%	(2,484,554,574)	-110.05%	(2,087,540,155)	-82.42%	(1,563,314,774)
389.2	1,516	0.00%	-	0.00%	-	0.00%	-
390.0	23,627,456	-30.00%	(7,088,237)	-10.00%	(2,362,746)	-10.00%	(2,362,746)
391.0	1,717,346	0.00%	-	0.00%	-	0.00%	-
391.2	7,356,574	0.00%	-	0.00%	-	0.00%	-
393.0	53,713	0.00%	-	0.00%	-	0.00%	-
394.0	4,900,533	0.00%	-	0.00%	-	0.00%	-
395.0	1,006,056	0.00%	-	0.00%	-	0.00%	-
396.0	119,819	0.00%	-	0.00%	-	0.00%	-
397.0	8,194,971	0.00%	-	0.00%	-	0.00%	-
398.0	260,787	0.00%	-	0.00%	-	0.00%	-
Subtotal	47,238,771	-15.01%	(7,088,237)	-5.00%	(2,362,746)	-5.00%	(2,362,746)
Total	2,408,904,226	-116.58%	(2,808,189,028)	-92.40%	(2,225,807,073)	-69.01%	(1,662,448,285)

Note: * - Exhibit A-____(TLS-1) and Exhibit A-___(TLS-2)

CONSUMERS ENERGY COMPANY
MPSC and A.G. Review of Gas Cost of Removal
Gas Depreciation Case U-12999

Request No.		Date
8.	Aldrich	05/10/02

Request:

3. Please provide copies of any adjusting journal entries made in 1999 and/or 2000 to correct or adjust retirements for any reason. Include all supporting workpapers and other documentation.

Company Response:

In December 2000, Consumers Energy retired 61,213 risers with an original cost of $11.1 million. It was determined that these risers should be retired after comparing the record count of service assets within the Fixed Asset System to the service count within the Service Information Management System (SIMS) which is Consumers' new electronic record management systems for gas and electric underground services. A summary of the retirement by vintage year is attached.

Responded by:

Tom Tylka

Case No. U-12999
Exhibit No. A-___(TLS-6)
Witness: TLSimonsen
Date: February 2004
Page 2 of 6

Attachment to MPSC Request No. 8

Totals By PIS for SIM to FAS Service Reconciliation

Business Unit	Trans Dte	PIS Yr	Qty	Amount
CPCOM	19-DEC-00	1983	-4,703	-714,876.38
CPCOM	19-DEC-00	1984	-4,011	-652,326.45
CPCOM	19-DEC-00	1985	-3,600	-573,279.25
CPCOM	19-DEC-00	1986	-3,636	-570,698.42
CPCOM	19-DEC-00	1987	-3,648	-511,713.09
CPCOM	19-DEC-00	1988	-3,700	-615,794.72
CPCOM	19-DEC-00	1989	-3,196	-464,349.70
CPCOM	19-DEC-00	1990	-3,168	-473,072.71
CPCOM	19-DEC-00	1991	-3,306	-536,714.66
CPCOM	19-DEC-00	1992	-6,925	-1,590,478.66
CPCOM	19-DEC-00	1993	-5,718	-1,050,157.18
CPCOM	19-DEC-00	1994	-2,986	-577,833.26
CPCOM	19-DEC-00	1995	-3,063	-590,802.19
CPCOM	19-DEC-00	1996	-154	-29,554.53
CPCOM	19-DEC-00	1997	-3,873	-849,079.76
CPCOM	19-DEC-00	1998	-2,680	-693,004.50
CPCOM	19-DEC-00	1999	-2,846	-617,856.23
			-61,213	-11,111,591.69

CONSUMERS ENERGY COMPANY
Gas Depreciation Case U-12999
December 2000 Retirement of Risers - Statistically Aged Back to Estimate Year of Retirement

Iowa Curve 35 R3

Expected Surviving Balance in Units:

Year	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
1983	1000	999	999	998	997	995	994	992	990	987	984	981	979	972	966	960	953	945
1984		1000	999	999	998	997	996	994	992	990	987	984	981	979	972	966	960	953
1985			1000	999	999	998	997	995	994	992	990	987	984	981	979	972	966	960
1986				1000	999	999	998	997	995	994	992	990	987	984	981	979	972	966
1987					1000	999	999	998	997	995	994	992	990	987	984	981	979	972
1988						1000	999	999	998	997	995	994	992	990	987	984	981	979
1989							1000	999	999	998	997	995	994	992	990	987	984	981
1990								1000	999	999	998	997	995	994	992	990	987	984
1991									1000	999	999	998	997	995	994	992	990	987
1992										1000	999	999	998	997	995	994	992	990
1993											1000	999	999	998	997	995	994	992
1994												1000	999	999	998	997	995	994
1995													1000	999	999	998	997	995
1996														1000	999	999	998	997
1997															1000	999	999	998
1998																1000	999	999
1999																	1000	999
2000																		1000

Expected Annual Retirements in Units:

Year	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	Total	Total Units Retired	Amount
1983	0	1	0	1	1	2	1	2	2	3	3	3	2	7	6	6	7	8	55	4,703	714,873.38
1984		0	1	0	1	1	2	1	2	2	3	3	3	2	7	6	6	7	47	4,011	652,326.45
1985			0	1	0	1	1	2	1	2	2	3	3	3	2	7	6	6	40	3,600	573,279.25
1986				0	1	0	1	1	2	1	2	2	3	3	3	2	7	6	34	3,636	670,698.42
1987					0	1	0	1	1	2	1	2	2	3	3	3	2	7	28	3,648	511,713.09
1988						0	1	0	1	1	2	1	2	2	3	3	3	2	21	3,700	615,794.72
1989							0	1	0	1	1	2	1	2	2	3	3	3	19	3,196	464,349.70
1990								0	1	0	1	1	2	1	2	2	3	3	16	3,168	473,072.71
1991									0	1	0	1	1	2	1	2	2	3	13	3,306	536,714.66
1992										0	1	0	1	1	2	1	2	2	10	6,925	1,590,478.66
1993											0	1	0	1	1	2	1	2	8	5,718	1,050,157.18
1994												0	1	0	1	1	2	1	6	2,986	577,833.26
1995													0	1	0	1	1	2	5	3,053	580,802.19
1996														0	1	0	1	1	3	154	29,554.53
1997															0	1	0	1	2	3,873	849,079.76
1998																0	1	0	1	2,680	693,004.50
1999																	0	1	1	2,846	617,856.23
Total																			309	61,213	11,111,568.69

Allocation of Actual Units by Year:

Year	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	Total	Unit Cost
1983	0	82	0	86	86	171	86	171	171	257	257	257	171	599	513	513	599	684	4,703	152.00370
1984		0	85	0	85	85	171	85	171	171	256	256	256	171	597	512	512	598	4,011	162.63437
1985			0	90	0	90	90	180	90	180	180	270	270	270	180	630	540	540	3,600	159.24424
1986				0	105	0	107	107	214	107	214	214	321	321	321	214	749	642	3,636	156.95776
1987					0	129	0	130	130	261	130	261	261	391	391	391	261	912	3,648	140.27223
1988						0	176	0	176	176	352	176	352	352	529	529	529	353	3,700	166.43101
1989							0	168	0	168	168	336	168	336	336	505	505	508	3,196	145.29089
1990								0	198	0	198	198	396	198	396	396	594	594	3,168	149.32851
1991									0	254	0	254	254	509	254	509	509	783	3,306	162.34563
1992										0	691	0	693	693	1385	693	1385	1385	6,925	229.67201
1993											0	713	0	715	715	1430	715	1430	5,718	183.65613
1994												0	497	0	498	498	995	498	2,986	193.51415
1995													0	612	0	613	613	1226	3,063	192.86351
1996														0	61	0	61	52	154	191.91253
1997															0	1936	0	1937	3,873	219.23051
1998																0	2680	0	2,680	258.58377
1999																	0	2846	2,846	217.09536
Total	-	82	85	176	278	475	630	841	1,150	1,574	2,446	2,935	3,639	5,167	6,166	9,369	11,237	14,965	61,213	

Allocated Cost By Retirement Year:

Year	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	Total
1983	-	12,464.30	-	13,072.32	13,072.32	25,992.63	13,072.32	25,992.63	25,992.63	39,064.95	39,064.95	39,064.95	25,992.63	91,050.22	77,977.90	77,977.90	91,050.22	103,970.53	714,873.40
1984		-	13,823.92	-	13,823.92	13,823.92	27,810.48	13,823.92	27,810.48	27,810.48	41,634.40	41,634.40	41,634.40	27,810.48	97,092.72	83,268.80	83,268.80	97,255.35	652,326.47
1985			-	14,331.96	-	14,331.96	14,331.98	28,663.96	14,331.98	28,663.95	28,663.96	42,995.94	42,995.94	42,995.94	28,663.96	100,323.87	85,991.89	85,991.89	573,279.23
1986				-	16,480.56	-	16,794.48	16,794.48	33,588.96	16,794.48	33,588.95	33,588.96	50,383.44	50,383.44	50,383.44	33,588.96	117,581.36	100,796.86	670,698.40
1987					-	18,095.12	-	18,235.39	18,235.39	36,611.05	18,235.39	36,611.05	36,611.05	54,846.44	54,846.44	54,846.44	36,611.05	127,928.27	511,713.08
1988						-	29,291.86	-	29,291.86	29,291.86	58,583.72	29,291.86	58,583.72	58,583.72	88,042.00	88,042.00	88,042.00	58,750.15	615,794.75
1989							-	24,408.87	-	24,408.87	24,408.87	48,817.74	24,408.87	48,817.74	48,817.74	73,371.90	73,371.90	73,517.19	464,349.69
1990								-	29,567.04	-	29,567.04	29,567.04	59,134.09	29,567.04	59,134.09	59,134.09	88,701.13	88,701.13	473,072.69
1991									-	41,235.79	-	41,235.79	41,235.79	82,633.93	41,235.79	82,633.93	82,633.93	123,869.72	536,714.67
1992										-	158,703.36	-	159,162.70	159,162.70	318,095.73	159,162.70	318,095.73	318,095.73	1,590,478.65
1993											-	130,948.25	-	131,315.56	131,315.56	262,631.13	131,315.56	262,631.13	1,050,157.19
1994												-	96,176.53	-	96,370.05	96,370.05	192,546.58	96,370.05	577,833.26
1995													-	118,044.71	-	118,237.59	118,237.59	236,262.30	590,802.19
1996														-	9,787.54	-	9,787.54	9,979.45	29,554.53
1997															-	424,430.27	-	424,849.50	849,079.77
1998																-	693,004.50	-	693,004.50
1999																	-	617,856.24	617,856.24
Total	-	12,464.30	13,823.92	27,404.30	43,378.80	72,243.65	101,301.12	127,919.25	178,818.34	243,861.44	432,450.65	473,755.98	638,319.16	895,211.92	1,101,782.86	1,714,010.63	2,210,219.78	2,828,615.51	11,111,588.71

Case No. U-12999
Exhibit No. A-____(TLS-6)
Witness: TLSimonsen
Date: February 2004

Case No. U-12999
Exhibit A-___(TLS-6)
Witness: TLSimonsen
Date: February 2004
Page: 4 of 6

CONSUMERS ENERGY COMPANY
Case No. U-12999
Calculation of Adjusted Net Salvage Percentage

Annual Reports	Plant Retirement	Cost of Removal	Salvage	Net Salvage
1998 MPSC Form P-522	7,048,354	(9,445,208)	256,763	(9,188,445)
1999 MPSC Form P-522	8,984,035	(9,430,816)	90,805	(9,340,011)
2000 MPSC Form P-522	22,125,125	(8,551,766)	108,927	(8,442,839)
2001 MPSC Form P-522	13,068,421	(7,387,322)	162,344	(7,224,978)
2002 MPSC Form P-522	7,648,543	(6,790,762)	159,193	(6,631,569)
Total	58,874,478	(41,605,874)	778,032	(40,827,842)
Five Year Average Net Salvage Percentage				-69.35%

Riser Retirement Adjustments:

1998 MPSC Form P-522	1,714,020
1999 MPSC Form P-522	2,210,220
2000 MPSC Form P-522	2,826,616
2000 MPSC Form P-522	(11,111,589)
	(4,360,734)

Adjusted Net Salvage Calculation:

1998 MPSC Form P-522	8,762,374	(9,445,208)	256,763	(9,188,445)
1999 MPSC Form P-522	11,194,255	(9,430,816)	90,805	(9,340,011)
2000 MPSC Form P-522	13,840,152	(8,551,766)	108,927	(8,442,839)
2001 MPSC Form P-522	13,068,421	(7,387,322)	162,344	(7,224,978)
2002 MPSC Form P-522	7,648,543	(6,790,762)	159,193	(6,631,569)
	54,513,744	(41,605,874)	778,032	(40,827,842)
Five Year Average Net Salvage Percentage				-74.89%

Case No. U-12999
Exhibit A-___(TLS-6)
Witness: TLSimonsen
Date: February 2004

CONSUMERS ENERGY COMPANY
Case No. U-12999
Calculation of Net Salvage Percentage

Acct No.	Plant Balance	Allocated Book Res.	Reserve Ratio	CECo Alt* Net Salvage	Total Net Salvage	Adjusted Net Salvage
350.2	1,321,117	760,498	42.44%	0.00%	-	0.00%
351.2	7,676,757	3,454,887	55.00%	-6.00%	(460,605.42)	-4.86%
351.2	4,607	3,494	24.16%	-6.00%	(276.42)	-4.86%
351.4	3,337,803	1,927,482	42.25%	-28.00%	(934,584.84)	-22.69%
352.1	5,336,673	3,053,749	42.78%	0.00%	-	0.00%
352.3	32,974,906	19,203,438	41.76%	-73.00%	(24,071,681.38)	-59.17%
352.4	16,388,907	11,889,073	27.46%	-73.00%	(11,963,902.11)	-59.17%
353.0	22,020,894	12,769,223	42.01%	-140.00%	(30,829,251.60)	-113.47%
354.0	78,065,202	35,660,663	54.32%	-17.00%	(13,271,084.34)	-13.78%
355.0	2,083,799	1,276,862	38.72%	-22.00%	(458,435.78)	-17.83%
356.0	13,376,874	5,736,104	57.12%	-28.00%	(3,745,524.72)	-22.69%
357.0	3,153,829	1,134,196	64.04%	-11.00%	(346,921.19)	-8.92%
365.2	15,624,024	6,612,196	57.68%	0.00%	-	0.00%
366.0	10,063,270	5,253,626	47.79%	-2.00%	(201,265.40)	-1.62%
367.0	183,611,384	97,746,693	46.76%	-26.00%	(47,738,959.84)	-21.07%
368.0	35,038,304	29,583,284	15.57%	-1.00%	(350,383.04)	-0.81%
369.0	23,684,196	8,699,814	63.27%	-6.00%	(1,421,051.76)	-4.86%
370.0	7,579,322	5,502,759	27.40%	-1.00%	(75,793.22)	-0.81%
371.0	3,445,240	1,654,337	51.98%	-1.00%	(34,452.40)	-0.81%
374.2	6,960,315	3,905,218	43.89%	0.00%	-	0.00%
375.0	4,242,886	4,115,355	3.01%	-17.00%	(721,290.62)	-13.78%
376.1	4,327,468	6,517,813	-50.61%	-105.00%	(4,543,841.40)	-85.10%
376.2	350,910,853	315,705,675	10.03%	-105.00%	(368,456,395.65)	-85.10%
376.3	9,358,954	16,459,684	-75.87%	-105.00%	(9,826,901.70)	-85.10%
376.4	16,968	23,529	-38.67%	-105.00%	(17,816.40)	-85.10%
376.5	541,424,815	197,737,539	63.48%	-105.00%	(568,496,055.75)	-85.10%
378.0	32,498,407	15,495,271	52.32%	-25.00%	(8,124,601.75)	-20.26%
380.1	224,035	268,242	-19.73%	-168.00%	(376,378.80)	-136.16%
380.2	72,006,386	73,082,005	-1.49%	-168.00%	(120,970,728.48)	-136.16%
380.4	27,245,781	30,737,296	-12.81%	-168.00%	(45,772,912.08)	-136.16%
380.5	502,406,199	268,182,502	46.62%	-168.00%	(844,042,414.32)	-136.16%
381.0	174,926,601	151,346,936	13.48%	0.00%	-	0.00%
382.0	151,913,431	84,783,480	44.19%	-76.00%	(115,454,207.56)	-61.60%
383.0	18,415,248	11,835,613	35.73%	-4.00%	(736,609.92)	-3.24%
389.2	1,516	(68)	104.49%	0.00%	-	0.00%
390.0	23,627,456	14,640,678	38.04%	-10.00%	(2,362,745.60)	-8.11%
391.0	1,717,346	(151,827)	108.84%	0.00%	-	0.00%
391.2	7,356,574	6,173,947	16.08%	0.00%	-	0.00%
393.0	53,713	(6,329)	111.78%	0.00%	-	0.00%
394.0	4,900,533	(434,746)	108.87%	0.00%	-	0.00%
395.0	1,008,056	(133,946)	113.31%	0.00%	-	0.00%
396.0	119,819	(19,267)	116.08%	0.00%	-	0.00%
397.0	8,194,971	(713,679)	108.71%	0.00%	-	0.00%
398.0	260,787	(35,160)	113.48%	0.00%	-	0.00%
TOTAL	2,408,904,226	1,451,438,139			(2,225,807,073)	

Note: * From Exhibit A-___(TLS-1) and Exhibit A-___(TLS).

CCONSUMERS ENERGY COMPANY
Case No. U-12999
Calculation of Depreciation Expense

Acct No.	Remaining Life	Net Salvage	Plant Balance	Allocated Book Res.	Total Net Salvage	Amount to Recover	Annual Amount	Rate
350.2	36.58	0.00%	1,321,117	760,498	-	560,619	$15,326	1.16%
351.2	24.74	-5.00%	7,676,757	3,454,887	(383,838)	4,605,708	186,164	2.43%
351.2	10.86	-5.00%	4,607	3,494	(230)	1,343	124	2.68%
351.4	26.08	-20.00%	3,337,803	1,927,482	(667,561)	2,077,882	79,673	2.39%
352.1	36.75	0.00%	5,336,673	3,053,749	0	2,282,924	62,120	1.18%
352.3	32.16	-60.00%	32,974,906	19,203,438	(19,784,944)	33,558,412	1,043,421	3.16%
352.4	27.77	-60.00%	16,388,907	11,889,073	(9,833,344)	14,333,178	516,139	3.15%
353.0	48.35	-115.00%	22,020,894	12,769,223	(25,324,028)	34,575,699	715,113	3.25%
354.0	23.44	-15.00%	78,065,202	35,860,863	(11,709,780)	54,114,319	2,308,631	2.96%
355.0	21.04	-20.00%	2,083,799	1,276,862	(416,760)	1,223,697	58,160	2.79%
356.0	22.57	-20.00%	13,378,874	5,736,104	(2,675,375)	10,316,145	457,073	3.42%
357.0	19.70	-10.00%	3,153,829	1,134,196	(315,383)	2,335,016	118,529	3.76%
365.2	55.10	0.00%	15,624,024	6,612,196	0	9,011,828	163,554	1.05%
366.0	40.36	0.00%	10,063,270	5,253,626	0	4,809,644	119,169	1.18%
367.0	50.03	-20.00%	183,611,384	97,746,693	(36,722,277)	122,586,968	2,450,269	1.33%
368.0	18.82	0.00%	35,038,304	29,583,284	0	5,455,020	289,852	0.83%
369.0	42.34	-5.00%	23,684,196	8,699,814	(1,184,210)	16,168,592	381,875	1.81%
370.0	8.17	0.00%	7,579,322	5,502,759	0	2,076,563	254,169	3.35%
371.0	20.97	0.00%	3,445,240	1,654,337	0	1,790,903	85,403	2.48%
374.2	57.31	0.00%	6,960,315	3,905,218	0	3,055,097	53,308	0.77%
375.0	29.65	-15.00%	4,242,886	4,115,355	(636,433)	763,964	25,766	0.61%
376.1	26.15	-85.00%	4,327,468	6,517,813	(3,678,348)	1,488,003	56,903	1.31%
376.2	46.93	-85.00%	350,910,853	315,705,675	(298,274,225)	333,479,403	7,105,890	2.02%
376.3	17.45	-85.00%	9,358,954	16,459,684	(7,955,111)	854,381	48,962	0.52%
376.4	25.40	-85.00%	16,968	23,529	(14,423)	7,862	310	1.82%
376.5	50.89	-85.00%	541,424,815	197,737,539	(460,211,093)	803,898,369	15,796,785	2.92%
378.0	40.00	-20.00%	32,498,407	15,495,271	(6,499,681)	23,502,817	587,570	1.81%
380.1	21.21	-135.00%	224,035	268,242	(302,447)	258,240	12,175	5.43%
380.2	32.50	-135.00%	72,006,386	73,082,005	(97,208,621)	96,133,002	2,957,939	4.11%
380.4	28.28	-135.00%	27,245,781	30,737,296	(36,781,804)	33,290,289	1,177,167	4.32%
380.5	31.17	-135.00%	502,406,199	268,182,502	(678,248,369)	912,472,066	29,274,048	5.83%
381.0	26.73	0.00%	174,926,601	151,346,936	0	23,579,665	882,142	0.50%
382.0	39.89	-60.00%	151,913,431	84,783,480	(91,148,059)	158,278,010	3,967,862	2.61%
383.0	40.15	0.00%	18,415,248	11,835,613	0	6,579,635	163,876	0.89%
389.2	41.72	0.00%	1,516	(68)	0	1,584	38	2.60%
390.0	29.99	-10.00%	23,627,456	14,640,678	(2,362,746)	11,349,524	378,444	1.60%
391.0	6.12	0.00%	1,717,346	(151,827)	0	1,869,173	305,420	17.78%
391.2	3.35	0.00%	7,356,574	6,173,947	0	1,182,627	353,023	4.80%
393.0	9.98	0.00%	53,713	(6,329)	0	60,042	6,016	11.20%
394.0	12.46	0.00%	4,900,533	(434,746)	0	5,335,279	428,193	8.74%
395.0	6.51	0.00%	1,006,058	(133,946)	0	1,140,002	175,116	17.41%
396.0	4.09	0.00%	119,819	(19,267)	0	139,086	34,006	28.38%
397.0	9.45	0.00%	8,194,971	(713,679)	0	8,908,650	942,714	11.50%
398.0	6.40	0.00%	260,787	(35,160)	0	295,947	46,242	17.73%
Total			2,408,904,226	1,451,438,139	(1,792,339,088)	2,749,805,175	74,084,679	3.08%
Average Rate		-74.40%						

Deloitte & Touche

CONSUMERS ENERGY COMPANY
Depreciation Study as of December 31, 2002
Salvage and Cost of Removal Analysis

Underground Storage

Account 352.3 - Well Construction

	PRIOR			CURRENT		
BAND	Salvage %	COR %	Net Salvage %	Salvage %	COR %	Net Salvage %
5-Year				3	74	(71)
10-Year	2	49	(47)	2	65	(63)
Full ( ) ( )						
Other ( ) ( )						
Selection	10	120	(110)	0	65	(65)
Balance	$24,205,027			$32,974,906		

****

Notes: Some salvage has been recorded, but cost of removal has and will exceed it.

See calculation for plugging wells in Account 352.4 for selection basis.

Use: 0% Salvage
65% COR

Case No. U-12999
Exhibit No. A-____(TLS-7)
Witness: TLSimonsen
Date: February 2004
Page 2 of 5

STUDY AS OF DECEMBER 31 , 2002   9-19-2003

CONSUMERS ENERGY COMPANY
ACCOUNT NO.: 23523000
Well Construction

YEAR	ADDITIONS	RETIREMENTS	REIMBURSEMENTS AMOUNT	REIMBURSEMENTS RATIO	SALVAGE AMOUNT	SALVAGE RATIO	COST OF REMOVAL AMOUNT	COST OF REMOVAL RATIO	NET SALVAGE W/REIMB.	NET SALVAGE W/O REIMB.
1993	0.	134696.	0.	0.%	0.	0.%	0.	0.%	0.%	0.%
1997	0.	154536.	0.	0.%	-31.	0.%	107313.	69.%	-69.%	-69.%
1998	0.	497420.	0.	0.%	16217.	3.%	144577.	29.%	-26.%	-26.%
1999	0.	0.	0.	0.%	0.	0.%	221694.	0.%	0.%	0.%
2000	0.	328907.	0.	0.%	9020.	3.%	101068.	31.%	-28.%	-28.%
2001	0.	0.	0.	0.%	0.	0.%	90466.	0.%	0.%	0.%
2002	0.	50711.	0.	0.%	830.	2.%	91380.	180.%	-179.%	-179.%
	0.	1166270.	0.	0.%	26036.	2.%	756498.	65.%	-63.%	-63.%
3YR-BANDS										
1993-1995	0.	134696.	0.	0.%	0.	0.%	0.	0.%	0.%	0.%
1994-1996	0.	0.	0.	0.%	0.	0.%	0.	0.%	0.%	0.%
1995-1997	0.	154536.	0.	0.%	-31.	0.%	107313.	69.%	-69.%	-69.%
1996-1998	0.	651956.	0.	0.%	16186.	2.%	251890.	39.%	-36.%	-36.%
1997-1999	0.	651956.	0.	0.%	16186.	2.%	473584.	73.%	-70.%	-70.%
1998-2000	0.	826327.	0.	0.%	25237.	3.%	467339.	57.%	-54.%	-54.%
1999-2001	0.	328907.	0.	0.%	9020.	3.%	413228.	126.%	-123.%	-123.%
2000-2002	0.	379618.	0.	0.%	9850.	3.%	282914.	75.%	-72.%	-72.%
SHRINKING BAND										
1993-2002	0.	1166270.	0.	0.%	26036.	2.%	756498.	65.%	-63.%	-63.%
1994-2002	0.	1031574.	0.	0.%	26036.	3.%	756498.	73.%	-71.%	-71.%
1995-2002	0.	1031574.	0.	0.%	26036.	3.%	756498.	73.%	-71.%	-71.%
1996-2002	0.	1031574.	0.	0.%	26036.	3.%	756498.	73.%	-71.%	-71.%
1997-2002	0.	1031574.	0.	0.%	26036.	3.%	756498.	73.%	-71.%	-71.%
1998-2002	0.	877038.	0.	0.%	26067.	3.%	649185.	74.%	-71.%	-71.%
1999-2002	0.	379618.	0.	0.%	9850.	3.%	504608.	133.%	-130.%	-130.%
2000-2002	0.	379618.	0.	0.%	9850.	3.%	282914.	75.%	-72.%	-72.%
2001-2002	0.	50711.	0.	0.%	830.	2.%	181846.	359.%	-357.%	-357.%
2002	0.	50711.	0.	0.%	830.	2.%	91380.	180.%	-179.%	-179.%
USE										
2000				___	10		120		___	(110)
2002				___	0		65		___	(65)