

STATE OF FLORIDA

Calculations
FILE P.00

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Public Service Commission

September 10, 1997

Ms. Anne V. Wood
Accounting and Rates Manager
Chesapeake Utilities Corporation
Florida Division
1015 6th Street
Winter Haven, FL 33881

Re: Docket No. **970428-GU**

Dear Ms. Wood:

Enclosed is the staff report for the distribution portion of the Florida Division of Chesapeake Utilities Corporation, as submitted in the docket referenced above. The report for the general plant portion of the Company is in process and should be provided by September 15, 1997. Please provide your responses to the inquiries, along with concurrence or disagreement, by October 20, 1997.

If you have any questions or wish to discuss any of this work, please telephone either me at 850-413-6453 or Jeanette Bass at 850-413-6461. We appreciate your cooperation in providing the needed information.

- ACK _____
- AFA _____
- API _____
- CAC _____
- C _____
- _____
- _____

Sincerely,

Patricia S. Lee
US/C Engineer Supervisor

PSL:JB/lts

cc: -- Division of Electric & Gas
Division of Legal Services
Office of Public Counsel
Division of Records and Reporting

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GENERAL COMMENTS

For several accounts, staff questions the proposals submitted in this current study. The Company's consultant has proposed changing life and/or salvage parameters based on results produced from mathematical analyses of historic information for this Company. Staff offers the following three comments on using this approach.

1. It is quite likely that such analysis, done every five years or so, will find enough variation in a Company's history to change the underlying parameters. These variations may be slight, or cyclical, or both. The resulting repeated changes to underlying parameters may amount to unnecessary oscillations, or fluctuations having a "knee-jerk" character. The smaller companies are especially likely to see such fluctuations in those accounts, such as industrial measuring and regulating equipment, which may have sporadic large transactions

2. The analytical difficulties described above may be tempered by comparison with a larger but similar population, if such a population can be identified. The Commission practice, of comparing Florida companies within a given industry, uses this concept to good advantage. Any company specific situation will be reflected in properly selected parameters; otherwise, similar companies will have similar underlying parameters. Thus, if an account is not showing evidence of need for change in service life and salvage, and the current authorized parameters are similar to other Florida companies, it would not be Commission practice to change them. Numerical analysis of a sudden flurry of activity would be tempered by a larger history.

3. There is always a question whether analysis of the past should be relied upon to predict the future. In the current industry climate, change is a dominant factor. To the extent the future is expected to be different from the past, reliance on history for life and salvage parameters is questionable. Appropriate capital recovery design must incorporate the expectations for the future, to the extent that the future can be determined.

For several accounts in the following review, it is important to note that staff's opinion relies in part on the absence of information to support a different conclusion. Planning, as well as history, should be included in reaching such conclusions as these. Chesapeake is asked to provide any information which may not have been taken into account up to this time.

Staff has utilized the age calculations provided by Chesapeake as survivor distributions. However, we are also using the half-year convention by which 1997 projected additions have an average age of a half year at 1-1-98; 1996 investment average age is 1.5 years at 1-1-98, and so on.

A summary tabulation of the staff recommended parameters follows the discussion of individual accounts.

ANALYSIS OF ACCOUNTS

Account 375 – Structures and Improvements: The Company proposes to continue underlying parameters from the last represcription, yet has used a 45-year average service life and square wave. Staff proposes continued use of a 45-year life span and an interim retirement rate of 0.5%. The Company proposed average remaining life is a continuation of 38 years, although the account age has increased. Staff calculations produce a 34-year remaining life at 1-1-98. Continuation of the net salvage of negative 15% is acceptable.

In the previous study, in the General Plant Structures Account, there was a 1990 vintage surviving amount of \$2,638. It appears that this was transferred in 1992 to the Distribution Structures Account, but information as to the 1990 vintage was lost in the transfer. Staff has determined that moving the \$2,638 amount to the 1990 vintage does not change the account average age, which remains 7.4 years. However, if the amount transferred were larger, or if the original placement vintage were earlier, the account age could be affected by the transfer. Transfers should be shown in the original vintage year, or in-service year of the transferring investment, for calculation of account age.

Account 376.1 – Steel Mains: The Company proposes a change from an S3 to an R3 lowa curve, and a reduction of average service life from 40 years to 37 years, with a net salvage changed from negative 30% to negative 35%. Staff does not find support for this change, but rather sees several points which would argue against it. There are survivors from 1950 and prior, with less than 10% of the investment in several older vintages retiring since the last study. Although the majority of mains additions since 1995 have been plastic, the average age of the investment in steel mains has increased less than a whole year since the last study, which is in line with the growth of more than 40% in the account over that period. The steel mains account does not therefore appear to be a "dying account" with attendant foreshortening of service life for the additions made in the latter years. The average annual percentage of investment retiring is far less than 1%; a rate so low does not serve well as a basis for statistical analysis. At this writing, Staff does not see any reason to move from continuation of the current service life and salvage parameters.

Account 376.2 – Plastic Mains: Typically, Florida companies utilize the same curve and service life for plastic mains as for steel. From conversations with Chesapeake personnel, there is currently a different "infrastructure factor" in the life of their plastic mains as compared to steel. Many retirements of steel main come from street widening, and other incidents having a character of "neighborhood redesign." The plastic installations are not seeing retirements forced by such changes. Since the plastic mains date from the mid-eighties, we cannot tell whether the useful life of these installations will be similarly impacted in future decades, as neighborhoods change over time.

It is useful to note that the life pattern of the steel mains appeared very stable in the first two decades of service. Simply stated, Staff does not see any reason to use a different curve and service life for plastic than for steel, at this juncture. It may be that the life

pattern of the plastic mains will develop differences from that of the steel mains, as developing trends become evident and more experience with the plastic mains investment is gained.

The net salvage stems primarily from cost of removal; the procedures for the retirement of plastic mains are virtually the same as for steel and depend primarily on whether or not the installations are under pavement. Staff does not recognize an indication that the net salvage for plastic should be different from that for steel. Again, factors such as the frequency of retiring installations from under pavement may impact this investment at a later time.

Account 378 – Measuring and Regulating Equipment - General: The Company proposes to retain the current 30-year service life, and move to an R4 curve. Staff considers this proposed change to be a reasonable reflection of the Chesapeake history of very few retirements of this type of equipment to date. This is not a detailed analysis of retirements to determine which curve is appropriate; rather it is an observation that the rarity of retiring investment is more like the proposed R4 curve than like the current R3. As this account investment continues to age, the increase in retirements will make curve matching easier. Staff accepts the proposal to move to a net salvage of negative 5%, which will accommodate the expected minimal cost of removal. It is consistent with the industry view for this account.

Account 379 – Measuring and Regulating Equipment - City Gate: The Company proposes to retain the service life of 30 years and the S4 curve. The proposal is reasonable, and reflects the Company's experience of few retirements, even from the earliest vintages. Staff can accept the move from negative 7% to negative 5% for net salvage, as a move toward the industry view.

Account 380.1 – Distribution Services - Steel: The Company's proposal is to decrease from a 35-year service life to 31 years, and to move from an S4 curve to an R 0.5. Indications for any such change should be apparent in the Company's experience or planning, but staff does not find any.

The Company reports that retirements can frequently be tied to the actual year of installation. When this cannot be done, retirements are booked on a first in, first out basis. Recognizing the Company's practice in this regard, surviving plant from the 1940's and 1950's become significant life indication factors. Additionally, staff would expect that the Chesapeake investment relating to this type of plant would have a life pattern similar to that for similar companies in Florida. With those considerations, Staff finds an R2 curve acceptable, and would retain the service life of 35 years.

The Company reports that approximately four hours are required for removal of a steel service not under pavement, or six hours if the service is under pavement. Also, Chesapeake reports some 4,300 steel services in use, with approximately 20% of those

under pavement. Based on calculating the cost of removal using current labor costs supplied by the Company, staff will recommend retaining the current negative 52% net salvage for the investment in this account.

Account 380.2 – Distribution Services - Plastic: The Company proposal is a decrease in average service life from 35 years to 32 years, and a change from the S2 curve to an S5. As we look at this account, we note first that the earliest installations of plastic services were booked in 1982. The oldest vintage of this type of plant is about 16 years old. Next, the total retirements for the years 1992 through 1996 produce a retirement ratio just over 1%. As the S2 and S5 curves are compared with these facts, there is not sufficient historic data to indicate one curve over the other at this juncture, and other curves also may be very closely matched to the data for this account. Staff is inclined to use the same curve and service life for the plastic services as for steel. This is not to say that the life pattern will be identical for these two types of investment, but that no distinct differences are recognized at this time. The plastic material may develop problems that steel never had, or the corrosion of steel may result in a life shorter than that for plastic. Other factors, such as infrastructure demands, may develop for segments of one investment or the other.

As in the case for steel services, an estimate of removal costs can be calculated from information provided by the Company. Chesapeake reports approximately 4,700 plastic services in use, of which about 5% are under pavement. It takes about three hours to remove a plastic service not under pavement, about five hours when pavement is involved. The current net salvage of negative 25% is a conservative estimate of the costs which will be incurred in removing this plant from service as retirements occur over the years to come.

Account 381 – Meters: The Company proposal is an increase in average service life from 25 to 30 years and retention of the R4 curve. On the average, annual retirements amount to less than 1% of the investment in this account over the years 1992 through 1996. The account age is approximately 11.3 years by year-end 1996. For both 25 and 30-year service lives, the R4 curve has 2% or less retiring at the age of 10 or 12 years. Equipment having a life pattern of an R4 curve, with average service life of 30 years, will routinely have some units continue in service up to an age of 40 years. We don't see that situation in this account. In summation, staff does not see any reason to move to the 30-year average service life.

The cradle to grave accounting practice is used for the investment in this account, and a zero net salvage is appropriate.

Account 382 – Meter and Regulator Installations: The Company's proposal is a change from the life pattern of the S2 lowa curve for an average service life of 35 years to the pattern of an S0.5 curve for an average service life of 29 years. Differences between the two life patterns include a higher level of retirements in the first decade of service life, and decreased survivors for the ages beyond 45 years. Specifically, the life pattern of the

current S2-35 would drop below 10% surviving at about age 50; the Company proposed life pattern would dip below 10% surviving before age 47. In the current pattern, 25% of the account investment can be expected to survive to age 42 years; at that age, only 16% of the account investment survives with the Company proposed pattern. It appears to staff that the proposed change is not really warranted: the very early retirements are too few, and more plant is surviving in the older ages, than would be expected from the proposed pattern. Staff will recommend retaining the current life pattern.

The proposal for net salvage is to move from negative 5% to negative 30%. With relatively few retirements in the Chesapeake history, it cannot be assumed that the same relative cost of removal would be experienced for the entire investment in this account. Staff will recommend continuation of the current negative 5% net salvage, which is typical of industry expectations.

Account 383 – House Regulators: The Company's proposal to move from an R4 curve and 30-year service life to an S2 curve and 29-year service life is the result of mathematical analyses of historical account activity. Reported retirements for 1992 through 1994 were zero, and less than \$4,300 for 1995 and 1996 combined. The annual plant balances have exceeded \$375,000, so that retirement rates are far less than 1%. Mathematical analyses of the data arising from such low retirement levels does not produce valid results. This makes it necessary to look elsewhere for indications of the life pattern which may be expected.

Staff understands that records for this type of plant are maintained by Chesapeake using cradle-to-grave and first in/first out conventions. This means that regulators may be moved from place to place, and they are only retired when they are junked. It is also understood that regulators are rarely retired during the first decade or so, usually only because of accident or mishandling, and the appropriate curve will have a "high shoulder" to match the minimal early retirements. In the last study, the oldest surviving investment was in the age range of 30 to 35 years; in this study, the age of the oldest survivors drops to about 30 or 31 years. Comparing these observations with the expectations of other Florida companies, staff is inclined to retain the 30-year service life and move to an S4 curve. A zero net salvage is an appropriate match for the cradle-to-grave accounting practice.

Account 385 – Measuring and Regulating Equipment, Industrial: The Company's proposal is a change from the S4 curve and 30-year service life to an S0.5 curve and 31-year service life. As in other accounts, this proposal for change comes from mathematical analysis of the surviving and retiring investments in the account, as indicated by the Company data. However, the information behind the data can be as important as the data itself. The equipment associated with this account is utilized in providing service to industrial customers, and is subject to the requirements of those customers. The activity for 1997 includes additions amounting to more than \$220,000 and retirements of more than \$50,000. The 1997 retirement amount exceeds the total retirements for the 1992 to 1996 period.

Staff would not be inclined to expect an increase in service life, under these circumstances. The likelihood of new technological requirements demanding newer types of equipment is expected to increase, not decrease. Moving to a curve having a small percentage of the investment retiring in the first decade or so is a conservative response to this situation. Surviving investment having age in the 25 to 35-year range is still very evident in this Company, and should be reflected in the curve selected. Prior to making a recommendation, staff would like to know how Chesapeake expects this account act, over the next five years. Are the next few years expected to have additions and retirements similar to 1997, or similar to 1993 and 1994? Are any specific retirements planned, or contemplated, for this type of equipment? It appears likely that an R3 or R4 curve would be a conservative but responsive move, but Company input could alter that course of action.

Regarding the cost of removal: several Florida companies have no expected cost of removal for this account, but Chesapeake has recorded cost of removal on a routine basis. Does your Company expect to stand the cost of removing equipment associated with 100% of the investment in this account? Please provide as much insight as possible as to what is expected in this regard.

Account 387 – Other Equipment: Staff would like descriptive information about the types of equipment in this account. Are there new types of equipment involved, or have the additions for 1992 through 1997 been consistent with the equipment represented by the survivors of prior vintages? The 1997 additions amount to just under \$20,000 and retirements are about \$1,600. Is this replacing equipment similar to the retiring equipment?

The proposal to move from the S4, 25-year pattern to an S0.5, 26-year pattern, based on mathematical analysis, is open to question. Without knowing that there is a similarity of new equipment to older, staff would hesitate to associate history closely with expectations for future performance. In the case of this account, Chesapeake equipment may or may not have close similarity to that of other companies. Staff would like to understand, from Chesapeake, how the present and planned investment compares with that from earlier vintages. The recommendation will flow from that information.

STAFF REPORT -- ACCOUNT PARAMETERS

<u>Account</u>	<u>ASL</u> (yrs)	<u>Curve</u>	<u>N.S.</u> (%)	<u>Age</u> (yrs)	<u>ARL</u> (yrs)
375 - Structures and Improvements	40	45LS/ 0.5 ir	(15)	7.4	34
376.1 - Steel Mains	40	S3	(30)	10.9	29
376.2 - Plastic Mains	40	S3	(30)	6.5	33
378 - Meas. And Reg. Eqpt., Gen'l	30	R4	(5)	5.1	26
379 - Meas. And Reg. Eqpt., City Gate	30	S4	(5)	5.3	25
380.1 - Dist. Services, Steel	35	R2	(52)	16.3	21.3
380.2 - Dist. Services, Plastic	35	R2	(25)	5.8	28
381 - Meters	25	R4	0	10	13.9
382 - Meter and Regulator Installations	35	S2	(5)	10	22
383 - House Regulators	30	S4	0	8.6	20
385 - Measuring and Reg. Eqpt. Ind.	≤30	R3orR4	0	6.9	#
387 - Other Eqpt.	#	#	#	7.6	#

NOTE: # indicates that additional Company information is pending.