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**DIRECT TESTIMONY OF GERALD C. HARTMAN
BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION
ON BEHALF OF
SOUTHERN STATES UTILITIES, INC.
AND
DELTONA UTILITIES, INC.
DOCKET NO. 920199-WS**

- 1 **Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**
- 2 **A. My name is Gerald C. Hartman. My business address**
3 **is Hartman & Associates, Inc., Southeast Bank**
4 **Building, 201 East Pine Street, Suite 1000, Orlando,**
5 **Florida, 32801.**
- 6 **Q. WHAT IS YOUR POSITION WITH HARTMAN & ASSOCIATES,**
7 **INC.?**
- 8 **A. I am a Principal Engineer with and President of**
9 **Hartman & Associates, Inc., a consulting engineering**
10 **firm in Orlando, Florida.**
- 11 **Q. PLEASE PROVIDE YOUR EDUCATIONAL BACKGROUND.**
- 12 **A. I received my Bachelors of Science degree in Civil**
13 **Engineering from Duke University in 1975 and my**
14 **Masters of Science degree in Environmental**
15 **Engineering from Duke University in 1976. I have**
16 **published over thirty papers on water and wastewater**
17 **utility systems and have been involved in numerous**
18 **technical training sessions and seminars. In**
19 **addition, I have co-authored two books concerning**
20 **water and wastewater systems.**
- 21 **Q. ARE YOU A REGISTERED PROFESSIONAL ENGINEER?**
- 22 **A. Yes, I am a registered professional engineer in the**
23 **States of Florida, Georgia, Maryland, North**
24 **Carolina, Pennsylvania and Virginia.**
- 25 **Q. ARE YOU A MEMBER OF ANY PROFESSIONAL ORGANIZATIONS?**

1 A. Yes, I am a member of the following organizations:
2 American Society of Civil Engineers
3 National Society of Professional Engineers
4 Florida Engineering Society
5 American Water Works Association
6 Florida Pollution Control Association
7 American Water Resources Association
8 Water Pollution Control Federation
9 Florida Water and Pollution Control Operators
10 Association
11 Florida Waterworks Association

12 In addition, I have served as an officer in several
13 of these organizations.

14 **Q. WHAT IS YOUR PROFESSIONAL ENGINEERING EXPERIENCE AS**
15 **IT PERTAINS TO WATER AND WASTEWATER UTILITIES?**

16 A. I have been the Engineer of Record for over thirty
17 water and wastewater master plans and five capital
18 improvements programs. I have been involved in over
19 fifty hydraulic model analyses of water and
20 wastewater systems. In addition, I have been
21 involved in numerous studies and investigations
22 ranging from pilot programs to value engineering
23 investigations. I have performed numerous water
24 process evaluations from simple aeration to reverse
25 osmosis (R.O.). In addition, I have performed

1 wastewater evaluations from secondary treatment to
2 advanced biological nutrient removal systems. I
3 have been involved in the design of over \$300
4 million worth of water and wastewater facilities in
5 the State of Florida.

6 These designs range from small single well
7 systems to large municipal and investor-owned
8 systems.

9 Q. HAVE YOU PREVIOUSLY TESTIFIED BEFORE THE FLORIDA
10 PUBLIC SERVICE COMMISSION REGARDING USED AND USEFUL
11 DETERMINATIONS?

12 A. Yes, I have testified before the Florida Public
13 Service Commission ("Commission") on numerous
14 occasions.

15 Q. HAVE YOU PREVIOUSLY TESTIFIED BEFORE OTHER
16 REGULATORY BODIES REGARDING USED AND USEFUL
17 DETERMINATION?

18 A. Yes, I have testified in rate proceedings in
19 Sarasota County and Hillsborough County regarding
20 used and useful issues.

21 Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS
22 PROCEEDING?

23 A. The purpose of my direct testimony is to briefly
24 describe the information that is contained in the
25 Commission's Minimum Filing Requirement Schedules

1 F-1 through F-10 as presented in Volumes II and III,
2 Book 11 of 11 and Book 6 of 6, respectively, of the
3 rate application. Specifically, my testimony will
4 address the F-1 through F-10 Schedules for the water
5 and wastewater systems in the following counties:
6 Citrus, Collier, Duval, Lee/Charlotte, Marion,
7 Martin,, Volusia, and Washington counties. Mr. Gary
8 S. Morse will present direct testimony pertaining
9 to the F-1 through F-10 Schedules for the systems
10 in the following counties: Brevard, Clay, Hernando,
11 Highlands, Lake, Orange, Osceola, Pasco, Putnam, and
12 Seminole counties. In addition, I will discuss the
13 sources of the information and the rationale used
14 in completing these schedules.

15 **Q. WERE THESE SUMMARIES AND SCHEDULES PREPARED BY YOUR**
16 **OR UNDER YOUR DIRECTION AND SUPERVISION?**

17 **A. Yes, they were.**

18 **Q. WOULD YOU DESCRIBE THE "F" SCHEDULES CONTAINED IN**
19 **VOLUME II, BOOK 11 ENTITLED - ENGINEERING**
20 **INFORMATION (WATER)?**

21 **A. Book 11 of Volume II presents Schedules F-1 through**
22 **F-10 of the Minimum Filing Requirements for each**
23 **water system. Schedule F-1 is entitled "Gallons of**
24 **Water Pumped, Sold, and Unaccounted For." Column**
25 **2 of this schedule indicates the "Total Gallons**

1 Pumped" for the historic test year period January
2 1, 1991 through December 31, 1991. These numbers
3 are taken directly from the monthly Water Treatment
4 Plant Operation Report submitted to the Florida
5 Department of Environmental Regulation ("FDER").
6 These reports are provided in Volume IV, Books 5 and
7 6, Additional Engineering information.

8 Column 3 of Schedule F-1, entitled "Gallons
9 Purchased", is applicable only to a select few
10 systems where water is purchased to either
11 supplement our supply or is the sole source of
12 supply for the water system. The data in this
13 column comes from the bills received from the
14 supplier each month.

15 Column 4 of Schedule F-1, entitled "Gallons
16 Sold", is derived from information contained in the
17 billing analysis.

18 Column 5 of Schedule F-1 is entitled "Other
19 Uses" and is expressed in thousands of gallons. As
20 indicated on the bottom of the table, "Other Uses"
21 is broken into Flushing of lines, Utility Use, Water
22 Main Breaks, Unmetered and Stuck Meters, and Fire
23 Dept. Use.

24 Columns 6 and 7 of Schedule F-1 show the
25 resulting "Unaccounted For Water" in thousands of

1 gallons and as a percentage, respectively.

2 The unaccounted for water information is
3 sponsored by Mr. Charles Sweat and is further
4 discussed in his direct testimony.

5 Q. WOULD YOU DESCRIBE THE INFORMATION CONTAINED ON
6 SCHEDULE F-3 IN VOLUME II, BOOK 11 (WATER)?

7 A. Schedule F-3 is entitled "Water Treatment Plant
8 Data." Part 1 of the schedule shows the rated plant
9 capacity. The course of this data is the FDER
10 permit. I have added a line to include the firm
11 reliable capacity of the treatment plant based on
12 standard engineering design criteria. Part 2
13 requests the maximum day demand which is defined as
14 being the single day with the highest pumpage rate
15 for the test year. The source of this data is the
16 monthly FDER Water Treatment Plant Operation
17 Reports. Part 3 requests information on the "Five-
18 Day Max Month" demand, which is defined as "the five
19 days with the highest pumpage rate from the month
20 with the highest pumping rate during the test year."
21 The average of these five figures is also requested,
22 but has no real bearing upon the planning and/or
23 design of a water system. The average of the five
24 maximum consecutive days of the maximum month of the
25 historic test year may be a significant factor in

1 the planning of a very large system; however, this
2 information is not requested in Schedule F-3. Part
3 4 requests information on the "Five-Day Max Year"
4 demand, which is defined as "the five days with the
5 highest pumpage rate from any one month in the test
6 year." Here also, the monthly FDER Water Treatment
7 Plant Operation Reports were the source of this
8 data. Part 5 requests the "Average Daily Flow"
9 during the test year which is a calculated value.
10 Its source is again the monthly FDER Water Treatment
11 Plant Operation Reports. Part 6 is the "Required
12 Fire Flow" for the water system. Typically, the
13 source of this data is the Insurance Services Office
14 "Fire Suppression Rating Schedule" dated June, 1980
15 or the County Fire Ordinance Code. Copies of local
16 county ordinances, where applicable, are included
17 in the Appendix of Volume II, Book 11 of 11.

18 Q. WOULD YOU DESCRIBE THE "F" SCHEDULES CONTAINED IN
19 VOLUME III, BOOK 6 ENTITLED-ENGINEERING INFORMATION
20 (WASTEWATER)?

21 A. Book 6 of Volume III presents Schedules F-2, F-4,
22 F-6, F-7, F-8 and F-10 of the Minimum Filing
23 Requirements for each wastewater system.

24 Q. WOULD YOU DESCRIBE THE INFORMATION CONTAINED ON
25 SCHEDULE F-4 IN VOLUME III, BOOK 6 (WASTEWATER)?

1 A. Schedule F-4 is entitled "Wastewater Treatment
2 Plant Data" and indicates the overall rated
3 capacity of the wastewater treatment facilities and
4 some basic information concerning the flows during
5 the historic 1991 test year. The treatment plant
6 capacity is that which is approved by the FDER and
7 noted on the operating permit. Copies of the
8 current FDER operating permits are provided in
9 Volume IV of the rate filing.

10 Q. WOULD YOU DESCRIBE THE INFORMATION CONTAINED ON
11 SCHEDULE F-5 IN VOLUME II, BOOK 11 (WATER)?

12 A. Schedule F-5 is entitled "Used and Useful
13 Calculations - Water Treatment Plant." As the title
14 indicates, Schedule F-5 presents the used and useful
15 analysis proposed by the Company for water supply,
16 treatment (if any), storage, pumping facilities, and
17 the water distribution system for the 1991 test
18 year. The used and useful methodology is described
19 in detail in the introduction section at the front
20 of Volume II.

21 Q. WOULD YOU DESCRIBE THE INFORMATION CONTAINED ON
22 SCHEDULE F-6 IN VOLUME III, BOOK 6 (WASTEWATER)?

23 A. Schedule F-6 is entitled "Used and Useful
24 Calculations-Wastewater Treatment Plant." As the
25 title indicates, Schedule F-6 presents the used and

1 useful analysis proposed by the Company for
2 wastewater treatment plants, the effluent disposal
3 systems, and the collection systems. Data specific
4 to the treatment plant is shown at the top of the
5 Schedule and is referred to as Input Data. This
6 data includes some basic information contained in
7 the FDER operating permits, the average daily flow
8 during the maximum month of the test year, a
9 determination of usage per equivalent residential
10 connection ("ERC") and the average number of ERCs
11 connected to the system. For those particular
12 systems requiring a margin reserve, the margin
13 reserve flow and margin reserve growth are shown on
14 lines 21 and 22, respectively. The resulting used
15 and useful determination with the margin reserve
16 taken into consideration is shown on line 23 for the
17 wastewater plant, line 24 for the effluent disposal
18 system, and line 25 for the collection system.

19 **Q. WOULD YOU DESCRIBE THE INFORMATION CONTAINED ON**
20 **SCHEDULE F-7 IN VOLUME II, BOOK 11 AND VOLUME III,**
21 **BOOK 6 FOR THE WATER AND WASTEWATER SYSTEMS?**

22 **A. Schedule F-7 is entitled "Used and Useful**
23 **Calculation-Water Distribution and Wastewater**
24 **Collection Systems." As the title indicates, this**
25 **schedule is generic to both water and wastewater**

1 systems. However, the used and useful determination
2 for the water distribution systems is shown on
3 Schedule F-5 and the used and useful determination
4 for wastewater collection systems is shown on
5 Schedule F-6.

6 **Q. WOULD YOU DESCRIBE THE INFORMATION CONTAINED ON**
7 **SCHEDULE F-8 IN VOLUME II, BOOK 11 AND VOLUME III,**
8 **BOOK 6 FOR THE WATER AND WASTEWATER SYSTEMS?**

9 A. Schedule F-8 is entitled "Margin Reserve
10 Calculations" and is generic to both water and
11 wastewater systems. A description of the margin
12 reserve determination is contained in the
13 introduction at the front of Volume II, Book 11 for
14 water systems and Volume III, Book 6 for wastewater
15 systems. The margin reserve is computed for an
16 eighteen month period of time for treatment plants
17 and one year for distribution and collection
18 systems.

19 **Q. WHAT IS THE PURPOSE OF A MARGIN RESERVE?**

20 A. The margin reserve is the additional water and
21 wastewater facilities necessary to meet the
22 customer demands while additional facilities are
23 being constructed. The Commission realizes that a
24 utility must construct facilities beyond the needs
25 of its current customers and has an obligation to

1 do so, since the utility's customer base is a
2 continuously growing and dynamic element while the
3 construction of facilities takes a great deal of
4 time.

5 Q. YOU MENTIONED AN "EIGHTEEN MONTH PERIOD OF TIME FOR
6 TREATMENT PLANTS"? WHAT DOES THIS MEAN AND DO YOU
7 THINK IT IS APPROPRIATE?

8 A. An "eighteen month margin reserve" is the period of
9 time that the Commission believes is the appropriate
10 time to consider for the addition of additional
11 capacity to serve future customers of water and
12 wastewater systems. In other words, the Commission
13 believes that a utility with a growing customer
14 base, such as many of the SSU systems, should
15 provide adequate capacity to meet the demands of
16 that customer base eighteen months beyond the test
17 year period being considered for ratemaking
18 purposes.

19 In most instances today, if a utility must
20 construct additional capacity to keep ahead of the
21 customer demands, it needs more than eighteen months
22 to complete the process. For a relatively "clean"
23 process in which there are no permitting, financing
24 or construction delays, two years is about the
25 minimum time period in which additional capacity can

1 be provided. Below I have briefly outlined a step
2 by step process for the addition of water treatment
3 capacity:

- 4 1. In house review of records, capacity,
5 customer commitments, etc., and the
6 determination of the abilities and
7 manpower to complete the work.
- 8 2. Request for a proposal, review of
9 qualifications and selection of an outside
10 consultant to perform the work.
- 11 3. Determination of the needed capacity
12 increase to meet the demands of the
13 current and future customers via a
14 planning document.
- 15 4. Study of the various raw water supply
16 alternatives and the required treatment
17 facilities necessary to produce potable
18 water.
- 19 5. Selection of the raw water supply and
20 treatment alternative that provide the
21 highest quality product for the lowest
22 customer price.
- 23 6. Determination of the source of supply and
24 the sizing of treatment facilities taking
25 into account economies of scale and used

- 1 and useful analysis.
- 2 7. Preliminary planning level engineering,
3 estimate of planning, financing, design
4 permitting, construction and startup costs
5 including overhead expenses, capitalized
6 interest, etc.
- 7 8. Study of complete financing alternatives
8 and determination of lowest cost financing
9 alternative considering all aspects.
- 10 9. Preliminary approval of selected financing
11 alternative by financial institution,
12 local government, etc.
- 13 10. Consumptive Use Permit (CUP) application
14 preparation with supporting documentation.
- 15 11. Water Management District (WMD) review and
16 request for additional information.
- 17 12. Complete request for additional
18 information.
- 19 13. WMD review and staff report.
- 20 14. WMD Board approval, noticing and CUP
21 issuance.
- 22 15. Design wells and local government
23 approval.
- 24 16. Bidding, evaluation and award well
25 drilling contract.

- 1 17. Finalization of financing for the well
- 2 drilling contract.
- 3 18. Well construction and testing.
- 4 19. Water sampling and analysis.
- 5 20. Determination of water quality and its
- 6 applicability to the treatment process.
- 7 At this point, project redesign may be
- 8 necessary causing significant delays.
- 9 21. Water treatment facilities design
- 10 completion.
- 11 22. Application for FDER construction permit.
- 12 23. FDER review and request of additional
- 13 information.
- 14 24. Complete request for additional
- 15 information.
- 16 25. FDER review and notice of intent.
- 17 26. FDER construction permit noticing and
- 18 permit issuance if no objections.
- 19 27. Local government review and permitting.
- 20 28. Final design completion and preparation
- 21 of bidding documents.
- 22 29. Bidding, evaluation and award of
- 23 construction contract.
- 24 30. Finalization of financing for the water
- 25 plant construction contract.

- 1 31. Water treatment plant construction and
- 2 disinfection.
- 3 32. Substantial completion inspection and
- 4 certification.
- 5 33. Punch list determination and completion
- 6 of items.
- 7 34. Start up, operator training and operation
- 8 and maintenance manual review.
- 9 35. Final walk through and inspection and
- 10 completion of final punch list items.
- 11 36. Final payment to contractor and project
- 12 close-out.
- 13 37. Final FDER certification and preparation
- 14 of as built drawings.
- 15 38. Adjustment of rates to include costs of
- 16 new facilities.

17 It should be noted that the above list is not
18 all inclusive and outlines only the major activities
19 in the addition of additional water system capacity.
20 Also, this outline assumes a relatively simple water
21 treatment facility with no major delays in the
22 permitting design or construction processes. If
23 this were a complicated process, for example an R.O.
24 facility with an injection well, the permitting and
25 construction time would more than likely be extended

1 by at least one year. Hartman & Associates, Inc.
2 recently completed an R.O. facility which utilized
3 an existing injection well and which was on an
4 extremely fast track, and the design, permitting and
5 construction took more than two years. A similar
6 result is also occurring in the wastewater industry.
7 A currently ongoing wastewater treatment expansion
8 is expected to take approximately two years to
9 design, permit and construct. It should be noted
10 that both of these projects were relatively
11 straightforward since there were basically no
12 treatment alternatives thus eliminating the first
13 five steps previously outlined.

14 **Q. WHY HAVE YOU PROPOSED ONLY AN EIGHTEEN MONTH MARGIN**
15 **RESERVE IN SCHEDULE F-5?**

16 **A.** To my knowledge, the eighteen month margin reserve
17 time has never been disputed in a rate application
18 and I therefore thought it inappropriate to present
19 anything different in this instant application. My
20 whole point is that if the Commission truly intends
21 the margin reserve time period to account for the
22 time required for a utility to implement its next
23 phase of water and/or wastewater treatment capacity,
24 that it consider a margin reserve time period much
25 greater than eighteen months, and that it be a

1 function of the source of supply and the complexity
2 of the water and/or wastewater treatment process and
3 the effluent disposal methods. With the continued
4 increased cost of constructing facilities in
5 conjunction with stricter environmental regulations,
6 it is very important that the utility be allowed
7 adequate time to study the various alternatives and
8 determine which will produce the lowest rates to its
9 customers while meeting all regulatory issues and
10 requirements.

11 Q. WOULD YOU DESCRIBE THE INFORMATION CONTAINED IN
12 SCHEDULE F-9 IN VOLUME II, BOOK 11 FOR WATER
13 SYSTEMS?

14 A. Schedule F-9 is entitled "Equivalent Residential
15 Connections-Water." This schedule provides the
16 beginning of year, end of year, and average number
17 of ERCs for each of the last five years, including
18 the test year. The source of the data is the
19 company's billing records for actively metered
20 customers. The average growth for the last five
21 years is calculated in column 9 as required.

22 Q. WOULD YOU DESCRIBE THE INFORMATION CONTAINED IN
23 SCHEDULE F-10 IN VOLUME III, BOOK 6 FOR WASTEWATER
24 SYSTEMS?

25 A. Schedule F-10 is entitled "Equivalent Residential

1 Connections-Sewer." This schedule provides the same
2 basic information for the wastewater systems as
3 contained in Schedule F-9 for the water systems.
4 The source of the data is the company's billing
5 records.

6 **Q. IS THERE A SUMMARY OF THE USED AND USEFUL**
7 **PERCENTAGES AND THE ASSET ACCOUNTS TO WHICH THEY ARE**
8 **APPLIED FOR THE WATER AND WASTEWATER SYSTEMS?**

9 A. Yes. A summary of the non-used and useful
10 percentages by asset account is contained in Volume
11 I, Book 1 of 4 behind tabs "W-Schedule F" and "WW-
12 Schedule F".

13 **Q. DID YOU CALCULATE THE NON-USED AND USEFUL**
14 **PERCENTAGES CONTAINED IN THE SUMMARY?**

15 A. Yes, I did.

16 **Q. MR. HARTMAN, DO YOU HAVE ANY ADDITIONAL TOPICS YOU**
17 **WISH TO DISCUSS?**

18 A. Yes. I wish to discuss the service life of R.O.
19 permeators as they relate to the Burnt Store water
20 system. Typically, R.O. permeators would be
21 classified in NARUC Account 320.3, Treatment Plant
22 Equipment, which has a depreciation life of twenty
23 two years. R.O. permeators should be accounted for
24 in a separate NARUC Account 320.35 and a five year
25 depreciation life should be authorized.

1 Q. WHY IS FIVE YEARS A MORE APPROPRIATE DEPRECIATION
2 SERVICE LIFE THAN TWENTY-TWO YEARS?
3 A. It is the intent of depreciation to recover invested
4 capital in a particular asset over the useful life
5 of the asset. According to Section 25-30.140,
6 F.A.C., Account 320 has an "accepted service life"
7 of twenty two years for a "Large Utility (Class A
8 & B)." This accepted service life grossly
9 overstates the "useful life" for R.O. permeators
10 which must be considered in deriving depreciation
11 expense.
12 Q. YOU STATE THAT FIVE YEARS IS A MORE APPROPRIATE
13 USEFUL LIFE FOR R.O. PERMEATORS. WHAT EVIDENCE DO
14 YOU HAVE IN SUPPORT OF THIS ASSERTION?
15 A. First, the average service life of R.O. permeators
16 is a site specific condition and is subject to the
17 recommendation of the permitting engineer and the
18 manufacturer of the permeators.
19 Q. I SHOW YOU EXHIBIT ___ (GCH-1) UNDER COVER PAGE
20 ENTITLED "FLORIDA PUBLIC SERVICE COMMISSION
21 METHODOLOGY FOR DETERMINING THE AVERAGE SERVICE LIFE
22 FOR R.O. PERMEATORS." WAS THIS EXHIBIT PREPARED BY
23 YOU OR UNDER YOUR DIRECTION AND SUPERVISION?
24 A. Yes, it was.
25 Q. COULD YOU BRIEFLY DESCRIBE THIS EXHIBIT?

1 A. Yes, this exhibit is a copy of a letter from Mr.
2 Robert J. Crouch, Engineering Supervisor of the
3 Florida Public Service Commission which confirms
4 that "the 22 years average life for NARUC account
5 320.3 Water Treatment Equipment is not appropriate
6 for Reverse Osmosis equipment." R.O. permeators can
7 have a useful life of three to eight years depending
8 on the type of reverse osmosis process. The useful
9 life is primarily a function of the quality of the
10 raw water and numerous other quantitative and
11 qualitative factors. In the case of Burnt Store,
12 I recommend that a five year service life be used.

13 Q. **DO YOU KNOW WHAT THE AVERAGE SERVICE LIFE IS FOR**
14 **R.O. PERMEATORS USED BY OTHER UTILITIES?**

15 A. Yes, I have contacted various investor-owned and
16 publicly owned utilities which operate R.O.
17 facilities in Florida. The following is a summary
18 of the results of those contacts.

19	Palm Coast Utilities Corp.	5 years
20	Sailfish Point Utilities	4 years
21	City of Sarasota	5 years
22	City of Cape Coral	5 years
23	Island Water Assoc. (Sanibel)	7 years
24	Greater Pine Island Water Assoc.	5 years
25	Indian River Co.	6 years

1 Q. I SHOW YOU EXHIBIT _____ (GCH-2) UNDER COVER PAGE
2 ENTITLED "LETTER FROM PALM COAST UTILITIES
3 CORPORATION." DO YOU RECOGNIZE THIS LETTER?
4 A. Yes, I do.
5 Q. COULD YOU BRIEFLY DESCRIBE EXHIBIT _____ (GCH-2)?
6 A. Exhibit _____ (GCH-2) is a copy of a letter to me
7 from Palm Coast Utilities Corporation which confirms
8 that the use of the five year service life for R.O.
9 permeators is appropriate. As you can see, the
10 recommended five year service life is a reasonable
11 period to account for the depreciation of the
12 reverse osmosis permeators.
13 Q. DOES THAT CONCLUDE YOUR DIRECT TESTIMONY?
14 A. Yes, it does.
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FLORIDA PUBLIC SERVICE COMMISSION
METHODOLOGY FOR DETERMINING THE
AVERAGE SERVICE LIFE FOR R.O. PERMEATORS

Commissioners:

THOMAS M. BEARD, CHAIRMAN
BETTY BASLEY
J. TERRY DEASON
SUSAN F. CLARK
LUIS J. LAUREDO



DIVISION OF WATER &
WASTEWATER
CHARLES HILL,
DIRECTOR
(904) 488-8482

Public Service Commission

April 7, 1992

Chuck Bliss, Hartman and Associates, Inc.
210 E. Pine Street
Suite 1000
Orlando, Florida 32801

Dear Mr. Bliss,

We in the Florida Public Service Commission engineering staff recognize that the reverse osmosis permeators have a limited life span. Depending upon the applications and the permeator, the average service life typically ranges from 3 to 8 years. Other treatment plant components have service lives more closely approximating the guidelines set forth in the National Association of Regulatory Utility Commissions (NARUC) system of accounts. We believe that the engineer of record should consider information which would enable us to compute the average service life for each application on a case by case basis. The FPSC engineering staff recognized that the 22 years average life for NARUC account 320.3 - Water Treatment Equipment is not appropriate for Reverse Osmosis equipment. Our recommended service life takes into consideration the manufacturers suggested service life as well as the operating conditions of the particular water treatment system under study. (see FPSC Order No. 25092, Page 23 dated 9/23/91, Sailfish Point Utility Corp)

The NARUC system of accounts must be updated and new account numbers assigned to Reverse Osmosis equipment. More realistic service life estimates must be created. Until that time, the FPSC must make engineering decisions on service life based upon our best engineering judgement.

Sincerely,

A handwritten signature in cursive script that reads "Robert J. Crouch".

Robert J. Crouch, P.E.
Engineering Supervisor

LETTER FROM PALM COAST UTILITIES CORPORATION

Palm Coast Utility Corporation
A Subsidiary of ITT Corporation

April 7, 1992

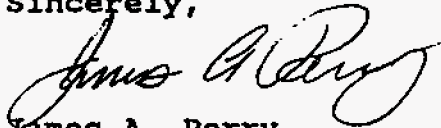
Jerry Hartman
Hartman and Associates
201 East Pine Street
Suite 1000
Orlando, FL 32801

Dear Jerry:

In discussions with Chuck Bliss about our new Membrane Softening Water Treatment Facility the question arose as to the life we would be expecting from the membrane filters. Based upon information provided by the membrane manufacturer "Filmtec" we expect the membranes to have a working life of five years. We will be depreciating the membrane filters over the expected five year period.

If you need additional information or have questions please contact me at your convenience.

Sincerely,



James A. Perry
Vice President of Finance

✓cc: C. Bliss

(JHARTMAN.LTR)