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BEFORE
THE PUBLIC UTILITIES COMMISSION OF OHIO

In the Matter Of the Application Of Cincinnati Bell Telephone Company For Approval of a Retail Pricing Plan Which May Result in Future Rate Increases and for a New Alternative Regulation Plan	:	Case No. 96-899-TP-ALT

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Prepared Testimony
of
Christopher Kotting
Accounts and Audits Division

Staff Exhibit _____

1

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

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4 A. My name is Christopher Kotting. I am employed by the Public Utilities
5 Commission of Ohio, 180 East Broad Street, Columbus, Ohio
6 43266-0573.

7

8 2. Q. What is your current position and what are your responsibilities?

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10 A. I am a Public Utilities Administrator I in the Accounts and Audits
11 Division of the Utilities Department. I am responsible for supervising
12 and reviewing the results of the Staff's investigations analyses as they
13 pertain to rate cases as well as other special projects. In the present
14 case, this includes the Staff's recommendations regarding depreciation
15 issues, both for the Staff's recommended revenue requirement, and
16 costing purposes.

17

18 3. Q. What are your qualifications for this position?

19

20 A. I came to the Commission as a Utility Examiner I in June of 1982,
21 working in the depreciation area of what was then the Accounts and
22 Valuation Division. I was promoted to a Utility Examiner II in October
23 of 1982 as a Depreciation Analyst. In September, 1984, I was promoted
24 to Utility Examiner III. Since August of 1987, I have served as a Public
25 Utilities Administrator I in Accounts & Audits. I have received my BA
26 from the Ohio State University, where my coursework included
27 statistics and mathematics. I have completed Programs II, III, IV, E and

F conducted by Depreciation Programs, Inc. In addition I have attended various seminars in depreciation, rate case procedures, utility accounting, regulatory theory and practice, and computer analysis sponsored by this Commission, the State of Ohio, the Ohio Telephone Association, the National Regulatory Research Institute, and the National Association of Regulatory Utility Commissioners. I am a Senior Member of the Society of Depreciation Professionals, and a member of the NARUC Staff Subcommittee on Depreciation. As a member of that Subcommittee I wrote sections of the NARUC manual Public Utility Depreciation Practices relating to life estimation. I have prepared and presented testimony in hearings on numerous cases before this Commission.

4. Q. What is the purpose of your testimony in this proceeding?

A. The purpose of my testimony is to present corrections to the Staff Report as published, and to respond to the objections to the Staff Report posed by the various parties to this proceeding.

5. Q. Would you please detail the objections to which you will be responding?

A. Yes, my testimony will respond to the following objections:
Cincinnati Bell Telephone Objection 92
Office of Consumer's Counsel Objections 5 and 32

6. Q. You indicated that you are testifying with regard to the Staff's depreciation recommendations for both revenue requirement and costing purposes. Could you explain how those two recommendations relate to one another?

A. Certainly. Before I start describing the Staff's position, I'd like to take a moment to define the terms I'm going to be using. Other parties may not like or agree with my definitions, but at least this will help to make my meaning clear.

An Average Service Life is simply the average of the full service lives of the individual units that make up a group of property. However, when most people talk about an Average Service Life, particularly in a ratemaking proceeding, they actually mean an Account Average Service Life, which is the average of the service lives of all the property currently in service in a given plant account. This is the life figure used in calculating the depreciation accrual rates, which are in turn used to calculate depreciation expense. A Projection Life is also an average service life, but is the expected average service life of new units being installed today (or as close to today as possible). It is usually represented by a Probable Life Curve, which represents the effects of retirements over time upon an original investment.

Often, the Projection Life is a part of the calculation of the Account Average Service Life. In a calculation usually referred to as a Generation Arrangement, the history of the plant currently in service in an account is summarized. However, since the full service life of the

plant cannot be known (because it is still in service), a portion of the Probable Life Curve for the associated Projection Life is used to forecast the future of the current investment in the account. This is the manner in which the Staff's Recommendation of the Account Average Service Lives for setting the depreciation accrual rates was determined.

The Staff has recommended the use of the Projection Life itself for the purpose of calculating the TELRIC. This is the linkage between the Staff's TELRIC recommendation and its depreciation rates recommendation, the Projection Lives arrived at from the 3-Way Meeting process we used as part of the calculation of the Account Average Service Lives used in calculating the depreciation rates and also are the Staff proposed lives for the TELRIC calculation.

7. Q. Turning now to the Applicant's Objections, CBT Objection number 92 objects to "...the Staff's recommendation for the use of costs including depreciation and cost of capital, which do not reflect forward looking costs and may result in the confiscation of property used and useful in rendering reliable service." Will you be responding to the cost of capital portion of this objection?

A. No, I will not.

8. Q. With regard to the depreciation portion of that objection, have you read the testimony of Mr. Mette regarding this issue, and can you comment?

A. Yes, I have. Mr. Mette seems to conclude that the projection lives proposed by the Staff are inappropriate based on two factors, their purpose in the 1997 triennial represcription and a perceived difference between the factors underlying the projection lives and the lives to be used in a TELRIC study. I will address each of these.

I agree with Mr. Mette that the "purpose" of the projection lives in the triennial represcription is to set service lives to be used in determining depreciation expense. However, that is where my agreement ends. He states that the function of the represcription is to "establish depreciation expense based on the traditional use of assets in rendering useful service.", as though the actual future of the plant in question is ignored. This seems to miss the point that the purpose of depreciation is to allocate "the original cost of depreciable assets...over the normal useful life of the property in a systematic and rational manner." This means that all forces that can cause the retirement of an asset, whether physical, economic, regulatory, or obsolescence play a part in the determination.

If this were not the case, the projection lives would certainly be substantially longer than they are, because the company wouldn't have taken the time of literally dozens of subject matter experts over the past 15 or so years to explain to the Staffs of both this Commission and the FCC how the estimates of projection lives must be shortened in the face of coming competition. As I noted earlier, a Projection Life is a best estimate of the service life of newly installed plant, given the

environment in which it will operate, and the forces of retirement, including economic forces, that will operate upon it.

If Mr. Mette's testimony truly reflects the Company's position, then I should expect that the projection lives that they propose in the next represcription will be closer to the results obtained by Dr. Ileo.

With regard to the "purpose" of the Projection Lives in a triennial represcription, while it is true that their purpose in that venue is the determination of a largely historical average service life, that is not the only purpose to which a best estimate of the service life of new plant installations can be put. Given that a properly determined Projection Life must encompass the whole range of forces of retirement, including the "...physical life, technological obsolescence, and the ability of the asset to generate revenues in a competitive, forward looking environment.", It is an appropriate figure to use for other "forward looking" life estimates as well.

9. Q. Have you reviewed the supplemental Testimony of Robert C. Coogan with regard to the use of the recommended Projection Lives for TELRIC purposes?

A. Yes, I have.

10. Q. Do you have any comment?

A. Yes, I do. While I agree with the factual statements Mr. Coogan makes in his Supplemental Testimony, I cannot agree with his conclusions. In fact, I believe that his facts support exactly the opposite conclusion.

His discussion of Depreciation and Average Service Life appearing at the bottom of Page 2 of his Supplemental Testimony, while correct, doesn't seem to relate to the Staff's recommendation, which was to use Projection Lives, rather than Average Service lives.

On the bottom of Page 3, Mr. Coogan presents a table of the Projection Lives arrived at in the past four FCC Represcriptions, noting that each represcription resulted in a successively shorter Projection Life. From this he concludes that the Projection Lives are "not sufficiently forward-looking".

I note a number of things about the results shown in the table. One is that over the nine years intervening between the represcriptions, the projection lives have dropped by six to eleven years. This would indicate to me that, as competition has become more of a factor in the service life on new installations of plant, making economic factors more and more critical in the determination of the life of that new plant, the Projection Lives arrived at have kept pace with this effect.

There seems to be an assumption that "purely economic lives" must, by definition, be shorter than a Projection Life that takes <u>all</u> the forces of retirement into account. This does not make sense. A piece of switching equipment that no longer provides service because it has

been the victim of a lightning strike, and is physically unable to provide service is just as much at the end of its "economic life" as a similar piece of equipment that must be replaced by a demand for a new service.

Statistically, the forces of retirement are additive. In other words, the chance of a given piece of equipment being removed from service in a given time period increases with the number of forces of retirement affecting it. So, how can a life determined by observing only one force of retirement (economics) be shorter than one which takes all forces of retirement into account?

The fact is, the TELRIC rules are vague with regard to what is meant by "forward looking" life estimates for "state of the art" equipment. The Staff is of the opinion that the most reasonable definition is a forward looking life estimate for equipment being put into service at the present time. The Staff believes that the Projection Life is the best available estimate of that life.

11. Q. Turning to the objections of the Ohio Consumer's Counsel, their Objection number 5 states that the parameters from the 1997 triennial represcription meeting ..."should neither be used as the basis for determining the Company's revenue requirement, nor as inputs into the Company's forward-looking cost studies..." In addition, their Objection number 24 objects to the Staff's recommended depreciation expense, "... to the extent it reflects the results of the Company's 1997 triennial review...", and their Objection number 32 objects to the Staff's

reserve deficiency calculation on the same basis. Do you have a response to these objections?

A. Yes, I do. These objections appear to be linked, so I shall address them together. First, it appears from Dr. Ileo's testimony that he is recommending the use of the Account Average Service Lives resulting from the 1994 study for TELRIC purposes. As I have stated earlier, Projection Lives are the appropriate figures for use in a TELRIC study, since they are forward-looking. In addition, reviewing the testimony of Dr. Ileo, I notice a number of errors of fact and of theory.

First and foremost, he refers to the Staff recommendations as a "negotiated settlement" in the triennial represcription. This mischaracterizes the triennial represcription process, at least as it has proceeded in Ohio, and the result. Historically, the FCC has been required to get input from the relevant State commissions in any proceeding to determine interstate depreciation accrual rates. The triennial represcription process has been the vehicle for obtaining that input. In this process, the Company must submit to our staff the same data it gives to the FCC staff as part of its filing. We perform an analysis of the submitted data, and prepare a summary of our results. The FCC Staff does the same. These results are shared between the two Commissions, and with the Company. Generally there has been a "3-Way Meeting" in which representatives of the FCC Staff, the PUCO Staff, and the Company meet to discuss our respective conclusions, and the reasons for them. In this case, the differences were significant to start with, but as a result of two days of discussion and a conference call

to nail down a few details, an agreement was reached as to appropriate Projection Live and Future Net Salvage parameters.

Without going into a legal argument, here are the reasons why this is not a "negotiated settlement":

1) The PUCO Staff does not have the authority to enter into a "settlement" on behalf of the Commission.
2) Even if the PUCO Staff did have such authority in this situation, that is not our purpose in the process. The PUCO Staff's purpose in the process is to provide our input into the FCC's decisionmaking. A "meeting of the minds" is desired, however, we can and have at times "agreed to disagree".
3) Although it is referred to as a "3-Way meeting", there is no requirement that there be any agreement. As noted earlier, sometimes not even a "2-Way" agreement between the commission staffs has been reached.

12. Q. Do you note other errors of fact and or theory in Dr. Ileo's testimony?

A. Yes. Starting on Page 10 of his testimony, Dr. Ileo appears to be laboring under the misapprehension that depreciation accrual rates in Ohio are set on a Remaining Life calculation. This is not correct. Rather than using a Remaining Life calculation, Ohio uses a Whole Life calculation (specifically, a Straight Line-Whole Life-Equal Life Group calculation), where the formula is DR=(100%-NS)/ASL, where DR is the Depreciation Rate in percent, NS is the Average Net Salvage, and the ASL is the Average Service Life. Also, on Page 10, he appears to be

using an Average Net Salvage figure in his Remaining Life calculations, when a Future Net salvage figure should be used. What this means, in effect, is that his comparisons of accrual rates on his Schedule 3 are based on comparing two different calculations, on two different bases, with one of them calculated incorrectly.

I also note that Mr. Ileo appears to be using Average Service Lives in his analysis of the TELRIC recommendations, which, as I stated earlier, is improper. The average service life is largely derived from the history of existing plant, and thus is inappropriate for use in a forward-looking TELRIC calculation.

13. Q. Do you have other, more specific concerns?

A. Yes. in his discussion of the application if the Fisher-Pry theory to Digital Switching, Dr. Ileo makes a comparison to the results of his "life-span analysis". It is really an "apples-to-oranges" comparison. The information that Dr. Ileo started out with appears to have been the initial submission of the Average Year of Final Retirement calculation. The Fisher-Pry model is a "Technology Substitution" model. It seeks to forecast the rate at which a new technology will come to dominate the environment after its introduction. It can be, therefore, an appropriate model in attempting to determine the Projection Life of new installations of current state-of-the-art technology. However, the Average Year of Final Retirement calculation entirely relates to the existing, in service, plant. It is useful in determining an average service life, and some of the information in it (the projected dates of the

retirement of the most current vintages) can be used as a starting point in determining a Projection Life (if that data is limited to installations of the current technology, rather than repairs of existing systems), but the results of a life-span analysis based on AYFR data are not comparable to a Fisher-Pry projection.

In addition, Dr. Ileo's life-span analysis is incomplete. In order to determine an Average Service Life or a Projection Life from AYFR data, interim retirements must be accounted for. Over the life of any installation of plant, portions of that plant are likely to be replaced, above and beyond the normal maintenance of the plant. In this event, some of the original investment is retired, and new investment is capitalized. This has a single impact on the Projection Life (the expected retirement of a portion of the original investment), and a double impact on the Account Average Service Life (since the newly installed plant will only serve over the remaining life of the original installation). Had he taken this into account he would have reached a shorter historical average service life.

14. Q. While we are discussing digital switching, have you reviewed Dr. Ileo's use of a Gompertz-Makeham analysis for Digital Switching?

A. Yes. I feel I must clarify that Gompertz-Makeham is not a method of analysis, it is simply a formula for mathematically expressing a survivor curve. Dr. Ileo appears to have calculated a Gompertz-Makeham based curve shape based on historical data for Account 2212. In addition to the difficulties I have with his applying a distinctly

historical analysis to a forward-looking Projection Life, absent a statement of the variables he used in his calculations, I cannot speak to how well his curve fits the actual historical data.

15. Q. What about Dr. Ileo's discussion of cable accounts?

A. Dr. Ileo compares the network composition between metal and fiber cable as a percentage of the investment and concludes that "Copper remains as the company's predominant choice." (Page 12, Line 30). I don't see how he reached his conclusion based on the table in his testimony. By comparing percentages of embedded plant between Copper and Fiber cable, noting that most of the embedded investment is in copper cable, he concludes that there is "no indication that its copper investments in Ohio are rapidly being replaced with fiber." In effect, Dr. Ileo refutes the forecast that Fiber will be rapidly replacing Copper by stating that "it hasn't happened yet".

Looking at the composition change from 1993 to 1996, in every account other than Buried Cable, the percentage of the total investment that represents Copper cable is going down, while the percentage of total investment that represents Fiber cable is going up. This indicates to me that Fiber cable has indeed become the "the company's predominant choice". While Buried Cable still shows growth in Copper Cable, this is hardly a refutation of the Fisher-Pry model, since that model makes no claims of any ability predict before a new technology reaches 5 percent penetration.

In addition, a comparison based on investment costs is itself misleading because, on an investment per unit of capacity basis, fiber has a far lower capital cost.

16. Q. Dr. Ileo's Schedules also offer a calculation of "Plant Survival and Age Characteristics" for various accounts. Can you please comment on these?

A. Yes. For each of the six accounts shown, Dr. Ileo presents the vintage year for each vintage in the study, the surviving investment in dollars, and the proportion surviving from each vintage from CBT's depreciation study. However, what he does with that information is puzzling. I believe what he is attempting to calculate is an Account Average Service Life, but there are problems.

17. Q. Can you explain the problems?

A. I will try. First, he seems to be allocating a full year of service life to the first vintage, when as of the study date, it would have only served half a year. therefore, each of his "PS Curve Area at Average Age" figures should be shorter by .5 years, as should the bottom figure in his Column 5. However, a more fundamental problem is that he seems to be attempting to calculate some kind of a life figure by summing the proportion surviving figures for each vintage. This doesn't comport with any method of calculating a service life I have ever encountered, whether historical or forecast. It is as though he has substituted the proportion surviving in successive generations of plant for a properly

derived survivor curve. It doesn't work, because the proportion surviving in each successive vintage has no mathematical relationship to the proportions surviving from earlier or prior vintages. What he is calculating is neither an Account Average Service Life, nor a Projection Life. Whatever the resulting figures are, they are not life figures that would apply as either a Projection Life or an Account Average Service Life.

18. Q. Can you summarize briefly your concerns with Dr. Ileo's position and analysis?

A. Yes. He seems to be consistently making inappropriate comparisons (Whole Life to Remaining Life accrual rates, Projection Lives to Account Average Service Lives, historical analyses to forward looking forecasts). He mischaracterizes life estimation theory and practice, as well as regulatory practice in Ohio. In addition, his advocacy of historically determined average service lives from a prior prescription of depreciation rates, for use in a TELRIC study seems to contradict every understanding of what "forward looking" means.

19. Q. Do you have any further comments regarding the Depreciation related aspects of the Staff Report?

A. Yes. On Page 217 of the Staff Report, Attachment 2, there appear to have been some typographical errors in the table. Specifically, for Account 2232 - Analog Circuit Equipment, the Future Net Salvage should be -5%, for Account 2411 - Poles, the Future Net Salvage should

be -97%, and for Account 2423 - Buried Cable - Nonmetallic, the Projection Life should be 25 years.

20. Q. Does this conclude your testimony?

A. Yes it does.

CERTIFICATE OF SERVICE

I hereby certify that a true copy of the **TESTIMONY OF CHRISTOPHER KOTTING** was served by regular U.S. mail, postage prepaid, or hand-delivered, upon the following parties of record, this 19th day of March, 1999.

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