BEFORE THE
FLORIDA PUBLIC SERVICE COMMISSION

DOCKET NO. 000121-TP

In the Matter of:

INVESTIGATION INTO THE ESTABLISHMENT OF OPERATIONS SUPPORT SYSTEMS PERMANENT PERFORMANCE MEASURES FOR INCUMBENT LOCAL EXCHANGE TELECOMMUNICATIONS COMPANIES.

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VOLUME 4
PAGES 598 THROUGH 807

PROCEEDINGS:	HEARING
BEFORE:	CHAIRMAN E. LEON JACOBS, JR. COMMISSIONER J. TERRY DEASON COMMISSIONER LILA A. JABER COMMISSIONER BRAULIO L. BAEZ COMMISSIONER MICHAEL A. PALECKI
DATE:	Thursday, April 26, 2001
TIME:	Commenced at 9:30 a.m.
PLACE:	Betty Easley Conference Center Room 148 4075 Esplanade Way Tallahassee, Florida
REPORTED BY:	TRICIA DEMARTE Official FPSC Reporter
APPEARANCES:	(As heretofore noted.)

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WITNESSES

EXHIBITS

PROCEEDINGS

(Transcript follows in sequence from Volume 3.)

CHAIRMAN JACOBS: And we come to Dr. Mulrow.

MR. LACKEY: BellSouth calls Dr. Mulrow to the stand.

(Discussion off the record.)

CHAIRMAN JACOBS: Go right ahead.

MR. LACKEY: Thank you, Mr. Chairman.

EDWARD J. MULROW

was called as a witness on behalf of BellSouth Telecommunications, Inc., and, having been duly sworn, testified as follows:

DIRECT EXAMINATION

BY MR. LACKEY:

Q Would you please state your name and address for the record.

A My name is Edward J. Mulrow. My business address is 1225 Connecticut Avenue, Northwest, Washington, D.C.

Q By whom are you employed, Dr. Mulrow?

A I'm employed by Ernst & Young, L.L.P.

Q Dr. Mulrow, did you cause to be prefiled in this proceeding direct testimony in question and answer form consisting of 24 pages?

A Yes, I did.

Q And was that direct testimony accompanied by two exhibits?

A Yes, it was.

Q And did you also cause to be filed in this proceeding 35 pages of prefiled testimony in question and answer form that was erroneously labeled as direct testimony again?

A Yes. It was supposed to be rebuttal testimony, but yes, I did.

Q Other than correcting the label of the rebuttal testimony, do you any changes or corrections to your prefiled direct or rebuttal testimony?

A No, I don't.

MR. LACKEY: Mr. Chairman, could I have the next exhibit number, which I believe is 20, for Dr. Mulrow's exhibits?

CHAIRMAN JACOBS: Very well. Show Composite Exhibit 20 marked as the attachments to Dr. Mulrow's testimony. Is it just the EM-1?

MR. LACKEY: There are two of them; it's EMJ-1 and EMJ-2.

(Exhibit 20 marked for identification.)

BY MR. LACKEY:

Q That's correct, isn't it, Dr. Mulrow?

A Yes. EJM-2 is just a single page.

MR. LACKEY: Mr. Chairman, I'd like to have Dr. Mulrow's testimony included in the record as if given orally from the stand.

CHAIRMAN JACOBS: Without objection, show the

testimony of Dr. Mulrow entered into the record as though read.

BELLSOUTH TELECOMMUNICATIONS, INC.

DIRECT TESTIMONY OF EDWARD J. MULROW, PH.D.

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

DOCKET NO. 000121-TP

MARCH 1, 2001

Q. PLEASE STATE YOUR NAME, WHO YOU WORK FOR, AND YOUR BUSINESS ADDRESS

A. My name is Edward J. Mulrow. I am employed by Ernst & Young LLP as a Senior Manager in the Quantitative Economics and Statistics Group. I have been retained by BellSouth as a statistical advisor. My business address is 1225 Connecticut Ave., NW, Washington, DC 20036.

Q. WHAT IS YOUR PROFESSIONAL EXPERIENCE AND EDUCATIONAL BACKGROUND?

A. My career as a statistical consultant spans over 13 years. While at Ernst & Young, I have been involved in a number of regulatory issues for several telecommunications companies. Prior to my employment at Ernst & Young, I was a senior scientist at Science Applications International Corporation (SAIC) where I was involved in the analyses of current and future defense systems. I also have worked as a senior sampling statistician at the National Opinion Research Center

(NORC) at the University of Chicago, a mathematical statistician for the Internal Revenue Service, and an assistant professor of mathematics for Southern Illinois University. I received a BA in mathematics from Illinois Wesleyan University, an MS in mathematics from the University of Utah, and a Ph.D. in statistics from Colorado State University.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. I am here to address statistical issues contained in the issues list for this docket. I will speak to issues involving the appropriate methodology for determining whether BellSouth is providing parity: 1) to individual ALECs (Tier I), and 2) to the ALEC community as a whole (Tier II). Specifically, these issues are Issues 11 (c) 1,2 and 5, and Issues 12 (c) 1,2 and 5.

I will also address Issue 23, which relates to the necessity of a Competitive Entry Volume Adjustment.

Q. PLEASE SUMMARIZE YOUR TESTIMONY.

A. I generally agree with the statistical methodology proposed in the February 7, 2001 direct testimony of Florida Public Service Commission staff member Paul W. Stallcup. The key points with which I agree are:

1. The appropriate statistical test to use is the Truncated Z when transaction level data is available and a BellSouth retail analog exists.
2. The statistical testing methodology should balance Type I and Type II error probabilities.
3. There should not be a floor on the balancing critical value.
4. The same methodology should be used for both Tier I and Tier II testing.

I will address each of these points in more detail in my testimony.

Q. CAN YOU PROVIDE A BRIEF OVERVIEW OF WHAT WE ARE TRYING TO ACCOMPLISH WITH THE STATISITCAL ANALYIS THAT YOU ARE GOING TO DESCRIBE IN YOUR TESTIMONY?

A. Yes. What we are talking about here is the situation where BellSouth provides a service of some sort to its competitors, the ALECs. BellSouth also, at the same time, is providing a similar, or at least an analogous service, to its own retail operations. The question is whether BellSouth is favoring its retail operations in the provision of the particular service, or whether it is providing the same level of service to its competitors as its provides to itself.

For instance, assume that ALECs purchased widgets from BellSouth and BellSouth also provided widgets to its own retail operations which then used the widgets to provide service to BellSouth's own retail customers. If BellSouth

provided the widgets to the ALECs on a two-day interval every time, and provided the widgets to its own retail operations on a two-day interval every time, then anyone could conclude that BellSouth was providing parity to the ALECs. Similarly, if BellSouth were furnishing the widgets to the ALECs on a one-day interval, and furnishing the widgets to its own retail operations in two days, it would be evident that BellSouth wasn't providing parity, but was providing better service to the ALECs than to its own retail operations. Presumably the ALECs would not be upset with that.

The problem arises when BellSouth, in a given month, provides the widgets to its retail operations on average in two days, and provides widgets to the ALECs, on average, in 2.2 days. The question is whether the difference is attributable to random chance, or whether the difference is attributable to either some systemic problem with BellSouth's operations or some intentional act on BellSouth's part. The purpose of the statistical analysis to provide the tools that the Commission can use to make an informed judgment about whether the difference I just described is something to be concerned about or rather is simply the result of the sample used and therefore meaningless. The specific tool that I am going to describe in my testimony is a test that can be applied whenever the Commission wishes to compare two outcomes to determine whether any perceived difference in the outcomes is real or not. While the test is a statistical one, and involves statistical concepts, I believe that what we have is very workable and understandable.

Issue 11 (c) 1 – What is the appropriate statistical methodology?

Q. WHAT IS THE APPROPRIATE STATISTICAL METHODOLOGY THAT SHOULD BE EMPLOYEED TO DETERMINE IF BELLSOUTH IS PROVIDING COMPLIANT PERFORMANCE?

A. The appropriate methodology to use is called the Truncated Z method with error probability balancing. Dr. Colin Mallows, a recently retired statistician from AT&T Research Labs, created the Truncated Z statistic, and then Dr. Mallows together with Ernst & Young statisticians, including myself, developed the actual Truncated Z methodology. The methodology is distinguished from the statistic in that we jointly took Dr. Mallows' formula that yielded the statistic and complimented it with such things as the error probability balancing. The collaborative effort was the result of a request by the Louisiana Public Service Commission (LPSC), lasted over nine months, and concluded in the filing of a "statisticians' report" with the LPSC in September of 1999 (revised February 2000 -- attached as Exhibit No. EJM-1).[1]

Q. CAN YOU EXPLAIN IN LAYMAN'S TERMS, WHAT THE TRUNCATED Z METHODOLOGY DOES?

[1] Typographical error corrections are attached as Exhibit No. EJM-2.

A. I can. Remember that what we are doing is comparing two outcomes to see if there is any difference. Therefore, one of the first things that must be done is to separate all of our observations into identical, or substantially identical categories. For instance, lets assume that what we are trying to compare the performance of BellSouth with regard to order completion intervals. That is, we want to know whether the order completion intervals for BellSouth's retail operations are statistically the same as the order completion intervals for the ALECs. You would not want to compare a BellSouth retail residential order that requires a dispatch with an ALEC resale residential order that did not require a dispatch. The requirements for provisioning the different orders would be different.

Obviously you can carry this concept of granularity to an extreme, but the point is that the first thing we have to do is to separate the individual observations into enough categories so that the comparison we are going to make is as close to being an apples-to-apples comparison as we can reasonably get it.

In our work, we call these classifications "cells." For any particular measurement contained in the BellSouth plan, there could thousands of these "cells." Once we have these cells identified and populated with observations, we apply statistical tests to the information in the cells to put the conclusions we draw about every cell on a common footing. To make this illustration as clear as possible, I will assume that I have a cell for residential dispatched orders during the first half of the month. For illustrative purposes, I will assume that BellSouth has one observation that

took 2 days, and the ALECs had a single observation that took 2.2 days, the times I used above. We would then apply a statistical calculation to those two observations, as is described in Appendix A of Exhibit EJM-1 (attached), and we would derive a value, a "cell z-value" of -0.67. The calculation of this value is not subject to a simple explanation, but is done through standard statistical analysis with which no statistician should disagree. Obviously, as the number of observations in the cell increases, the "cell z-value" may change.

I have described briefly what we would do for the individual cell. In actuality, we would make this same type of calculation for every cell (or more plainly stated, for each of the apples-to-apples comparisons that we had identified in connection with the specific measurement).

Q. WHAT HAPPENS NEXT?

A. When we are done, we would have a large number, potentially thousands of numbers, each representing the "cell z-value" for each individual cell. The "cell z-values" would be either positive, or negative, or in some cases would be zero. The cells that have a negative "cell z-value" would represent those cells where, continuing my example from above, it appears that the interval for the ALECs was longer than for BellSouth. The cells that had a positive "cell z-value" would represent those cells where, again continuing my example, it appears that the

interval for the ALECs was shorter than for BellSouth. Where the "cell z-value" was zero, there would be no apparent difference in the intervals.

Q. WHAT DO YOU DO WITH THESE THOUSANDS OF "CELL Z-VALUES?"

A. We move to the next step in the analysis, which is to analyze the "cell z-values" using a normal distribution curve. If BellSouth were providing parity, one would expect that the distribution of the values over the entire range of the cells would look just like the normal bell curve with which we should all be familiar.

This is where the idea of "truncating" the z statistic comes into play. We have z statistics for every cell. Some are positive, meaning they fall on the right side of the normal bell curve. Some are negative, which means that they are on the left side of the normal bell curve. One concern we would have is that if all of the z-values were left in the analysis, the positive z-values, if there were enough of them, might mask one or more significant negative z-values when averaging the z-values across all cells. That is, if there were a thousand cells, and 800 of them had positive z statistics, the sheer number of positive observations might hide significant negative values. Therefore, in order to prevent this, the Truncated Z methodology simply sets every positive value to zero, hence the "truncation." By setting the positive observation to zero, it forces us to concentrate on the negative values on the left side of the bell shaped curve.

Q. WHAT DO YOU DO NEXT?

A. Remember we are now only concentrating on the lower half of the normal bell-shaped curve, and what we are going to try to do, in layperson's terms, is to determine how far the observations we have made fall from the normal bell curve I have been talking about. You would not expect the observations to lie down perfectly on the curve. There are going to be variations and the question is how much is too much. Consequently, the next step is to calculate a Z statistic for all the cells, including those formally positive cells whose value has now been set to zero. Assuming that a statistician understood the purpose of truncating the positive values, and the selection of the cells weights, the calculation of the Z statistic for the truncated observations (the positive ones set to zero and the remaining negative observations left as they were found) should not be subject to dispute. This calculation will leave you with a single number that represents the truncated Z statistic value for the particular measurement contained in BellSouth's plan for which the observations were made.

Q. DOES THIS CALCULATED Z STATISTIC BY ITSELF REPRESENT A STATISTICALLY SIGNIFICANT DIFFERENCE IN THE PERFORMANCE BELLSOUTH PROVIDED TO ITS RETAIL OPERATIONS AND THE ALECS?

A. No, generally you can't draw any conclusion from the Z statistic itself. It is just a number. However, if the number turns out to be positive (which, even though it seems illogical because of changing the positive values to zero, could occur) you could just ignore the result. If it is negative, however, you still have to have a number to compare the Z statistic to, in order to determine whether the difference represented by the Z statistic is significant.

Q. ONCE YOU HAVE THIS NEGATIVE Z STATISTIC, THEN, WHERE DO YOU GET THE NUMBER THAT IT IS COMPARED WITH IN ORDER TO DETERMINE WHETHER THERE IS A STATISTICALLY SIGNIFICANT DIFFERENCE IN THE SERVICE PROVIDED TO THE ALECS AND THE SERVICE BELLSOUTH PROVIDES TO ITSELF WITH REGARD TO THE SPECIFIC ITEM THAT YOU ARE MEASURING?

A. There are several ways of determining the number that is used for comparison. Given the constraints of a self-effectuating system, the best way, in my opinion, is to use what we call "Error Probability Balancing." Using this approach allows the observer to determine both that the observed difference is statistically significant, and that it is material. I will discuss this in more detail subsequently in my testimony.

Q. WHAT ARE SOME OF THE OTHER WAYS?

A. The most common statistical method used is what we call the "fixed critical value." Let me explain what this is, and why it shouldn't be used here. One of the main issues statisticians have to face in determining whether there is a statistical difference between two numbers is controlling the probability that the observed difference indicates a failure to provide parity when in fact parity has been achieved. We call these kind of errors, where it appears that there is a statistically significantly difference when there is in fact not one, a Type I error. To illustrate this point, consider the situation where a person is flipping a coin. Everyone knows that on average, heads should come up the same number of times as tails. Suppose you flip the coin five times, and just as a matter of chance, tails comes up every time. You might then conclude that something is wrong with the coin, that the coin is somehow biased toward tails because it is not acting in accord with what we know to be correct. In fact, the coin may be perfectly okay, and what we are seeing is simply a Type I error.

One way, then, to determine the "critical value" that is to be compared to the Z statistic that we have been talking about is to determine what the acceptable level of a Type I error is, and when that is done, a "critical value" can be calculated using standard statistical tools. For instance, if you wanted the probability of a Type I error occurring limited to less than a 5 percent chance, the calculated "critical value," based on a standard normal distribution, would be –1.645. Every statistician in the world would agree with the calculation of that number given the criteria we have laid out.

Q. WHAT WOULD YOU DO WITH THIS "CRITICAL VALUE" IF THAT WERE THE APPROCH TAKEN?

A. This is what is called a "fixed critical value." All you would have to do is compare the truncated Z statistic that we obtained as described above, with this value. If the truncated Z statistic were positive or closer to zero than the "fixed critical value" then a statistician would conclude that the observed difference was not statistically significant and that there was no actual difference between the observed measurements.

Q. IF IT IS THAT SIMPLE TO USE A "FIXED CRITICAL VALUE" WHY DON'T WE JUST AGREE TO THAT APPROACH?

A. The problem is that while the "fixed critical value" can tell you whether the observed differences are statistically significant, it cannot tell you whether the differences are material. Let's use an example. Suppose the observed interval for residential dispatched orders furnished to BellSouth's retail operations is 4.1 days. Suppose the observed interval for the ALEC is 4.3 days. Using a "fixed critical value" it might be possible to get a truncated Z statistic for these measurements that was less than –1.645, that is, that was much larger in magnitude (farther from zero in the negative direction). That would tell you that the two numbers were statistically different. However, someone would then have to look at the actual

numbers, 4.1 days versus 4.3 days, and determine whether the difference is material. Did it really make a difference to the ALEC or the ALEC's customers that it took two-tenths of a day longer, on average, to provide service to the ALEC's customer? Maybe it does and maybe it doesn't. Using the "fixed critical value" cannot answer that question, which means that another analysis will have to be made in each case where there is a statistically significant difference observed. This is not practical for a self-effectuating system that is suppose to determine parity on a timely basis.

Q. DOES THE USE OF THE "ERROR PROBABILITY BALANCING METHOD" FIX THIS PROBLEM?

A. It does. Using "Error Probability Balancing" we determine a "balancing critical value" which allows you to determine whether an observed difference is statistically significant and material all at the same time. Therefore there is no need for another analysis and no dispute as to whether two-tenths of a day is material or not. The application of the "balancing critical value" provides both answers.

Q. CAN YOU TELL US MORE ABOUT THE DIFFERENCE BETWEEN THE "FIXED CRITICAL VALUE" AND THE "BALANCING CRITICAL VALUE?"

A. Certainly. I have already described how the "fixed critical value" is determined. The "balancing critical value" introduces another dimension and that involves what

we call Type II errors. A Type II error is where the observed data suggests that parity has been achieved, but in fact it has not. In the simplest terms, a Type I error hurts the ILEC because it says the ILEC didn't provide parity when in fact it did. A Type II error hurts the ALEC because it says that BellSouth provided parity when it did not. What the "Error Probability Balancing" method does is make the probability of committing either of the two different types of errors equal. You will recall when I was discussing the "fixed critical value" I talked only about having the probability of a Type I error at a level less than 5 percent. With a "balancing critical value," we are saying that the number we are using to compare to the Z statistic reflects the probability that there will be just as many Type II errors as there are Type I errors. In other words, we don't worry about whether there is a 5 percent chance of a Type I error or a 30 chance of a Type II error. Rather we derive a figure that yields an equal probability of either type of error. There are formulae that are used to make the calculation that yields a single number that can be then compared to the Z statistic we talked about earlier.

Q. CAN YOU DISCUSS THESE FORMULAE?

A. The formulae are outlined in Appendix C of Exhibit EJM-1 (attached), and are difficult to describe in a short statement. The formulae are dependent upon the type of performance measure (mean, proportion, rate), the number of BellSouth and ALEC transactions, and the "delta" that is selected for use in the formula.

In a simple scenario with a large number of BellSouth transactions, an approximate value can be calculated by taking the negative of the square root of the number of ALEC transactions and multiplying it times the "delta" divided by 2. I know that this is not intuitive, but once again these formulae are ones that a well-trained statistician would agree are appropriate, and would yield a critical value that represents a balancing of the Type I and Type II error probabilities. For instance, if we selected a "delta" of 1, and we had 25 ALEC observations, the appropriate critical value to compare the truncated Z statistic to would be -2.5. If the Z statistic were less than –2.5 (that is, it is further from zero than –2.5) there would be a statistical difference and it would be material, thus avoiding the problems associated with the "fixed critical value" approach.

If the Z statistic were greater than –2.5 (that is, the Z statistic was closer to zero or positive), it would indicate that the difference was not statistically significant and the analysis would be at an end.

Q. CAN YOU EXPLAIN WHAT THE TERM "DELTA" ENCOMPASSES?

A. There is a specific issue involving "delta" and I will explain the term more fully in that discussion.

Q. WHY IS THIS METHODOLOGY APPROPRIATE?

A. First of all, Dr. Mallows created the truncated Z statistic so that it possesses five important properties.

1. It is a single, overall index on a standard scale; that is, you can use a normal bell shaped curve to make judgments.
2. If transaction counts for BellSouth and the ALECs across comparison cells (classifications) are exactly proportional, the aggregate index should be very nearly the same as if we had not disaggregated. This means that if the granular disaggregation I have discussed really wasn't necessary, you will still get the same results.
3. The contribution of each cell depends on the number of transactions in the cell.
4. As far as possible, systematic discriminatory performance in some cells is not masked by good performance in other cells.
5. The final result does not depend critically on minor details in the data; that is, small changes in transaction values only induce small changes in the final result.

Second, the methodology follows the four key principles that Dr Mallows and the Ernst & Young team laid out.

1. Like-to-Like Comparisons. When possible, data should be compared at appropriate levels, for example ALEC transactions that are "new" provisioning orders should be compared with "new" BellSouth provisioning orders.

2. Aggregate Level Test Statistic. Each performance measure of interest should be summarized by one overall test statistic giving the decision maker a rule that determines whether a statistically significant difference exists.

3. Production Mode Process. The decision system must be developed so that it does not require intermediate manual intervention.

4. Balancing. The testing methodology should balance Type I and Type II error probabilities. A Type I error adversely affects BellSouth; a Type II error adversely affects an ALEC. Balancing the error probabilities ensures that both sides assume the same level of uncertainty in the decision process.

Q. MR. STALLCUP DESCRIBED THE TRUNCATED Z STATISTIC IN HIS FEBRUARY 7, 2001 TESTIMONY. DO YOU AGREE WITH HIS DESCRIPTION?

A. Yes. Mr. Stallcup's summary of the truncated Z statistic as an aggregation of many modified Z tests is correct. I have attached, as Exhibit No. EJM-1 to my testimony, the statistical report filed jointly by Ernst & Young and Dr. Mallows with the LPSC that sets forth the Truncated Z methodology in great detail.

Issue 11 (c) 2 – What is the appropriate parameter delta, if any?

Q. WHAT IS THE FACTOR "DELTA"?

A. "Delta" is a factor that is used to identify whether a meaningful difference exists between the BellSouth and ALEC performance, in addition to a statistically significant difference. It is a rather complex concept so let me try to use a very simple example to illustrate what "delta" does. I want to caution you that this is a simplistic example that I am offering just to try to illustrate this complex point. Lets assume that for a given month, the mean (average) time that BellSouth took to provision a dispatched residential retail order was 5 days. Assume further that the standard deviation associated with that mean or average was half a day. This means that about 68 percent of all of these services were provisioned for BellSouth customers within a period of 4.5 days to 5.5 days if it were a normally distributed data set. The remaining 32 percent of BellSouth's customers would fall equally above and below that spread of 4.5 to 5.5 days. Lets now assume that the "delta" or materiality factor we choose was "1." This means that as long as the average time taken to provide the relevant service to the ALECs did not exceed the BellSouth mean (5 days) plus one-half of the standard deviation I mentioned (half a day), the difference would not be material. That is, if the mean for the ALECs for this period were 5.25 days or less, the difference would not be material. I arrived at the conclusion that the difference could not be more than one-half of the BellSouth standard deviation by dividing the "delta" of one by two, as I set out in my formula above.

Lets consider another very simple example to illustrate what happens when "delta" is reduced. Assume the exact same facts as above, but use a "delta" of 0.5. In that case, the difference between the BellSouth average for the month and the ALEC average for the month for the same measure could only be 3 hours (an eighth of day), instead of 6 hours (a fourth of a day). The question that the selection of "delta" raises is how close is close enough in terms of materiality. Is it material that BellSouth took 6 hours longer over a five-day period on average to provide service to the ALEC than to its own retail services? Is it material that BellSouth took 3 hours longer, on average?

Q. HAVE THE STATISTICIANS DETERMINED THE APPROPRIATE VALUE FOR "DELTA"?

A. No. While statistical science can be used to evaluate the impact of different choices of these parameters, there is not much that an appeal to statistical principles can offer in directing specific choices. Specific choices should be made based on economic/business judgment.

Issue 11 (c) 5 –Should there be a floor on the balancing critical value?

Q. WHAT DO YOU UNDERSTAND THE ISSUE TO BE WITH REGARD TO THE QUESTION OF WHETHER THERE SHOULD THERE BE A FLOOR ON THE BALANCING CRITICAL VALUE?

A. If you will look at the simple formula that I discussed above, where the critical value is determined by taking the negative of the square root of the ALEC sample size and multiplying it times "delta" divided by 2, it is clear that the magnitude the "balancing critical value" will change as the sample size increases (that is, it will move further away from zero in the negative direction). This is what it should do, but it may cause some to question the use of an extreme critical value. However, an artificial floor will inappropriately prevent the "balancing critical value" from changing, as it should. A simple example will illustrate this. Assume that the average interval for providing service to an ALEC is 3 3 days. Assume further that the relevant measure for the retail analog shows that BellSouth experienced an interval of 3 days, with a standard deviation of 4 days Finally, assume that a floor on the "balancing critical value" is set at –3. That is, no matter what the sample size the "balancing critical value" does not change further once it has reached -3. The table below shows the smallest ALEC average completion times that would cause a z-value to go beyond the critical value, and thus triggering a penalty. The chart also shows the relevant Z statistics and the calculated "balancing critical value." The "delta" value Mr. Stallcup recommends for Tier I testing, 0.5 is used.

Number of ILEC Transactions	Number of ALEC Transactions	Z-value	Balancing Critical Value $\delta = 0\ 5$	ALEC Average Penalty Trigger $\delta = 0\ 5$ w/floor of -3
100	5	-0.164	-0.546	4 days
1,000	50	-0.518	-1.725	4 days

12,000	800	-2.054	-6.847	3.44 days
100,000	2,500	-3.704	-12.347	3.24 days

This chart shows four different sets of observations with increasing numbers of ILEC observations as well as ALEC observations It also shows the Z statistic and the "balancing critical value" for each set of observations. In this situation, the trigger for penalties would be 4 days if the balancing critical value were always used.

The point of this chart is that if you look at the "balancing critical value" and the Z statistic, BellSouth would pass the test in every instance. If you artificially put a floor of –3 on the critical value, then the artificial floor would kick in with the third and fourth set of observations, and would actually affect the outcome in the fourth set of observations. That is, the Z statistic would be well in excess of the –3 and a penalty would have to be paid in the fourth set of observations. However, look what has happened to the actual penalty trigger point as the observations sets have changed. We had a trigger point of 4 days in the first example, which means that a variation of less than four days would be acceptable. By putting the floor on the "balancing critical factor" the trigger point is reduced in the fourth set of observations to 3.24 days. The point is that the artificial floor simply creates a situation where the materiality level is artificially and arbitrarily reduced. BellSouth would be paying a penalty even though the four-day threshold that

actually represents a material difference has not been met in the fourth set of observations.

Issues 12 (c) 1, 2, 5 – Tier II Methodology

Q. DO ANY ASPECTS OF THE STATISTICAL METHODOLOGY NEED TO BE CHANGED FOR TIER II ENFORCEMENT MECHANISMS?

A. No. The statistical methodology for comparing the service experience of all ALEC customers to BellSouth customers remains the same. One may want to consider changing the value of "delta" however. When the statisticians were putting together the "Statisticians' Report" for Louisiana, it was thought that it might be prudent to use a smaller value of "delta" for Tier II testing. The reasoning behind this is that when one combines all ALEC transactions together, poor service to a few small ALEC's could be masked by better service to the rest of the ALECs. One way to try to avoid such masking is to use a small materiality threshold. Whether or not this is necessary, and how much smaller "delta" should be for Tier II compared with Tier I, are questions subject matter experts and regulators should answer. As was stated before, the statistician should still play a role in this process so that the impact of various choices can be assessed.

Issue 23 – Should the Performance Assessment Plan include a Competitive Entry Volume Adjustment, and if so how should such an adjustment be structured?

Q. IS A COMPETITIVE ENTRY VOLUME ADJUSTMENT NEEDED FOR A PLAN THAT USES "BALANCING"?

A. A competitive entry volume adjustment is simply a change in the level of the penalty for those ALECs who have a small number of transactions in a given month. There is no statistical justification for such an adjustment. In fact, exactly the opposite is true. I have explained above that the number of the transactions already impacts the "balancing critical value." That value is adjusted automatically for the sample size that is experienced, so every ALEC, irrespective of its size, has its "balancing critical values" driven by its own numbers. Under balancing, when sample sizes are small the probability of a false non-compliance alarm (a Type I error) is higher than one would usually use, which of course operates to the ILEC's detriment. In a sense, this recognizes that an ALEC with a small number of transactions has more to lose when poor service is delivered and penalizes the ILEC accordingly. We give the benefit of the doubt to the ALEC, and judge BellSouth to be non-compliant even though the statistical evidence is weak. It would seem counterintuitive to me to also increase the amount of a remedy in such a situation.

Q. CAN YOU GIVE AN EXAMPLE THAT ILLUSTRATES THIS POINT?

A. Yes. Consider the case where there are 100 BellSouth transactions and 5 ALEC transactions. The "balancing critical value" in this situation is approximately -0.546 when a "delta" of 0.5 is used. This corresponds to a test with a Type I error probability of 29.3 percent. This is almost 6 times higher than the 5 percent Type I error probability rate that the FCC approved for use in Texas and New York. There should be no doubt that the small ALEC is getting ample protection.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes.

BELLSOUTH TELECOMMUNICATIONS, INC.

REBUTTAL
~~DIRECT~~ TESTIMONY OF EDWARD J. MULROW, PH.D.

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

DOCKET NO. 000121-TP

MARCH 21, 2001

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

A. My name is Edward J. Mulrow. I am employed by Ernst & Young LLP as a Senior Manager in the Quantitative Economics and Statistics Group. I have been retained by BellSouth as a statistical advisor. My business address is 1225 Connecticut Ave., NW, Washington, DC 20036.

Q. ARE YOU THE SAME EDWARD J. MULROW THAT FILED DIRECT TESTIMONY IN THIS DOCKET?

A. Yes. I filed direct testimony in this docket on March 1, 2001.

Q. WHAT IS THE PURPOSE OF YOUR REBUTTAL TESTIMONY?

A. The purpose of my rebuttal testimony is to respond to portions of the direct testimonies of Dr. Robert M. Bell representing the ALEC Coalition, and Dr. George S. Ford representing Z-Tel Communications. In responding to the direct testimony of these witnesses, I address the following issues:

- The appropriate statistical methodology for making performance measure parity comparisons.
- Dr. Bell's analysis of the impact of "delta."
- The use of a floor for the balancing critical value.

1. The appropriate statistical methodology for making performance measure parity comparisons.

Q. THE ALEC COALITION, REPRESENTED BY DR. ROBERT BELL, PROPOSES THAT THE FLORIDA COMMISION ORDER THE MODIFIED Z AS A COMPONENT OF THE STATISTICAL METHODOLOGY. PLEASE RESPOND.

A. As I said in my direct testimony, the appropriate methodology to use in situations where transaction level data is available and a BellSouth retail analog exists is the Truncated Z with Error Probability Balancing. This methodology is described in the Louisiana PSC "statistician's report" which is attached to my direct testimony as Exhibit EJM-1. One of the more interesting things about Dr. Bell's position is that it was another AT&T witness, now retired, who basically created the truncated Z formulas that BellSouth is now offering. Indeed, as I mentioned in my direct testimony, the methodology was developed in a joint effort between AT&T's statistical expert Dr. Colin Mallows (the AT&T witness who is now retired), and the Ernst & Young statistical team. I find it difficult to understand how AT&T and BellSouth could have expended such effort to reach a methodology that was satisfactory to the experts representing each party, only to have AT&T seemingly walk

away from that methodology.

Q. CAN YOU EXPLAIN THE FUNDAMENTAL DIFFERENCES BETWEEN WHAT DR. BELL PROPOSES AND WHAT BELLSOUTH IS PROPOSING?

A. As with many things involving statistics, the explanation is a bit complex, but I will try to explain in as clear a fashion as possible. You will recall that in my direct testimony, I discussed how BellSouth's methodology took various measures down to what I called the individual "cell" level. The purpose of creating "cells" was to break each comparison down it its most basic components, so that we could be relatively sure that we were comparing "apples-to-apples." For instance one of the cells would be a new residential provisioning order that is non-dispatched with less than 10 circuits that occurred in the first part of the month in a particular wire center. We would compare BellSouth's transactions that met those criteria as well as the ALEC transactions that met the criteria. We would determine the mean for both samples and would calculate a modified Z statistic for that cell. After doing this, we would roll this cell up with other cells related to plain old telephone service and would essentially aggregate all of the individual modified Z statistics into a single statistic. As I explained in my direct, when we rolled these individual statistics into a single statistic, we assign a value of zero to all of the statistics that have a positive value, so that we do not mask the impact of any negative values. This changing of positive values to zero is why we call the resulting statistic a truncated Z statistic.

On the other hand, Dr. Bell's process essentially stops with the calculation of the modified Z statistic for each of his "sub-measures" which can generally be thought of as being conceptually the same as BelllSouth's cells, except that Dr. Bell has disaggregated his sub-measures in a different way, and has not disaggregated them to the levels that BellSouth has proposed. For instance, and this is taking an extreme example, Dr. Bell's proposal would essentially have BellSouth stop at the cell level discussed above, and make the final comparison about whether parity is being provided right there.

Q. SO, BASED ON THIS DISCRIPTION, WHAT IS CONCEPTUALLY WRONG WITH DR. BELL'S APPROACH?

A. I can explain this most clearly by looking again at what BellSouth has done. Lets assume that there were 2000 "cells" associated with the provisioning of plain old telephone service. If we looked at the individual cells, we might find 75 that revealed an apparent discrepancy between BellSouth's performance and that provided to the ALEC. Based on these failures, relying solely on the modified Z statistic, BellSouth would be expected to pay a penalty. The problem is that we know that we are going to get some Type 1 errors in a statistical analysis like this. For instance, if we were willing to accept that 5% of the observations were going to be Type I errors, you would expect to see 100 failures. Viewed in this light, 75 failures would be well within the expected parameters. The point is, if you looked at the individual "cells" you would conclude there was a problem, but when you look at the whole picture

you see that there is not. Dr. Bell's approach, relying solely on the modified Z statistic for individual "cells" or "sub-measures" doesn't allow this to happen.

Q. IS THE IDEA OF "AGGREGATING" MANY STATISTICAL RESULTS TO MAKE AN OVERALL DETERMINATION OF PARITY SOMETHING THAT WAS DEVELOPED SPECIFICALLY FOR THE LOUISIANA STATISTICIAN'S REPORT?

A. No. The concept has been around for quite some time. It is sometimes referred to as a "multiple testing problem."

Q. WILL YOU BRIEFLY EXPLAIN WHAT A "MULTIPLE TESTING PROBLEM" IS?

A. Certainly. As I pointed out in my example above, whenever one performs numerous statistical tests at one time, it needs to be recognized that some of the tests will provide results indicating a problem even when there is no problem. By looking at all the results in a more global way, one can determine if the "failed" tests that are observed represent a true problem, or just random chance.

Q. IS BELLSOUTH THE ONLY COMPANY SUGGESTING THAT THIS FORM OF AGGREGATING SHOULD BE DONE?

A. No. The four states where the FCC has granted an RBOC the right to market long distance services have performance comparison plans that aggregate the

results of many comparisons into an overall result that determines parity/disparity.

In New York, Verizon uses a weighted average of performance scores to make parity judgments. In Texas, Oklahoma, and Kansas, Southwestern Bell uses the "K-value" method. This "K-value" methodology was described by AT&T's Dr. Mallows in an affidavit to the FCC in May 1998[1]. Thus, both of the methods of aggregation that AT&T's expert has suggested have been adopted by former Bell Companies for use in their performance plans. AT&T however, appears reluctant to accept either of these methodologies.

Q. WHY IS THE TRUNCATED Z STATISTIC A BETTER AGGREGATE STATISTIC THAN THE OTHERS THAT ARE IN USE, SAY IN TEXAS?

A. As I explained in my direct testimony, the truncated Z statistic was created so that it possesses five important properties.

1. It is a single, overall index on a standard scale; that is, you can use a probability distribution to make judgments.
2. If transaction counts for BellSouth and the ALEC across comparison cells (classifications) are exactly proportional, the aggregate index should be very nearly the same as if we had not disaggregated. This means that if the

[1] Affidavit of Dr. Colin L. Mallows before the Federal Communications Commission, sworn May 29, 1998.

granular disaggregation I have discussed really wasn't necessary, you will still get the same results.

3. The contribution of each cell depends on the number of transactions in the cell.
4. As far as possible, systematic discriminatory performance in some cells is not masked by good performance in other cells.
5. The final result does not depend critically on minor details in the data; that is, small changes in transaction values only induce small changes in the final result.

In addition to these important properties, the error probabilities of the truncated Z test can be balanced. The other statistics used when aggregating results do not meet all of the criteria that I have outlined above, but I would note that any of them would be better than what Dr. Bell is proposing, which is that no aggregation be done at all.

Q. ARE THERE OTHER DIFFERENCES BETWEEN WHAT DR. BELL HAS PROPOSED AND THE BELLSOUTH METHODOLOGY?

A. Yes, and there is one in particular that should be considered. The formulae that Dr. Bell proposes for testing proportion and rate measures do not easily lend themselves to balancing Type I and II error probabilities. This creates a methodological inconsistency between the test Z statistics he recommends and

the balancing critical value. I will discuss this in more detail later in my testimony. In order to explain the root of the problem, however, I need to tell you something more about statistics. What we have been discussing in the examples above is a comparison of "means," that is, we take the average of the BellSouth transactions in the "cell" and compare that "average" or "mean" to the comparable "mean" of the ALEC transactions. Not all observations lend themselves to the calculation of "means," however. For instance, consider "missed appointments." With "missed appointments" you are looking at the percentage of the total number of scheduled appointments that were missed. As a result, you end up with a proportion, such as a tenth of a percent or 5 percent or whatever figure is appropriate. You do not have a mean per se. Another example is what we call a "rate" such as the "customer trouble report rate", where you are looking at the number of troubles BellSouth or the ALEC has per the number of available lines. Unlike the "proportional" measures described above, which would always have to be less than 1, the measurement of a "rate" could exceed 100 percent. For instance, if you had ten access lines and 12 reported troubles (that is some lines have more than a single trouble during the reporting period) you can get more than a figure of 100 percent. Again, these two special categories are simply different measures than the "means" calculation that we have been talking about.

The root of the problem is that Dr. Bell uses the modified Z concept irrespective of whether the measure is one based on "means," "proportions," or

"rates." The difficulty from a statistical perspective is that the concept the modified Z statistic is based on should not be applied across the board to all measure types. Specifically, the basis for the modified Z statistic is that you take the difference between the two "means" in the particular "cell" or sub-measure, and divide the result by the standard deviation of BellSouth's mean. This is done to make the test sensitive to changes in the ALEC standard deviation (compared to the BellSouth standard deviation) that would be harmful to the ALEC. In other words, BellSouth could try to give the same average service to ALEC customers as to it own customers, but do so in a way that some ALEC customers receive longer completion times. For example, suppose that BellSouth always services its own customers in 2 days. BellSouth could service one-third of the ALEC customers in 1 day, one-third in two days, and the remaining third in 3 days. On the average, the ALEC service times are the same as BellSouth's, but one-third of the ALEC customers received service that was "below" average. Dividing the difference between the means by only BellSouth's standard deviation avoids masking this problem.

The same situations cannot occur for "proportion" or "rate" measures. In the case of a proportion, such as "missed appointments" that is stated as a percentage of total appointments scheduled, you only have one parameter to consider, the proportionality. As a result, BellSouth cannot separately control the proportion value and the variability about that value.

Q. ARE THERE DIFFERENT FORMULAS THAT DR. BELL COULD HAVE USED TO ADDRESS THESE ISSUES?

A. Yes, but he did not do so, which is another reason why BellSouth's approach makes more sense.

II. Dr. Bell's analysis of the impact of 'delta."

Q. IN ORDER TO SUPPORT HIS CHOICE OF A "DELTA" VALUE OF 0.25, DR. BELL PROVIDES A TABLE SHOWING THE PERCENTAGE OF ALEC CUSTOMERS RECEIVING BAD SERVICE, BY BELLSOUTH PERCENT AND DELTA. CAN YOU COMMENT ON THIS TABLE?

A. Well, there are a couple of interesting points I can make. First, the methodology that Dr. Bell advocates in his testimony and exhibit is not the method that he used to calculate the numbers in the table. Second, the table does not accurately represent the way that BellSouth proposes to carry out balancing for proportion measures.

Q. WOULD YOU EXPLAIN YOUR FIRST POINT MORE FULLY?

A. The overall concepts for balancing error probabilities were first developed for mean performance measures. As previously described, these are measures that represent the average of a measured amount, for example the average time it takes to complete an order. In this case, "delta" represents the difference between the ILEC and ALEC averages in terms of an ILEC standard deviation.

When solving for the balancing critical value, it turns out to be mathematically convenient to define the alternative hypothesis this way, given the form of the modified z statistic for a mean measure.

A proportion measure, on the other hand, measures the fraction of transactions that possess a certain quality or attribute out of all transactions. For example, percent missed installations measures the fraction of all provisioning orders in a month where service was not completed on or before the assigned due date. Often in statistics, methods that are worked out for means can be used on proportions because a proportion can be considered as a special type of mean. However, a proportion is a fraction of the whole, so it can only be a number between 0 and 1 (or equivalently between 0 percent and 100 percent).

Now, if we want to describe "delta" for a proportion measure as the difference between the ILEC and ALEC proportions in terms of an ILEC standard deviation we have to be careful. The mathematical convenience present in the mean measure case is not present with a proportion measure. Thus a different method is needed.

Q. WHAT METHODS ARE AVAILABLE FOR BALANCING A PROPORTION MEASURE?

A. We have identified two ways to approach balancing for proportion measures. One way is to transform the proportion using the arcsine square root transformation. This is what Dr. Bell used to create Table 1 on page 13 of his

direct testimony. The other way is to use a concept called the "odds" ratio.

Q. WHAT IS THE REASONING BEHIND USING THE ARCSINE SQUARE ROOT METHOD?

A. Because "delta" for a proportion measure cannot be defined using a straightforward analogy with the definition for a mean measure, a transformation is used. This allows us to use the same formula to compute the balancing critical value as was used in the mean measure case. However, two problems arise: 1) the interpretation of "delta" is related to the transformed measure, and 2) the z statistic that is used in the test should also use the transformed measurement.

Q. WHAT IS THE INTERPRETATION OF "DELTA" WHEN THE ARCSINE SQUARE ROOT TRANSFORMATION IS USED?

A. "Delta" becomes twice the difference of the transformed ILEC proportion with the transformed ALEC proportion. It is no longer the difference between the performance measures in terms of an ILEC standard deviation.

Q. YOU STATED THAT THE Z STATISTIC USED IN THE TEST SHOULD ALSO USE THE TRANSFORMED MEASUREMENTS. COULD YOU EXPLAIN THIS?

A. Yes. In order to arrive at the same balancing critical value formula for a

proportion measure as that of a mean measure, you must redefine the basic Z statistic. When using the arcsine square root transformation the Z statistic should be

$$Z = \frac{2\left(\arcsin\left(\sqrt{\hat{p}_{ILEC}}\right) - \arcsin\left(\sqrt{\hat{p}_{ALEC}}\right)\right)}{\sqrt{\frac{1}{n_{ILEC}} + \frac{1}{n_{CLEC}}}}.$$

Q. IS THIS WHAT DR. BELL IS RECOMMENDING TO USE FOR PROPORTION MEASURES?

A. No. The formula he recommends is given in Exhibit RMB-1, page 14, of his direct testimony. This formula is a direct analog of the mean measure formula, but as I have already explained, we need to be cautious in directly applying mean measure formulae to other types of measures when we are using a balancing methodology.

Q. WHAT ARE THE CONSEQUENSES OF USING A BALANCING CRITICAL VALUE BASED ON THE ARCSINE SQUARE ROOT TRANSFORMATION WITH A Z STATISTIC THAT IS NOT BASED ON THE TRANSFORMATION?

A. There are many scenarios where the use of the wrong type of Z statistic would find BellSouth to be out of parity when the use of the proper Z statistic would find them in parity. Consider a simple example. Let's suppose that there are

1000 BellSouth provisioning orders, and that BellSouth "missed" 214 of the appointments, that is, the orders where not completed on or before the due date. Thus, BellSouth "missed" 21.4 percent of their orders. For the same time period, suppose there were 30 comparable ALEC provisioning orders, and that 8 of these were "missed." So, BellSouth "missed" 26.7 percent of the ALEC's orders. Now the balancing critical value based on the arcsine square root transformation and the "delta" of 0.25 that Dr. Bell uses is -0.675. If we use the modified Z formula given in Dr. Bell's direct testimony, we will get a Z score of -0.693. Since this is less than the critical value (further from zero on the negative side), we would conclude that there is a lack of parity, and BellSouth would pay a penalty. On the other hand, if we use the Z formula given above, which is based on the arcsine square root transformation, we get a Z value of –0.666. In this case, we would say that BellSouth is compliant, and there would be not a penalty assessment.

Q. SO YOU ARE SAYING THAT THE BASIC METHODOLOGY THAT IS USED TO CALCULATE THE BALANCING CRITICAL VALUE NEEDS TO BE MATCHED WITH THE SAME BASIC METHODOLOGY THAT IS USE TO CALCULATE THE Z TEST STATISTIC.

A. Yes, and there appears to be an inconsistency in what Dr. Bell is recommending for proportion measures as well as rate measures.

Q. YOU SAID THERE IS ANOTHER METHOD FOR BALANCING PROPORTION MEASURES THAT IS BASED ON THE "ODDS" RATIO.

WHAT IS AN "ODDS" RATIO?

A. The "odds" ratio is what BellSouth has used when the information in the "cells" involves proportions, which I have been discussing, rather than "means." The "odds" methodology is relatively straightforward. First we need to define the odds of an event such as a missed installation occurring. Odds are the ratio of the probability of an event occurring to the probability that the event won't occur. So, if BellSouth "missed" 21.4 percent of the installations to their own customers, then the odds of a customer experiencing a "miss" is found by dividing the probability of a "miss," 0.214, by the probability of an "on-time" installation, 0.786 (= 1 – 0.214). This gives the odds of a "miss" as 0.276. In odds terminology, we might say that the odds of a BellSouth customer experiencing a "miss" are approximately 1 to 2.6.

The odds ratio for "missed" provisioning installations is the ALEC customer's odds of a "miss" divided by the BellSouth customer's odds of a "miss." When this odds ratio is one or less, BellSouth is delivering parity or better service to the ALEC's customers. When this odds ratio is greater than one, then BellSouth is not necessarily delivering parity service. Under a balancing approach, we need to determine an odds ratio greater than one to use for the balancing alternative hypothesis.

Q. IS THE ODDS RATIO EASIER TO INTERPRET THAN THE ARCSINE SQUARE ROOT METHOD?

A. Not necessarily. Many people have trouble interpreting odds, and relating the value back to the probability of an event occurring. However, the interpretation in terms of odds is straightforward. If the odds ratio for "missed' installations is set at 3, then we know that an ALEC customer's odds of a "miss" is three times greater than that of a BellSouth customer. We would still need a table, such as Dr. Bell's Table 1, to interpret the actual difference in the performance. I want to say, however, that setting the "odds" ratio at 3, which is what the Louisiana Commission has done for Tier 1 measures, does not necessarily mean that the probability of actually having a disparity is that great.

Q. CAN YOU PROVIDE US WITH SUCH A TABLE?

A. Certainly. Figure 1 below will help one interpret the actual difference between the BellSouth proportion and the ALEC proportion for a given "odds" ratio. The table shows the percentage of the time an ALEC customer will experience a miss by the BellSouth percentage "missed," for two values of the odds ratio: 2 and 3.

Figure 1
ALEC Percentage of "Missed" Installations
By BST Percentage and
The Odds Ratio of the Alternative Hypothesis

BST PERCENTAGE MISSED	Odds Ratio 2	3
1	2	3
5	10	14
10	18	25
20	33	43

We see from the first row of this table that for an alternative hypothesis with an odds ratio of 3, the ALEC percentage of "missed" installations is about 3 percent when the BST percentage is 1 percent. However, the ALEC percentage is about 43 percent when the BST percentage is 20 percent. So when the BST percentage is close to 0, the ALEC percentage is about 3 times larger at the balancing alternative hypothesis. As the BST percentage get larger, the ratio of the ALEC percentage to the BST percentage gets smaller; converging to 1 as the BST percentage approaches 100 percent.

Q. THIS SEEMS TO SUGGEST THAT IF BELLSOUTH HAS A MISS OF 20 PECENT, THAT A MISS OF UP TO 43 PERCENT WOULD BE ACCEPTABLE FOR THE ALECS. IS THIS CORRECT?

A. No, that misses the point completely and that is what is wrong, in large measure with Dr. Ford's analysis, which I will discuss in more detail below. However, to put point on this, with numbers like that, with a very small sample size the methodology would show BellSouth out of parity almost 60 percent of the time and as the sample size approached a thousand transactions for BellSouth and only fifty for the ALEC, the probability that parity will not be concluded approaches 100 percent (see Table 3 below). I realize this is not intuitive, and I will discuss it more below, but it would be a mistake to conclude that the odds ratio balancing test allows the ALECs to experience significantly worse performance than BellSouth without detecting a failure to provide parity on BellSouth's part. I would also note that the same holds true for Dr. Bell's calculations using the arcsine square root method where he

shows a similar disparity. Once the sample size gets to the levels that I have just mentioned, the probability of finding a disparity at those levels approaches 100 percent.

Q. IF THE ODDS RATIO METHOD IS USED FOR DEFINING THE BALANCING CRITICAL VALUE, HOW DOES THAT EFFECT THE FORMULA THAT IS USED TO CALCULATE THE CRITICAL VALUE?

A. The balancing critical value for a proportion measure is based on a different formula than that of a mean measure when an odds ratio approach is used. The formula is more complicated than the mean measure formula, and it is given in Appendix C of the Louisiana "Statistician's Report" (Exhibit EJM-1 of my direct testimony).

Q. DOES THE Z STATISTIC USED TO COMPARE THE PERFORMANCE MEASURES NEED TO BE MODIFIED WHEN USING THE ODDS RATIO APPROACH?

A. I was able to derive the balancing critical value formula based on the odds ratio because it "fit in" with the method used to calculate the cell level Z statistic. This Z statistic that I refer to is given in Appendix A of the Louisiana Statistician's Report. As previously alluded to, it differs from the Z statistic given by Dr. Bell in his testimony.

Q. SO THE Z STATISTIC FOR PROPORTIONS PROFFERED BY DR. BELL

NEEDS TO BE MODIFIED, REGUARDLESS OF THE BALANCING APPROACH, IN ORDER TO HAVE THE BALANCING METHODOLOGY CONSISTENT WITH THE BASIC Z STATISTIC METHODOLGY.

A. Yes. I believe that we should try to be consistent with the Z statistic methodology when developing the methods for balancing. That's not to say that a balancing methodology cannot be worked out for the proportion Z statistic in Dr. Bell's testimony, but I think it would make a complex problem messier. Dr. Bell may also be able to show that a balancing critical value based on a method different from the one used to create the LCUG proportion Z statistic is a reasonable approximation under certain circumstances. The data that we have examined so far exhibit many different characteristics, so it is easy to find cases when the approximations break down. In fact all of the balancing methods break down when both BellSouth and ALEC transaction counts get very small. So, none of the methods we've looked at are perfect. I do believe that we should do our best to avoid problems that we can identify, and consistency between Z statistic methods and balancing methods helps.

Q. YOU SAID THAT YOU DID NOT THINK THAT DR. BELL'S TABLE 1 REPRESENTS THE WAY IN WHICH BELLSOUTH WILL CARRY OUT BALANCING FOR PROPORTION MEASURES. WILL YOU EXPLAIN THIS?

A. BellSouth has chosen to use the "odds" ratio approach to balancing. In fact, the Louisiana Public Service Commission has ordered BellSouth to use an

odds ratio of 3 for Tier I testing of proportion measures, and an odds ratio of 2 for Tier II testing. So Figure 1 above shows the impact of the choice of an "odds" ratio based on BellSouth's proportion measure balancing position.

Q. IS THERE ANY WAY TO TRANSLATE BETWEEN THE TWO METHODS?

A. Yes, the Louisiana "Statistician's Report" provides equations that can be used to translate between the two methods. Things are not that straightforward however. You must have an idea of what the BellSouth proportion is in order to translate between methods. For a proportion measure, we can determine what the largest "delta" value will be for a fixed odds ratio over the whole range of proportion values. For instance, with an odds ratio of 3, the largest value of "delta" based on the arcsine square root method is about 0.54. This occurs when the BellSouth percentage of "misses" is about 37 percent. For percentages smaller or larger than 37 percent, the equivalent delta for an odds ratio of 3 is smaller than 0.54. The equivalent delta gets very close to zero when the BellSouth percentage of "misses" is close to 0 or 100 percent.

III. The use of a floor for the balancing critical value.

Q. DR. FORD STATES IN HIS TESTIMONY THAT HE BELIEVES THERE IS A SERIOUS FLAW IN THE ERROR PROBABILITY BALANCING METHODOLOGY, AND THAT A LIMIT ON THE BALANCING CRITICAL VALUE NEEDS TO BE ESTABLISHED TO CORRECT THE FLAW. PLEASE RESPOND.

A. In reading through his arguments I sense that he is confusing hypothesis testing issues. The key issue that he is confused about is that there is a difference between the probability of a Type I error and the probability of detecting disparity. I also do not belief that Dr. Ford appreciates the problems imposed by the observational nature of a monthly performance incentive plan. I will briefly address these issues, and discuss an error in one of Dr. Ford's graphics.

When all of the statistical issues are properly understood and considered as a whole, I believe that there are no serious flaws in the balancing methodology. Therefore, there is no need for the "fix" that Dr. Ford suggests, namely, a floor on the balancing critical value.

Q. YOU SAY THAT DR. FORD IS CONFUSING THE PROBABILITY OF A TYPE I ERROR WITH THE PROBABILITY OF DETECTING DISPARITY. PLEASE EXPLAIN?

A. Dr. Ford makes several comments in his testimony that suggest that a statistical test with a small Type I error probability has very little power to detect discrimination. For instance, on page 21, lines 15 – 17, he states "At significance levels less than 0.0001 (assuming no more than 500 tests are conducted), balancing performs no function other than to make it nearly impossible to detect discrimination (i.e., reject the null hypothesis)." This is simple not true.

First, it needs to be understood that the significance level, i.e. the probability of a Type I error, is the probability of rejecting the null hypothesis (concluding that disparity exists) when, in fact, the null hypothesis is true (BellSouth is providing parity service). This is not the probability that the null hypothesis will be rejected when there is truly a certain amount of disparity in the system. Statisticians refer to that probability as the power of a test because it allows us to know how well a test can detect departures from parity. We can evaluate the power of statistical test based on a balancing methodology, and we can show that the power to detect discrimination beyond the materiality level defined by one-half "delta" is above 50 percent.

Q. WOULD YOU DISCUSS MATERIALITY AGAIN IN THE CONTEXT THAT WE ARE USING THE TERM IN THIS PROCEEDING?

A. Certainly. Recall from my direct testimony that as long as the average time taken to provide the relevant service to an ALEC does not exceed the BellSouth mean plus one-half "delta" times the BellSouth standard deviation, then the apparent difference in mean service times would not be material. That is, we would not conclude that BellSouth is providing discriminatory service. To state this another way, one-half delta, the parameter that defines the alternative hypothesis for balancing, is a materiality threshold for the disparity in the service system when a balancing method is used for a mean measure test.

Q. WOULD YOU PROVIDE US AN EXAMPLE OF THIS?

A. Yes. Figure 2 shows the probability that a mean measure statistical test will detect a difference in the mean performance of BellSouth and an ALEC when the balancing alternative hypothesis uses a "delta" of 1. To calculate these we assume that the true disparity is 0, 0.2, 0.45, etc. For the purpose of this example I am defining the "true disparity" as the numbers indicated across the top of the chart. This is not an observable figure; I am assuming the disparity to exist to illustrate what I am talking about. If we have used a delta of 1, this chart would tell us that any "true discrepancy" below 0.5 is immaterial and any "true discrepancy" above 0.5 is material. The chart shows the probability of detecting this condition. Using an example from the chart, assume a very small sample size, which is always going to be problematic. In the first line, even if the "true disparity" was zero, that is there was no disparity, the statistical analysis is going to show that there is disparity 32 percent of the time. On the other end of the scale, at 1, the analysis is only going to show a material difference 68 percent of the time, when we know that the disparity actually exists and is material. These are essentially examples of Type 1 and Type II errors, where the Type II error at the 1 disparity level is 32 percent (the complement of the probability of detection). Importantly, as the sample size increases, the analysis rapidly approaches an accuracy level of 100 percent, meaning that the Type I and Type II errors are essentially eliminated.

Figure 2: The Probability of Detecting Disparity
Mean Measure Test with Delta = 1

BST Sample Size	ALEC Sample Size	Balancing Critical Value	True Disparity Level						
			0	0.2	0.45	0.5	.55	0.8	1
10	1	-0.477	0.317	0.387	0.481	0.5	0.519	0.613	0.683
100	5	-1.091	0.138	0.256	0.457	0.5	0.543	0.744	0.862
1000	50	-3.45	0	0.019	0.365	0.5	0.635	0.981	1
12000	800	-13.693	0	0	0.085	0.5	0.915	1	1
100000	2500	-24.693	0	0	0.007	0.5	0.993	1	1

Q. IT SEEMS THEN THAT A MEAN MEASURE TEST BASED ON A BALANCING METHODOLOGY DOES MAKE IT POSSIBLE TO DETECT DISCRIMINATION AS LONG AS THE TRUE DISPARITY IS BEYOND THE MATERIALITY THRESHOLD. IS THAT TRUE?

A. Yes, a mean measure test based on balancing and large sample sizes has a high likelihood of detecting disparity beyond the materiality threshold, but a low probability of detecting disparity that falls under the threshold.

Q. ISN'T IT TRUE THAT THESE CONDITIONS ARE THE SAME ONES THAT LEAD TO BALANCING CRITICAL VALUES THAT ARE FURTHER FROM ZERO THAN THOSE THAT ARE CONVENTIONALLY USED?

A. Yes. Large sample sizes lead to critical values that are further from zero than those that are used in many applications. Such critical values, in turn, lead to small significance levels. But, as I have shown, those small significance levels (which are the probabilities corresponding to a true disparity of 0 in Figure 2)

do not imply that BellSouth will get away with any amount of discrimination. Those levels of disparity that are lower than the materiality threshold, which is defined by the choice of delta, will not be considered discriminatory. However, levels of disparity beyond the materiality threshold will be detected as discriminatory with a high likelihood.

Q. IS THE SAME THING TRUE FOR PROPORTION MEASURES?

A. A similar statement can be made for a proportion measure test. When using an odds ratio approach to balancing, the materiality threshold in not one-half of the odds ratio used in the balancing alternative hypothesis, but the threshold is at a point close to this. Figure 3 below illustrates this by showing the probability that the testing procedure will determine disparity (reject the null hypothesis), for a range of disparity levels and BST/ALEC sample sizes when the BellSouth proportion of missed installations is 0.20 and balancing is done for the alternative hypothesis with an odds ratio of 3.

Notice that for a balancing alternative with odds ratio of 3 (BST proportion of 0.20 and CLEC proportion of 0.43), there is a significant probability of determining disparity for odds ratio levels less than 3. For example, with a CLEC proportion of misses of 0.30 there is at least a 50% chance, regardless of sample size, that disparity will be determined and a remedy paid. Here we have an odds ratio of 1.75, much less than the balancing alternative of 3.

Figure 3: The Probability Of Determining Disparity When the BellSouth Proportion of Missed Installations is 0.20 and the Balancing Critical Value is Determined at an Odds Ratio of 3

Number of Transactions		Level of Disparity in Terms of Odds Ratio *Level of Disparity in Terms of CLEC Proportion*						
BST	ALEC	1* *0.20*	1.25 *0.24*	1.75 *0.30*	2 *0.33*	2.25 *0.36*	2.75 *0.41*	3** *0.43*
10	1	0.4110	0.4440	0.5000	0.5220	0.5410	0.5750	0.5890
100	5	0.2920	0.3730	0.5040	0.5570	0.6030	0.6790	0.7080
1000	50	0.0410	0.1530	0.5130	0.6750	0.7960	0.9300	0.9590
12000	800	0.0000	0.0000	0.5520	0.9640	0.9990	1.0000	1.0000
100000	2500	0.0000	0.0000	0.5930	0.9990	1.0000	1.0000	1.0000

Q PLEASE RECAP YOUR POINT REGARDING DR. FORD'S TESTIMONY THAT YOU HAVE BEEN DISCUSSING.

A. Dr. Ford seems to believe that low significance levels means that actual and material disparities will not be discovered, particularly with large sample sizes. That is simply not true, as I have demonstrated above.

Q. LET'S MOVE ON TO THE SECOND ISSUE YOU BELIEVE DR. FORD IS CONFUSED ABOUT. CAN YOU DESCRIBE YOUR POINT WITH MORE SPECIFICITY?

A. Dr. Ford seems concerned about the large critical values that can result from the analysis that is proposed in BellSouth's plan. He believes that some sort of "standard analysis" would preclude the use of significance levels below one percent. For example, on page 20 of his direct testimony, lines 11 – 13, he states, "Recall that standard significance levels of a means-difference test are

* An odds ratio of one assumes that there is parity. Thus, the probability of determining disparity in this situation is the probability of a Type I error.

** The probability of determining disparity increases as the level of disparity goes beyond an odds ration of three.

5%, or in some cases as low as 1%. A 1% significance level is considered quite small. Rarely are significance levels chosen below this value." Basically, he is suggesting that large critical values in and of themselves suggest some sort of problem and that there ought to be a floor on critical values to eliminate any such problems.

The problem with appealing to the "standard," or "conventional" testing approach that is described by most introductory statistical textbooks, and even more advanced textbooks, is that there is almost always an assumption that the data in a study are collected according to a designed plan and that there is more than ample time to evaluate critically the data that is being used. In the simplest of cases, the assumption is that a simple random sample has been collected. In more complex cases, such as agricultural experiments or clinical trials, the sampling plans call for collecting data in specific ways. In all these cases, the sample size of the data collected is usually under the control of the data collector.

Most statistical textbooks also warn users of statistics to think about the results that they are observing. Just because a test results in a statistically significant difference between two means or proportions, one should also make sure that the observed difference makes sense from a practical point of view. This is especially true when sample sizes are very large. In these cases, Z statistics may have a large magnitude even when the actual difference between the performance measures is quite small.

Q. WHY ARE THESE POINTS IMPORTANT IN THE CONTEXT OF THIS PROCEEDING?

A. There are two reasons. First, the performance assessment plans that we are dealing with involve observational studies. This is a process where the subjects select themselves into one of the groups that are being compared. In our case customers select the telephone company that they want. We have very little control over this, and unlike the situations that textbooks usually cover; we have no control over the sample sizes that will be used every month.

Q. WHAT IS THE SECOND ISSUE?

A. The analysis of this data must be completed in a short amount of time, for many measures, every month. Normally, a good statistician would explore the data, and try to answer many questions about the data. This is particularly true when seemingly large Z values are calculated, which seems to be Dr. Ford's concern. That is, normally you should try to discover why such large Z values occurred. Was it due to a large discrepancy in the performance measure? Or, maybe it is the case that, from a practical point of view, there is very little difference in performance and the large Z value was simply caused by large sample sizes.

Q. DOES THE FACT THAT THESE PLANS REQUIRE VERY SPEEDY REPORTING AND PROVIDE ALMOST NO TIME FOR ANY CRITICAL ANALYSIS MEAN THAT THE STATISTICAL METHOD PROPOSED IS

SIMPLY INAPPROPRIATE TO USE?

A. Absolutely not. Indeed, the speed with which the data is to be reported and penalties paid if owed is one of the reasons why the Ernst & Young statistical team felt a balancing method was valuable. Large Z values that go beyond a balancing critical value are most likely caused by truly disparate treatment. But Z values that don't go beyond the balancing critical value are immaterial in terms of the difference in performance.

Q. IS THERE ANYTHING ELSE IN DR. FORD'S TESTIMONY THAT YOU FEEL IS IMPORTANT TO DISCUSS?

A. Yes. I think it is important to discuss the opposite of the small significance level issue that Dr. Ford raises. That is, the use of significance levels that are much larger than what is conventionally used when sample sizes are small. I would also like to discuss a graph in Dr. Ford's testimony that is very misleading.

Q. WHAT HAPPENS TO THE SIGNIFICANCE LEVEL OF A BALANCED STATISTICAL TEST WHEN SAMPLES ARE SMALL?

A. The significance levels can be 3, 5, or even up to almost 10 times larger than a conventional value of 5 percent. For example, with a BellSouth sample of 1000, an ALEC sample of 30, and a "delta" value of 0.25, the balancing critical value of a mean measure test is –0.675. This gives a significance level for the

test of about 25 percent. This means that BellSouth would be found to be out of parity 25 percent of the time.

Q. DOES THIS MEAN THAT YOU HAVE AN OBJECTION TO BALANCING FOR SMALL SAMPLES?

A. No. This is what balancing is supposed to do. When sample sizes are small it gives the benefit of the doubt to the ALEC. On the flip side, the data must show that there is a material difference, not just a conventionally significant difference, in the performance measure when the sample sizes are large.

Q. ISN'T IT MORE LIKELY THAT SAMPLE SIZES WILL BE LARGE?

A. On the contrary, in the performance measure data that I have looked at sample sizes tend to be small enough in such areas as UNE services and other special types of services that the balancing critical value of a Tier I test tends to be between 0 and –1. In the example I give above, samples of 1000 (BellSouth) and 30 (ALEC) lead to a balancing critical value of –0.675 for a "delta" of 0.25, and -1.35 for a "delta" value of 0.5. While a sample of size 30 for the ALEC is not huge, many would not consider it to be overly small.

Q. DOES DR. FORD RECOGNIZE THIS FACT ABOUT LARGE SIGNIFICANCE LEVELS FOR SMALL SAMPLE SIZES?

A. I believe he does, since he suggests using a "delta function" to choose "delta" based on the ALEC sample size. But I do not believe that this is the correct concept. Balancing error probabilities is not about searching for critical values that in some sense makes the two sides happy. When one adopts a balancing approach it has to be understood that you are really trying to determine what type of difference in performance truly has a material impact on an ALEC's business.

Q. YOU HAVEN'T MENTIONED HOW DR. BELL FEELS ABOUT THE EFFECTS OF BALANCING OF THE SIGNIFICANCE LEVEL OF THE TEST. DOES HE THINK THERE NEEDS TO BE A "FIX" FOR THE METHOD?

A. In discussing large negative Z scores that do not trigger a test failure because the balancing critical value is larger (further from zero than the Z score), Dr. Bell states on page 14, lines 16-17, "Such an outcome would be justified only if one could be certain that delta has not been set too large." He goes on to say that he feels no floor is warranted if the "delta" he advocates, 0.25, is used.

From this statement, I infer that Dr. Bell understands that a balanced test has sufficient power to detect truly discriminatory performance on the part of BellSouth. However, this will only be true if "delta" is chosen so that it effectively defines the materiality threshold.

Q. DO YOU AGREE WITH DR. BELL?

A. In principal yes. I am not convinced, however, that a "delta" of 0.25 is correct. The Louisiana Public Service Commission has ordered BellSouth to use a "delta" of 1. The Georgia Public Service Commission has ordered that a "delta" of 0.5 be used. In both situations, there will be periodic reviews of the effectiveness of the methodology. I assume that if these commissions find that "delta" was set too large, they will lower the value. It's also possible that a review will find that the values are too low. Only time will tell.

Q. YOU STATED THAT DR. FORD HAS INCLUDED A GRAPH IS HIS DIRECT TESTIMONY THAT IS MISSLEADING. PLEASE EXPLAIN THIS TO US.

A. Exhibit No.___(GSF-3) of Dr. Ford's direct testimony is supposed to be a graph that shows the alternative distribution with different "delta" values. Dr. Ford does not identify the exact distribution he is using, but based on the bell-shapes he uses, and the language in his testimony, I assume that he is using a normal distribution. Given that, there is no way his graph illustrates distributions that are shifted 0.25, 0.5 and 1 standard deviations from the BellSouth distribution.

Q. HOW CAN YOU TELL THAT?

A. The normal distribution has certain properties about it that indicate to you the size of its standard deviation based on the spread of the bell-curve. Figure 4 below illustrates this.

FIGURE 4: The Normal Distribution
Illustration of the Relationship Between
The Spread of the Bell-Curve and the Standard Deviation

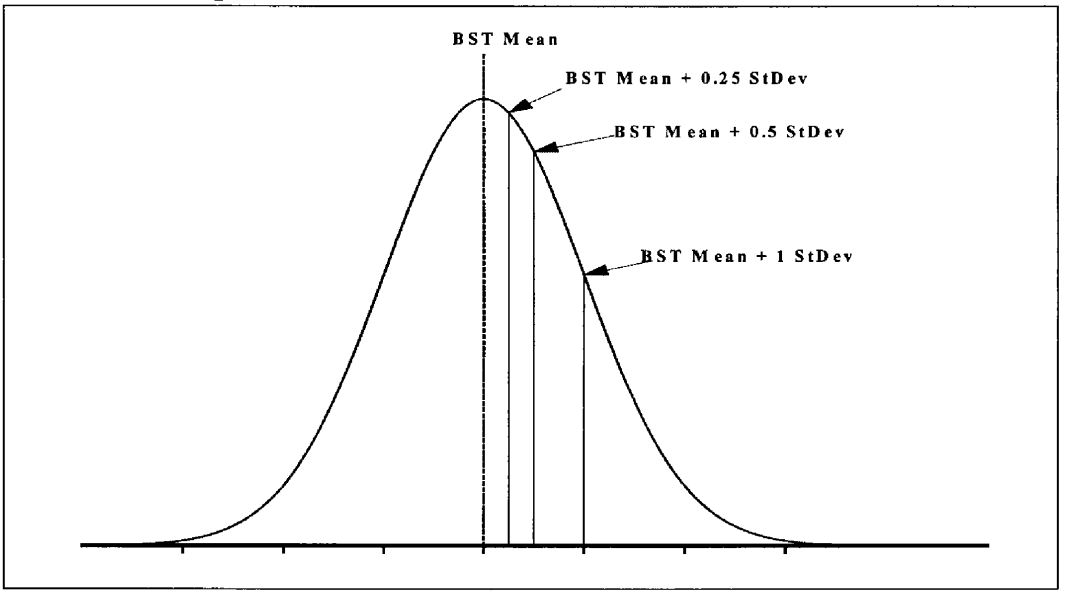


Figure 4 shows the location of the points that are 0.25, 0.5 and 1 standard deviations (StDev) from the mean of the distribution (BST Mean is at the center of the bell-curve). We can also look up the area under a normal bell-curve to the left of each of these values. These areas are approximately 60, 70, and 84 percent of the total area under the curve for the points 0.25, 0.5 and 1 standard deviation from the mean, respectively. A visual inspection of Figure 4 will indicate that this graph exhibits these area features.

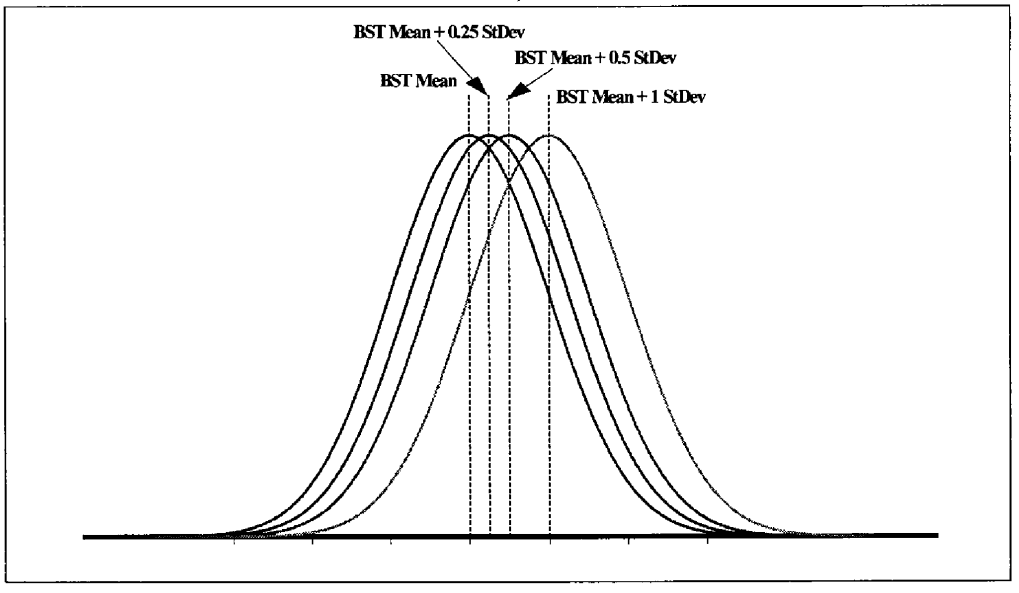
Looking at Dr. Ford's graph in Exhibit No.___(GSF-3), he does not place these points correctly on his graph. The point where he places the mean plus 0.25

standard deviation appears to really be about 2 standard deviations from the mean. I can only guess that the point that is supposed to be 1 standard deviation from the mean is located about 8 standard deviations from the mean.

Q. WHAT SHOULD THE CONCEPT DR. FORD IS ATTEMPTING TO ILLUSTRATE REALLY LOOK LIKE?

A. Figure 5 shows 4 bell-curves. The first one on the left represents the BellSouth service time distribution. The second one represents the alternative hypothesis distribution for an ALEC that has the same standard deviation as the BellSouth distribution, but its mean is larger than BellSouth's by 0.25 standard deviations. The third and fourth bell-curve are similar, representing ALEC means that are 0.5 and 1 standard deviations larger than the BellSouth means.

FIGURE 5: Location of Alternative Normal Distributions With Respect to the BellSouth Distribution
Delta = 0.25, 0.5 and 1



Q. THIS CERTAINLY GIVES A MUCH DIFFERENT VISUAL REPRESENTATION THAN DR. FORD'S GRAPH. WHY IS DR. FORD'S GRAPH SO DIFFERENT?

A. I am not sure. Perhaps he is not using a normal distribution. But his curves are symmetric bell-shapes, and while there are other distributions with similar shapes, the relationship between the curve and the point that is one standard deviation from the mean is not that much different from where it is located based on the normal distribution. I can only conclude that Dr. Ford either doesn't understand what he is doing, or he is deliberately trying to be misleading.

Q. DOES THIS CONCLUDE YOUR REBUTTAL TESTIMONY?

A. Yes.

BY MR. LACKEY:

Q Dr. Mulrow, do you have a brief summary of your testimony?

A Yes, I do. Good afternoon. My name is Edward Mulrow, and I'm a statistician employed by Ernst & Young. My purpose of appearing in this proceeding is to address the appropriate methodology for determining whether BellSouth is providing parity to the ALECs in Florida both individually and as a whole.

My basic position is that I generally agree with Staff Witness Stallcup's statistical methodology presented in his testimony; that is, we are comparing the service that BellSouth provides to ALECs with similar service that BellSouth provides to itself. The appropriate statistical test used is called the truncated Z. More specifically, I am actually recommending a methodology that is called the truncated Z with error probability balancing.

This methodology serves to detect statistically different results in the service BellSouth provides to itself and the ALECs while balancing the probability that an error will be made in the analysis. In statistics there are two types of errors that can be made. Type I errors, where BellSouth is providing parity, but the test suggests it is not, and Type II errors, where BellSouth is not providing parity, but the test suggest it is. The error probability balancing means that there is just as much chance of one type of error being made as the

other, so neither side is disadvantaged. It is a credible and practical methodology which even AT&T and the ALECs should not challenge.

Dr. Colin Mallows of AT&T research labs and Ernst & Young statisticians, including myself, developed the methodology jointly, so it is not a theory just created for the benefit of BellSouth or any other incumbent local exchange carrier.

In general terms, the truncated Z statistic is a summary of the results of many statistical comparisons made within like-to-like categories using a modified Z type of statistic. This modified Z type of statistic is the same statistic that the ALECs want to use in this proceeding. The difference is, is that BellSouth aggregates similar cells or grouping and when an aggregation is used, the modified Z statistic cannot be used by itself. The summary is created so that BellSouth is truly providing parity service. Then the final result is on a bell curve scale. However, the statistic is designed so that as much as possible it will not mask systematic poor performance.

To fully carry out the method, input is needed from those who understand the telephone industry the best; that is, it is not enough for the statistician to merely detect a statistical difference. In the case at hand, the difference must not only be statistically significant, it must also be material. Specifically, a measure of a meaningful difference between the

BellSouth and CLEC performance, which we refer to as delta, needs to be chosen. It is necessary to serve as a reference level of disparity so that the probability of a Type II error can be calculated.

In the Louisiana statisticians' report, we recommended the choice of delta be left to telephony experts. This does not mean that statisticians do not have any role to play in choosing the parameter of the balancing hypothesis. Indeed, statistical science is important in evaluating the impact of different choices of delta. One such impact is that if the observed difference between the BellSouth average performance and the ALEC performance is greater than one-half delta standard deviations, then BellSouth will be found to be out of compliance and pay a penalty.

This is true regardless of the sample sizes used in the test, which is quite different from that -- than the textbook situations where a fixed critical value for the Z test statistic is used. In that case, the failure threshold for the ALEC sample average is large for small sample sizes and very small for large sample sizes. While that is an appropriate approach for studies that fit into the textbook mode, the situation we are dealing with is not a textbook situation. We do not have plan samples. Instead, customers chose themselves into the sample when they request a service call. We also are constrained by timely reporting requirements. We want a calculations system that is

self-effectuating, and that it requires little to no manual intervention, and we want the analysis done within a short amount of time. Finally, we want a system that will give BellSouth an incentive to provide an ALEC with the opportunity to compete.

In summary, I recommend the use of the truncated Z methodology with error probability balancing and situations where transaction level data is available and a BellSouth retail analog exists as described in the joint statisticians' report attached to my direct testimony. This methodology is based on the extensive examination of BellSouth performance measure data and is, therefore, both credible and practical. In order to balance the error probabilities, the Commission needs to choose the parameter of the balancing alternative hypothesis; namely, delta. The choice of delta should be based on the business arguments that the parties make to the Commission. That concludes my summary.

MR. LACKEY: The witness is available, Mr. Chairman.

CHAIRMAN JACOBS: Very well. First up, Mr. McGlothlin.

CROSS EXAMINATION

BY MR. McGLOTHLIN:

Q Dr. Mulrow, a few general questions to begin. Do you agree that significance levels of 5 percent and sometimes 1 percent generally are regarded by statisticians as adequate to assure that the statistical test is not unduly affected by sampling errors?

A Yes, I agree that in typical types of studies that are outlined in textbooks usually design type studies that people, practitioners of statistics, will use, say, a 5 percent or 1 percent significance level.

Q Are 5 percent and 1 percent significance levels ever used outside of the textbook?

A Yes. As I was saying, in situations where you have designed the experiment, in other words, planned the sample size, you understand what it is you are doing before the experiment takes place. People -- many applications will use those significance levels.

Q I want to ask you a few questions about the basic relationships within this balancing mechanism. With respect to the balancing critical value, do you agree that as the delta value increases, the corresponding balancing critical value also increases?

A Yes, it would. Yes.

Q And as sample size increases, balancing critical value also increases?

A Yes. For a fixed delta, the balancing critical value increases with an increase in sample size.

Q Do you agree that an increase in the balancing critical value has the impact of decreasing the significance level associated with the test?

A Yes, I do.

MR. LACKEY: I'm sorry, Mr. Chairman. Mr. McGlothlin's voice is dropping off, and I can't hear the end of the question. Joe, I'm sorry, if I could ask you to get closer to the mic or something. I appreciate it.

CHAIRMAN JACOBS: Many folks want to hear you today, Mr. McGlothlin.

MR. LACKEY: Usually that's not a problem. I don't understand.

BY MR. McGLOTHLIN:

Q Sir, you recommend a delta value of one in this case; correct?

A No, sir. BellSouth recommends a delta value of one. I did not choose that. That was a choice that BellSouth made.

Q I accept your correction. Does that delta of one recommended by BellSouth mean that the alternative hypothesis that comprises part of this statistical test would incorporate a difference in means of one standard deviation?

A Yes. The difference between the CLEC -- or the ALEC mean and the BellSouth mean would be one standard deviation at the alternative hypothesis.

Q With respect to sample size, you've mentioned -- you've alluded to the fact that, in your words, customers choose themselves into certain sample sizes. Would you expect that the ALEC sample sizes would vary to some extent?

A Yes. Based on the data I've seen, it varies quite a

bit.

Q As I understand your earlier responses, you're saying in this case that you believe delta should not vary with sample size; is that right?

A That's correct. Delta as -- when we put the Louisiana statisticians' report together, it was meant to be a meaningful difference between the ALEC and the BellSouth mean.

Q And BellSouth did sponsor the submission of this statisticians' report to which you refer in the Louisiana case?

A Yes, BellSouth and AT&T sponsored it.

Q And you were a coauthor of that document, sir?

A Yes, along with two other statisticians at Ernst & Young and AT&T's Dr. Colin Mallows.

Q Isn't it true that the statisticians' report regarded sample size as a relevant consideration to take into account in choosing the value of delta?

A No, it does not.

Q Do you have the statisticians' report that was attached to your prefiled testimony in front of you?

A Yes, I do.

Q Would you turn to -- we're looking at the header on the case, Exhibit EJM-1, Page 32 of 39. Do you have that page --

A I'm there.

Q And this is a portion of the statisticians' report that we have been discussing, is it not?

A Yes. This is the appendix that deals with balancing.

Q I refer you to the second of the three bullet paragraphs in the middle of the page.

A Yes, sir.

Q The one captioned "Parameter choices for delta." Would you read the first several sentences in that paragraph?

A It says, "The set of parameters $delta_j$ are much more important in the choice of the balancing point than was true for the lambdas of j. The reason for this is that they directly index differences in the average service. The truncated Z test is very sensitive to any such differences; hence, even small disagreements among experts in the choice of the $delta_{js}$ could be very important. Sample size matters here too. For example, setting all the $delta_{js}$ to a single value, $delta_j$ equal to delta, a fixed delta, might be fine for tests across individual CLECs where currently in Louisiana the CLEC customer bases are not too different."

Q If you will stop there.

A Well, excuse me, sir. I would like to continue reading because it's the next few sentences that are important.

Q All right. Go ahead.

A "Using the same value of delta for the overall state testing does not seem sensible. At the state level we are aggregating over CLECs, so using the same delta as for an individual CLEC would be saying that a 'meaningful' degree of

disparity is one where the violation is the same delta for each CLEC. But the detection of disparity for any component CLEC is important, so the relevant 'overall' delta should be smaller."

Q Now, with the additional language that you read, at the state level would that corresponded to a Tier 2 test in this case?

A Yes, that does.

Q I'm going to refer you back to the earlier portion where the report says that setting all the deltas to a single value might be fine for tests across individuals CLECs. Would that correspond to the Tier 1 portion of this case?

A Yes, that's correct. That's for the Tier 1 where you're setting a constant delta across all comparison cells.

Q And in Louisiana, according to the report, was sample size a pertinent or a relevant consideration in the choice of delta for what corresponds to the Tier 1 test in this case?

A No.

Q Why not?

A Because it's meant to be a meaningful difference between the BellSouth average and the ALEC average.

Q Well, this paragraph does address the choice of delta, does it not, sir?

A Yes, it does. And where we're saying sample size matters is to just say that the sample size affects the balancing critical value.

Q Well, I certainly agree with that. And does it also indicate that the fact that in Louisiana where this choice of a single delta is appropriate because the sample sizes are not different?

A No.

Q Well, if you'll explain to me then what different meaning you would attach to this language. Let me read it. "For example, setting all the $delta_{js}$ to a single value might be fine for tests across individual CLECs where currently in Louisiana the CLEC customer bases are not too different." Does that not imply to you that if the CLEC customer bases were different, some different result might be appropriate?

A Yes. And in that terms, what we're talking about is the CLEC customer base being the types of business that the CLECs in Louisiana were dealing with. They are dealing with similar types of customers, so one delta over all the CLECs might seem reasonable.

Q Okay. So in Louisiana, the CLECs had approximately this same size sample. So in that situation, the statisticians say it is okay for a single delta; correct?

A No. It had nothing to do with same size sample. It had to do with the similarity of the CLECs, or at least what we were lead to believe to be the similarity of the CLECs. I can tell you for sure that when you look at the various transaction levels across CLECs, it varies quite a bit.

COMMISSIONER DEASON: So are you indicating it's not the number of transactions per CLEC, it's the type transaction for any given CLEC being similar?

THE WITNESS: Yes. I believe what we were thinking here was that, suppose in Louisiana that the only types of CLECs that were operating were those that were interested in going after POTS type services. I don't know that that's true, but I'm just saying suppose it was. And if the base of all the CLECS, if they were all trying to sort of get into the same business line, then you might think that a single delta for those CLECs would be good for each one of them. The same delta from CLEC to CLEC would be appropriate if you set that one delta that way.

MR. McGLOTHLIN: Thank you, sir.

BY MR. McGLOTHLIN:

Q Dr. Mulrow, would you agree with me that the sentence that begins, "For example," is an elaboration or amplification of the sentence that preceded it immediately?

A No.

Q Okay. If this paragraph is talking about customer characteristics, why do we see this language, "sample size matters here too"?

A That was just put in there because the sample size does affect the balancing critical value.

Q And so when the paragraph is constructed so as to read "sample size matters here too," for example, what follows does

not discuss sample size?

A Let me just say this. This is the second edition of this writing. Okay. And in the first one, there was -- this is a bad job of cutting and pasting when I do a revision. In the first one, there was a follow-on thought to that sample size issue. And when I was doing the revision, Colin Mallows pointed out to me that he thought that it pertained the wrong idea. I think it pertained the idea that you're trying to get at, but he specifically told me that that needed to be corrected. That's why I read those couple of extra sentences. Those are what he told me to add in there. Now, I passed these things along to the other statisticians involved, and we all agreed that that was the right concept that he was trying to capture and that what we originally wrote could have been misleading.

Q Did you do the same poor job of cutting and pasting in the following paragraph to discuss the cite where it says, "sample size matters here too"?

A Yes. In other words, it was a follow-on paragraph from the first one. I didn't want to repeat all the same information, so it just captured that. And in the editing that probably got missed just like in the other one. It was not taken out.

Q You propose to make no adjustment to modify the balancing critical value when sample size generates a very high value; is that correct?

A When the sample size generates a very extreme critical

value?

Q Yes.

A Yes, sir, I don't think it's necessary.

Q Is there any limit to how high balancing critical value can be and still have a valid statistical test of the null hypothesis?

A No, sir. Because -- let's take the joint ALEC plan, for example. The way they base their penalties, they take the ratio of the Z statistic, the modified Z statistic, to the balancing critical value. Now, when you take that relationship -- and this would be the same for the way BellSouth does it. In that relationship the factors involving the standard error, which volumes sample size, which is the reason why both the critical value and potentially the Z value can get large, they cancel out.

And what happens is, is that your test becomes more like a benchmark. If you look at the algebra, the situation, it says, if you take the observed CLEC average, subtract off the observed BellSouth average, and divide by the BellSouth standard deviation, that's the standard deviation, not the standard error, that if that is greater than delta over two, then the test fails and a penalty is due. And since you've taken sample size in a way out of that, that rule just isn't going to be affected by very large sample sizes.

Q You've alluded to the Louisiana case, and we've

discussed that to some extent. Is it true that the Louisiana staff submitted a recommendation which was ultimately approved by the Louisiana Commission in that case?

A I know that the staff submitted a recommendation. I'm not sure that it was approved, but I think -- I thought that I heard that it was.

Q But you're familiar with the staff recommendation, aren't you?

A As it pertained to statistical issues, I --

Q Okay. Isn't it true that in its recommendation, the Louisiana staff based its analysis on representations by BellSouth that the balancing critical values of its proposal would average approximately 1.645?

A That was the result, yes, of an impact analysis that I had done which Dr. Mallows criticized. Evidently, his criticism did not go over in Louisiana, but it did ring true to my ears.

Q I'm not quite sure I understand that part of the answer.

A In other words, Dr. Mallows was saying the -- his argument was that we are not in a search for critical values. You are trying to balance the Type I and Type II errors, and delta is meant to be a meaningful difference between the ILEC and the CLEC performance, and that searching for critical values is not an appropriate way to go about setting delta. When BellSouth first chose their delta of one, they said, what type of impact

analysis can you do? And I said, well, let's look at what critical values are generated.

And so I did, and that got used in Louisiana. And Dr. Mallows was very critical of using that type of an analysis, and I understand his point. It's just -- the way the critical values turn out is not really that important when you're doing balancing.

Q Well, let's have a look at what we're talking about. I would like to hand out a document, if I may.

MR. McGLOTHLIN: Dr. Mulrow and Commissioners, what I'm handing out is an excerpt from the Louisiana Public Service Commission staff final recommendation. We have one copy of the lengthy document here. I represent that this is an excerpt from it, sir. If you have any need to see the full document, we can supply it to you.

CHAIRMAN JACOBS: Is this on the official recognition list?

MR. McGLOTHLIN: I believe it is not.

CHAIRMAN JACOBS: Would you like to mark it?

MR. McGLOTHLIN: Yes, sir.

CHAIRMAN JACOBS: We'll mark this as Exhibit 21.

(Exhibit 21 marked for identification.)

BY MR. McGLOTHLIN:

Q Dr. Mulrow, we have provided you with a document that has been marked as Exhibit 21. It's an excerpt from the staff

final recommendation that you and I have been discussing. Would you turn to what is identified at the bottom right as staff final recommendation Page 11 of 11. I'm going to ask you to read beginning with the last paragraph that appears on that page.

A The one that starts with "In response"?

Q Yes.

A In response to the questions raised by staff, BellSouth produced data which tends to substantiate its contention that choosing a parameter delta value of 1 produces critical values in the range of minus 1.7 as stated by BellSouth for the individual CLEC populations in Louisiana. In addition, on January 10th, 2000, BellSouth filed a document entitled, "Analysis of BellSouth's Proposal for Determining Balancing Critical Values." This document also tends to suggest that a -- that at a parameter delta value of 1, the balancing critical value is in the range of minus 1.7, although it does not vary considerably depending upon the sample size -- oh, it does, sorry. I think I said "not." It does vary considerably depending on the sample size.

Q Okay. Stop there, if you will, sir. Now, for purposes of my question, my question relates to that which BellSouth submitted and that which the Staff analyzed. And let's leave other people out of it. Is it true that in the Louisiana proceeding, BellSouth submitted data indicating that its proposal would result in balancing critical values of about minus 1.7 in support of its proposition?

A Yes, it did.

Q And does it appear to you that the staff relied on that in recommending that it be adopted?

A In part, certainly it did.

COMMISSIONER DEASON: Let me ask a question on this same document. A little further down in that same paragraph you were reading from on Page 12, there is a sentence that reads, "In addition, the balancing critical value produced with the .25 delta parameter value results in a much higher probability of Type I and Type II errors." Can you explain that, please.

THE WITNESS: Yes.

COMMISSIONER DEASON: First of all, do you agree with that, and can you explain it?

THE WITNESS: Yes. Lowering the value of delta will -- for a fixed sample size will increase the Type I and Type II errors. And basically what's happening there is that as you require a tighter bound on the difference in the performance and you keep your sample size fixed, that's just going to increase the probability that an error could be made. So, in other words, it's more likely that you're going to fail the test. And so it's more likely that if parity truly exists, that you could fail the test. And that's a Type I error.

Now, since we're balancing -- if you go to the balancing alternative hypothesis which is the separation between the two means is a quarter of a standard deviation, since the

Type II error was set equal to the Type I error, if the Type I error goes up, the Type II error has to go up. Did I --

COMMISSIONER DEASON: Yeah, you answered the question; then that brings another question. But then based upon your answer, are you saying that if you have a larger sample size, you can have a critical -- I'm sorry, you could have a delta of .25 and you would diminish the probability of Type I and Type II errors?

THE WITNESS: Yes, that's right.

COMMISSIONER DEASON: Okay.

BY MR. McGLOTHLIN:

Q Turning back to the value of minus 1.7 that the staff recommendation addressed. Does minus 1.7 correspond to a significance level of 5 percent?

A Roughly. I think it would be little bit less, but roughly, yes.

Q Is it fair to conclude that that was the reason they were targeting minus 1.7?

A Yes. Because in the Bell Atlantic order the FCC said that minus 1.645, which corresponded to 5 percent, was a reasonable significance level to use to determine parity.

Q Okay. Now, this provides some information such as a delta value of 1 and the balancing critical value of minus 1.7. In your testimony, you state that the equation for balancing critical value can be approximated by the equation of delta over

two times the square root of the ALEC sample; is that correct?

A That's correct.

Q So knowing the balancing critical value and the delta, we can derive the sample size that was part of this analysis; correct?

A You could approximate it, but I will just say that as it turns out, there really are cases where BellSouth has small sample sizes.

Q Yes. Well, I'm talking about --

A Well, that approximation assumes that the BellSouth sample size is very large. So while you could say, well, it looks like the CLEC sample sizes are in this particular range, there would be a few cases where you would be thrown off because the BellSouth sample size was also small.

Q Okay. A few cases where it could be thrown off, but as a rough approximation, would you agree that this is an appropriate equation to use?

A As a rough approximation, you can use that equation, yes.

Q With a delta of 1 and a balancing critical value of 1.7 -- or minus 1.7, would you agree that the corresponding sample size is 12?

A I'll assume that you did your math right and agree with it, but I can't do that calculation in my head.

Q Okay. We've talked about the error balancing

mechanism. The error balancing mechanism that's being discussed in this case is part of an overall version of what's called the Z test; is that correct?

A Well, the Z test can be separate from the balancing critical value.

Q But the balancing critical value is part of a larger statistical test that includes more than just a balancing function; correct?

A Yes. A test includes your hypotheses, a test statistic, and a critical value.

Q And the two hypotheses are the null hypothesis and the alternative hypothesis; is that correct?

A Yes, that's right.

Q The balancing of errors mechanism is a part of the alternative hypothesis; is that correct?

A Yes. You need to set a reference point in your alternative in order to calculate a Type II error. In other words, Type II error exists for many -- there are many alternatives which would show some type of disparity, and you need to pick one of those in order to do the balancing.

Q The error of balancing mechanism is not part of the null hypothesis; is that correct?

A In a -- directly, no. But when you're calculating out how to do the balancing, you have to take the probability of a Type I error, which is related to the null hypothesis, and equate

it to the probability of a Type II error, which is related to the alternative hypothesis.

Q With respect to what are characterized as means difference tests, the null hypothesis is that there is zero difference in the means; is that correct?

A Yes, sir. But it's a little bit larger than that. You're really trying to say that there is parity. That's what your null hypothesis is, but that's a concept, and we need a mathematical model to relate that to. And they are many types of mathematical models that you could use to assume parity. It turns out that if you were to believe that your data comes from a normal distribution, or a gaussing distribution, however you would like to describe it, then all you need to do is know the mean and standard deviation of the two distributions you're trying to compare. If the two means and standard deviations are equal, then both things are coming from the same normal distribution, just knowing the means isn't enough.

And this is recognized in our testing procedure for mean measures by using the modified Z where we use only the ILEC standard deviation. We don't do what is usually done in pooling. And while this does not test for a difference in standard deviation, it makes this means difference test more sensitive to alternatives that where the CLEC standard deviation would be larger than the BellSouth, which would be another way of having disparate treatment. So the null hypothesis that we really want

is that the means are equal and the standard deviations are equal.

Q I won't promise that I followed all of that, but I believe your answer to my question is, yes, that the null hypothesis poses that there is zero difference between the ALEC mean and ILEC mean?

A As one component of it, yes.

Q Is that the null hypothesis?

A The null hypothesis is really that the means are equal and the standard deviations are equal. And that's a mathematical model for a concept that there is parity. Now, whether this mathematical model truly captures parity is another question.

Q I think we're getting close because my question relates to the ModZ that both BellSouth and the ALECs propose to use in this case. Under the ModZ, is it true that the null hypothesis poses that there is zero difference between the ILEC mean and the ALEC mean?

A Yes. It's zero difference between the ILEC and ALEC mean, but also that the ILEC and ALEC standard deviations are equal.

Q Okay. And isn't it true that the statisticians' report to which we referred to earlier equates the null hypothesis with parity?

A Yes. That's what I was explaining, that parity is a concept that we need a mathematical model for. And we chose that

particular set of hypotheses.

Q If you'll look at Appendix C-1, which is Page 24-39.

MR. LACKEY: I'm sorry, could I have the page again, please.

MR. McGLOTHLIN: Yes. Page 24 of 39, which is also marked "C-1" at the bottom.

BY MR. McGLOTHLIN:

Q I'm looking near the top of the page, sir. It states, there are four key elements of the statistical testing process. Number one is the null hypothesis, H_0, that parity exists between ILEC and CLEC services. Is that consistent with the version of ModZ that you and I have been talking about?

A Yes, provided you really believe that you only need to equate means and standard deviations.

Q At Page 23 and 24 of your rebuttal, I want to ask you a few questions about the area of your testimony.

A Of my direct testimony?

Q No. Of your direct/rebuttal testimony.

A Okay. Could I have those page numbers again?

Q Yes, 23 and 24.

A I'm there.

Q All right. And at this point in your testimony, you are responding to the contention by Dr. Ford that unduly high balancing critical values result in significance levels that biased the test against a finding of discrimination; is that

correct? You may want to look as far as back as number 21.

A Yes. As I look back there and -- I believe that's true, yes.

Q And in your response to that, you include a table that's labeled "The Probability of Detecting Disparity, Mean Measure Test with Delta Equal to One."

A That's correct.

Q And you have a caption there called "true disparity level;" correct?

A Yes, that's right.

Q But those are all assumed values, are they not?

A Yes. Those are conditional -- I'm calculating conditional probabilities here. Assume there is a disparity level, what's the probability you would detect it with the test.

Q And you use the word "power" in your testimony. Do I understand that correctly to mean the ability of a test to detect an existing level of discrimination that exceeds some benchmark materiality standard?

A No. The power to test most simply is the power -- is the probability that you would reject the null hypothesis given some -- given an assumption about what is truly going on.

Q Okay. That seems like a contradiction in terms. Some assumption about what is truly going on, what do you mean?

A I mean that if the true disparity was, say, .2, what is the probability that the test that you're doing would reject the

null hypothesis and, therefore, determine that BellSouth was providing disparate treatment.

Q But you don't know what that true level of discrimination is, do you?

A No, we don't. We don't know whether parity exists either, yet we calculate the significance level, which is also a conditional probability. The first column in my table where I say true disparity level is zero is actually a Type I error, probability of a Type I error.

Q Well, with significance levels, we can determine the extent to which the -- any discrepancies or departures from the null hypothesis are statistically significant, can we not?

A What the Type I significance level is --

Q If you'll begin with a yes or no on that one, please.

A I'm sorry. I believe the answer is yes. But let me explain. Significance level is the probability you reject the null hypothesis given that there is parity. Okay. So it's a conditional probability. And when you're using a significance level in a test, it's an inference you make saying, well, gosh, my results seem kind of extreme. If there really was parity, there would be this small probability out there, so I'll go ahead and reject the null hypothesis. But it's not a direct calculation that there is some true separation in the two means.

Q Looking at the question and answer just below that table. The question reads: It seems then that a mean measure

test based on a balancing methodology does make it possible to detect discrimination as long as the true disparity is beyond the materiality threshold; is that true?

Your answer says: Yes, a mean measure test based on balancing and large sample sizes has a high likelihood of detecting disparity beyond the materiality threshold, but a low probability of detecting disparity that falls under the threshold.

When you use the word "threshold," does that correspond to the delta that you assume?

A No. I use that to mean the halfway point to delta because when the observed disparity goes beyond delta over two, that's when you start paying a penalty.

Q Assume for the purpose of this question that the objective is to detect whether there is any disparity, any difference beyond the ILEC mean.

A Okay.

Q Would it follow from your statement here that a mean measure test based on large sample sizes does a poor job of that?

A It will not --

Q Yes or no, if you may.

A Yes, if you mean that any type of disparity goes undetected. It is just a fact of when you're using balancing that with large sample sizes, the probability of detecting the disparity between zero and one-half delta is almost zero.

Q Earlier you agreed with me that the null hypothesis is that there is zero difference in means; correct?

A Yes. Basically, yes.

Q And you also -- okay.

CHAIRMAN JACOBS: Mr. McGlothlin, are you at a good breakpoint?

MR. McGLOTHLIN: Yes, sir, we can break if you'd like. I have about another ten minutes or so.

CHAIRMAN JACOBS: Why don't we break and come back in 15 minutes?

(Brief recess.)

CHAIRMAN JACOBS: We'll go back on the record. Just to make sure everyone is on board with where we are, we're planning on working late tonight, at least to 6:00, perhaps later if we think we can be productive; start again at 9:00 a.m. in the morning and probably work through lunch tomorrow; and then we're just going to prepare to get done at 5:00. If we don't get done at 5:00, we'll find another date, but I'll leave that in the capable hands of counsel.

I understand that there has been agreement on reordering of some witness testimony. Is everybody on board with that?

MR. LACKEY: BellSouth certainly is. It's my understanding we're talking about pulling Pate and Latham up to tonight, so we don't have to listen to statistics --

CHAIRMAN JACOBS: Right. We understand there may be one exception. Very well. With that agreement and understanding, then, Mr. McGlothlin, I think you're in the middle of your cross. You may proceed.

BY MR. McGLOTHLIN:

Q Dr. Mulrow, I want to pose to you a hypothetical that compares distributions of the means of the ILEC with the distribution of means of the ALEC. Is that all right?

A Okay.

Q And the hypothetical is this: The Type I and Type II error rates are virtually zero.

A Okay.

Q The balancing critical value is five, and discrimination by definition has been found. Do you understand the hypothetical?

A Yes, sir.

Q Would you agree that the distribution of the means -- that the overlap between the distribution of the means of the ILEC and the overlap of the distribution of sample means of the ALEC would be very small?

A If -- well, I think I need a little more information to answer that.

Q What do you need?

A How many standard deviations apart are they?

Q To the assumptions I gave you earlier, assume that the

sample size of one distribution is 1,000, the sample size of the other distribution is 100, and there is a single standard deviation between the population of the means.

A A single standard deviation between the population means?

Q Yes, sir.

A Well, I'm still not totally sure because I would need to know the population standard deviation.

Q They are equal, one.

A What is equal?

Q The standard deviation is one.

A The standard deviation is one. Okay. So for the -- and this is the sample means?

Q That's correct.

A So the ILEC, the BellSouth, sample mean has a standard error of one divided by the square root of 1,000, and the CLEC standard error is one divided by the square root of 100 or one-tenth. Are those the conditions you're setting?

Q That's correct.

A And it's the population standard deviation that's separating them?

Q Correct again.

A And I believe -- well, you haven't told -- so, yes, there would be very little separation between them.

Q We may have --

A Overlap, I guess, is what you were looking for. I'm sorry.

Q That's correct. All right, sir. Now, there is a point in your rebuttal testimony beginning on Page 32 in which you find fault with Dr. Ford's GSF-3. Do you recall that series of questions and answers?

A Yes, I do.

Q Just so that we're clear on the exchange between Dr. Ford's revised direct and your point, would you refer to Page 18 of his revised direct testimony?

A Yes, I'm there.

Q Beginning at Page 18, Line 8, Dr. Ford makes this statement which I believe is the subject of your rebuttal. "For example, if BellSouth's mean level of service were three days, standard deviation of that service were six days and delta was one, as BellSouth proposes, then BellSouth could consistently provide the ALEC with service averaging nine days without any penalty. While not illustrated in Figure 2, it should be apparent that as the difference between means gets larger, delta gets larger, the Type II error rate gets smaller. Alternately, as the ILEC and ALEC means get closer to magnitude, the Type II error rate decreases. Exhibit GSF-3 illustrates the implications of alternative specifications of delta."

A Okay.

Q Now, based on the hypothetical that I gave you, and

based upon Dr. Ford's statement regarding the distributions of means, would you agree that his GSF-3 shows the type of small overlap that would be appropriate for the depiction of the relationships he describes?

A No, I would not.

Q Would you explain why.

A As I was saying, in the situation that you described to me, the standard error for the ILEC distribution would be one divided by the square root of 1,000. The standard deviation for the ALEC would be one-tenth. Okay. Now, the curves that he's showing there are identical in their standard deviations. So he cannot be representing that.

Furthermore, if you go to his Figure 3, it says, "location of the alternative distribution with different delta values." The alternative distribution of the alternative is the population you are sampling from. It is not the distribution of the ALEC sample mean.

Q Do I understand correctly that based upon the title of the GSF-3, you concluded that he was representing the population and not the samples?

A Yes, I did. I went through my office to about five or six statisticians. These are people that do statistics every day of their life. I showed them all that, and they all just shook their head saying, this cannot be true.

Q If you will assume for the purpose of this question

that the depiction was not of the population but of sample means, would your conclusion about the appropriateness of these graphs change?

A As I said, I would expect to see the spreads -- the first -- the left most graphic is labeled X of B. I assume that that's supposed to be the null hypothesis, which he's saying the BellSouth distribution. The other ones should be representing the ALEC distributions. And if the two sample sizes are not the same, then these curves would have to -- the one with the higher sample size has to be more pushed in, more peaked, than the ones with the smaller sample size.

Q For larger sample sizes, would they overlap?

A For larger sample sizes, would they overlap? If these are depicting the distribution of the averages, which is not what the title of this says, then they would not overlap.

MR. McGLOTHLIN: Those are all of my questions.

CHAIRMAN JACOBS: Ms. Boone. And I assume Ms. McNulty didn't have any cross. Staff.

CROSS EXAMINATION

BY MR. FUDGE:

Q Dr. Mulrow, there appears to be several areas where the parties agree on statistical procedures. I'm going to see if I can nail down some of those agreements. The transform data method, also known as the arcsin transformation, is the one statistical technique which is appropriate for proportion and

rate measures and for which there is evidence in this proceeding to implement the technique. Do you agree with that?

A No, sir, it's not appropriate for rate measures. It's only appropriate for proportion measures.

Q Did you say it was not appropriate for rate measures?

A No, sir, it is not appropriate for rate measures.

Q What should be used for rate measures?

A Just so I get this right, let's go to my exhibit -- Attachment 1, EJM-1. Let me find the page here and I'll -- it's on Page 33 of 39 in Exhibit EJM-1. It is in the appendix. It's C-10. Do you have that?

Q Yes, sir.

A Okay. There are two equations at the top of that. The first equation is the arcsin square root transformation, which is for proportions, and the second one is just a square root transforms which I have not verified, but Dr. Mallows told me that that was appropriate for rates.

Q Does the second one have a different name?

A I guess, square root transformation.

Q Where sample sizes are small, compliance for measures with retail analogs should be determined using a permutation test for mean measures and the hypergeometric test, also known as Fisher's Exact Test, for proportion and rate measures. Do you agree with that?

A Yes, sir. And I think Dr. Bell explained in his

deposition that the Fisher (phonetic) Exact Test is based -- is really a permutation test as well. It's just that the algebra works out. So we could say that for all these different types of tests, permutation testing is the right thing to do when sample sizes are small. It's just that when you have a proportion, the algebra works out nice, and you can get an equation.

Q Do you agree that where sample sizes are small, compliance for measures with benchmarks should be determined using the adjustment table for a 95 percent confidence interval?

A I'll say yes. It's -- those are based on a statistical method, and for a benchmark, I would prefer to use a statistical method.

Q Do you agree that for purposes of a performance enforcement plan, balancing Type I and Type II errors is more critical with small samples than large samples since statistical tests are more powerful with large samples?

A No. And it's mainly because I don't necessarily find value in just balancing for the sake of balancing. It's the by-products of balancing that I like, which is this introduction of the materiality into the test.

Q In BellSouth's proposed penalty payment mechanism, do you agree that the penalty is based on some estimate of the number of discriminatory transactions?

A Yes. Say they are attempting to use a model to capture the number of transactions, which if changed for the better,

would bring them into parity.

Q In estimating the number of discriminatory transactions, does BellSouth proposal to estimate the total number of transactions that did not receive parity service or only the portion of transactions for which disparate service was detected?

A I believe the latter. And what they are doing is, they are going to cells. When you do the truncated Z, it's broken up into cells. We have talked about that. So they will go to the cells where there was a negative Z score, and they will only use transactions from those cells to determine the penalty.

Q When the ALECs proposed penalty payment mechanism, do you agree that penalties are based on the presence of discrimination in a particular measure with greater penalties as the statistical certainty of discrimination increases?

A Yes, that's, I believe, what the joint ALEC plan is trying to achieve.

MR. FUDGE: Thank you, Dr. Mulrow.

COMMISSIONER JABER: Dr. Mulrow, were you here yesterday for Mr. Stallcup's testimony?

THE WITNESS: Yes, I was.

COMMISSIONER JABER: So you heard him acknowledge that his proposal, his testimony was really a way of -- well, first of all, it was based on the Georgia model with some modifications, and in fact, he probably took the strengths from

the ALEC model and the strengths from the ILEC model and put together a compromised proposal. Would you agree with that?

THE WITNESS: As best I can tell, when I looked through it, I just paid attention to the statistical part, but it appears that that's what he did.

COMMISSIONER JABER: Were you here for your counsel's opening statement where he said, you know, the Staff proposal is better than the ALEC proposal? I'm paraphrasing. I don't think those were the exact words, but basically it's a recognition that Mr. Stallcup's proposal is not the ILEC proposal, but it's really not the ALEC proposal either, it's better than that.

THE WITNESS: I believe I heard him say that or something along those lines. And I would agree with that, yes.

COMMISSIONER JABER: Would BellSouth -- and this is really in line of the questions and answers with respect to what BellSouth would find acceptable and -- an acceptable remedy plan that would kick in the self-executing penalties. Would BellSouth accept and adopt Mr. Stallcup's proposal?

THE WITNESS: Are you talking about the proposal in his testimony?

COMMISSIONER JABER: Yes, in its entirety.

THE WITNESS: In its entirety. This is what was attached to his direct testimony?

COMMISSIONER JABER: Yes, and as is described in his direct testimony.

THE WITNESS: Well, all I -- I'm here as a statistical expert. I am not a BellSouth employee, and they look to me to say what's the statistical methodology. So I can say what I've seen of the statistics in Mr. Stallcup's proposed plan is something that I would agree to, and therefore, I think BellSouth would. But I could not answer for them to say that they would just agree with all of it.

COMMISSIONER JABER: Well, I appreciate that clarification, but let me make sure I understand then with respect to Mr. Stallcup's testimony as it relates to the statistical analysis. You would agree and accept then the proposal, you would agree and accept the proposal made by Mr. Stallcup?

THE WITNESS: Yes.

COMMISSIONER JABER: And taking it one step further. You would recommend that your client accept and agree with Mr. Stallcup's proposal?

THE WITNESS: Yes.

COMMISSIONER JABER: Thank you.

CHAIRMAN JACOBS: Dr. Mulrow, are you familiar with Dr. Bell's testimony?

THE WITNESS: Excuse me, I didn't hear that. I'm sorry.

CHAIRMAN JACOBS: Are you familiar with Dr. Bell's testimony?

THE WITNESS: Yes, I've read through it.

CHAIRMAN JACOBS: Specifically, where he discusses the selection of a delta. And I'm on Page 11 and 12 of his direct.

THE WITNESS: I'm there.

CHAIRMAN JACOBS: On Page 11, what he says is when you select a delta, they are important in, and he says, business judgment, but in our case, public policy judgments to be made. The goal -- would you agree with his goal here in our selection of delta?

THE WITNESS: Could you point me to a specific phrase, or just the whole thing there?

CHAIRMAN JACOBS: I guess he doesn't really -- he doesn't state his goal, but mainly the idea is to gain the smallest variation in delta that would cause some kind of material impact on competition.

THE WITNESS: Yeah, I believe that Dr. Bell and I agree on what needs to go into selecting delta, if that's what you're getting at. The concept is, you know, that you don't want too much separation between the performance of the BellSouth and the ALEC side, because you're trying with delta to just say that, yes, the statistics might pick up a statistically significant difference between the two performance measures, but you really want that to be a practical difference. So a difference that maybe in what you just said that would have an affect on your public policy.

CHAIRMAN JACOBS: Right.

THE WITNESS: So it's not necessarily an easy concept to come up with, but it's one that -- that's the overall goal that you're looking for when you are setting delta.

CHAIRMAN JACOBS: And do you agree that to the extent we overstate delta, that the probability of not achieving that increases as your sample sizes increase? Let me restate that.

There's a statement here he does where that's set out. On Page 14 of Dr. Bell's testimony, beginning on Line 1.

THE WITNESS: Which line?

CHAIRMAN JACOBS: Line 1 on Page 14.

THE WITNESS: Line 1 on Page 14?

CHAIRMAN JACOBS: Correct. The answer to that question. Let me just -- how would you respond to his position here?

THE WITNESS: Well, what I believe that he's saying is that once you set delta -- and I believe in the questioning this came up -- that for very large sample sizes, if there was really a disparate treatment that was between zero and delta over two on this disparity scale, that you would have no chance of detecting that. Once you go beyond delta over two, you have a very high chance of detecting it.

Okay. So that -- you would want to be concerned that that range from zero to delta over two was not too large because that's a region where you have very little power to detect the

difference when you're doing balancing. So if you choose delta very large, then necessarily that range from zero to delta over two is going to be large, and that's what you have no chance of detecting in a balancing situation.

CHAIRMAN JACOBS: Okay. That was a major, major victory to get to that point. Thank you.

THE WITNESS: I'm sorry if I'm a little wordy.

CHAIRMAN JACOBS: No, no, no, it wasn't your problem; it was mine. That takes care of Staff. Any other questions, Commissioners? Redirect.

MR. LACKEY: Thank you, Mr. Chairman. I need to follow up on your question.

REDIRECT EXAMINATION

BY MR. LACKEY:

Q You recall the questions the Chairman just asked you about the smallest delta variation that will cause some sort of impact on competition?

A Yes, sir.

Q Can you tell me at what point under your formulas BellSouth will start paying penalties -- at what value of delta will BellSouth start paying penalties?

A Yes. You start paying penalties when the observed disparity goes beyond delta over two. And by "observed disparity," it's the ALEC mean that you observe, the sample ALEC mean minus the sample BellSouth mean divided by the BellSouth

standard deviation. I'll call that our measure of disparity. And when the sample gives you something that's larger than delta over two, then you start paying penalties.

Q Does that mean the delta of one that when the disparity gets to half of delta, penalties start getting paid?

A Yes, that's true.

Q And if delta were set at .25, does that mean that penalties would start being paid when you got to a disparity that was only equal one-eighth of a standard deviation?

A Yes, that's correct.

Q There was a question that the Staff asked you about rate measures. Do you recall that?

A Yes, I do.

Q And I think Mr. McGlothlin asked you questions about the mean difference measures.

A Yes.

Q Those are two of the three kinds of measures there are; is that correct?

A That's correct.

Q What's the third kind of measure?

A The third kind of measure is a proportion measure.

Q In BellSouth's approach to this case, did we use delta in the calculations involving mean difference measures?

A Yes, you do.

Q Do we use delta in the rate measures?

A No, you don't.

Q Do we use delta in the proportionality measures?

A No, you don't.

Q Can you give us an example of what a proportionality measure is?

A Yes. This exhibit right up here is a proportion measure. It talks about the proportion of, say, BellSouth's missed installations would be an example; that this would be an exhibit of that.

Q So you mean that chart that's been sitting up there now all day doesn't represent what BellSouth would've actually have done with a proportionality measure?

A No, BellSouth would not handle it with a delta value.

MR. LACKEY: Thank you. That's all I have. I'd like to move Exhibit 20.

CHAIRMAN JACOBS: Exhibit 20. Without objection, show Exhibit 20 is admitted.

(Exhibit 20 admitted into the record.)

MR. McGLOTHLIN: I move 21.

CHAIRMAN JACOBS: Without objection, show Exhibit 21 is admitted into the record.

(Exhibit 21 admitted into the record.)

CHAIRMAN JACOBS: Thank you, Dr. Mulrow. You're excused.

(Witness excused.)

CHAIRMAN JACOBS: Next witness.

MS. BOONE: Covad Communications calls Thomas Allen on behalf of the ALEC Coalition.

THOMAS E. ALLEN

was called as a witness on behalf of the ALEC Coalition and, having been duly sworn, testified as follows:

DIRECT EXAMINATION

BY MS. BOONE:

Q Would you please state your name for the record.

A My name is Tom Allen.

Q By whom are you employed?

A I'm employed by Covad Communications as vice president, ILEC relations.

Q Were you given -- would you take the oath yesterday?

A Yes, I did.

Q And you are still under oath today?

A Yes, I am.

Q Are you the same Thomas Allen who caused to be filed in the docket 23 pages of direct testimony?

A Yes, I am.

Q And do you have any corrections to that testimony?

A Yes, I have two corrections that I would like to make right now. Page 6, Line 5, the phrase "and these benchmarks" needs to be omitted. And the other one I would like to make is on Page 7, Line 21 where it indicates "98 percent," it should be

replaced with "95."

Q And with the exception of those corrections, if I asked you the same questions today as are in your testimony, would your answers be substantially the same?

A Yes, they would.

MS. BOONE: I ask that the direct testimony of Mr. Allen be inserted into the record as though given live.

CHAIRMAN JACOBS: Without objection, show that the testimony of Mr. Allen is entered into the record as though read.

Q. What is your name and for whom are you employed?

A. My name is Tom Allen, and I am employed as Vice President of ILEC Relations for Covad Communications Company ("Covad"). My business address is 10 Glenlake Parkway, Suite 650 Atlanta, GA 30328.

Q. What are your responsibilities as Vice President of ILEC Relations?

A. As Vice President of ILEC Relations and External Affairs I have responsibility of the regulatory and ILEC management for the BellSouth region.

Q. Briefly describe your professional and educational background?

A. I graduated from Emory University in 1976 with a BA in Political Science. I then attended the University of Georgia where I graduated with a Master's Degree in Public Administration, majoring in Public Finance in 1978. I began my career with Southern Bell in the Residence Installation and Maintenance Department as an Installation Foreman in Augusta, Georgia. My next assignment was as Dispatch Supervisor for the Augusta District. I went into Customer Services where I worked as a Business Office Manager and in various positions in the Billing and Collection group in the Customer Services-HQ organization and the Rates and Tariff - Regulatory group at Southern Bell headquarters. By 1990, this group was incorporated into the BellSouth Regulatory Policy and Planning organization. I was a part of this group where I worked on Local Competition planning until I left BellSouth in October of 1995.

After leaving BellSouth, I joined Intermedia Communications as Divisional Vice President- Regulatory and External Affairs with all regulatory responsibilities. In this role, I was also the lead negotiator of Interconnection Agreements. In July 1997, I joined ICG Communications as Vice President of Regulatory and External Affairs. Finally, I joined Covad Communications in September 1999 as Vice President of ILEC Relations and External Affairs with responsibility of the regulatory and ILEC management in the BellSouth region.

Q. Describe Covad's general business plan.

A. Covad is a competitive local exchange carrier that provides high-speed Internet and network access utilizing digital subscriber line ("DSL") technology. Covad offers DSL services through Internet service providers ("ISPs") to small and medium sized businesses, home users, and directly to companies who use DSL to enable their employees to connect with their businesses' internal computer networks ("Local Area Networks") from their homes. Covad currently provides its services across the United States in 81 of the top metropolitan statistical areas ("MSAs"), including Orlando, Miami, Jacksonville, and Tampa.

Q. What is the purpose of your testimony?

A. Along with several other competitive carriers, Covad's testimony provides real world examples about how lack of adequate measurements affects a competitive carrier's business and how poor performance by BellSouth affects Florida consumers.

As the Vice President of ILEC Relations, I spend a great deal of time in my job ensuring that Covad's sole supplier, BellSouth, is able to meet the order volume from Covad. Since our ISP partners cannot begin to bill their customers until their DSL lines are working, their business plans naturally depend on the speed with which Covad can deliver its product: a functional DSL line. In turn, Covad's ability to meet customer expectations is completely dependent upon BellSouth's timely performance. Performance from our sole supplier is critical to Covad's ability to compete and to deliver service with any customer satisfaction. ILECs in Florida act as the sole supplier of unbundled network elements to Covad in their respective territories in the state. Therefore, their performance must be constantly monitored and financial incentives should be in place to drive constant improvement.

I. PROPOSED NEW MEASUREMENTS

Q. What additional measures or changes to the Strawman Proposal and BellSouth measures would you propose?[1]

A. Covad proposes additional measures for pre-ordering (access to loop makeup information both manually and electronically), joint acceptance, and loop conditioning completion intervals. We also ask that the Commission set appropriate

[1] **To compile my testimony, I have relied upon the deposition testimony of Paul Stallcup, including the exhibits. The Florida Public Service Commission's proposed Performance Assessment Plan, Exhibit A, (hereafter the "Strawman Proposal") indicates that the detailed business rules for the SQMs will be those adopted by Florida as Interim metrics for the purpose of OSS testing. I have relied upon the version of those SQMs posted on the Florida PSC, OSS testing website, which indicates those SQMs were last revised February 22, 2001. Since it is not clear exactly what BellSouth will be proposing in this docket, I rely on both the Florida SQM and testimony offered by BellSouth in Georgia to illustrate the difference between BellSouth's proposal and what ALECs believe is necessary to adequately measure performance.**

intervals for loop delivery that reflect the entire time from which an ALEC submits a correct and complete Local Service Request until BellSouth delivers a working xDSL loop. Furthermore, Covad believes that BellSouth data should be disaggregated by DSL loop type (including line sharing), that the appropriate analogs for DSL service is retail POTS services and that revisions to the business rules on Order Completion Interval are necessary to enable this Commission and Covad to adequately monitor BellSouth's performance on DSL loop provisioning. I will address each of these issues below.

1. Measurements for Loop Makeup Information

Q. What is loop makeup information and how is it used by Covad to improve service to customers in Florida?

A. Members of the ALEC Coalition use several different DSL technologies to provide the customer with optimal speed and price options based on the capabilities of the underlying facility. It is essential, therefore, that DSL providers have efficient access to accurate electronic information about relevant operational parameters regarding BellSouth constructed and maintained loop facilities. Thus, DSL providers need information on loop length, number and location of analog load coils, number and location of bridged taps, and the presence of a digital loop carrier ("DLC") (and the type of DLC) to be catalogued, inventoried, and made available directly to them through an automated database.

In the UNE Remand Order, the FCC made it clear that incumbent carriers such as BellSouth have an obligation to provide detailed loop makeup information

to ALECs. Notably, the FCC required that ALECs be provided with nondiscriminatory access to the detailed loop information that exists in BellSouth's back office systems and that is available to any BellSouth employee. The FCC recognized that access to loop makeup information is critical to enabling ALECs to qualify customers for DSL service and for insuring that ALECs can advise customers during the ordering process about whether and what speed of service will be available to them. Without such information, ALECs are at a huge competitive disadvantage to the incumbents.

More simply stated, loop information helps DSL providers sell the correct DSL product to the right customer. Without this pre-ordering information, DSL providers have to endure inordinate delay and frustration in obtaining service. This puts DSL wholesalers at a competitive disadvantage because ISPs that resell our services may also resell BellSouth services, where they experience no such delays.

There are two possible methods of accessing loop makeup information: manual and mechanized. The BellSouth SQM (as posted on the Florida OSS testing website, revised February 22, 2001) does not include a current measurement or standard for ALEC access, either manual or mechanized, to loop makeup information. The Florida Strawman proposal indicates that there will be a metric for loop makeup information average response time, but there are no business rules available to review on that proposed metric.

The Commission should measure both manual and electronic response to loop makeup inquiries. The ALEC Coalition is proposing that the Commission establish

today a benchmark of 72 hours 95% of the time for manual loop makeup information inquiries, and less than a minute at 98% of the time for mechanized inquiries. That is exceedingly generous when you think about how quickly ordinary consumers get electronic responses from electronic retailers or while conducting banking on line. Georgia recently adopted this metric ~~and these benchmarks~~ for response time.

Q. Why must the Commission measure both manual and electronic access to loop makeup information?

A. There are several reasons. First, an ALEC may not have the resources to build an electronic interface to access loop makeup information electronically. Thus, those ALECs will continue to be dependent on BellSouth performing manual loop makeup in an efficient and accurate manner. Second, BellSouth has admitted in testimony in Florida and elsewhere that detailed loop makeup information is not available electronically on all loops. Therefore, in some instances in which an ALEC does perform an electronic loop makeup inquiry, the information needed may not be available and therefore an ALEC will have to obtain a manual loop makeup from BellSouth. Third, BellSouth has admitted in testimony in Georgia that inaccurate data may be received as often at 10% of the time in utilizing the electronic loop makeup systems. When such information is received, and these inaccuracies are detected, Covad and other ALECs will be forced to obtain a manual loop makeup inquiry to determine if service can be provided to a particular customer.

Q. What is Covad experiencing today when attempting to obtain manual loop make up information?

A. BellSouth's product and services guide targets completion of a manual loop makeup inquiry at seven business days. Thus, competitors are required to wait well over a week to qualify a loop for service. A Florida customer could feasibly place an order with Covad on Monday, and not find out until the following Wednesday whether or what type of DSL service Covad can provide. Under the BellSouth proposed target interval, the ALEC would not learn about the loop makeup information until possibly seven business days later. This is not acceptable. BellSouth has offered no justification for such an unreasonably long interval for manual access to loop makeup information. Furthermore, BellSouth has admitted that it can obtain all the information needed on a loop from its Corporate Facilities Database, through MapViewer. Thus, even when the ALEC submits an order by manual processes, BellSouth uses an electronic system to get the information, either through LFACs or MapViewer. Thus, a manual loop makeup inquiry by a CLEC results in BellSouth performing an electronic search. This should take no longer than 3 days, which is generous considering the limited electronic work being performed.

The New York and Texas state commissions have previously adopted a standard similar to the one advocated by the ALEC Coalition. In addition, the Commission should order the ALEC Coalition proposal -- that BellSouth provide electronic access to loop makeup information ~~98%~~ 95% of the time within 1 minute. That exact performance measurement was recently ordered in Georgia.

Q. What is the effect on Florida consumers when BellSouth delays loop makeup information or when the information provided to Covad is inaccurate?

A. Quite simply, delays and the supply of inaccurate information lead to enormous customer dissatisfaction and frustration. Let me give you a couple of real life scenarios that explain why Covad is seeking performance measures regarding loop makeup.

When Covad is delayed in getting loop makeup information, Covad cannot inform its customers (the ISPs) or the end-users (the Florida consumers) what service can be provided on a particular loop. Imagine a scenario in which an ISP has successfully won a customer who wants SDSL service at a very high speed (like Covad's TeleSpeed 768 kbps service). This is very fast speed that is used by many businesses with heavy data traffic. The customer places an order and Covad immediately requests manual loop makeup information from BellSouth. A week and a half later that customer is informed that his loop is too long for the high speed service, and Covad can only provide him with a slower 144 kbps service. That customer is extremely dissatisfied, first because the news about his service is bad, but also because he's waited over a week and likely thought his service was on the way to being provisioned. In many instances, Covad loses that customer forever.

Equally frustrating is a situation a Covad customer recently experienced in Fort Lauderdale. That customer placed an order for Covad service, Covad performed an electronic loop makeup inquiry and determined, based on the information provided, that the customer could get ADSL over a line shared line to

his home. From the customer's perspective, this is the best choice since the line shared line is already in place, and will not require BellSouth to do any additional work in its outside plant. The cross connections necessary to provision a line shared line can be completed in a manner of minutes by a central office technician. Nonetheless, after repeated truck rolls on this order, Covad later learned from BellSouth that the loop makeup information was incorrect. There were load coils on the loop that had to be removed before this customer could receive ADSL service.

The delay in obtaining DSL obviously frustrated the customer, who ultimately cancelled his Covad order. Moreover, from Covad's perspective, Covad rolled several trucks on this order and incurred all the expense associated with those efforts, as a result of erroneous BellSouth information. Covad sunk those costs into a loop order, that was later cancelled, so that Covad has no chance of ever recovering the expenses it incurred.

For these reasons, BellSouth should be measured and penalties imposed based on timeliness of loop makeup information. It may also be appropriate in the future to create a way to measure the accuracy of reported information.

2. Percent xDSL Lines Cooperatively Tested – OP-9 through OP-14

Q. **What is another crucial measurement that data ALECs such as Covad must have that is currently not a part of BellSouth's SQMs or the Strawman Proposal?**

A. The ALEC Coalition proposes two measures involving Joint Acceptance Testing. The first will measure the percentage of loops with which BellSouth engages in Joint Acceptance Testing. The second will measure the percentage of loops that actually pass the Joint Acceptance Testing on time. Essentially, Joint Acceptance Testing works as follows. The BellSouth technician, having delivered the loop to the customer premise, calls a Covad 1-800 number. Next, the BellSouth technician and Covad run a series of tests on the loop to establish that it is functioning properly. Although it is not foolproof, these series of tests can determine in most instances whether the loop works at the time of installation. By measuring the percentage of loops that BellSouth cooperatively tests with Covad, this Commission would create an incentive for BellSouth to conduct this testing. The ALEC Proposal would also measure the number of loops that passed the cooperative tests. By doing so, this Commission can increase the number of loops that are functional when provisioned. This new measure will allow Covad and other competitive carriers to assess whether BellSouth and other ILECs are delivering a working loop on time.

There are two crucial aspects to these measures. First, requiring ILECs to engage in Joint Acceptance Testing increases the number of loops that are working at the time they are delivered. Second, Joint Acceptance Testing generally decreases costs for both the ILEC and for the ALEC, because problems are identified during the provisioning phase, rather than arising as troubles in the repair and maintenance phase. Furthermore, Joint Acceptance Testing is very important to competitors as a customer service issue. Customers who are forced to take days off from work to wait for their DSL loops to be delivered are generally very unhappy when the loops

delivered are not working. This has been a serious issue in maintaining customer satisfaction for ALECs in Florida.

For example, another end user in Ft. Lauderdale was recently scheduled to have his loop provisioned by BellSouth. Although BellSouth says that Joint Acceptance Testing is now part of its routine provisioning methods and procedures, BellSouth never called Covad to conduct the testing. The customer later reported to Covad that he had seen the BellSouth technicians working on the line. However, BellSouth never notified Covad that loop had been provisioned and Covad had not confirmed through Joint Acceptance Testing that the loop was functioning when delivered. BellSouth provided several additional pieces of inaccurate information to Covad, further delaying the provisioning of this loop. Ultimately, Covad scheduled a truck roll and completed the installation. Because of BellSouth's failure to jointly test this loop, and its failure to provide a completion notification, this Florida consumer's DSL service was delayed three weeks. Mandatory Joint Acceptance Testing would eliminate these problems. Georgia recently approved a measure requiring Joint Acceptance Testing.

ALECs need to measure two things: full participation in Joint Acceptance Testing, and the amount of loops that successfully pass the testing on time. A customer is not nearly as interested in knowing that his or her loop was provisioned on time, as he is in knowing that the loop was provisioned on time and was functional when provisioned. BellSouth suggested in Georgia an array of three different measurements that would supposedly provide ALECs with the same information as the new Joint Acceptance Testing measurements. These

measurements include: (1) Percent Missed Installation Appointments; (2) Average Completion Interval; and (3) Percent Provisioned Troubles within 30 days. From the perspective of ALECs, the measurement of both pieces (timeliness and functionality) is critical since both the timeliness of delivery and the functionality of the loop affect ALECs' ability to provide service to Florida consumers. That is, the measurement and standard are crucial in showing the serious and dramatic impact that BellSouth's poor performance has on ALECs' ability to provide competitive DSL services in Florida. BellSouth offers no such metric. Consequently, the Commission should adopt the Joint Acceptance Testing measurements as proposed by the ALEC Coalition.

3. Reasonable Loop Delivery Intervals for xDSL Loops

The Florida Strawman proposal suggests that the appropriate loop delivery intervals for xDSL loops is 7 business days for xDSL loops and 14 business days for loops that require conditioning (Order Completion Interval). This is not the appropriate benchmark for several reasons. First, as proposed, the Order Completion Interval measures the time from delivery of a Firm Order Confirmation ("FOC") until a completion notice is issued. This measurement fails to capture potentially 5-7 days that BellSouth thinks it should be allowed to perform Service Inquiry process on the front end of an xDSL loop order. Thus, BellSouth believes it should actually be allowed **up to 14 business days** to provision an xDSL loop (and **up to 21 business days** -- more than a month -- to provision an xDSL loop that requires conditioning). These intervals are too long to enable ALECs to compete in Florida.

The ALEC Coalition proposes that BellSouth be allowed 3, 5, or 7 business days, depending on volume, to deliver xDSL loops. Given the rudimentary nature of the work being done, these intervals are ample. xDSL loops are nothing more than plain copper voice loops, like BellSouth provisions every day in Florida. In fact, BellSouth has provided DSL to over 51,000 customers in Georgia using their existing phone lines to provision the service (through line sharing). Although we do not have access to similar data for Florida, the numbers of customers to whom BellSouth provides DSL on an existing phone has got to be huge. BellSouth has over 217,000 such customers region-wide and expects to have 600,000 by the end of 2001.

These enormous numbers demonstrate plainly that xDSL loops are nothing more than simple voice grade copper loops. One day the loop is being used for voice service. Then, BellSouth.net or a BellSouth Internet Service Provider ("ISP") partner sells that customer DSL service to ride on top of the voice loop. If BellSouth then loses the voice customer, and only DSL is provided on the loop, it is still the same simple voice grade loop. It should be no different when ALECs order a loop for xDSL service. The times proposed by the ALEC Coalition provide sufficient time for BellSouth to provision an xDSL loop. The Strawman Proposal intervals reward BellSouth for having inefficient processes, by failing to impose penalties until BellSouth takes over 14 business days to deliver a loop or over 21 business days to deliver a loop that requires conditioning. As discussed below, numerous other state commissions have recognized the need for more streamlined loop delivery processes and have required ILECs to provide them. There is no reason for Florida consumers to get worse service than consumers in Texas and New York.

4. Percent Completion of Timely Loop Modification/De-conditioning on xDSL Loops

Q. Are there additional aspects of provisioning an xDSL capable loop that are not captured and measured by BellSouth's SQMs or the Strawman Proposal?

A. Absolutely. ILECs, including BellSouth, regularly perform maintenance and provisioning on their outside plant facilities, including placing and removing certain devices from those loops, such as load coils and excessive bridged tap. Since DSL technologies will not work in most instances on a loop that contains filters, load coils, range extenders, repeaters, or excessive bridged tap, DSL providers must have these loops conditioned before they will support DSL services. In recent negotiations, BellSouth proposed that it be allowed up to 30 days to condition a loop.

The ALEC Proposal includes an interval of five days for provisioning a conditioned loop. BellSouth should be measured on how often it timely completed the provisioning of these conditioning activities. Without a set benchmark for performance and without measures, Covad cannot assure its customers of how long it will take to deliver these loops. Without any such assurance, customer dissatisfaction grows and Covad's ability to compete is severally restrained.

Q. Is this acceptable for competitors?

A. No. From a customer satisfaction perspective, this is untenable for DSL providers. Customers demand information about when they will receive their loops and they expect DSL providers to give them that information in a timely manner. Customers grow weary of waiting for service to be delivered and generally are dissatisfied by excuses about the length of time BellSouth takes to perform simple conditioning

work. Although BellSouth refuses to set intervals for conditioning, SWBT in Texas conditions loops within ten business days.

BellSouth claims that conditioning activities are included in its Order Completion Interval, and are measured in that way. Because conditioning loops is a critical function for DSL providers, we believe a separate measurement is the best way to ensure that BellSouth is performing this work in a timely fashion.

Q. What do you propose as intervals for conditioning?

A. The ALEC Coalition proposes a separate measurement for loop conditioning with a benchmark of five days in which that conditioning should be performed. This provides three important benefits for DSL providers and thereby to Florida consumers. First, it provides ALECs with a firm benchmark to rely upon when informing customers of their loop installation date. Second, it enables DSL providers to measure whether BellSouth is meeting this commitment. Third, it gives this Commission an opportunity to review BellSouth's performance of routine maintenance tasks which BellSouth performs every day for BellSouth's own facilities and for BellSouth's own retail customers as compared to BellSouth's performance of these same tasks for ALECs. Indeed, loop conditioning should be one of the areas in which this Commission can most accurately assess whether BellSouth's treatment of competitors is non-discriminatory since the exact same work is routinely conducted in BellSouth's outside plant for its own retail services.

Q. Have other state commissions required such measures on loop conditioning?

A. Yes. The Texas Commission took a similar approach in establishing performance

measurements and standards. xDSL loop delivery in Texas is actually defined as loops with conditioning (benchmark of 10 business days) and loops without conditioning (5 business days). Thus, if SWBT does not condition a loop on time, that loop is not counted as delivered on time. The ALEC Coalition respectfully requests the Commission similarly adopt a measurement and standard for timeliness of loop conditioning. That measurement should be based on a five-day loop delivery and BellSouth should be required to perform the necessary work 95% of the time.

Likewise, the New York Public Service Commission recently approved a five business day loop delivery interval for Verizon. This new interval resulted, in part, from Verizon's admission that its loop delivery processes were improving and that it was able to decrease the interval from six days to five. In contrast, the intervals proposed by BellSouth do not drive BellSouth toward process improvements.

II. ADDITIONAL IMPROVEMENT TO THE STRAWMAN PROPOSAL

1. ALECs Need More Disaggregation than the Strawman Requires

Q. Are either the Strawman or BellSouth's previous proposed measures adequately disaggregated?

A. No. The ALEC Coalition proposes that the Commission require BellSouth to provide a level of disaggregation such that deficiencies in BellSouth's performance can be neither masked nor ignored. Disaggregation should be required by DSL product, maintenance and repair, query type and collocation category.

Q. Why is disaggregation important in obtaining accurate performance data?

A. Disaggregation is key to obtaining an accurate snapshot of BellSouth's performance,

as poor performance in particular areas can be masked when lumped into one large report. This is particularly true of DSL loops. BellSouth's most recent SQM does not disaggregate DSL loops, let alone by loop type like we request. BellSouth tries to dismiss the ALECs' need for disaggregation by suggesting that doing so would produce meaningless reports and that resale products *currently* purchased by ALECs are adequately captured. Neither point is persuasive. ALECs have not proposed specific disaggregation levels to put BellSouth through the exercise of filing useless information. On the contrary, what is requested is information which ALECs have learned is useful to monitor BellSouth's performance. For example, Covad currently monitors BellSouth reported performance on the Performance Measurement Application Platform (PMAP). It is difficult to use the information reported there for several reasons. First, BellSouth reports ALEC aggregate data for all unbundled loops, not for specifically DSL loops or more importantly by DSL loop type. Second, BellSouth compares its performance for Covad to retail DS1 performance, or to Retail Design performance, neither of which are analogous to xDSL service. The information currently provided by BellSouth is not sufficient to insure that BellSouth is not discriminating against Covad or DSL providers in Florida.

Q. How would you propose that information regarding DSL be disaggregated?

A. By all loop types, namely: Unbundled ADSL, Unbundled HDSL, Unbundled UCL (short and long), Unbundled UDC/IDSL, Unbundled xDSL loops (since BellSouth is planning to release yet another DSL loop product that must likewise be measured) and Line Shared Loops. Moreover, the levels of disaggregation should cover all of

the products ALECs purchase when there is large scale entry in both the residential and business markets.

Sufficient disaggregation is also necessary given the rapidly evolving nature of the telecommunications industry in Florida. One of the most significant changes is the burgeoning growth of DSL technologies, an important method of providing broadband services, including high speed Internet access. In order for the Commission to track BellSouth's performance in the provisioning of products required by DSL providers, BellSouth must measure and report the elements specifically ordered by DSL providers. BellSouth must not be permitted to combine reporting performance of its provisioning xDSL elements with its performance in providing other elements not required by DSL providers. Thus, it is essential for BellSouth to disaggregate its product offerings by loop types – analog voice-grade loops, digital loops, ADSL loops, HDSL loops, UCLs and xDSL loops, as well as line sharing – as the ALEC Coalition proposes. BellSouth's most recent SQM does not disaggregate DSL loops, let alone by loop type like we request.

Q. Why would disaggregated loop type information be helpful to Covad in Florida?

A. As Covad has testified many times, Covad believes that all of BellSouth's xDSL loop products are exactly the same facility: a plain copper loop, free of load coils, excessive bridged tap, and other interferors. The only difference between the loops is the artificial loop length restrictions placed on these loop products by BellSouth. Likewise, BellSouth may have slightly different provisioning procedures for its various xDSL loop products. By monitoring the performance on loop delivery by

loop type, Covad can in some cases adjust the type of loop ordered to provide faster, more reliable service to customers. Over the course of its business relationship with BellSouth, Covad has ordered and provided service using the HDSL, ADSL, UCL and UDC/IDSL loops, as well as over line shared loops. By reporting data of specific performance for each type of loop, Covad may be able to capture additional efficiencies for its customers by altering the type of loop it orders. Therefore, disaggregated information would be helpful to Covad's business in Florida.

2. Changes to the Order Completion Interval Measurement

Q. How is loop delivery measured in BellSouth's SQM?

A. It is very difficult to tell. From a customer's perspective, the length of time it takes from placing an order to getting that DSL order installed is the proper interval to measure. BellSouth proposes something fundamentally different. There are two key concepts in loop delivery. First, BellSouth must provision the loop on the date that loop is due. BellSouth provides this delivery date when it returns to Covad a firm order confirmation ("FOC"). This delivery due date is then known as the "FOC date." Second, and equally important, the loop that is delivered must function properly. BellSouth's SQM measures order completion interval from the date the FOC is provided to the date the completion notice is sent. This ignores the entire pre-ordering interval before a FOC is established. The BellSouth proposed measure also fails to penalize BellSouth for provisioning a loop that does not work.

Q. How would Covad improve on this?

A. The business rules associated with Order Completion Interval should be changed to measure the period of time from when an ALEC submits a complete and correct LSR until BellSouth participates in Joint Acceptance Testing with Covad and the loop passes the tests and is accepted by Covad. This will capture Covad's experience as a customer from the point at which it places an order with BellSouth until BellSouth successfully completes that order by provisioning a functional loop.

3. Retail Analogs for DSL

Q. What retail analog is appropriate for DSL loops?

A. DSL loops are plain copper, voice grade loops. Thus, the appropriate retail analog for stand alone xDSL loops (ADSL, HDSL, UCL, xDSL) is retail POTS service. For order completion intervals, Covad prefers that BellSouth be measured on a benchmark. This insures that Covad can tell its customers what level of service to expect and BellSouth has the appropriate incentives to provide that service. Historically, BellSouth has refused to set anything but a "target" date for loop delivery, and has refused in interconnection negotiations to establish an acceptable delivery interval. This issue is pending in Covad's Petition for Interconnection Arbitration with BellSouth. Irrespective of the interval that will become part of Covad's contract with BellSouth, penalties should be assessed based on the benchmarks set forth in the ALEC Proposal for Order Completion. For other provisioning and maintenance and repair measurements, the appropriate retail analog is retail POTS.

In Georgia, BellSouth proposed that DS1 loops were the appropriate analog for standalone DSL loops performance. In its current Florida SQM and in the Strawman Proposal, many aspects of BellSouth's performance for xDSL loops would be compared to what BellSouth does for Retail Design loops. Both analogs are incorrect. A DSL loop is no more complicated than a plain copper voice grade loop. In contrast, BellSouth Retail Design services encompass much more complex services, like Centrex/PBS Design, PBX Design, SynchorNet digital service, MegaLink, ISDN Service, interLATA dedicated services, and Custom Network Service Arrangements. Comparing xDSL service to Retail Design will mask unnecessary and unacceptable poor performance. Recognizing this, the Georgia Commission established "ADSL as provided to retail" as the analog for many measurements of performance on xDSL loops.

Thus, for measurements other than those for which we propose a benchmark, BellSouth's performance on xDSL loops should be compared to its retail POTS performance. For UNE Line Shared loops, the appropriate retail analog is BellSouth's retail ADSL (industrial/consumer) product. It is directly analogous to what Covad and other ALECs offer using a line shared loop.

Q. Why should penalties for poor performance be assessed against BellSouth and awarded to damaged ALECs?

A. Covad's customers have become increasingly frustrated by Covad's inability to obtain loops in a timely fashion from its sole supplier, BellSouth. As a result, these customers have begun to press Covad for assurance that it will provision loops within

a certain amount of time. They have suggested that if Covad fails to provision these loops in that amount of time, the price of Covad's service should be decreased or that some other penalty against Covad should be assessed.

In turn, Covad believes that its sole supplier, BellSouth, should face the same sort of pressures from its customer, Covad. These types of incentives, as well as the desire to deliver a quality product with customer satisfaction, drive daily process improvements inside Covad. In a competitive environment such as the one in which Covad operates, if Covad does not satisfy its customers, those customers may choose another DSL provider. Covad faces the possibility of that penalty everyday.

BellSouth's own reported data shows why penalties are necessary to drive better performance. BellSouth has reported the following for Covad for December 2000:

- 27% missed installation appointments
- Over 14 days to provision to an xDSL loop (counting only from BellSouth's issuance of a Firm Order Completion until BellSouth sends a completion notification -- this does not include the 5-7 business days required for the Service Inquiry process on xDSL loops)
- Average Held Order Interval of 36 days
- Average Jeopardy interval of 21 days
- 17% of Covad's orders placed in Jeopardy status
- More than 26% repeat troubles within 30 days

As the Commission can see, BellSouth's level of performance is inadequate to support Covad's business plan, which relies upon delivering high customer

satisfaction. We believe that imposing financial penalties on BellSouth for failure to perform is the only way to drive improvement.

Q. Does this conclude your testimony?

A. Yes.

BY MS. BOONE:

Q Mr. Allen, did you prepare a summary?

A Yes, I have.

Q Would you please give it.

A Yes. Good afternoon, Commissioners. I'm here today to explain why accurate performance measures are a crucial part of providing long-lasting competitive data services to Florida consumers. Moreover, accurate performance measures are also a requirement for the ultimate survival of data ALECs like Covad. My testimony will focus on four major areas that must be addressed in creating accurate performance measures. One, the need for additional measures; two, further disaggregation; three, definition of loop delivery intervals; and four, penalties.

Additional measures. Covad proposes addition measures or changes to the Commission's proposed performance assessment plan and BellSouth's proposed measures. These additional measures are for preordering, access to both manual and loop makeup, joint acceptance testing, loop completion intervals, and loop conditioning intervals. Efficient access to accurate electronic information about relevant operational parameters regarding BellSouth loop facilities is necessary for ALECs to provide DSL services in Florida. The Commission should measure both manual and electronic responses to loop makeup inquiries. The ALEC Coalition proposes a benchmark of 72 hours 95 percent of the time for manual loop makeup information inquiries and less

than 1 minute at 95 percent of the time for mechanized inquiries. It is especially important that the Commission set measures for manual loop makeup response time.

Another crucial measure that I understand from this morning's testimony BellSouth has accepted is for joint acceptance testing. Joint acceptance testing works like this. BellSouth tech having delivered the loop to the customer premise calls a Covad 1-800 number. Next, the BellSouth tech and Covad run a series of tests on the loop to establish that it's functioning properly. The ALEC Coalition had proposed two additional measures involving joint acceptance testing. The first measure is the percentage of loops which BellSouth engages in joint acceptance testing. This measure creates an incentive for BellSouth to conduct the testing. The second measure would be for the percentage of loops that actually pass the joint acceptance testing on time. This measure would increase the number of loops that are actually functional when provisioned. It is critical that good loops be delivered on time, and that needs to be clear in what is ordered.

Joint acceptance testing decreases cost for both the ILEC and the ALEC because problems identified during the provisioning phase rather than arising as troubles in the repair and maintenance phase. Moreover, joint acceptance testing is important to customers in Florida. Customers are forced to take days off from work to wait for their loop to be delivered and are

generally unhappy when the loop delivered is not working. As I discussed in my testimony, this has been a serious issue in maintaining customer satisfaction for ALECs in Florida.

The next measure I'd like to discuss today is setting a reasonable loop delivery interval for xDSL loops in Florida. The ALEC Coalition proposes that BellSouth be allowed three, five, or seven business days, depending on volume, to deliver xDSL loops. XDSL loops are nothing more than plain copper voice loops like BellSouth provisions every day in Florida. Given the relative simple nature of the work being done, our proposed intervals are ample. BellSouth proposes seven days, not including the time for service inquiry functions which can be seven days themselves. Numerous other state commissions have recognized the need for a more streamline loop delivery process and required the ILECs to provide them. There is no reason for Florida consumers to get worse service than consumers in Texas and New York, for example.

Loop conditioning intervals are also an important part of performance measures. BellSouth's measures will not capture how long they take to condition a loop, something that BellSouth routinely does to its loops every day in order to maintain its network. The ALEC Coalition proposes a separate measure of loop conditioning with a benchmark of 5 days to be met 95 percent of the time. This is adequate time, as other state commissions such as Texas and New York have ordered similar intervals for conditioning. In Texas, the Commission took an approach that the

measure is defined as loops with conditioning has a benchmark of delivery within ten business days, and loops without conditioning is five business days.

Disaggregation. Next, I would like to talk about the need for more disaggregation. Disaggregation is key to obtaining an accurate snapshot of BellSouth's performance. Poor performance in one area can be masked when lumped into one large report. This is particularly true of DSL loops. We propose that information regarding DSL loops be disaggregated by all loop types: Unbundled ADSL, unbundled HDSL, unbundled UCL short and long, unbundled UDC, line sharing, and any other loop related to DSL that may be developed and offered by BellSouth. In order for this Commission to track BellSouth's performance in the provisioning of products required by DSL providers, BellSouth must measure and report the elements that are specifically ordered by DSL providers. BellSouth cannot be permitted to lump the DSL products with its performance in providing other DSL providers like Covad -- excuse me -- other providers DSL providers like Covad do not even purchase.

Definition of loop delivery intervals. Next, I would like to discuss a problem with how BellSouth attempts to measure loop delivery intervals. There are two key components in loop delivery. First, BellSouth must provision the loop on the date the loop is due. BellSouth provides the delivery date when it returns a firm order committment. This date is then known as the

FOC date. Second, and equally important, the loop that is delivered must function properly. BellSouth's proposed SQM measures order follow -- excuse me -- measures order completion interval from the date the FOC is provided to the date the completion notice of loop delivery is sent. This ignores the entire preordering interval before the FOC is even delivered to Covad.

Also, BellSouth's measures fail to penalize BellSouth provisioning a loop that does not work. Covad proposes that business rules associated with order completion intervals should be changed to measure the period of time from when an ALEC submits a complete and correct LSR until BellSouth participates in joint acceptance testing with Covad and the loop is tested and accepted by Covad. This is the only way to capture Covad's true experience as a customer from the point at which it places the order until BellSouth successfully completes the order.

Penalties. Finally, Commissioners, I would like to discuss the importance of assessing penalties against BellSouth for poor performance. Covad's customers have become increasingly frustrated by Covad's inability to detain loops in a timely fashion from its sole supplier, BellSouth. As a result, our customers have begun to press us for assurance that we will provision loops within a certain time frame. They suggested that if we fail, the price of Covad's service should be decreased or that some other penalty should be assessed. In turn, Covad

believes BellSouth should face the same sort of pressure from its customer, Covad. In a competitive environment such as this, if Covad does not satisfy our customers, they may choose another DSL provider; therefore, we face the possibility of penalties every day. We believe that imposing financial penalties on BellSouth for failure to perform is the only way to drive improvement. Thank you. And that completes my summary.

MS. BOONE: Mr. Allen is available for cross examination.

CHAIRMAN JACOBS: None, none. Very well. BellSouth.

MR. LACKEY: Thank you, Mr. Chairman.

CROSS EXAMINATION

BY MR. LACKEY:

Q Mr. Allen, my name is Doug Lackey, and I'm an attorney for BellSouth. Let's start on Page 5 of your testimony. Have you read the SQM that is attached to Mr. Coon's testimony?

A Yes, I have.

Q Now, you say that there's no current measurement or standard for loop makeup; is that correct? It's on Line 17.

A When my testimony was prepared, yes, that is my statement.

Q Well, you corrected your errors; right?

A That's correct.

Q Okay. And you didn't correct that part of your testimony, did you?

A I did not correct that part of the testimony.

Q Okay. And there is, in fact, a current measurement in the BellSouth proposed SQM for both electronic loop makeup and manual loop makeup; correct?

A I have a copy of Mr. Coon's testimony. Could you direct me to the pages that you reference?

Q It's measurement PO-1 and PO-2.

A Could you give me a page reference?

Q Well, I'm using my copy of it. Let me get his out, and I'll do that.

A Well, I mean, that's okay. I can just get back to it.

Q Have you found it?

A I have it.

Q I'm sorry. Have you found it?

A Yes.

Q It's on Page 1-13 and 1-15; is that correct? I'm going to operate off of that copy then. 1-13 is the loop makeup response time manual; is that correct?

A That's correct.

Q Now, tell me what you-all asked for in this case in your testimony.

A That manual loop makeup be provided within 72 hours 95 percent of the time.

Q Okay. And what is the benchmark that BellSouth has proposed in the SQM? It's on Page 1-14.

A Ninety-five percent in three business days.

Q So I guess there's a difference between 3 business days and 72 hours; right?

A I think in reality 72 business hours would be 3 business days.

Q So does that mean we do have a standard and we don't have a disagreement as you reported in your testimony?

A It looks, based on this, that we have an agreement that we, in fact, described it as 72 hours for manual loop makeup to be provided 95 percent of the time, and BellSouth proposes 95 percent of the time in 3 business days.

Q All right. Now, the next one is the electric loop makeup time. And this is the one you corrected. You had said you wanted a benchmark of 98 percent in 1 minute, and you suggested that's what Georgia had ordered; correct? That's what you corrected --

A That's what I corrected. I corrected it to 95 percent.

Q Do you happen to have your copy of the Georgia order there with you?

A No, I do not have a copy of the Georgia order.

MR. LACKEY: Mr. Chairman, the Georgia order has been noticed on the official recognition list, but I have copies if anybody would like them. I don't think I'm going to use it extensively.

CHAIRMAN JACOBS: Yes, I think we would like to get one

up here.
BY MR. LACKEY:
Q Mr. Allen, I'm going to turn you to Page 7 of Page 30. That's where -- I'm sorry, do you have the order in front of you?
A Yes, I do.
Q And you do recognize this as being the Georgia order on performance measurements?
A Yes, I do.
Q And I'm going to direct your attention to Table 2 on Page 7 of 30, and see if you'll agree with me that the average response time for the electronic loop makeup starts at the bottom of that Page 7 of 30?
A Yes.
Q And if you'll turn over to the top of the next page, I think you'll find what the standard is for the electronic loop makeup in Georgia, won't you?
A Ninety percent within 5 minutes; 6 months, 95 percent within a minute.
Q Actually, what it says is, currently it's 90 percent, not 95 percent, and it's within 5 minutes, not 1 minute; correct?
A Excuse me, if I may state it, I thought I said 90 percent within 5 minutes; within 6 months, 95 percent within a minute.
Q Okay. To have your testimony be precisely correct, what the Georgia Commission ordered currently is 90 percent

within 5 minutes; correct?

A That's correct. And I guess Georgia had different -- slightly different benchmarks than we were recommending. I didn't mean that that sentence portrayed, that I think you're referring to, implied that we were recommending 95 percent of the time within 1 minute for electronic.

Q If you will turn to 1-16 of Mr. Coon's SQM, can you tell us what BellSouth has proposed for the analog?

A It's 90 percent in 5 minutes, reassess 6 months.

Q So at least currently BellSouth is proposing exactly what the Georgia Commission approved; correct?

A I wouldn't say that it's exactly what the Georgia Commission has. I think there is a variation. It says 90 percent within 5 minutes in 6 months. The BellSouth analog says new system. Here, in the Georgia, it says 6 months, 95 percent within a minute.

Q I'm sorry. I thought I put the word "currently" in my question. If I didn't, let me correct my question. Currently, the Georgia standard is exactly what BellSouth has proposed, 90 percent in 5 minutes; correct?

A That is correct.

Q Now, look at the bottom of Page 8.

A Of my testimony?

Q Of your testimony, yeah. I'm moving back to your testimony now. You're talking about a customer experience in

Fort Lauderdale; is that correct?

A That's correct.

Q And Covad performed an electric loop makeup inquiry, and based on the inquiry you made, you told the customer the customer could get ADSL; is that correct?

A That's correct.

Q And I assume that what you did was you then issued the order for ADSL for that customer; correct?

A Correct.

Q And you got a firm order commitment back on that order; is that correct?

A That would be correct.

Q Did you have any trouble? Was the firm order commitment that you received timely?

A To my knowledge, no.

Q I'm sorry, what?

A Excuse me. To my knowledge, that was not a problem.

Q I'm sorry, to your knowledge, the firm order commitment was returned on time?

A Yes.

Q Okay. As I understand it then there were repeated truck rolls on the order for some reason; is that correct?

A Because the loop makeup information was incorrect.

Q So I take it that means that the customer service was not installed on time; correct?

A Well, in this case, it wasn't installed at all because the customer ultimately canceled his order.

Q Now, the fact that the appointment was missed is captured in BellSouth's missed installment -- missed appointments installment measure, isn't it?

A I believe this has more to do -- we're looking at loop makeup information that was correct.

Q Well, I understand. But I mean, something went terribly awry; your customer wasn't happy. The question is, have we captured this measurement? What I want to know is, when we didn't meet the appointment, was that fact captured in the missed appointment statistic?

A Would the missed appointment capture it if the order was ultimately canceled?

Q Yeah, you said there were several truck rolls, so I assume we tried to go out and fix it, and we didn't get it fixed. So we missed the appointment, didn't we?

A In this case, the truck rolls could have been both Covad and BellSouth. This line right here that is being described here is line sharing, and in fact, the BellSouth work has to be performed really in the central office. So the repeated truck rolls in this case are more than likely related to Covad trying to get the service up and operational, because it couldn't it -- it didn't work because the information was incorrect. That's the problem.

Q Maybe my question wasn't clear. When we returned the FOC to you, we said on this day, we're going to be there, and this service is going to be delivered to your customer; right?

A You said the service was going to be delivered to my customer on that day.

Q And it wasn't; right?

A It didn't work.

Q And that would have been captured in the missed installation appointment; correct?

A I don't know if it would be captured in the missed installation appointment or the percent failed in 30 days. The missed installation appointment, you would have performed your work in the timely manner. If you performed the work that you thought was necessary and delivered a loop that did not work in a line sharing environment --

Q Could you turn to Page 3-6 of the SQM? And let's look at the definition of a missed installation appointment. Let me know when you are there, please.

A I'm there.

Q All right. Look at the last sentence in the definition. "This measure is the percentage of total orders processed for which BellSouth is unable to complete the service orders on the committed due dates and the reports for the total misses and end user misses." We missed it. We didn't complete the service order on the committed due date; right? I mean, the

guy didn't get the service.

A The guy didn't get the service.

Q And that's both a Tier 1 and a Tier 2 penalty; correct?

A Correct.

COMMISSIONER JABER: Mr. Allen, I have a logistical kind of question. How does the customer canceling your service or the order at least get communicated back to BellSouth? How do you do that is the first question.

THE WITNESS: We send him an update of the service order canceling the order.

COMMISSIONER JABER: So when you receive the cancellation from the customer, you in turn send a cancellation order --

THE WITNESS: Notice to BellSouth.

COMMISSIONER JABER: -- to BellSouth?

Okay. So in a remedy plan, it's your cancellation to BellSouth that will trigger the missed penalty?

THE WITNESS: I'm not sure, Commissioner, I quite understand where you're going. My cancellation, after they missed the appointment, I think what I'm being asked by counsel for BellSouth, would that be picked up in their missed appointments. And based on the definition, it should be. But if it's repeatedly missed and the customer gets frustrated and decides to cancel or go with another provider because he's gotten frustrated, then I just send in a cancellation to BellSouth, and

I don't know how it's, you know, captured after that because I've lost the customer.

COMMISSIONER JABER: Well, then I'm really just -- it's a logistical kind of question. How do the penalties kick in? And what determines what kind of penalty it will be, if it's a missed appointment penalty, for example, versus you referred to something else? You said you weren't sure if it was a missed appointment penalty or a --

THE WITNESS: Well, excuse me. I may not have finished the thought. But if it is a missed appointment, then I guess it would go in that queue to be tallied under that area against BellSouth.

COMMISSIONER JABER: Okay. All right.

BY MR. LACKEY:

Q And I'm assuming that you didn't cancel the order before the due date; right?

A Right.

Q Okay. Now, in addition to the percent missed installation appointments, it would also be captured by P-4, average completion order and order completion interval distribution, wouldn't it, which is the next measure?

A It says, "exclusions for canceled service orders."

Q That's why I asked you when you canceled it.

A It would have been canceled after BellSouth would have performed their work and delivered the loop, so -- but it didn't

work when it was delivered.

Q So it should have been captured by that measure as well; right? And that's also a Tier 1 measure; correct?

A Well, if the order wasn't completed, I'm not sure that it would be captured by the average completion interval, P-4.

Q Let's just stick with the first one. We had an agreement that it would be captured by P-3, right, missed installation appointment?

COMMISSIONER PALECKI: I'd like to follow up on that. On Line 6 of your testimony on Page 9, it states that you learned from BellSouth to the loop makeup information was incorrect. So I think that's the acknowledgment that you received from BellSouth that there had been a service failure on their part. Would you agree with that?

THE WITNESS: Commissioner, let me ask you again for that reference.

COMMISSIONER PALECKI: That's on Page 9 of your testimony, Line 6.

THE WITNESS: Yes. After we'd made the inquiry, we learned from BellSouth that the loop makeup information was incorrect.

COMMISSIONER PALECKI: And I guess the question I have is, from that acknowledgment from BellSouth, which service failure specifically kicks in with that particular information that you've received? I'm not sure, and I'm just trying to

figure this out in my own mind if this would be an order violation as has been previously discussed. And I'd like to kind of specifically refer to this example. What type of failure under the criteria we're discussing does that acknowledgment result in?

THE WITNESS: Well, that would be incorrect loop makeup information which caused the order to be placed. So the first failure I guess you would have to say is that the loop makeup information was incorrect that caused the order to proceed through the system as a good order. When we got to the customer and it got to be the due date, then it was determined that the loop makeup information was correct. Of course, in the process it was Covad that provided the repeated truck rolls on the order, and then after contacting BellSouth, it learned from BellSouth that there were load coils on the loop that had to be removed before this customer could receive their service.

COMMISSIONER PALECKI: And the question I am trying to get to is that under the criteria for service failures, what particular service failure do we have here where the loop makeup information was incorrect, it resulted in you rolling trucks on several occasions and ultimately losing the customer? Can you identify that?

THE WITNESS: Commissioner, I would right now just make it -- having to identify one, I'd have to probably go back to P-3, percent missed installation appointments.

COMMISSIONER PALECKI: I guess the point I'm getting at is, it seems like there may be many different occurrences that happen in the field where there will be a dispute or a potential dispute as to exactly what service violation has taken place and what penalty would be appropriate. It just seems that in this example that we're looking at, we don't have loop makeup information incorrect as one of the possibilities, and so there's going to be judgment calls. And I would also think there will be oftentimes potential disputes on these matters.

THE WITNESS: Commissioner Palecki, I appreciate, you know, you saying that. That is exactly correct. I think my testimony touches on a point that was referenced in earlier testimony by Mr. Pate in reference to some of the information that comes through LQS via LFACS and the electronic systems in general suffering from roughly a 10 percent error rate.

You've got a situation where -- because that error rate -- because the information may be inaccurate, or it may just not be complete, you come back and you get that, and you really don't find out potentially until you get there and try to deliver that loop. So if there was a subcategory that said, was loop makeup and loop makeup -- was loop makeup information correct or incorrect 95 percent of the time, you know, that would probably further define and keep, you know, disputes over whose responsibility or whose actual fault it was down at least for that category.

COMMISSIONER PALECKI: Thank you.

COMMISSIONER JABER: Mr. Allen, let me just follow up on something you said. It's not until the BellSouth truck rolls out that you discover that there are load coils on the loop. There is no way -- and Covad is primarily a DSL provider; correct?

THE WITNESS: Correct.

COMMISSIONER JABER: So when you are ordering loops, you are ordering them for DSL service; right?

THE WITNESS: DSL and DSL only.

COMMISSIONER JABER: You don't know when you contact BellSouth that there are load coils on the loop?

THE WITNESS: BellSouth may or may not know based on the information that they have. Assuming that there is an error rate of 10 percent, which I think they have discussed in previous testimony, is that you know that there will be a factor, so many times that you will have an error, you know, you'll have load coils on there, and you won't know about it.

So I'm not sure that I answered your question fully, but there is a built-in chance of roughly 10 percent, and, you know, this is going to be in your major metropolitan areas, I think, where the information is more complete and more detailed. I believe that's what BellSouth has testified to in the past where you're going to run into it. So accurate loop makeup information is essential.

COMMISSIONER JABER: So the answer then to the question is, when Covad or any ALEC requesting a DSL loop calls the wholesale center, you are not told whether that loop has load coils on it because they don't know.

THE WITNESS: They know probably, let's say, 90 percent of the time, if you want to look at 90 percent of the time. They don't know, based on what -- it's my understanding that they have testified to, because of a built-in error about 10 percent of the time. So they should know, but they may not because the information is complete or something has happened in the record, something wasn't input, they may not know that it's there, and then when we get there, we find out about it.

CHAIRMAN JACOBS: I seem to recall that there are some master records, and I can't recall what the title of them are, but for -- there's an additional process, and I think it probably was in some arbitration we had, but there's an additional process, and I think there's probably an additional charge, where they can go through these master records and give you a higher percentage of probability that whether or not coils are on that loop or not.

THE WITNESS: You may be referring to Map Viewer, which I understand they use to determine what the detail is on their loop makeup.

CHAIRMAN JACOBS: That could be.

THE WITNESS: I'm not an engineer, don't get me wrong.

But that's what I understand they use to look it up, but that information still sometimes may or may not be completely accurate --

CHAIRMAN JACOBS: Okay. Thank you.

THE WITNESS: -- as I understand it.

CHAIRMAN JACOBS: All yours.

MR. LACKEY: Thank you, Mr. Chairman.

BY MR. LACKEY:

Q Are you representing that this was one of the cases that fell into the 10 percent of the time when our information about loop makeup was inaccurate? Is that what you're suggesting this occasion was?

A I think that's what my testimony says, Mr. Lackey.

Q Now, that would be the same thing that would happen to our customers; correct? I mean, if the records were inaccurate for you, they are going to be inaccurate for us as well; correct?

A That would be correct.

Q And what, of course, we're here for is parity, not perfection; correct?

A Correct.

Q And nobody is perfect. I mean, you worked for the telephone company -- you worked for BellSouth for 19 years; right?

A Yeah. I think we had a few contacts during that time.

Q You can attest to the fact that nobody is perfect;

right?

A I wouldn't imply that anybody is perfect. I think what we try to do, though, is not set expectations for customers that we can't meet. I think that's the crux.

Q Look at Page 10 of your testimony now, and this has to do with P-7, the joint acceptance testing. Does Mr. Coon's comments this morning that what successful testing means is when the ALEC says its "Hanes"? Does that satisfy Covad? When the ALEC says the loop is working, does that satisfy Covad in that regard?

A As I understand Mr. Coon this morning, he indicated that a successful test meant that it actually was accepted by the ALEC. I think Mr. Coon went to clear up some doubt about the asking in this area for the two measurements that we originally asked for. I think in my summary I noted that, and I guess, Mr. Lackey, my point in making another comment in that summary was simply this, that that needs to be clear and understood by both sides, that a successful test means that the loop is successfully tested and the ALEC has accepted it as working. And I think that is how I understood Mr. Coon this morning. I think that that proposed measurement captures it.

Q Okay. Good. And on Page 11, though, you're giving us another case in Fort Lauderdale where apparently BellSouth never called to notify Covad that the loop had been provisioned; correct?

A That's correct.

Q Now, do you happen to know for a fact whether Covad actually asked for joint acceptance testing on that loop?

A Covad asks for joint acceptance testing on all its loops, and we have been discussing this with BellSouth for a long time. And BellSouth does perform joint acceptance testing with us a majority of the time. So the answer to the question is, yes, we ask for joint acceptance testing on all of our loops.

Q Now, if we didn't make the call, the failure in that case is going to be caught in that same standard that BellSouth proposes, P-7; correct?

A Bear with me, and let me just look at it again. Yes, yes, excuse me, yes. It should be caught there, I'm sorry. I'm little bit slow on the page turning.

Q That's all right. What I'm trying to do, Mr. Allen, is I'm going through your testimony, and I'm trying to make sure we've got measures to cover what you're concerned about. That's what the purpose of this is.

A I appreciate that.

Q Let's look at Page 12. On Page 12, you're talking about the reasonable delivery loop intervals for xDSL loops; correct?

A Correct.

Q And you talk about two aspects of this. First, you talk about what happens before the FOC is issued, and then you

talk about what happens after the FOC is issued; is that correct?

A That's correct.

Q And that's where you say on Line 17 that this measurement fails to capture potentially five to seven days that BellSouth thinks it should be allowed to perform service inquiry process; is that correct?

A That's correct.

Q Have you looked at measurement O-10 in this proposal of Mr. Coon's, which is on Page 2-27?

A Yes.

Q Now, doesn't that capture the time period for a service inquiry with LSR firm order confirmation?

A I think the answer to the question is, it's titled, "Service Inquiry with LSR Firm Order Confirmation Response Time Manual," and for xDSL, as I'm reading this, it says, "95 percent return within 5 business days." Is that correct, that page?

Q That's the way I read it. What I'm asking you is, there is a measure in BellSouth's plan that captures exactly what you're describing and has a benchmark associated with it; correct?

A The service inquiry process to firm order confirmation captures it that it's 95 percent of the time within 5 business days. That's at the beginning before the LSR is sent.

Q Now, the other issue is, what happens after the FOC is entered, and there at least for order completion intervals we are

talking about a benchmark in terms of a number of days; is that correct?

A That's correct.

Q And if you turn to your testimony and look at Page 12, you talk about the Strawman allowing 7 days without conditioning and 14 days with conditioning; correct?

A Seven days business days without conditioning, and 14 business days when conditioning is required, yes.

Q Okay. Can you tell us what the Georgia order provided for with regard to these same measurements?

A Could you provide me a reference for the Georgia order?

Q Sure. It's on the table. I just looked at the wrong one. Excuse me for just a moment.

MS. BOONE: It's Page 17.

MR. LACKEY: Thank you. I appreciate it.

BY MR. LACKEY:

Q Page 17.

A The Georgia order proposed the same thing, 7 business days without conditioning, 14 business days with conditioning.

Q And did you offer up your three, five, and seven business day testimony in Georgia?

A I was not the witness in Georgia.

Q Well, then the question I guess I should ask is, do you know whether your interval of three, five, or seven days was offered by anybody on behalf of the ALECs in Georgia?

A I did not attend that hearing, so I can't really attest to what was offered at that time.

Q Okay. Now, is Covad still in business in Georgia?

A Yes.

Q And are you -- from all the bankruptcies they were talking about a while ago, it seems like a fair question.

A I guess that sort of brings us to why we're here too.

Q And are you providing xDSL service in Georgia currently?

A Yes, we are.

Q So I guess 7 and 14 days isn't too long in Georgia for you-all to compete; is that correct?

A Well, that was recently ordered. I think what BellSouth had been performing with prior to that were basically benchmarks where you had a service inquiry period, and then once the service inquiry was done, then you actually -- the LSR was sent to the LCSC, a FOC was established, then there were due dates that were targets. I think Georgia made an attempt to actually establish hard-and-fast time frames that weren't, quote, targets but actually were dates.

But let me go a little bit further addressing your point that you brought up about the three, five, and seven business days.

MR. LACKEY: Wait a minute. Mr. Chairman, I've got a question pending out there that I don't think he's answered. I

would let him go, but if he's going off on another tangent, I want to stop him and get an answer to my question.

Q Would you like me to ask my question again, Mr. Allen?

A Please.

CHAIRMAN JACOBS: Would you restate the question, and we'll go at it again.

MR. LACKEY: I will restate the question.

THE WITNESS: Yeah, I would like counsel to rephrase or restate his question, please.

BY MR. LACKEY:

Q I'll be happy to. Are those intervals, 7 days and 14 days, too long to let Covad compete in Georgia?

A For --

Q Could I have a yes or no, and then your explanation?

A Could you repeat it one more time?

Q Sure. The Georgia Commission's ordered 7 and 14 days; right?

A Correct.

Q And what I'm asking you is, are those intervals too long to enable Covad to compete in Georgia?

A No, they are not too long to allow us to compete. I think the situation, though, is that we need to drive performance because our customers are driving us for better performance in shorter intervals for loop delivery. We have been successful so far when the loop delivery periods were much longer. They have

come down, but they are not where they need to be.

Q Look at Page 12, Line 22. If they are not too long to allow you to compete in Georgia, why did you say in your testimony that they were too long to enable you to compete in Florida?

A Again, going back to the answer that I just previously gave. The customers are expecting higher levels of performance. The time periods of what we're showing here with manual service -- manual loop delivery, you're talking anywhere from half -- a little bit more than half a month because we are talking business days to over a full month. The fact of the matter is, customers expect service. We live in a society right now that whether for not better purposes, when the people want to order it, they want it now. Over the long run, I think what you see is the demands of the customers for quicker service, faster service -- delivery of service is there. I think Georgia ordered these benchmarks. Do I think that they are where they need to be? No.

Q The truth of the matter is, you can compete in Florida with those periods, 7 days and 14, because you are doing it in Georgia; right?

A We've been competing in Georgia, and we've been competing in Florida.

MR. LACKEY: I'm skipping some questions, Mr. Chairman. If you'll just give me a minute, I'm trying to wrap this up.

Q Let's look on Page 22 of your testimony -- I'm sorry, I guess we ought to look at Page 21 first. Do you understand that in Georgia the comparison for non -- or items that aren't related to OCI, order completion interval, are compared for xDSL to ADSL as provided to retail; is that correct?

A Yes.

Q Do you understand that that's the standard that BellSouth is offering here in Florida in Mr. Coon's testimony?

A Yes, I did. In fact, I guess one question that I had for Mr. Coon's earlier testimony when he said that is, I believe that he also indicated that you provide ADSL in two manners, line sharing, which is the predominant, and then a standalone. And the references or the benchmarks for both are ADSL provided to retail or provided to retail. I assume that there is a little clarity that needs to be added there to make sure that it's not ADSL provided to retail for line sharing for all or for the standalone loop to all. But I understand it as I'm looking here at the Georgia benchmark that's what he indicated. I think it just needs to be further clarified.

I think the best thing that can come with a performance is to make sure that there is little left for misinterpretation, that the rules need to be clear and well-defined. And I think that's, you know, part of the reason why Covad is really very much an active part of the performance measures docket.

Q Let's look at Page 22, and this is your reporting -- or

you're reporting what BellSouth reported for Covad for December 2000; correct?

A Correct.

Q Twenty-seven percent missed installation appointments; correct?

A That's correct.

Q Can we agree that that would have been caught by the missed installation appointment measure that Mr. Coon has included in his testimony?

A Yes.

Q And we've already agreed that's a Tier 1/Tier 2 penalty; correct?

A That's correct.

Q Over 14 days to provision an xDSL loop. Now, we've already agreed that the standard here that's been proposed is 7 days without conditioning and 14 days with conditioning; correct?

A Correct.

Q So over 14 days would have been caught with regard to that standard; correct?

A Correct.

Q Average held order interval of 36 days. There's an average held order interval measurement in Mr. Coon's testimony as well; correct?

A Could you give me the reference for that one? I don't

think we've talked about that one.

Q Yeah, just a second. It's mean held order. I'll have to go find it. It's P-1, mean held order interval and distribution interval. We've got a measure for that; correct?

A Let me -- as I slowly flip through just --

Q It's on Page 3-1.

A Right, I've got it. Yes, there is provisioning mean held order interval and distribution intervals.

Q And the next one is average jeopardy interval at 21 days. Now, I'm kind of curious about that. A jeopardy notice is a notice that's given when there's going to be a problem with your order; right?

A That's the way I understand it, yes.

Q And the bigger the jeopardy notice, the better off you are; right?

A I'm not sure I understand what you mean by "bigger the jeopardy notice." To me, when I hear the order has a jeopardy on it, it's just that it has a jeopardy. There's no big nor small.

Q Well, let me see if I can expand on that. Let's say that you had a due date on a service of June 1. You would like to know if there is going to be a problem with that because of a lack of facilities. You'd like to know and have that jeopardy order as soon as possible; right?

A If there is a problem with an order, yeah, we'd like to know as soon as possible.

Q Okay. The next one, 17 percent of Covad's orders placed in jeopardy status. Would you look at P-2, and see if that would be in P-2?

A It would seem to be captured in P-2.

Q And the last one is more than 26 percent repeat troubles within 30 days. Will you agree with me that that would be caught in M&R-4, percent repeat troubles within 30 days, on Page 4-7 of the SQM?

A I believe that's the one Mr. Coon had discussed significantly during his testimony, and I believe, yes, that would be captured there.

Q So every one of the things that you report on Page 22 has a measure associated with it, except maybe the average jeopardy interval of 21 days; I don't know about that. But all the others certainly have measurements they would have been caught in Mr. Coon's proposal; right?

A They would be caught in Mr. Coon's proposal. I'm not sure Mr. Coon has proposed penalty remedies for all of them.

Q Well, certainly the missed installation appointments is a Tier 1/Tier 2; right?

A Yes.

Q The more than 30 trouble -- percent repeat troubles within 30 days is certainly a Tier 1/Tier 2; right?

A That's correct.

Q The OCI, the order completion interval, is, I

believe -- well, perhaps do you know what the order completion interval is? I believe it's a Tier 1/Tier 2 as well; right?

A I believe that's correct, yes.

Q I think probably -- I think the jeopardy one may not be.

A Yeah, the jeopardy notice was the one that I had just looked at that had no penalties in it.

Q So at least for the missed appointments, the over 14 days, the repeat troubles, I don't know about the average -- the mean held orders, do you? Well, let's just stop there. At least for three of them, there are penalties associated with them; correct?

A There are penalties associated with them; correct. And I guess in my testimony we've said that there needs to be further disaggregation. And on the average jeopardy interval, as you said, it appears to be the only one that does not have penalties associated with it.

Q And they're ALEC-specific penalties. So if we messed up your orders this bad in the month of December and we compared your performance to ours and it was bad, you would get penalty payments, wouldn't you?

A If they met your benchmark or your threshold.

Q If it turned out we were providing discriminatory service; right?

A And I think if they met the benchmarks, yeah.

Q Well, a missed appointment is a missed appointment, isn't it?

A Yes, it is.

Q And you've already said over 14 days to provision an xDSL loop, and we've said I think the maximum was 14 days with conditioning; right?

A Yes, that's correct.

Q And repeat troubles, 26 percent repeat troubles certainly fit in the category; right?

A Yes.

Q So if these measurements had been in place in December and this had represented disparate treatment, we would have paid you penalties; right?

A Based on the information that we discussed here, yes.

MR. LACKEY: That's all I have, Mr. Chairman. Thank you.

COMMISSIONER PALECKI: I just have a quick follow-up. Under the data that's listed on Page 22, would it be possible to make a calculation just with this data as to what that penalty might be under the proposal that has been submitted by BellSouth? I guess I'm curious as to based on this data what kind of dollars we're talking about, or do you need further information concerning BellSouth's own performance?

THE WITNESS: Well, I would need further information. I couldn't answer your question. But based on Mr. Lackey's

questioning to me and statements, it sounds like they would have been paid. What level or amount, I don't know, Commissioner.

COMMISSIONER PALECKI: I don't know if I can ask for this as a late-filed exhibit, or if we have information enough information, but I would like some sort of scenario that lists data like this and compares it to BellSouth's performance for the month of December 2000 and makes a calculation. Is it possible with the cooperation between Covad and BellSouth to put together a scenario that would give us an example of what type of financial penalties there would be under these factual -- this December 2000 example set forth right here?

THE WITNESS: I would say BellSouth should be able to come up with that, but I think with cooperation between the two parties, it would seem to be that we could come to the scenario that we offered.

COMMISSIONER PALECKI: Could I ask the two parties to attempt to provide that information as a late-filed exhibit?

MR. LACKEY: Yes, sir. I was looking back at Mr. Coon, and he was nodding, yes, that he thought we had that data. If they have it, we can certainly prepare it.

COMMISSIONER PALECKI: I think that would be very worthwhile for the Commission to see that sort of calculation based on a real world example.

MR. LACKEY: We may have to get some information from Covad to do it, but we'll give it a shot and let you know what

happens.

COMMISSIONER PALECKI: Thank you.

MS. BOONE: Yeah, we'll be happy to work with BellSouth on this. The only information that was available to us at the time we gathered this is based on BellSouth's current PMAP that's on the Web site that reports different analogs and different benchmarks than what they are proposing here today. So we don't have their side of the data, if that makes sense.

MR. LACKEY: For instance, to follow up, we're going to have to figure out what data we have that shows our missed appointments in the same relevant area that we've got Covad here. So we're going to have to know where there's is and where ours is, but we'll go look at it.

COMMISSIONER PALECKI: And the other thing I note is that some of this data is listed with percentages, and I'm not sure if you won't need numbers rather than percentages. I don't know.

MR. LACKEY: They said they got this off our -- that we reported it, so we should have the underlying numbers if --

MS. BOONE: Yes, sir, and we have the raw data as well which breaks it down and has the instances and occurrences. This is just what comes from a report that's produced from that data.

COMMISSIONER PALECKI: Thank you.

CHAIRMAN JACOBS: We'll identify it as a late-filed exhibit, 22, and I've titled it, "BellSouth Equivalent to Covad's

Statistics Listed on Page 22 of Mr. Allen's Testimony." Sounds reasonable enough?

(Late-Filed Exhibit 22 identified.)

MR. LACKEY: Yes, sir. Mr. Coon was just here telling me that obviously whatever we've got a benchmark for, you know, we can do it without any question. It's the retail analog that may be the problem, recreating the retail analog for December, but we'll look at it and see what we can do.

CHAIRMAN JACOBS: Okay.

MS. BOONE: And one of the Staff interrogatories did request some data from BellSouth of their ADSL retail analog. I can look up that number as well.

CHAIRMAN JACOBS: Very well. Mr. Lackey, you were done with your cross?

MR. LACKEY: Yes, sir, I am.

CHAIRMAN JACOBS: Staff.

MR. FUDGE: Staff doesn't have any cross. But did you want to set a time frame on that late-filed exhibit?

CHAIRMAN JACOBS: Yes. Suggestions?

MR. FUDGE: It would be up to BellSouth.

MR. LACKEY: I can't even begin to give you a time frame until we check it.

CHAIRMAN JACOBS: Ten days?

MR. LACKEY: I can certainly give you a response and tell you what we're going to do sooner than that. That's what

I'll need to do first, is make sure what we can do.

CHAIRMAN JACOBS: Yeah, you can give it to us tomorrow. You can give it to us tomorrow when you think you can provide that. No, not the response; when you think you can provide the response.

MR. LACKEY: Yes, sir. And I'm not trying to be evasive, but I've just got a bunch of people I've got to get lined up to look at this.

CHAIRMAN JACOBS: No problem, no problem. Mr. Allen, I had one brief question. And I'm sorry, that was part of the questioning that I did not follow. As I understood it, there were measures that you were questioned about that would capture performance under these statistics that are on Page 22 of your testimony. And the question was whether or not you -- there would be a remedy calculated or at what level that remedy would be calculated if BellSouth was determined to have failed those measures; is that correct?

THE WITNESS: Yes, Commissioner, I believe that was correct.

CHAIRMAN JACOBS: Okay. Would the level of those remedies be impacted by what your testimony -- the testimony that you gave, I guess, just prior to this where -- let me make sure this is the right one. You make an argument that there is a mismatching of analogs. And essentially, you say measuring UNEs analogs against POTS is not -- I'm sorry, measuring analogs for

DSL loops to POTS is ineffective and that that should be a different analog. That's on Page 20.

THE WITNESS: I think what I said is, if you're reading at Line 14 on Page 21, I'm drawing a distinction what BellSouth had used as prior benchmarks. I said BellSouth's performance on xDSL loops should be compared to retail POTS performance. For UNE shared line loops, the appropriate retail analog is BellSouth's retail ADSL industrial/consumer product.

CHAIRMAN JACOBS: Okay. My question: Would that enhance the idea that a remedy would occur and the level of that remedy if you follow your recommendation?

THE WITNESS: If they followed my recommendation, I think the level of the remedy and its occurrence would be more frequent than what BellSouth, at least when I wrote my testimony, had been using.

CHAIRMAN JACOBS: Very well. No exhibit -- oh, a late-filed exhibit, but no other exhibits?

MS. BOONE: I just have a brief redirect.

CHAIRMAN JACOBS: Redirect.

REDIRECT EXAMINATION

BY MS. BOONE:

Q Mr. Allen, Mr. Lackey was asking you some questions about the ways the BellSouth plan would capture some of the instances in your testimony. Could you turn to P-7?

A Okay.

Q Now, how important is the cooperative acceptance testing? Both of these that were proposed by the ALECs, how important is that to Covad?

A It's extremely important to Covad. And one of the reasons it was one of the prime parts of my testimony in particular was that just performing the test, it should be done, but if the test is performed and the loop is not working, then you still really haven't accomplished the task at hand, which is deliver a good loop the first time. That enhances customer satisfaction. It also saves both parties money in the long run because it doesn't generate a trouble report. Our point is that those need to be clear, and therefore, we felt like that we needed the two measures when we proposed them.

Q Could you look at the SEEM measures for that particular metric?

A Yes, I am.

Q Is this a Tier 1 violation triggering penalty payments to Covad?

A No, it is not.

Q Could you look at measure P-1?

A Okay.

Q Now, that is one of the measures that Mr. Lackey suggested would capture some of our problems on Page 22 of your testimony; is that right?

A That's correct.

Q Would you look at the SEEM measures for that particular metric?

A I have them.

Q Now, are there going to be any penalties assessed in Tier 1?

A There are no penalties for Tier 1.

Q How about for Tier 2?

A There are no penalties for Tier 2.

Q Could you look at P-2?

A Yes.

Q Could you look at the SEEM portion?

A Yes.

Q Now, are there penalties for Tier 1 or Tier 2 violations of that metric?

A There are penalties for neither Tier 1 nor Tier 2.

Q Would you look at P-3, please. And that is percent missed installation appointments; is that correct?

A That's correct.

Q And you were discussing that with Mr. Lackey. Do you recall that conversation?

A Yes, I do.

Q About whether the problem with the line shared loop would trigger an error or a failure on this particular measure.

A Yes, I do.

Q Would you look under the exclusions, please.

A Yes, I did.
Q Could you tell me what it says there in the first line?
A It says, "canceled service orders."
Q Now, what do you take that to mean?
A I took it to mean, and I think I mentioned this earlier, was that a canceled service order may, in fact, be excluded from this measurement.
Q Now, if you look at the next, P-4, and if you'd look under exclusions again.
A Yes.
Q Could you tell me what the first line under exclusions is?
A "Canceled service orders."
Q Now, is there anything that says when this order is stripped out of the analysis?
A No.
Q So from reading this, how do you understand that canceled orders will be treated with respect to this measure?
A It would be my view that any service order that was canceled would be omitted.
Q At any time that it was canceled?
A It would seem to be at any time it was canceled.
Q And when Mr. Lackey was talking with you about the measures that there are possibly penalties for you, you were here for Ms. Cox's testimony, weren't you?

A Yes.

Q Now, is BellSouth proposing that they will be immediately subject to these penalties?

A No.

Q Can you explain that?

A As I understood from Ms. Cox that the penalties actually wouldn't kick in until they had 271 approval.

Q So there would not be any penalties last December nor this June; is that correct?

A That's correct.

MS. BOONE: Thank you. No further questions.

MR. LACKEY: That's unusually pessimistic.

CHAIRMAN JACOBS: You've got a point?

MR. LACKEY: I didn't object to the last December, but she shouldn't talk about June, I don't think. We might have relief by then.

MS. BOONE: I withdraw that June reference. How about, what is this, April?

CHAIRMAN JACOBS: Very well. That takes care of -- thank you, Mr. Allen. You're excused.

THE WITNESS: Thank you, Commissioner.

(Witness excused.)

CHAIRMAN JACOBS: We'll take a 10-minute break and come back with the next witness.

(Brief recess.)

CHAIRMAN JACOBS: We'll go back on the record. Let the record reflect that Mr. Falvey is due up, but we announced earlier that Ms. Terry --

MR. HORTON: Ms. Renee Terry will take the stand. Mr. Chairman, she has not been sworn yet.

(Witness sworn.)

CHAIRMAN JACOBS: Thank you. You may be seated.

RENEE TERRY

was called as a witness on behalf of the ALEC Coalition and, having been duly sworn, testified as follows:

DIRECT EXAMINATION

BY MR. HORTON:

Q Would you state your name and address, please, ma'am.

A My name is Renee Terry. My business address is 131 National Business Parkway, Suite 100, Annapolis Junction, Maryland.

Q And by whom are you employed?

A E.spire Communications.

Q And could you briefly give your professional experience and background?

A Yes. I joined e.spire in November of 2000. Prior to that, I was with the Federal Communications Commission for more than nine and a half years. The majority of my tenure was with the Common Carrier Bureau in the enforcement division, formal complaints and investigations branch, and also in the competitive

pricing division. I also spent approximately three and a half years in the Cable Services Bureau in a variety of divisions.

Before I joined the Federal Communications Commission, I was employed for approximately four and a half years by the Commonwealth of Massachusetts. I was a hearing officer at the Department of Public Utilities, which is now known as the Department of Telecommunications and Energies. As a hearing officer, I presided over matters in the electric, gas, water proceedings. I also certified ALECs seeking to operate in the state; at the time they were known as CLECs.

Before that, I had a brief stint at the Massachusetts Cable Television Commission where I was a staff attorney in charge of implementing the state consumer billing and protection regulations.

Q Ms. Terry, have you read the testimony that was prefiled on behalf of James C. Falvey in this proceeding?

A Yes, I have.

Q And it's your intent to adopt Mr. Falvey's testimony as yours today, is it not?

A Yes, it is.

Q Do you have any changes or corrections to make to that prefiled testimony?

A Yes, I have two changes. On Page 2, I would like to strike Lines 1 through 21, as I've just stated my professional experience. Also on Page 4, Line 6, I would like to insert "to"

after "BellSouth."

Q And that first change that you made was just to take out Mr. Falvey's background and name and substitute yours for it?

A Yes, it is.

MR. LACKEY: I'm sorry. Could I have the second change again? I missed it.

THE WITNESS: The second change?

MR. LACKEY: Yes, it was on Page 4, I think. And what was it?

THE WITNESS: Line 6, to insert "to" after "BellSouth."

MR. LACKEY: Oh, I'm sorry. I got it. Thank you.

BY MR. HORTON:

Q And with those changes, if I were to ask you the questions contained in the prefiled testimony, would your answers be the same today?

A Yes, they would.

MR. HORTON: Mr. Chairman, with that, we'd ask that Ms. Terry's testimony be inserted in the record as though read.

CHAIRMAN JACOBS: Without objection, show the prefiled testimony of Ms. Terry substituted for Mr. Falvey entered into the record as though read.

MR. HORTON: And she had no exhibits.

~~Q. PLEASE STATE YOUR NAME, TITLE AND BUSINESS ADDRESS FOR THE RECORD.~~

~~A. My name is James C. Falvey. I am Senior Vice President - Regulatory Affairs for e.spire Communications, Inc. ("e.spire"), which formerly was known as American Communications Services, Inc. or "ACSI". My business address is 131 National Business Parkway, Suite 100, Annapolis Junction, Maryland 20701.~~

~~Q. PLEASE DESCRIBE YOUR PROFESSIONAL EXPERIENCE AND BACKGROUND.~~

~~A. Prior to joining e.spire as Vice President - Regulatory Affairs in 1996, I practiced law as an associate with the Washington, D.C. law firm of Swidler and Berlin for two and a half years. In the course of my practice, I represented competitive local exchange providers, competitive access providers, cable operators and other common carriers before state and federal regulatory authorities. Prior to my employment at Swidler and Berlin, I was an associate in the Washington, D.C. office of Johnson & Gibbs, where I practiced antitrust litigation for three years. I graduated from Cornell University in 1985 with honors and received my law degree from the University of Virginia School of Law in 1990. I am admitted to practice law in the District of Columbia and Virginia.~~

Q. ON WHOSE BEHALF ARE YOU TESTIFYING IN THIS PROCEEDING?

A. I am testifying on behalf of e.spire and its local operating subsidiaries in the state of Florida. e.spire is a facilities-based ALEC that, through its operating subsidiaries, provides a full range of local and long distance telecommunications services in more than 30 markets throughout the northeastern, southeastern and southwestern United States. In Florida, e.spire has an Interconnection Agreement with BellSouth.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. The purpose of my testimony in this proceeding is to present some examples of e.spire's experiences with BellSouth as a competitive carrier in Florida and illustrate how lack of adequate performance measurements adversely impacts the development of local competition and ultimately denies Florida consumers the benefits of competition.

Q. WHAT MEASURES OR CHANGES TO THE BELLSOUTH MEASURES WOULD YOU PROPOSE?

A. e.spire proposes changes to BellSouth's FOC (Firm Order Confirmation) process because the process is flawed. In addition, e.spire proposes that the Commission establish a performance measure for EEL conversions and require routine trunk testing. BellSouth's lack of routine trunk testing and current process for issuing FOC dates and conducting EEL conversions have a negative impact on the competitive telecommunications market, as I will discuss in further detail below.

Q. WHY DO YOU PROPOSE CHANGES TO THE FIRM ORDER CONFIRMATION (FOC) PROCESS.

A. Based on e.spire's experiences, there are several deficiencies in the current FOC process. e.spire believes that it is insufficient for FOC performance measures to merely capture the amount of time that it takes for BellSouth to issue FOC dates. For example, after e.spire places an order with BellSouth for unbundled network elements, even if e.spire obtains a timely FOC date from BellSouth, the order can be placed in Pending Facility (PF) status, while BellSouth conducts a facilities check. In addition, BellSouth does not conduct an engineering test as part of the facilities check.

Q. WHAT IS THE COMPETITIVE AND CUSTOMER IMPACT OF INADEQUATE FOCs?

A. The FOC date that BellSouth provides to e.spire is used to determine e.spire's customer due dates. To the extent that e.spire and other ALECs are unable to rely on the BellSouth FOC date, this in turn adversely impacts the ability of e.spire and other ALECS to meet their customer due dates. Thus, the business reputation of ALECS with respect to the ability to meet customer expectations of timely service is placed in jeopardy, if competitive carriers have to contact customers to cancel or reschedule service appointments. Meeting customer expectations is a crucial component of successful local competition, especially in the current environment. If customers have the

perception that e.spire and other ALECS are unable to meet scheduled appointments, these customers may very well return to BellSouth. Thus, BellSouth's failure to conduct a facilities check prior to issuance of the FOC date has potentially crippling effects on local competition. In addition, this also causes e.spire and other ALECS to tie-up limited resources and needlessly juggle internal operations to meet customer due dates because the FOC date is not reliable.

Q. HOW DOES E.SPIRE PROPOSE TO ADDRESS THE FOC INADEQUACIES?

In order to make the FOC date meaningful, e.spire proposes that the Commission require BellSouth to complete a facilities check prior to issuing a FOC, and establish a performance measure for instances in which BellSouth places orders in PF status, after FOCs have been issued. These changes should make the FOC date more reliable for ALEC planning purposes and allow the parties to monitor the FOC process.

Q. WHAT DO YOU PROPOSE WITH RESPECT TO ENHANCED EXTENDED LINK (EEL) PROVISIONING.

A. e.spire proposes additional measures for enhanced extended link (EEL) provisioning. For example, e.spire submitted data to BellSouth nearly a year ago around March 24, 2000, for EEL conversion. As of today, BellSouth still has not processed e.spire's order. This delay runs counter to The Federal Communications Commission's (FCC)

recognition that ... "the process by which special access circuits are converted to unbundled loop-transport combinations should be simple and accomplished without delay."[1] These delays are therefore, unacceptable and illustrate the need for provisioning intervals in this area.

Q. WHAT IS THE COMPETITIVE AND CUSTOMER IMPACT OF NO EEL PERFOMANCE MEASURES?

A. EELS are important to the widespread and efficient deployment of competitive local exchange services by ALECS. A robust local competitive market will provide the consumers of Florida with more service options at a lower price. As I have testified, e.spire has been waiting nearly a year for BellSouth to process its EEL order. As stated above, because the EELs conversion process should be "simple ... and ... without delay," an EELS performance measure would provide an invaluable tool by which this process may be monitored and compliance enforced. Therefore, it is critical for the Commission to establish EEL provisioning measures. Indeed, the FCC recognizes the importance of EEL conversion to competitive carriers and is currently conducting an EELs Summit to address issues related to the EEL conversion process. In the absence of an EELs performance measure, e.spire and other ALECS may be forced to individually demonstrate

[1] See Implementation of the Local Competition Provisions of the Telecommunications Act of 1996, CC Docket 96-98, Supplemental Order Clarification, 15 FCC Rcd 9587 para. 30

that BellSouth has failed to process EEL requests in a timely manner before the Commission, which could needlessly tie-up both ALEC and Commission resources.

Q. REGARDING TRUNK TESTING, HAS BELLSOUTH INSTITUTED ADEQUATE PREVENTIVE MEASURES?

A. No, this is an area of concern to e.spire. Currently, BellSouth does not conduct routine tests on BellSouth's end office tandem trunks to e.spire switches. As a result, calls may not be competed, if there are technical problems with the trunk. The customer disruption of service in this situation could have been avoided, if BellSouth had conducted the simple preventive measure of routine trunk testing prior to turning up service on the trunk. This is yet another example of BellSouth providing ALECS with inferior service that adversely impairs ALECS' ability to provide services on par with that of BellSouth.

Q. DO YOU HAVE ADDITIONAL OPERATING CONCERNS WHERE YOU THINK THAT PERFORMANCE MEASURES WOULD IMPROVE QUALITY OF SERVICE.

A. Yes, three specific situations come to mind. e.spire has experienced Access Customer Advocacy Center (ACAC) answer/hold times that are excessive. When e.spire has called the ACAC to report problems, we have experienced hold times as long as 90 minutes. Second, when e.spire's circuits are down during the evening hours, in some instances,

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(2000).

BellSouth may not correct the problem at that time, and e.spire's customer will be out of service overnight. Even though BellSouth may fix the problem the next day, in the business world, customers expect that repairs should be made promptly, during hours that cause the least disruption to their business. Also, e.spire has experienced problems with BellSouth failing to show up promptly at the scheduled time or not at all, particularly after hours, for e.spire customer cutovers. Collectively, these problems constitute a drain on e.spire's valuable resources (financial, time, and personnel), constitute a barrier to competition, and reduce the ability of Florida consumers to obtain the benefits of competition in the local telecommunications arena – more service options and lower prices.

Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes, it does. Thank you.

BY MR. HORTON:

Q Ms. Terry, do you have a summary of your testimony?

A Yes, I have a brief summary of my testimony. Basically I'm here today to provide some real life examples of e.spire's operating issues with BellSouth. And we believe these represent the need for performance measures, adequate standards, and the need for remedies.

The first matter that I'd like to discuss is the FOC process. Basically, we believe that it needs to be improved in order to give the FOC date more meaning; in other words, to change it from a confirmation date to a commitment date. The problems that we're experiencing is that we will submit the order to BellSouth. We could receive a FOC date in a timely manner; however, after we received the FOC date, the order goes into pending facility. This has a negative impact on us because we have made commitments to the customer to have a certain due date. And to the extent that the customer due date is placed in jeopardy, we're having to go back to the customers to either cancel the order; ideally, reschedule the order. And it really makes it difficult because the customers will look to us as not being professional or not being able to meet our commitments. And it is especially critical because this is the beginning stages of our business relationship with the customer. And if we're going back trying to jiggle the date when we can first provide service, sometimes it could set the tone from the

customer's perspective as to our ability to provide services in a professional manner.

The ultimate concern is that these customers will decide to return to BellSouth. Since this is a systematic problem, we believe that vis-a-vis the other ALECs, they still will face the same type of problems, and the customers could decide BellSouth is the reliable one, and the ALECs, as a rule, are not reliable in this respect. And also, this process ties up our internal resources because we're dealing with BellSouth, we're dealing with the customer trying to juggle the dates or just work something else, and this could be time and energy spent handling other matters.

The other issue -- I'm sorry. We think that this problem could be addressed if there were a facilities check before BellSouth issued the FOC to us; that way that could alleviate one potential reason why we're receiving the pending facilities. And also, we believe that if there were some type of measures in place to capture the amount of time that the orders are placed in the pending facility status after we receive a FOC date, that it could help the Commission hone in on this problem, because we do believe that it is systematic, and we believe some changes are necessary in order to make the state more meaningful.

A second matter that I would like to bring to your attention is the EEL conversion process. We have been having difficulty in obtaining EEL conversions. According to the

testimony, we've placed a request in March of 2000; to date, we still haven't received the EEL conversions. We have been working with BellSouth. We have made progress in some areas, but ultimately, we still don't have the conversions, and it's impacting our ability to provide competitive service to consumers. We believe that if there are some type of performance measures to address this situation, that that would help competition and beef up the deficiencies that we see in this area.

We think that performance measures are necessary because if all ALECs are facing this problem, instead of having us come individually trying to file complaints and address this matter, it's something that's global, and it's appropriately addressed by performance measures.

We also had some problems with routine trunk testings. We're proposing or we would like for BellSouth to conduct tests on the end office tandem trunks to e.spire. What I've been finding out, based on my discussions with our operational folks, is that in these situations, it's possible for us to hook up the customer for service, but then telephone service is disrupted. We believe that if this maintenance were performed before the customer were hooked up, then we could avoid this problem without finding out when the phones go down.

And also, we have some other operating issues where we had excessive hold times at the ACAC center. I believe we had

some instances where the hold times were over 90 minutes. We've also had generic problems when our circuits are down after hours. Sometimes we're not able to get BellSouth to make the repairs during the evening hours. And granted, BellSouth could make the repair the next day, but in this business environment, we need and the customers expect to have the least disruption to the business operations. And their concern is, well, why are you coming during the day to make the repairs? You should have been here at night. During the day, that's when I need my phone service. So these are the type of issues that we are facing.

Also, in some instances when we have customer cutovers, we're having problems with the BellSouth technicians not showing up or showing up late after hours. And once again, this is a situation where we have our customers ready, e.spire is ready, but the cutover can't take place as scheduled. And it's my understanding that this is particularly an after-hours problem.

And these were some of the examples that the operational folks gave to me when I inquired about what's going on in the BellSouth territory and in Florida. That's the summary of my testimony.

MR. HORTON: Ms. Terry is available for cross examination.

CHAIRMAN JACOBS: Who's up? No cross here. Mr. Lackey again.

MR. LACKEY: I guess it's me, again, sir.

CROSS EXAMINATION

BY MR. LACKEY:

Q Ms. Terry, my name is Doug Lackey. I'm an attorney with BellSouth. I know you're adopting Mr. Falvey's testimony. If I ask you something you don't understand or don't know, just say so. I understand the situation.

First, I want to talk to you about the FOC process. If I understand correctly, what you're saying is, you send us an order, we issue an FOC, and then after the FOC is issued, the order goes into a pending facility hold; is that correct?

A Yes, it is.

Q Now, when we give you the FOC, we give you an installation appointment; correct?

A Yes.

Q So if we give you an FOC and then put the facility in -- or put the order in pending facility, we're going to miss measurement P-3, missed installation, aren't we?

A I don't have the measurements in front of me, but --

MS. BOONE: We've got one.

MR. LACKEY: Huh?

MS. BOONE: We've got one.

MR. LACKEY: Oh, you've got one.

BY MR. LACKEY:

Q When you get it, P-3 is on Page 3-6.

A Okay. Yes.

Q What I asked you was, if we gave you the FOC, and then put it in a PH status, we would miss P-3, missed installation appointment; correct?

A Correct.

Q And that is a measurement that has both Tier 1 and Tier 2 penalties associated with it; is that correct?

A Yes.

Q And we would also -- if we put it in the PH status, we would miss P-4, OCI intervals; correct?

A Yes.

Q And that has Tier 1 and Tier 2 penalties associated with it; correct?

A Correct.

Q And you said you'd like to have a measurement when it was in that hold status. Would you look at P-1, and see if mean held order interval would cover that for you?

A I'm sorry, could you repeat the reference again, please.

Q Yes. It's P-1; it's on Page 3-1. It's the mean held order interval.

A Yes.

Q Okay. Now, your solution, if I understand correctly, is to move the facilities check in front of the FOC; is that correct?

A Yes.

Q In other words, BellSouth would do its facilities check, and after it confirmed there were facilities available, then it would issue the FOC; correct?

A Yes.

Q Now, one of the situations this PF might come up in is if you wanted to buy a UNE loop from us and it turned out the customer was being served with integrated digital loop carrier; correct?

A Yes.

Q We would have to go find a copper pair that we could run to that customer's house; correct?

A Yes.

Q Now, is it correct that the FOC return for electronic orders is -- the benchmark is 95 percent in 3 hours? That is O-9, if you look on Page 2-24.

A I'm sorry, you said Page 2-24?

Q 2-24 is what is showing on my set here. Yes, it is O-9, firm order confirmation timeliness. And if you'll look at the benchmark, which is on Page 2-26, I think you'll find that mechanized is 95 percent within 3 hours. Do you see those? It's on the upper right-hand side of Page 2-26.

A Yes, I see that.

Q Okay. And you see it requires for a mechanized order, 95 percent with 3 hours; right?

A Yes, I see that.

Q Okay. Now, how are we going to do a facilities check, go out and find a copper pair for you out of some central office somewhere in Florida and still get the FOC back to you in three hours if we do the facilities check?

A Well, my first thought would be perhaps the process needs to be changed so you can do that.

Q I'm sorry?

A Perhaps the process needs to be changed so you could do that.

Q Well, how would you change the process so that we could do that? I mean, using the example I gave you a minute ago, you want a UNE loop, we've got a customer that's served on IDLC, we've got to find a cooper loop for you; right? We've agreed to that, so we've got to find this cooper loop that can be used to serve your customer.

A Yes.

Q Now, how can we change the process and go find a copper loop within three hours?

A I think this illustrates the overall point that e.spire is trying to make, that the system that we're using now seems to be flawed in the sense that the things that the ALECs need and we need now, we can't get now because of the way the internal operations of BellSouth is structured. So instead of asking us to change being able to give the customers what they want when they want it, that perhaps BellSouth should change its internal

operations to do that. We're being driven by our customers. For your customer, perhaps you should or perhaps BellSouth should consider changing the way it provides service to us. It's like putting the cart before the horse.

Q I understand your position. All I want to know is, I've got a central office in Miami that's serving my customer or serving Ms. White, Nancy White, our general attorney. She's done a bad job; she's gotten fired. She wants to change and move over to you-all. You go to order a loop; she's served on IDLC. Okay?

A Yes.

Q I've got to dispatch somebody to go find a copper loop; right?

A Yes.

Q Okay. My question to you is: How many people do I have to have standing by waiting so that I can dispatch somebody to find a copper loop for you and get you an FOC within three hours?

A As many people that is reasonably necessary to do that within the time constrictions.

Q You did used to work for the FCC, didn't you?

A Yes.

Q Let's talk about the EEL conversions. An EEL is what, an enhanced extended link?

A Yes.

Q So if I understand this, and I don't understand what

the problem is, so you're going to have to help me with this. You-all must have special access lines that you purchased from us; right?

A Yes.

Q And you want to convert those to EELs; correct?

A Yes.

Q Now, those special access lines are in service, so your customers are being served today?

A Yes.

Q No customer is out of service; correct?

A Correct.

Q This is nothing but a billing issue; right?

A We believe that the EEL conversion should be a simple billing issue, but unfortunately, the reality is that has not been such.

Q Okay. Well, something must be going on that I don't understand. I mean, normally, if you're going to provide local service with these special access loops, all you ought to be able to do is certify that and get them converted over to EELs; right?

A That is the way the process is supposed to work, yes.

Q Have you certified that these are being used for local service?

A I believe so, yes.

Q So can you tell me what the problem is?

A From our perspective, there have been roadblocks and

obstacles being put into our way. We believe that the FCC order is clear on the process that must be followed. It is my understanding that BellSouth and e.spire has been disputing some of the requirements of the order which we believe are clear.

Q I see. In other words, we're having a legal dispute with you about what the order requires us to do; correct?

A Yes.

Q Okay. So it's not that you gave us this order, and we just lost it.

A That is correct.

Q We're having a fight about something.

A Yes.

Q Okay. All right.

A But I believe this fight was prompted by some of the systematic problems that touches upon all of our practices, what we believe to be unnecessary wrangling. I recognize that this is a legal dispute, and you probably have a different interpretation. But we're concerned that, once again, we have customers, they want certain services, and we spend an excessive amount of time wrangling over these legal matters.

Q You wouldn't require us to waive our legal rights to dispute an interpretation of some order that we disagreed with you over, would you?

A Certainly not. However, if we keep being in the situation where we relitigating issues in each and every

jurisdiction in which e.spire provides services, that's when things become a problem from our perspective.

Q But your customers are getting service because we provided you the special access. This is just a billing issue; right?

A A billing issue with large monetary ramifications.

Q Okay. But it's not customer affecting?

A Well, actually, e.spire, we're in bankruptcy, so anything pertaining to the monetary ramifications is very important to us.

Q Well, if you're bankrupt, I guess it isn't as important as it once was, but the last one is trunk testing.

COMMISSIONER JABER: Ms. Terry, on the EEL provisioning.

THE WITNESS: Yes, ma'am.

COMMISSIONER JABER: So are you suggesting that the Commission accept your proposal for additional measures on a billing issue?

THE WITNESS: Well, we're looking for measures to capture when the changes actually take place. Right now, there has been no EEL conversions, and so we believe that if there are some measures put in place, it will address what we believe to be a deficiency in the process.

COMMISSIONER JABER: Have you filed a complaint -- let me start with -- you requested the EEL conversions over a year

ago; is that correct?

THE WITNESS: Yes.

COMMISSIONER JABER: Have you filed a complaint at the PSC or at the FCC about how long it's taken to have the EEL conversion?

THE WITNESS: No. We participated at a summit before the FCC about the process, not specifically with BellSouth, but with ALECs as a whole. Some folks were looking for further guidance from the Commission regarding why the process is taking so long and what action should be taken. But we've been trying to work with BellSouth to resolve this matter.

BY MR. LACKEY:

Q Are you having this problem with other ILECs besides BellSouth?

A Yes.

Q Okay.

A Oh, yes, it's not a BellSouth-specific problem.

Q And since you don't have any experience with the actual conversion, you don't have any basis for concluding that BellSouth isn't converting, when there is no dispute, special access to EELs in a timely manner, do you?

A I'm not familiar with any ALEC that has received EELs conversion.

Q The third one was trunk testing, and I guess it must have been a problem of trunks wouldn't work, trunks between our

switches and your switches weren't working?

A Correct.

Q So you were getting calls blocked?

A Yes.

Q Have you looked at the measurements TGP-1and TGP-2, trunk group performance, CLEC-specific and aggregate? It's on Page 9-3. And the question I'm going to ask you is, we have measurements that catch trunk blocking, don't we?

A I'm on the page.

Q I'm sorry, are you at the page?

A Yes.

Q Okay. We have two measurements, one an aggregate and one a CLEC-specific, that relate specifically to our performance regarding blocking, don't we?

A I see that.

Q Okay. Now, on Page 7 of your testimony you're talking about holding times, and I've got two questions to ask you with regard to the holding times. First of all, you say or Mr. Falvey said that you had holding times when you call the ACAC. Now, that's the access customer advocacy center; right?

A Yes.

Q That's not the local service center; right?

A Yes.

Q So this is a local service case, and we're talking about measures for local service, not access; right?

A Correct.
Q Is that right?
A Yes.
Q And if you'll look at O-12, you'll -- take a look at O-12, which is on Page 2-31, and see if we don't have a speed of answer and ordering center measure?
A I'm sorry, you said that's O-12?
Q O-12, Page 2-31.
A I'm there.
Q We have a measurement for answer time interval in the local service center, don't we?
A Yes.
Q It doesn't have a penalty associated with it, but it will record and report the holding times for people who call there; right?
A Yes.
Q On the last page of your testimony, you're talking about some other problems e.spire has -- I'm on Line 5. "E.spire has experienced problems with BellSouth failing to show up promptly at the scheduled time or not at all, particularly after hours." We have a missed installation appointment if it's an original repair -- I mean, an original installation; correct?
A Yes.
Q And we have missed repair appointments, which is M&R-1 on Page 4-1; right?

A Yes.

Q So there are measures in our plan that will capture these when they occur, aren't there?

A Yes. However, from the ALEC perspective, we are -- well, from e.spire's perspective, we advocate these measures, but these are the kind of things that really impact our professional reputation with the customer, so --

Q Well, and just to finish that out, that measurement, missed repair, is both a Tier 1 and a Tier 2 penalty; right? It's on Page 4-2.

A Yes.

Q Now, what we're after here is parity, not perfection; is that correct?

A Yes.

Q Now, BellSouth, as much as it hates to do it, occasionally misses installations and misses repair appointments for its own customers, doesn't it?

A Yes.

Q So all you're asking for is parity here; right?

A Yes.

Q So you don't want us to warrant that we're going to be there every time on time, in place, dressed, and ready to play; right?

A We would like that.

Q But you know that's not feasible; correct?

A Yes.

MR. LACKEY: That's all I have. Thank you, Mr. Chairman.

COMMISSIONER PALECKI: Ms. Terry, I have a few questions. The facilities check that you've requested, you heard the testimony of Mr. Thomas Allen for Covad earlier?

THE WITNESS: Yes.

COMMISSIONER PALECKI: Would a facilities check, as you've suggested, have solved Covad's problem where they had loop makeup information that was incorrect?

THE WITNESS: No. If I understand the point, there was some instances, 10 percent, where a facilities check would still yield an incorrect answer.

COMMISSIONER PALECKI: So even with the facilities check, you could still have that -- a mistake being made on that issue?

THE WITNESS: Yes. We were trying to think of ways, pragmatic, practical ways, to address some of our concerns. In all instances, the concerns may not be addressed, but we were trying to develop something that was feasible to get at our underlying problem.

COMMISSIONER PALECKI: Now, you've talked about FOC inadequacies, and I believe that Mr. Allen also addressed what he considered an inordinate amount of time for the FOC, potentially five to seven days. Explain to me how the FOC process works from

your side.

THE WITNESS: From my understanding, we fill out the LSR; we receive an FOC.

COMMISSIONER PALECKI: And this takes five to seven days, or is it more quick in your case?

THE WITNESS: Well, for the discussions that I had with our operational people, who are the ones who have direct hands experience with this, what they wanted me to express was that in this particular instance, they weren't necessarily disputing the amount of time that it would take for us to receive the FOC, but their concern in this area was, once we receive the FOC, things would happen in terms of the order being placed in pending facility, which would make the FOC date less reliable for us.

COMMISSIONER PALECKI: So you're not having a problem with the length of time?

THE WITNESS: I'm not -- I cannot answer that because the specific questions and discussions that I've had with the e.spire personnel focussed more on the problem of having the orders being placed in pending facility as opposed to the number of instances where we were receiving the FOCs late. That wasn't the topic of our discussions.

COMMISSIONER PALECKI: So you're not so much concerned as the lengths of time in the measures that have been suggested by BellSouth. You're more concerned about the accuracy of the information and the facilities check.

THE WITNESS: With respect to the FOC in general, I would have to say yes.

COMMISSIONER PALECKI: Thank you.

CHAIRMAN JACOBS: Staff.

CROSS EXAMINATION

BY MR. FUDGE:

Q Ms. Terry, have you proposed any specific measures or business rules in this proceeding that would address your concerns regarding EELs?

A I believe that the ALEC Coalition via Karen Kinard has placed certain measures in her rebuttal testimony.

Q Can you be more specific?

A I believe in Karen Kinard's rebuttal testimony she has specific performance measures for EEL conversions.

Q Do you know what they are labeled as?

A I believe 95 percent in 5 hours for electronic notices, and 24 hours for manuals for each metric. And there was also a proposal to receive confirmation once the billing change has taken place for 95 percent within 30 days from receipt. Page 4 of the rebuttal testimony of Karen Kinard.

MR. FUDGE: Thank you, Ms. Terry.

CHAIRMAN JACOBS: Questions, Commissioners? Redirect.

MR. HORTON: Yes, sir, just a few questions.

REDIRECT EXAMINATION

BY MR. HORTON:

Q Ms. Terry, could you refer to the P-1, measurement P-1, which was on Page 3-2, or look at 3-2. Are there any remedies associated with that?

A No.

Q O-9, if you would, O-9, that is another one that Mr. Lackey referred you to, which is on Page -- it's the firm order confirmation timeliness, Page 2-26.

A I'm there.

Q Are there any Tier 1 remedies with that?

A No, there are not.

Q 0-12, on Page -- which is speed of answer and ordering center. I think Mr. Lackey referred you to that one as well on Page 2-31.

A I'm there.

Q And are there any remedies associated with that?

A No.

Q In talking about checking the trunk facilities, does Bell have to dispatch in order to determine if there are facilities?

A I don't believe so, but I'm not an engineer, so --

Q Okay. You were asked, I believe, if you had filed any complaints. You operate in states other than Florida, don't you?

A Yes.

Q How many states are you operating in? Do you know?

A Nine.

Q Nine?
A Nine.
Q And that's mostly the BellSouth region?
A Yes.
Q What would be required of e.spire to file a complaint to all of these? What resources would you dedicate?
A It would be very labor intensive. We have a very small regulatory staff. We would have to coordinate with outside counsel for each of the states in which we operate. And as I stated before, we're in reorganization, and that's not very feasible for us.
Q So it's a financial requirement on you too?
A Yes.
Q You said you're interested in accuracy with respect to the FOCs and some of the others, and I think you said you want them there when you say they are going to be there. What happens when Bell is not there at a customer's place when they say that you're going to be there? Does the customer look to Bell, or do they look to you?
A The customer looks to us because we're the ones that were making the dates vis-a-vis the customer. In general, I don't think that the customers really are concerned other than they showed up and they're not getting what they want from us when they want it.
Q So the customer wouldn't know that it's BellSouth's

fault that you're not giving them the service that you promised?

A Correct.

Q They would blame you for that?

A Yes.

COMMISSIONER JABER: Ms. Terry, I'm confused by your testimony. I thought you said it was critical -- that the EEL conversion process is critical to increasing competition and increasing your business in Florida; is that correct?

THE WITNESS: That's correct.

COMMISSIONER JABER: So is it more important then to dedicate your resources in resolving complaints and disputes quickly and efficiently, or is it more productive and effective to dedicate your resources in addressing penalties after BellSouth doesn't comply with your request?

THE WITNESS: I think with the EELs process there are a number of other ALECs in similar situations. And we made the judgment call in this particular instance that as of now to work through the FCC summit process and also to continue our dialogue with BellSouth. If this is unfruitful, then perhaps our strategy will change in the future. But to date, that was a judgment call.

COMMISSIONER JABER: Thank you.

COMMISSIONER PALECKI: Addressing the question that Mr. Horton asked you earlier about the customer blaming it on the ALEC and not even being aware of BellSouth's responsibility for

the problem, should part of the penalty provision be some form of notice to the customer so that the customer is aware of whose fault the problem is? And I think that's especially important where you have customers who may go back to BellSouth because they think this ALEC just doesn't know what they are doing.

THE WITNESS: I think that would be helpful.

COMMISSIONER PALECKI: Thank you.

BY MR. HORTON:

Q Ms. Terry, do any of BellSouth's measures provide the EEL disaggregation?

A No.

Q You have Ms. Kinard's direct testimony there?

A Yes, I do.

Q Could you find her Attachment KK-1? It's attached to her direct testimony.

A KK-1?

Q I'm sorry?

A KK-1?

Q KK-1. What I'm looking for is O-8, speed of answer, the FOC. It would be the FOC, with respect to the FOC.

A I'm sorry, could you --

MR. HORTON: Mr. Chairman, what I'm going to do is, I'm going to hand Ms. Terry of a copy of a sheet from that. That's the reference KK-1.

A Thank you.

Q And there is some language highlighted on there. Could you read that?

A "BellSouth should also confirm facilities availability for all orders, not just trunks, before issuing a confirmation. If ALECs cannot depend on the due date given them, then confirmations are useless."

Q And that came from Karen Kinard's testimony, did it not?

A Yes.

MR. HORTON: Thank you. That's all I have.

CHAIRMAN JACOBS: Exhibits, none. We didn't have any exhibits, did we?

MR. HORTON: None.

CHAIRMAN JACOBS: Very well. Thank you, Ms. Terry. You are excused.

THE WITNESS: Thank you.

MR. HORTON: Thank you.

(Witness excused.)

(Transcript continues in sequence with Volume 5.)

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STATE OF FLORIDA)

: CERTIFICATE OF REPORTER

COUNTY OF LEON)

I, TRICIA DeMARTE, Official Commission Reporter, do hereby certify that the Hearing in Docket No. 000121-TP was heard by the Florida Public Service Commission at the time and place herein stated.

IT IS FURTHER CERTIFIED that I stenographically reported the said proceedings; that the same has been transcribed under my direct supervision; and that this transcript, consisting of 210 pages, Volume 4 constitutes a true transcription of my notes of said proceedings and the insertion of the prescribed prefiled testimony of the witnesses.

I FURTHER CERTIFY that I am not a relative, employee, attorney or counsel of any of the parties, nor am I a relative or employee of any of the parties' attorneys or counsel connected with the action, nor am I financially interested in the action.

DATED THIS 1ST DAY OF MAY, 2001.

Tricia DeMarte

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FPSC Official Commission Reporter
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