BEFORE THE WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

| | |
|---|---|
| In the Matter of the Pricing Proceeding for Interconnection, Unbundled Elements, Transport and Termination, and Resale | Docket No. UT-960369<br>Phase III<br>Volume XI<br>Pages 2395-2607 |
| In the Matter of the Pricing Proceeding for Interconnection, Unbundled Elements, Transport and Termination, and Resale for US WEST COMMUNICATIONS, INC. | Docket No. UT-960370 |
| In the Matter of the Pricing Proceeding for Interconnection, Unbundled Elements, Transport and Termination, and Resale for GTE NORTHWEST, INCORPORATED. | Docket No. UT-960371 |

A hearing in the above matter was held on February 29, 2000, at 9:18 a.m., at 1300 Evergreen Park Drive Southwest, Olympia, Washington, before Administrative Law Judge C. ROBERT WALLIS, Chairwoman MARILYN SHOWALTER, Commissioner RICHARD HEMSTAD, and Commissioner WILLIAM R. GILLIS.

The parties were present as follows:

US WEST COMMUNICATIONS, INC., by Lisa A. Anderl, Attorney at Law, 1600 Seventh Avenue, Room 3206, Seattle, Washington 98191.

THE COMMISSION, by Sally G. Johnston, Assistant Attorney General, 1400 S. Evergreen Park Drive, S.W., P.O. Box 40128, Olympia, Washington 98504-0128.

NEXTLINK WASHINGTON, ELECTRIC LIGHTWAVE, INC., ADVANCED TELCOM, INC., NEW EDGE NETWORKS, INC. and GST TELECOM, by Gregory J. Kopta, Attorney at Law, 2600 Century Square, 1501 Fourth Avenue, Seattle, Washington 98101-1688.

GTE, by W. Jeffery Edwards and Jennifer McClellan, Attorneys at Law, Hunton & Williams, 951 E. Byrd Street, Richmond, Virginia, 23219.

TRACER and RHYTHMS LINKS, INC., by Stephen J. Kennedy, Attorney at Law, Ater Wynne, Two Union Square, Suite 5450, 601 Union Street, Seattle, Washington 98101.

WASHINGTON INDEPENDENT TELEPHONE ASSOCIATION, by Richard A. Finnigan, Attorney at Law, 2405 S. Evergreen Park Drive, S.W., Suite B-3, Olympia, Washington 98502.

MCI WORLDCOM, by Ann Hopfenbeck, Attorney at Law, 707 17th Street, Suite 3600, Denver, Colorado, 80202.

AT&T, by Susan Proctor, Attorney at Law, 1875 Lawrence Street, Suite 1575, Denver, Colorado, 80202.

Barbara L. Spurbeck, CSR
Court Reporter

INDEX OF EXAMINATION

INDEX OF EXHIBITS

| EXHIBIT | MARKED | OFFERED | ADMITTED |
|---|---|---|---|
| Exhibit 91-T | 2400 | 2401 | 2402 |
| Exhibit 92 | 2400 | 2401 | 2402 |
| Exhibit 93-T | 2400 | 2401 | 2402 |
| Exs. 111-T, 112-T | 2431 | 2433 | 2433 |
| Exhibit 141-T | 2484 | 2485 | 2485 |
| Exhibit 142 | 2484 | 2485 | 2485 |
| Exhibit 143-T | 2484 | 2485 | 2485 |
| Exhibit 144 | 2484 | 2485 | 2485 |
| Exhibit 145-T | 2484 | 2485 | 2485 |
| Exhibit 171-T | 2519 | 2523 | 2524 |
| Exhibit 172-C | 2519 | 2523 | 2524 |
| Exhibit 173-T | 2519 | 2523 | 2524 |
| Exhibits 174-178 | 2520 | 2523 | 2524 |
| Exs. 179-C - 180-T | 2520 | 2523 | 2524 |
| Exhibits 181-190 | 2520 | 2523 | 2524 |
| Exhibit 191-C | 2520 | 2523 | 2524 |
| Exhibits 192-193 | 2521 | 2536 | 2536 |
| Exhibit 194-C | 2521 | 2536 | 2536 |
| Exs. 195-C, 196-C | 2521 | 2563 | 2563 |
| Exhibit 197 | 2521 | 2523 | 2524 |
| Exs. 221-T - 223-T | 2600 | 2601 | 2601 |

JUDGE WALLIS: Let's be on the record, please, for our March 1 -- no, our February 29 session. My watch is not as smart as they represented to me.

MS. ANDERL: Y2K.

JUDGE WALLIS: In the matter of Docket Numbers UT-960369, et al. This session is beginning with the appearance of US West witness Michael A. Carnall, and in conjunction with his appearance, there have been prefiled three exhibits.

The first I'm marking as Exhibit 91-T for identification. That is the direct responsive testimony of Michael A. Carnall. Exhibit 92 for identification is the resume of qualifications, also designated MAC-1. And 93-T for identification is the rebuttal testimony of Michael A. Carnall.

With that introduction, I'm going to ask the witness to stand, raise your right hand, please.

Whereupon,

MICHAEL A. CARNALL,

having been first duly sworn, was called as a witness herein and was examined and testified as follows:

D I R E C T E X A M I N A T I O N

BY MS. ANDERL:

Q. Good morning, Dr. Carnall.

A. Good morning.
Q. Before we start, let me remind you to please keep the microphone close to your mouth and speak clearly into it, so that everyone can hear you. That will save the Judge having to remind you of that. Could you please state your name and business address for the record?
A. My name is Michael A. Carnall. Business address is 2000 Powell Street, Emoryville, California, 94806, I think.
Q. Okay. And did you cause to be prepared and filed in this docket the testimony and resume that have been marked as Exhibits 91-T, 92, and 93-T?
A. I did.
Q. And do you have any changes or corrections to that testimony?
A. No, I don't.
Q. If I were to ask you the questions contained in that testimony today, would your answers be the same?
A. They would.
MS. ANDERL: Your Honor, I would move the admission of 91-T, 92 and 93-T.
JUDGE WALLIS: Is there objection? Let the record show that there is no objection, and the

exhibits are received.
MS. ANDERL: Thank you. The witness is available for cross-examination.

C R O S S - E X A M I N A T I O N

BY MS. McCLELLAN:

Q. Good morning, Dr. Carnall. I'm Jennifer McClellan, representing GTE Northwest.

JUDGE WALLIS: Ms. McClellan, would you bring the microphone closer to you, please?

Q. Dr. Carnall, as an economist, are you familiar with econometric theory and regression analysis?

A. Yes, I am.

Q. Is an underlying assumption of regression analysis that all correct independent variables are included?

A. Yes, in general, that's true.

Q. And what does it mean to say that the estimated coefficients are biased?

A. If the estimated coefficients are biased, that means that if you did this test, on average, that they are not at their true values or their estimation will not be at their true value.

Q. Will estimated coefficients be biased if independent variables are left out of a regression

model?
A. If the variables that are left out -- I have to qualify that just a bit. If the variables that are left out of the regression are absolutely orthogonal to all the variables that are in the regression, then they would not be -- they would not cause a bias.
CHAIRWOMAN SHOWALTER: Maybe you could explain orthogonal.
THE WITNESS: I think I best, yeah. By orthogonal, meaning that there's no relationship between the variables that are left out and the other variables that are left in. An example -- for example, I might estimate a model of crop yield which had -- which depends upon application of fertilizer, total sunshine for the year and total rain for the year.
If I were to leave out total rainfall, I would bias the variable on total sunshine, because rainfall and sunshine, as you well know, are related, but they're related differently in different areas. So for example, the relationship between sunshine and rainfall in Champaign, Illinois, is substantially different than it is here.
CHAIRWOMAN SHOWALTER: So in your example,

are rainfall and sunshine orthogonally related or not orthogonally --

THE WITNESS: They are not orthogonal. Therefore, if I left out one of those, it would bias the other one, because the other one would pick up some of the relationship between some of the effect that was actually due to -- so if I left out rainfall, that would pick up some of the effects perhaps of sunshine, because, again, they're related. They're not orthogonal.

If there was some variable that had absolutely nothing to do with those variables and I left it out, it would affect the explanatory power of the regression, but it would not affect the other variables.

Q. Is it common in a regression analysis to find the situation in which all variables are independent or orthogonal?

MR. KOPTA: Your Honor, at this point, I'm going to interpose an objection. Although economic theory is certainly a fascinating topic for discussion this morning, I don't see anything in Dr. Carnall's testimony that addresses any of GTE's testimony or GTE's models or any basis on which GTE has any adverse interest to the testimony that Dr.

Carnall has presented. This seems to me, therefore, as friendly cross. And although we definitely want to give people leeway in exploring their cases, doing it through a friendly witness, I think, is something the Commission has frowned on, at best.

JUDGE WALLIS: Ms. McClellan.

MS. McCLELLAN: Well, GTE is trying to understand Dr. Carnall's analysis of Mr. Spinks' testimony and his analysis. And until we completely understand his economic analysis of that testimony, we aren't quite sure if it's adverse to us or not.

MR. KOPTA: Well, Your Honor, it seems to me that GTE is adverse to Mr. Spinks' testimony just as US West is adverse to Mr. Spinks' testimony. And so if GTE had some issues, as far as the analysis goes, it was incumbent upon them to include that in their own witnesses' testimony, not extract it from a witness of an allied party.

JUDGE WALLIS: Well, as tempting as it is from the standpoint of efficiency to terminate the cross at this point, I think we've looked in the past at the pros and cons of doing that, and while we do certainly frown on friendly cross -- and if it gets to the point of being an obvious attempt to bolster, rather than examine the witness, that is something

different. But at this point, I believe that the examination is proper and may continue.

MS. McCLELLAN: Thank you, Your Honor.

Q. Would you like me to repeat the question?

A. Yes, please.

Q. Okay. Is it common in a regression analysis to find a situation in which all variables are independent or orthogonal?

A. Only in textbooks. It's very seldom that one finds all variables to be orthogonal. Even in the example I used, the application of fertilizer, for example, seems to be totally independent of rainfall and sunshine, but its effect is probably different, whether -- depending upon whether there is or is not sufficient rainfall. So it's very difficult to find a set of explanatory variables which are totally orthogonal or perfectly orthogonal.

Q. So is it correct that generally you'll only find independence or orthogonality, if I said that correctly, if you design that property into a sample?

A. In designing an experiment, if you can design every part of the experiment, it is easier to do that, yes.

Q. Are cost drivers such as the percentage of loops orthogonal or independent to average loop

length?
A. I'm not sure I understand percent of loops.
Q. Or the -- I'm sorry, percentage of long loops?
A. Could you --
Q. In a wire center?
A. Could you repeat that, please?
Q. Sure. Would cost drivers such as the percentage of long loops be orthogonal or independent to average loop length?
A. No, it would not.
Q. Okay. In Mr. Spinks' regression equation, which uses average loop length, would your exception apply, the exception we've been talking about apply?
A. No, I don't believe so.
Q. Is it your understanding that Mr. Spinks' proposal for distance-based deaveraging relies on the coefficient estimated for loop length?
A. It relies on a coefficient estimation for average loop length, not loop length.
Q. Okay.
A. That's one of the basic problems of his method, is that there is no data for it. What we're trying to establish is loop length and cost relationship, and all we have is -- all he has

available or we have available is average loop length or average loop length and average cost at the wire center level. They're totally different quantities.
Q. Does density equal lines by area?
A. Density can be defined that way. I believe that's the way it is used in Mr. Spinks' analysis.
Q. And what is the logarithm of density?
A. Oh. The logarithm of density? The logarithm of density -- the logarithm of density is the power to which Euler's number must be raised in order to obtain the density, if you want the --
Q. Can you explain that?
JUDGE WALLIS: That's very helpful.
THE WITNESS: It's not, I'm afraid. It's very difficult to come up with a layman's definition of the natural logarithm of density. In fact, I'm not sure I can. It's the --
Q. What is density in terms of lines and area? I'm sorry, the logarithm of density in terms of line and area?
A. The logarithm of density in terms of lines and area?
Q. Mm-hmm.
A. Well, you can do that two ways. It's either the logarithm of -- it can be calculated as

the logarithm of lines minus the logarithm of area. It's a natural property of logarithms that in that -- in logarithms, division is done by subtraction, the principle upon which slide rules are based. I'm not sure this is being very helpful, but --

Q. Is Mr. Spinks' regression equation equivalent to including lines and area as separate variables and imposing the constraint if the coefficients are the same magnitude?

A. Yeah, since he's using density as defined as lines divided by area, it's the same. That's true.

Q. And are there any cost drivers that Staff's regression equation fails to account for?

MS. HOPFENBECK: I'd like to interpose an objection. At this point, I'd like to reiterate the objection that Mr. Kopta raised. I do think, at this point, this examination has gotten to the point where it is really geared toward bolstering the testimony of Dr. Tucek on behalf of AT&T. Dr. Tucek, at pages 23 and 24 of his rebuttal testimony, filed on February 7th -- and I don't have the exhibit number. I can get it quickly. That's 180-T, is how it's been marked for identification. It specifically addresses Dr. Carnall's testimony and agrees, essentially, with

the criticisms that Dr. Carnall has levied on Mr. Spinks' testimony in this case.

Now, the cross-examination is geared toward eliciting from Dr. Carnall an elaboration of further criticisms that are really dovetailing with the criticisms that Dr. Tucek himself has levied at Dr. Spinks' testimony.

MS. McCLELLAN: I'll withdraw the question. Thank you, Dr. Carnall.

JUDGE WALLIS: Does that conclude your questioning?

MS. McCLELLAN: Yes, it does.

JUDGE WALLIS: Mr. Kennedy.

MR. KENNEDY: No questions.

JUDGE WALLIS: Mr. Kopta.

MR. KOPTA: No questions.

JUDGE WALLIS: Commission Staff.

MS. JOHNSTON: No, Your Honor.

MS. HOPFENBECK: No questions.

JUDGE WALLIS: Dr. Gabel

E X A M I N A T I O N

BY DR. GABEL:

Q. Good morning, Dr. Carnall.

A. Good morning.

Q. First, just so the record's clear, I want

to follow up on the last question. I believe you asked -- you answered affirmatively to Ms. McClellan when she's asked you is there an implicit assumption in Spinks' regression that the coefficient on lines and the coefficient in area are equal? Did I understand you correctly?

A. Well, if I were to write -- he used the logarithm of density, which he defines as lines divided by area. So I think that's equivalent to using also the logarithm of lines minus the logarithm of density. When I say they would be equal, it would be equal in magnitude, but not in size. So the coefficient --

Q. Isn't it the sum of the coefficients on lines would be the coefficient on lines plus the coefficient on area would be equal to the coefficient on density? Is that correct?

A. Yeah, that could be -- yes, I believe that's right, yeah, but I haven't really thought about it very much.

Q. All right. Well, all right. Let me also follow up on Ms. McClellan on the topic of bias and omitted variables. Are you familiar with general published econometric works on the cost function of the telecommunications industry? Is this an area you

read and are familiar with?
A. On the cost function in telecommunications? It's not something that I'm -- I would say that I've actually read a lot about, no.
Q. All right. So in terms of the testimony which you've provided, and you've talked about the omitted variables, the omitted variables that you're concerned about, are you aware if they're generally included or excluded in published academic articles on the telecommunications cost function?
A. I am not aware of that.
Q. Okay, all right. You were in the room yesterday, I believe, when Mr. Denney was testifying?
A. Yes.
Q. Okay. And I asked Mr. Denney, was he familiar with the term -- statistical term consistency. Are you familiar with that term?
A. I am, yes.
Q. Could you explain what that term means?
A. Well, that term means that an estimator's consistent if, in fact, as you increase the sample size, the variance of the estimator goes to zero, meaning as you get more and more information about information that can be applied to the estimate, the variability in the estimates you would get goes to

zero, meaning you target -- it zeroes in on the -- well, it zeroes in on a number, and that's what consistency means. If it's unbiased and consistent, that means it sort of zeroes in on the right number.

So being -- if you have a consistent unbiased estimator, it is the best kind of estimator to get.

Q. And have you read Mr. Tucek's testimony in this proceeding?

A. I have read it, but I really didn't prepare any response to it.

Q. Are you familiar with his discussion about the variability in the estimators in small wire centers versus wire centers with a large number of lines?

A. I really don't recall his testimony in detail on that subject.

Q. Could I ask you to turn to your responsive testimony, page 10, lines 12 to 16?

A. This is Exhibit 91-T or --

Q. Yes, 91.

A. Page 10?

Q. Yes, lines 12 through 16.

A. Okay.

Q. Okay. Would you elaborate this assertion

that you're making here about why there is a problem -- why you believe this association that he's making through the regression analysis is flawed?

A. Okay. The assertion is that using average loop length and average cost or average loop cost in order to establish a relationship between loop length and loop cost or individual loop length or individual loop cost, which is what we're interested in in this -- or is what Mr. Spinks has used that relationship to model or to estimate.

And if you think about average -- if you think about the way cost and length are, loop cost and loop length might be related. And if you think of length going out on an axis this way and cost going on an axis this way, you're going to have -- in each individual wire center, you're going to have several -- or a great number of lines probably fairly close to the wire center, and they may have fairly low cost. Then you'll have other lines, other loops that are perhaps -- that are further away from the wire center and have a higher cost.

We would expect that that relationship would be increasing. As you get further from the central office, the cost will go up, but probably at some decreasing rate. And so -- or it may be an

increasing rate, but probably not in a straight line. And so what happens in that case is that these loops with very -- at the very long loops, when you take the average, the very long loops with the higher cost, you take an average, a weighted average, and the weighted average is going to be somewhere down nearer the large number of short, cheap loops.

So it's going to be somewhere below the actual curve, which establishes the relationship between loop -- individual loop cost and individual loop length. That's the reason. You lose -- because there's probably fewer long loops and high-cost loops, you lose a lot of the information contained in the data that represents the cost at that long distance. So you can imagine the data, the average loop length data, is going to be always -- average loop length are always going to be much shorter than or much less than individual loop lengths.

So in taking the average, you've agglomerated a lot of information into an average and you've lost a lot of it. Because, as Mr. Denney testified and demonstrated yesterday in his picture, there's any number of ways, any number of sets of individual loops that can produce the same average loop length and average loop cost. So using averages

to come up with or to try to establish the relationship between individual loop length and individual loop cost simply doesn't work. And not only that, you can't really tell how wrong it is, because you've lost all this information in taking the averages.

So I can't even go back. I can't even say that the shape I get out of a regression on averages is the same or anywhere near what the shape of that relationship would be on individual loop length and individual loop cost.

Q. Dr. Carnall, I followed your explanation till you got to the very end, where you made the assertion it simply doesn't work. And that's where I want to understand precisely in statistical terms what you mean when you say it simply doesn't work.

Earlier you talked about biased and unbiased estimators, consistent and unconsistent. Is your assertion that the estimator doesn't minimize the variance or is it your assertion that you have a biased estimator, or what precisely do you mean when you say it doesn't work?

A. The estimator and the regression process using averages will explain, as Mr. Spinks has shown properly, that it explains -- his regression explains

90-some percent of the variance in his data. The point is not that, but what one has to remember is that what it explains is the variation in averages. It does not explain the variation in individual loop costs.

So the fact that it explains the variation in average loop cost in relationship to an average loop cost and average loop length is irrelevant in whether or not -- how well it might explain the relationship between individual loop cost and individual loop length. So that -- and if I were to take that, I think if I applied that to or tried to come up with the proper statistical name for that, I would say it has to be an inconsistent estimator, because it's not going to converge to the -- it's probably not even going to converge to a single number. Depending upon, for example, what sample of central offices you took, you might get something totally different the next time. I would guess it to be certainly inconsistent. Whether it's -- and it's certainly biased. I'm not sure I could tell which way it was biased.

Q. All right. You say it's certainly biased. Let's --

A. Well, let me qualify that. There are

conditions under which it would provide the proper relationship, and that's only when the underlying relationship is perfectly linear. It would be a good estimator and it would be a consistent and unbiased estimator under those conditions and those conditions only. And I doubt very much those conditions exist, and in fact, Mr. Spinks does not -- apparently does not think they exist either, because his model is not of a linear relationship.

Q. I'm having trouble understanding why the use of an average number will provide a biased result, and I believe, if I understand your testimony, it's because you say there's the assumption of linearity in the exercise. And could you explain or elaborate on why, in order to obtain an unbiased estimator, one has to have a linear relationship?

A. A blackboard would help a lot. If you think of this relationship of cost and length and if you think of the -- what we're trying to do is establish that relationship. If I start with a sample, a very simple -- a sample of two, and I have a loop that has -- one loop has a cost and a loop length that's say here, another loop is this long and has a cost up here, and the average of those two loop

lengths and loop costs is going to be on a line between those two. The average will be halfway between the two on the length axis and halfway on the cost axis.

So the average in that case, as far as establishing a relationship, will fall -- if that relationship is linear, if the relationship between cost and length is linear, then the average provides -- the average will fall exactly on that relationship and on that line between the two so that the average then has the same relationship to -- both the average cost and the average length in that case have the same relationship as individual length and individual cost. So in that case, you could use average length and average cost in order to estimate the parameters of that line. I'm afraid that's as good as I could do without a blackboard.

Q. Let me just follow up on that. Just in general, Mr. Spinks has used this sample mean for cost and the sample mean for loop length; is that correct?

A. Yes.

Q. Now, in general, is it a property of statistics that sample means are unbiased estimators of population means?

A. In general, yes.
Q. Okay. Do you believe that the sample mean for loop length is an unbiased estimator of the population mean in this exercise?
A. How do you define the population mean, exactly?
Q. The mean length of a wire center loop?
A. The mean length? I'm sorry, could you repeat that?
Q. For each wire center, as I understand it, Mr. Spinks has a mean length of a wire center loop; is that correct?
A. Right, that's correct.
Q. And that's a sample statistic or a population statistic?
A. Depends on how you define the population. If you define the population as the population of wire centers or the population of -- you might define the population as all loops, in which case each wire center might be considered a sample. If you define it that way, then what he has is -- has taken samples of the -- or those would be sample means. The wire center means would be sample means.
Q. Let me just try -- let me try this one more way, let me try a different approach. Just, as I

read this testimony, it seems as if you're expressing a concern, but it's a concern I'm not sure that you've proven. Do you believe that contained in your testimony is a proof that Mr. Spinks' relationship results in biased estimators?

A. There's certainly not a formal proof, but if you -- as I've said in there, if Mr. Spinks has assumed a specific relationship, a nonlinear relationship between -- in his case, actually, he's assumed that relationship between average cost and average length. Now, what he's actually used that relationship for was to establish individual loop cost based on individual loop length. So to some extent, the problem is ill-defined in that he's made a switch between two separate sort of quantities, two separate things that he's trying to estimate.

What I did -- an exercise I did do was this, and what I did was just numerically assume that using the coefficients that Mr. Spinks estimated and used in his establishing loop cost based on loop length. I simulated another sample of average loop lengths and average loop cost by simply simulating several system samples randomly, and then re-estimated on the basis of those average loop lengths and loop costs his equation.

If the equation -- if the coefficients of the estimations were unbiased or consistent or both, they should have come out -- we should have gotten the same equations back or the same coefficients back, and you don't. You get different coefficients. So that tells me that this is not an unbiased estimator.

So again, it's not a -- that exercise is not contained in my testimony, but it's implied there, but -- and I did do it, but I didn't include it.

DR. GABEL: Thank you. I have no further questions.

JUDGE WALLIS: Questions?

E X A M I N A T I O N

BY CHAIRWOMAN SHOWALTER:

Q. Well, of course, I'm not an economist, so I'm going to -- I may be asking some questions, and if you want to rephrase my questions if you think that it makes more sense, feel free to do so.

A. Sure.

Q. I think what I'm trying to understand from you is a qualitative judgment, based on your economic expertise. Particularly, is it your opinion that if you look at the -- if you stick at the wire center

level with what we know about wire center costs, which are averages -- am I correct on that so far?
A. That's true.
Q. And you compare that to Mr. Spinks' analysis, the results of his regression analyses, is there a way to say that Mr. Spinks' results or analyses are more meaningful than the wire center level? And by meaningful, I might mean get at precision of cost better than the wire center level, or is there no way to know?
A. I think you've formulated the question exactly right. And I would say that my opinion is that there is no way to know. And I base that on the fact that using averages, and especially where you have wire centers that have very different distributions of loop length and loop costs, meaning, as Mr. Denney was showing, if some of them have -- they're very densely -- there's a very dense amount of number of customers in a fairly localized area in some wire centers; in other wire centers, they are spread out in a wide geographic area very sparsely or in clustered places.
Doing averages, you lose all of that. You lose all of that distinction between closely or evenly-spaced customers and clustered customers. So

in losing that, you lose much of the ability to reproduce that same detail in estimating the cost-length equation.

So even though I certainly agree, and I think you've recognized that what we're really looking for here is individual loop costs, so that you can -- you can deaverage on the basis of loop cost, rather than wire center average cost. I don't think there's any way -- there's no way that I can tell without having data on individual loop length and loop cost for a wide variety of wire centers to determine whether or not the relationship that Mr. Spinks is estimating is at all different or provides any additional information.

I would speculate that these relationships are very different in different wire centers, and I think unless we had -- without having additional information, I would be extremely reluctant to say if it is any better than the averages. This is -- it's just a lot of information missing.

Q. So taking this up to even a higher level of abstraction, and there's a saying that you don't want perfect to be the enemy of the good. And I am following why you think Mr. Spinks' analysis is imperfect, that it doesn't produce results. But I

take it that you're also saying that you can't even tell that it's good, in the sense that it's better than what it begins with. Is that, in essence, what your argument is?

A. That's, in essence, it. The fact that he's used averages and the fact that average is a relationship that's not one-to-one, you know, I can't take an average and from that average -- or the average loop length and average cost, I can't reproduce what that wire center looked like. And so I can't tell. All I have is these averages. I have -- having looked at cost models, having looked at the way wire centers are laid out, I know that they can be very different. I know that very different-looking wire centers or very different-looking network configurations can give you the same average loop length and average length. So --

Q. But let me stop you there, because, say with the example we had yesterday from Mr. Denney, it was two wire centers with same averages, but different configurations.

A. Exactly.

Q. But we're dealing with maybe 111 wire centers, and so there will be some with a much higher

average than others.
A. Right.
Q. And is there any additional information or meaning that you can derive by taking all 111 wire centers with their range of configurations and deducing from a regression analysis that there is some kind of reliable relationship?
So in other words, I'm understanding your argument for any given wire center or any comparison of two wire centers. But if you add up 111, is it just adding 111 nonmeaningful events, so you don't get anything more meaningful, or by having 111 wire centers, you actually can start to make some judgments?
A. I think it could actually get worse, because if you're trying to use a lot of wire centers in order to -- what you're trying to get at, again, is to estimate the relationship for an individual loop between its length and its cost, and by, for example, using twice as many -- if you were to some way find 200 wire centers, if most of them were urban wire centers, then a regression based on average cost, average loop length for urban wire centers would not provide you any information about the relationship between cost and length in rural wire

centers.

So at that point, you're trying to establish a universal relationship between length and cost using data that doesn't contain all the information about the configuration of the network within that wire center. And so it will not have -- will not allow you to have the information required to establish, especially in a rural wire center, the real relationship between length and cost.

Q. I'm glad you brought up the issue of urban versus rural. If you took the 25 percent most urban wire centers on the list, would there more likely be a linear relationship or an identifiable relationship? That is, is there more likely to be a similarity of those 25 wire centers and their relationships than there would be at the rural 25, top 25 percent wire centers?

A. I can't disagree that that would probably -- if you could segregate, and this is basically what we were talking about in leaving out variables. If you could find other variables that described perfectly or describe much better the configuration of a network within the wire center, then you could use that to establish, perhaps, a better relationship.

So yeah, the more you can segregate out wire centers which have similar network configurations, the relationship of length to cost within those one would think would be better. But still, without having individual loop data, it would be speculation to say more than that.

CHAIRWOMAN SHOWALTER: Okay. Thank you.

THE WITNESS: You're welcome.

E X A M I N A T I O N

BY COMMISSIONER HEMSTAD:

Q. Perhaps your answers to those last questions answers the questions I was going to ask you. Your testimony focuses on or is a critique of Mr. Spinks' approach and Mr. Montgomery's. Have you critiqued Dr. Denney's approach to -- and his recommendations as to how this Commission should address this issue?

A. I've looked at Mr. Denney's testimony. I haven't -- I haven't specifically critiqued it. The one area that I might comment on is that he has made a comparison between US West's proposal and his proposal, and by comparing the variance of cost, variance of average wire center cost within each of the zones proposed by AT&T and US West, and made a statement that since the variance of average wire

center costs within AT&T zones is smaller than the variance in wire center average costs in US West's zones is smaller, that that's a perhaps somehow better proposal.

I would only point out that what we're really concerned about is the variance in individual loop costs across -- within each of those zones, not the variance in average wire center costs. Again, the fact that this wire center average somehow subsumes and wipes out the variance that's in individual loop cost is a very important thing to remember.

Q. Well, as a follow on to that, do you have a view, then, as to whether building a system around wire centers is desirable or not?

A. Unfortunately, I can't -- my view is that probably the better, all things given equal, administrative costs, et cetera, all things being equal, what I would say is that a set of zones which has the lower variance in individual loop costs would be preferred to one that had a higher variance of individual loop costs.

Now, without the data on individual loop cost, that's very difficult for me to establish such zones or to make such an assessment.

COMMISSIONER HEMSTAD: Thank you. That's all I have.

JUDGE WALLIS: Any redirect?

MS. ANDERL: Just one question.

R E D I R E C T E X A M I N A T I O N

BY MS. ANDERL:

Q. Dr. Carnall, you were asked by Chairwoman Showalter about whether or not the Commission could maybe -- or one could reach a more accurate conclusion about -- with the wire centers if one were to segregate out the 25 most urban wire centers. Do you recall that line of questioning?

A. Yes, I do.

Q. If the Commission here is intending to establish deaveraged loop prices for the whole state, does segregating out the 25 most urban wire centers assist in accomplishing that goal?

A. Without knowing exactly what the consistency of the remainder were, again, it would be something -- if you had -- if I had, for example, individual loop data, rather than averages, that might be a first step. If I don't have individual loop data, I'm not sure how useful it would be.

Again, without that individual loop data, it's -- certainly it would be somewhat better, but

I'm not sure it would be sufficient, whether you would still have sufficient information even doing that segregation.

MS. ANDERL: That's all I have.

JUDGE WALLIS: Any further questions? It appears not. Thank you very much for appearing today.

THE WITNESS: You're welcome.

JUDGE WALLIS: You're excused from the stand. Let's be off the record while the next witness comes forward.

MS. ANDERL: US West calls Barbara Brohl to the stand.

JUDGE WALLIS: Let's be back on the record, please. US West has called to the stand at this time its witness, Barbara J. Brohl. And in conjunction with her appearance today, two documents have been prefiled and are identified as follows:

The first is Exhibit 111-T for identification, entitled the Responsive Direct Testimony of Barbara J. Brohl, and the second is Exhibit 112-T, consisting of the rebuttal testimony of Barbara J. Brohl. Those are so marked for identification. I'm going to ask the witness to stand, raise your right hand, please.

Whereupon,

BARBARA J. BROHL,

having been first duly sworn, was called as a witness herein and was examined and testified as follows:

JUDGE WALLIS: Ms. Anderl.

D I R E C T E X A M I N A T I O N

BY MS. ANDERL:

Q. Good morning, Ms. Brohl.

A. Good morning.

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

A. Barbara J. Brohl, that's B, as in boy, r-o-h-l. My address is 1999 Broadway, Denver, Colorado, 80202.

Q. Do you have before you the direct and rebuttal testimony, Exhibits Numbers 111-T and 112-T?

A. I do.

Q. Is that your testimony?

A. Yes, it is.

Q. Do you have any changes or corrections to make to it?

A. No.

Q. If I were to ask you the questions contained in that testimony today, would your answers be the same?

A. They would.
MS. ANDERL: Your Honor, I'd move the admission of those two documents.
JUDGE WALLIS: Is there objection? Let the record show that there is no objection, and Exhibits 111-T and 112-T are received in evidence.
MS. ANDERL: Thank you, Your Honor. As we previously discussed, and I can't remember whether we did this on the record or off, but we would like an opportunity for Ms. Brohl to make a brief oral surrebuttal statement in connection with the testimony of Mr. Montgomery.
JUDGE WALLIS: Is there objection?
MR. KOPTA: No, we don't have an objection, and certainly this is preferable to cross-examining GTE's witness for that information.
MS. ANDERL: No comment.
JUDGE WALLIS: Please proceed.
Q. Ms. Brohl, did you have the opportunity to review the rebuttal testimony of William Page Montgomery, dated February 7th, 2000?
A. I did.
Q. Did you also review his exhibit where he provided examples of off-the-shelf distance calculations?

A. Yes.
Q. Can you please go ahead with your surrebuttal statement, then, in connection with Mr. Montgomery's off-the-shelf distance calculation proposals?
A. Yes. Thank you for allowing me to make a brief oral surrebuttal on this, on Mr. Montgomery's proposal. Mr. Montgomery proposed that CLECs and US West would use a web-based Internet-provided type of driving distance software package to determine the loop length. He also provided one in particular that was called MapQuest, and he gave us three addresses.
And what my group did is took that particular software product, as well as several others to make some comparisons, and with those three addresses did go in and do the queries. What we found were that they were inconsistent. With one of the addresses, there was a 24 percent difference in the longest length to the shortest length. In another one, there was about 10 percent difference. So what we found was there was an inconsistency.
In addition, part of what causes that inconsistency is that many of these software products allow for certain options. You can have an option of whether it's the fastest time, the shortest driving

distance, let's not go over toll roads, those kinds of things. And so taking into account one-ways, bridges, those sorts of things, it will come up with a particularly different route, or it had the potential to.

The other thing that we really did derive was that driving distance does not necessarily equate to a loop length. And whereas driving distance may or may not be the most straightforward way of going, loop lengths have to follow rights-of-way. Even in the going forward, forward-looking technology type of environment, we will still be using right-of-way route miles.

The last thing is that, by using one of these software products, these products are not integrated into our ordering or billing processes, and as a result would, for the duration of the use of these products, require a manual step on both sides. Well, actually more than one manual step, but a manual process for both the CLECs and for US West.

Q. Ms. Brohl, from your evaluation of this proposal, did you draw any conclusions as to the practicality or ease of administration of incorporating Mr. Montgomery's proposal for determining loop length into US West's systems?

A. Yes. As I mentioned earlier, there would be no integration for these systems into our billing and ordering systems, and as a result, in my opinion, it would not be a practical use of -- a practical application, let me put it that way, of determining loop length by using one of these methods, based on the fact that they're inconsistent, they don't follow loop length, and they would require a manual step or a manual process to be developed ongoing.

MS. ANDERL: Thank you, Your Honor, for allowing us to do that. The witness is available for cross-examination.

JUDGE WALLIS: Ms. McClellan.

MS. McCLELLAN: No questions from GTE.

JUDGE WALLIS: Mr. Kennedy.

MR. KENNEDY: No questions.

JUDGE WALLIS: Ms. Hopfenbeck.

C R O S S - E X A M I N A T I O N

BY MS. HOPFENBECK:

Q. Ms. Brohl, in your responsive testimony, which has been admitted as --

JUDGE WALLIS: 111-T.

Q. -- 111-T, sorry, 111-T, you note that -- in particular, direct your attention to page nine, you note that it's much more practical to make system

changes for pre-ordering, ordering, and billing based on metropolitan service areas. Do you see that testimony?

A. Yes.

Q. Is my understanding correct that US West's OSS systems are currently populated with the information necessary to identify a customer to a particular wire center?

A. When we -- a wire center is identified in those systems, yes. When a CLEC would perform a service availability query, which is a pre-order transaction through either our billing or through our EDI interfaces, both of those interfaces will return the wire center to the CLEC.

Q. So in your view, it would also be practical, to use your term, to make those changes to pre-ordering, ordering, and billing based on wire centers; isn't that right?

A. It would be more practical to make them according to wire center than it would be to make them according to mileage-sensitive distances.

Q. Thank you. I also noted in your testimony that you identified certain costs associated with modifying OSS systems to take into account the distance-sensitive proposal. How would US West or

does US West generally recover costs such as those you've identified in your testimony?
A. Well, we've attempted to recover costs through cost recovery dockets and have actually been successful in a couple of states, and we would attempt to recover those costs from the CLECs, the cost causers. I'm not sure how these ones would be recovered or what our intent would be to recover these based on the fact that this would be something that would be coming from the Commission. I'm not sure about that.

MS. HOPFENBECK: Thank you. I have nothing further.

JUDGE WALLIS: Ms. Proctor.

MS. PROCTOR: Thank you.

C R O S S - E X A M I N A T I O N

BY MS. PROCTOR:

Q. Just to follow-up on one of those questions, when you were talking about use of wire centers, would there have to be any changes to the existing systems, since you testified that they already report wire centers for each customer?

A. The systems do report wire center for each customer. However, I'm not sure of the linkages there, but I'm not -- I don't -- I think we already

are implementing that in some of the states, so I don't believe there would be much change.
Q. This is for wire centers?
A. Right.
Q. In your Exhibit 111-T, at page seven, at line 17, you talk --
A. I don't have a line 17 on my page seven. I may not have the same copy.
MS. ANDERL: Your Honor, sometimes, of course, the electronic versions don't print the same. Let me provide the witness with a copy.
MS. PROCTOR: It says, Second, there would likely be an impact to flow-through.
MS. ANDERL: Yes, mine matches that, Susan, so --
Q. Do you have that?
A. I do.
Q. Are you familiar with the FCC's definition of flow-through in this context?
A. I have a general view of it. I wouldn't mind if you refreshed my memory, however.
Q. Would it be your understanding that flow-through, as described by the FCC, refers to the process by which a CLEC electronically creates an order and the order then passes through

electronically, is translated, and goes to the ILEC's systems all electronically?
A. Through -- to and through the service order processing systems?
Q. Yes.
A. Yes.
Q. And that would be your understanding of the FCC's definition of flow-through?
A. Right.
Q. And you're also aware that US West doesn't always use flow-through the same way?
A. At this point, I know that at one point we did have a function, a screening function. That function has gone away. And at this point, we do maintain that when an LSR is received in our gateway, the definition of flow-through is to have it electronically converted and enter into the service order processors without manual intervention.
Q. When did that happen?
A. The screening function was removed actually in October of '99.
Q. And is that for the ordering of all unbundled network elements or only some of them?
A. I know it's for UNE loops, which is what the purpose of this hearing is. And so I'm not sure

what it is for the others at this point.
Q. And it doesn't apply to the ordering of combinations of unbundled network elements, what is known as the platform, is it?
A. I'm not aware of that.
Q. And US West began working on that functionality sometime around the implementation -- the enactment of the federal act, which would be in February of '96; is that right?
A. US West began working on all of its electronic interfaces during 1996. There -- because systems are not all developed all at one time, nor are all of the functionalities done at one time, you have to trade off. Different things were done at different schedule points.
Q. And at this point, three years later, or four years later, US West has not yet completed implementation of those changes, has it?
A. I don't know which specific changes you're talking about.
Q. Changes necessary for CLECs to be able to order unbundled network elements?
A. We do have the capabilities in place for CLECs to order unbundled network elements.
Q. At commercial volumes?

A. At the volumes that we're receiving. My understanding is that we can receive additional volumes -- for the volumes that we're receiving, we're able to handle them.

Q. From the examination that you did in connection with the preparation of your testimony, are you able to tell us how long it would take to implement the changes that you were addressing in your testimony?

A. The mileage changes?

Q. Yes.

A. I'm not at all positive. This was a very -- because we found out about these changes, about this proposal when the testimony was provided to us, we did a high level estimate of what the cost would be. In order to do more elaborate time and cost estimates, which would then identify how long it would actually take and then when that functionality could be delivered really requires us to go through a standard software development life cycle, which means that you identify what the requirements are, you go through a high level design. At that point, time and cost estimates are refined and they're selected then for a release and then go through the development process.

Until we would get into a little later phase in the development, which would be at least at the high level design, I couldn't really tell you with any great certainty when this could be implemented. I know it would not be able to be implemented by May 1st, however, and so it would require that anything that be done on a mileage basis would have to be done manually.

Q. And once US West makes any changes to its systems, it also has to provide for a process by which it notifies the CLECs and allows the CLECs time to be able to modify their systems so that they can continue to communicate with the US West system as changed; is that true?

A. That is true. There's less of an impact for those CLECs that are using the IMA GUI, which is a graphical user webface type of interface. There's more of that type of an impact when they are using the EDI, which is the electronic data interchange, because the two systems must talk to each other in the same language and with the same protocol. And we do provide for notification in our change management process.

Q. And a number of the CLECs are moving to the EDI interface; isn't that true?

A. And we're hoping more will.
Q. On page eight of your testimony, and do you have the version that refers to flow-through on line 14? You talk about the approximate percentage of loops with full or partial flow-through?
A. Yes.
Q. Now, are you using flow-through there in the same way that you did on the preceding page?
A. No, the way that I'm using it, and I apologize for any confusion. The way that I'm using it here is the downstream provisioning flow-through.
Q. So that's an internal process of US West?
A. It's an internal process.
Q. You're not talking about CLECs placing orders on page eight, are you?
A. No.
Q. And in your estimate on page nine at the top, you've got a total estimate of a range of seven and a half to 12 and a half million, and five to 10 million of that is for conversion of the retail lines; is that right?
A. That's right.
Q. So once those retail lines were converted, then that information would be available to US West's retail unit to using its retail person, wouldn't it?

A. It would. It would also be used for any CLEC that wanted to then convert a retail customer to an unbundled loop, as well.
Q. But it would be available to the US West retail unit?
A. To both, yes.
MS. PROCTOR: Thank you. That's all I have.
JUDGE WALLIS: Mr. Kopta, do you have questions of the witness?
MR. KOPTA: I have more than three minutes worth, probably.
JUDGE WALLIS: Let's take our morning recess at this time, and we'll reconvene about quarter to 11:00.
(Recess taken.)
JUDGE WALLIS: Let's be back on the record, please, following our morning recess. I believe we left off just as Mr. Kopta was going to begin his cross-examination of Ms. Brohl. Mr. Kopta.
MR. KOPTA: Thank you, Your Honor.
C R O S S - E X A M I N A T I O N
BY MR. KOPTA:
Q. Good morning, Ms. Brohl.
A. Good morning.

Q. Greg Kopta, representing several CLECs. I wanted to follow up first on a couple of the topics that you discussed with Ms. Anderl. On the three different programs that you ran, including MapQuest, for calculating distances between addresses, was that inconsistency attributable to just the variations from using different options?

A. The difference was -- let me kind of explain how this works. We used MapQuest, we used Snap.com and Yahoo.com. Both Yahoo.com and Snap.com have MapQuest as their underlying provider. Now, you can specify options to MapQuest when you use it native. When you use Snap.com or Yahoo.com, those particular interfaces specify the options for you, so you don't know which options are specifying in the particular addresses that you're asking it to look up for you.

So I can't really answer the question that it's only specific to options, because if that were the case, then I can see what you're saying. Then you derive the options, these are the only options that you use, you document them, and every month you use them. The thing is is that when it's an unknown, we don't know which options they're going to be using based on the different addresses.

Q. So it sounds to me as though it's the same program; it's just that you access it from different sources. Is that what I'm hearing you saying?
A. There's three websites that allow for driving directions, and we actually looked up four. And two of them used one of them as the underlying provider and one didn't use any at all. It didn't use any of the other three at all.
Q. And does it have the -- the fourth one, does it have the same kind of options that the other three had?
A. Right, they all have options that you can pick.
Q. Is there anything that would prevent you from running, as much as you can, the programs using the same options, and then, to the extent that there's any variation, say picking the highest resulting number?
A. I think if you're -- and I think what I need to do is look at it from a theoretical point of view and from an operational point of view. From a theoretical point of view, there's nothing that would prevent you from doing any of these things, because what you could even do is call the other party, the other CLEC, and say, Hey, this is what I'm getting

when I use this particular program, what are you getting, and come to some sort of consensus.

When you're talking about an operationally-ready system, which is local service requests coming in all the time, there really isn't time to do that sort of thing. What you're going to do is you're going to backlog all of those orders, because you're going to have to apply a lot of manual process to each one of them.

And I'm not sure that the CLECs are going to then allow us to significantly increase the standard interval that they'll accept for their loop ordering, and that's really what it would cost.

Q. Another topic that you discussed with Ms. Anderl was that driving distance is not necessarily the same as route miles. Does that accurately reflect what you were discussing with her?

A. Well, route miles, can I ask, is that what we call right-of-way? The way that the loop would normally route to the particular central -- from the central office to the particular customer premise?

Q. That's my understanding of how that term was used.

A. Yes, then I would agree that that's -- that those two things don't necessarily correlate.

Q. A pretty fair proportion of routes or right-of-ways are along streets, aren't they?
A. Right, but I don't think right-of-ways necessarily take into account a one-way, where a driving direction might.
Q. And do you know what proportion of US West's rights-of-way are along streets, as opposed to not along streets?
A. I don't know.
Q. So there may be instances in which the route through the right-of-way would be shorter than the driving distance or it may be longer?
A. In either of those cases, it would still be inconsistent with what the actual loop length was.
Q. I'm just trying to get at whether it all comes out in the wash. If you're going to have most of your right-of-ways along streets, and in some cases it's going to be shorter and in some cases it's going to be longer than driving distance, we're talking about averages here.
Isn't it possible that on an average basis, the driving distance will accurately or close to accurately or at least approximate the actual length of the loop?
A. What I hear you asking me is if I take a

whole group of loops and I derive the driving distance for a whole group of them and then determine the right-of-way for all those, is it generally going to be the case that they will average out to some amount. I'm not a mathematician. I would assume that that would be the case, but I don't see the difference between doing that and then just saying, on this group of loops, this is the charge that we're going to do, or in this wire center basis, this is the rate that we're going to apply. I don't see a lot of difference in that, then.

Q. The other area that I wanted to explore with you I guess derives from the concern that you have about US West needing to validate the amount. I'm assuming that you don't care if the CLECs want to incur whatever costs they need to incur to measure driving distance or the distance of a loop, but that your concern is primarily US West needing to verify that that information is accurate and input into the systems; is that accurate?

A. My concern is -- I have been involved in systems development for a number of years, and in that we've done things in different ways. We've manually produced -- and this is an oxymoron -- manually produced systems. We -- and that's what I'm

saying, it's kind of oxymoron, but we basically set up processes, that this is how you use the systems that are there, and you have to kind of jury-rig things. And I've done it where you actually mechanize the systems.

It's my experience that the more you introduce manual processes, the more you introduce opportunity for error. And in my opinion and in my experience, you're going to go through a manual process both on the CLECs' side, as well as on the US West side. We're not talking about one step. We're talking several steps here that have to be done the same way in order for the outcome to be the same on both sides.

And like I said earlier, if we're talking a onesie-twosie basis, you know, one loop here, one loop there, that's probably manageable. When we're talking the volume of loops, especially with a commercially ready kind of system and commercial volumes, that's not viable, in my opinion.

Q. Well, what I hear from your responses, as well as what's in your testimony, is that you're assuming that US West would verify the price or the length of the loop each time the CLEC approaches US West and orders a particular loop?

A. Mr. Montgomery's testimony stated that there would be would be no systems mechanization that needed to occur. Let me kind of back up and kind of explain that. What that means is that, in today's world, there is a loop price associated with this particular end user customer. What Mr. Montgomery proposed was leave that part alone, let that order go through, let it post to the accounting databases, the accounts databases, let it go through the way it's going to go through.

What will happen is every month, then, the CLEC would go through and calculate for each and every loop the distance, then figure out, then, based on that distance, and it would use some sort of a driving tool to do that, then go back and, based on the mileage sensitive rates, determine what the appropriate or the new rate would be, then send over to US West the difference.

The thing that would have to happen on the US West side was we would be getting that remittance. On each and every single loop, we would have to do the very same thing. And in addition, we would then have to issue an adjustment on that account, not only to the account, but remember we've journalized monies to certain journal codes, certain monies have to be

separated out, so we would have to then make sure the adjustment was applied to the correct journal and the journal code, and then we would then apply that adjustment to the bill and let it go through at that point.

This is not on a one-time basis. This is not even on a one-time the first time it's ordered. This is every single month with every single loop. And that's the only way you can do it without any systems mechanization.

Q. Let me follow up on that one last point that you made. Are you saying that you'd have to measure each loop every month or would you just have to measure the first time?

A. Well, let me get back to Mr. Montgomery's original premise, which was no systems mechanization, no modifications to the systems. If you only did it the first time, we have to put that information somewhere. And if we don't modify the systems, we have no place to put that mileage or that agreed-to distance on our billing databases. We don't have mileage for loops on our billing databases at this time.

Q. Well, let me explore something else, which is that US West currently provides facilities to

CLECs without an individual kind of verification process, doesn't it?
A. I don't understand that question.
Q. Well, let me use an example. Pole attachments. Are you familiar with pole attachments?
A. No, I'm sorry, I'm not.
Q. Is that information included in US West's OSS, as far as ordering pole attachments?
A. See, I'm not familiar with them, so I'm not sure if it's there. I don't know --
Q. But you know the OSS systems?
A. I know them from an ordering and provisioning standpoint for unbundled network elements, yes.
Q. So you don't know whether you can order pole attachments out of US West's OSS?
A. Can you tell me what a pole attachment is, and maybe I can get to that?
MS. ANDERL: Getting close to an objection here.
Q. Are you aware that US West owns or jointly owns utility poles, telephone poles?
A. Right, right.
Q. Okay.
A. See, it's my understanding that the FCC, in

its First Report and Order and in the subsequent orders, has required us to provide mechanized interfaces for the provision -- for the pre-order, order, provisioning, repair and billing of unbundled network elements and resale. And it's real specific as to the unbundled network elements that we have that requirement for. I am not -- I'm unaware, let me put it that way, that we have a requirement to provide a mechanized solution for ordering pole attachments. And I guess I'm kind of confused as to where that falls within the realm of UNE loops.

Q. Well, let me try and clarify it. Since you don't know about pole attachments, you may not know this information, but are you aware that US West allows other parties to put attachments, or attach wires to its telephone poles?

A. I'm not aware, but I wouldn't be surprised.

Q. And do you know whether US West, on a monthly basis, inspects each one of its telephone poles to see whether the proper attachments are on each pole?

A. I don't know that.

Q. Well, let's reverse it, then, in terms of facilities that US West provides line conditioning. Are you aware that the Commission has authorized US

West to recover cost for line conditioning, which is removal of bridge taps or load coils?
A. I'm aware of that.
Q. And does US West's OSS include the information or access to databases that would enable a CLEC to determine whether a particular loop has load coils or bridge taps that would need to be removed?
A. US West currently has the -- an interface, excuse me, both the IMA EDI and the GUI, that do provide, on a loop-by-loop basis, the presence of bridge taps, the total length of the bridge tap, as well as the presence of load coils.
Q. So CLECs have access to that database in the same terms and conditions that US West has access to that database?
A. CLECs have access to that information.
Q. But you don't know whether it's the same as US West's access?
A. CLECs use a mediated gateway, a mediated access gateway, whereas US West does have direct access. Mediated access gateways were provided for and actually ordered in that First Report and Order. We were ordered to create mediated access gateways so that all the CLECs didn't have to learn all of the

different RBOCs' proprietary systems. You could do it on a mediated access basis using a standard interface such as an EDI or a GUI-based system.

Q. But other than the fact that the CLEC has to go through a different portal, for lack of a better word, than US West, is it the same access?

A. Are you -- I guess I need a little more clarification. Are you asking me are they using the same downstream systems?

MS. ANDERL: Well, and Your Honor, before we get any further, I guess I would like to object. I understand that Mr. Kopta started with trying to explore the witness' statement in response to Mr. Montgomery's testimony that no mechanized systems changes would need to occur in terms of making sure that it measured the loop length once, whether it would have to be measured each month, or could somehow be input into the billing system, but it now seems that we're no longer anywhere close to exploring that and we're talking about things that are not part of this witness' direct testimony and a general discussion of the IMA EDI and GUI interfaces for ordering loops not connected with the deaveraging proposal or even the criticism of the distance-sensitive rates. So it's a relevancy

objection, I guess.
JUDGE WALLIS: Mr. Kopta.
MR. KOPTA: Well, I'm not trying to explore specifically the type of access or gateways that are in existence right now. What I'm trying to explore is the ability of CLECs to verify information that US West provides to CLECs, which seems to be the concern that US West has, specifically Ms. Brohl has, in terms of needing to verify loop length information that CLECs provide to US West.
I'm just exploring an instance in which CLECs are required to rely on information provided by US West and pay rates that US West says are applicable without CLECs' ability to completely verify that information.
MS. ANDERL: Well, I'm --
JUDGE WALLIS: Ms. Anderl.
MS. ANDERL: I guess, based on that explanation, I'm not aware that -- that would go to a proposition that doesn't seem to be advanced in this docket, which would be that Mr. Montgomery has suggested that US West would not be either allowed or required to verify the CLEC information on loop length. That's not what Mr. Montgomery has said.
MR. KOPTA: No, Mr. Montgomery has

testified that US West could, if it chose, verify the information. Ms. Brohl's testimony is that US West would have to verify the information each time it was submitted by a CLEC. What I'm exploring is the extent to which that is equally applicable to other circumstances in which the CLECs are required to rely on cost information that US West provides to the CLEC.

JUDGE WALLIS: How far along are you in your exploration?

MR. KOPTA: Most of the way through. I have one or two additional questions. Ms. Anderl times her objections so that I only have one or two more questions left.

CHAIRWOMAN SHOWALTER: Just before the punch line.

MR. KOPTA: That's right. You're stealing my fire.

MS. ANDERL: All right.

JUDGE WALLIS: Let's proceed and wrap this up, then.

Q. Well, now that I've told you where I'm going, CLECs don't have access to US West's network to the point where they could verify whether a particular loop has a bridge tap or a load coil on

it, do they?
A. I disagree. Right. And I do disagree, because we have a release that went into effect in October, October 31st, as a matter of fact, the IMA 4.2 release, which provides, on a facility availability query, the presence of bridge taps, the total length of the collective bridge taps, as well as the presence of the load coils. And that is provided provided that information is known. If it's known, it's given to the CLEC. If it isn't known, our query doesn't provide us any additional information either.
Q. And by known, that's information that US West has loaded into the database; correct?
A. True.
Q. So CLECs don't have access to US West's network to verify that that information is correct, do they?
A. No. Without walking the loop, which is what it would take for a US West technician to verify that that information is correct, as well, and walking the loop is a term of art that the network groups use, I don't think anyone would know that for sure.
Q. So if a CLEC orders a loop and US West

says, Gee, that's going to require conditioning and it's going to be an extra charge, CLECs have to accept that that is, in fact, the case and pay that charge; is that correct?

A. I don't really know how the billing of conditioning works, I'll be really honest with you, because it doesn't go through the normal mechanized billing process. So I'm a little bit on shaky ground here.

Q. Well, let's assume, billing questions aside, that US West is entitled to charge for line conditioning and that it imposes a charge for line conditioning on loops that a CLEC orders that US West determines need line conditioning. Does the fact that a CLEC cannot verify by inspecting US West's network that line conditioning is actually required, does that somehow exempt them from being required to pay the line conditioning charge?

A. I think the fact that the -- let me think here. Can you repeat that for me? I have to think about that.

Q. I don't think I could. Based on your understanding that a CLEC cannot verify, by physical inspection, whether load coils or bridge taps exist on a particular loop, is US West any the less

entitled to recover its charge for line conditioning simply because the CLEC can't verify the accuracy of the information that US West is providing to the CLEC?

A. I don't believe that the CLEC would not be required to still pay for the line conditioning provided the line conditioning was done.

MR. KOPTA: Thank you. That's all I have.

JUDGE WALLIS: Commission Staff.

MS. JOHNSTON: Thank you.

C R O S S - E X A M I N A T I O N

BY MS. JOHNSTON:

Q. Good morning.

A. Good morning.

Q. Please turn to your responsive direct testimony that's been marked as Exhibit 111-T, at page five, line eight. There you state that, to incorporate loop length into the service order process, the process would have to account for some variation of USOCs, that's U-S-O-C, stands for universal service order codes, driven by kilofoot ranges. Do you see that testimony?

A. I do.

Q. I'd like to direct your attention now to what's already been admitted into the record as

Exhibit 70. Those are -- that's US West tariff or distance-sensitive Centrex rates. Do you have that?
A. I do.
Q. Thank you. Now, that tariff does not contain any USOCs for the quarter-mile distance rates, does it?
A. I don't see any on this page.
Q. On --
A. Well, no, that's true, for the mileage, you're correct.
Q. I'm going back again to your responsive direct testimony, Exhibit 111-T. At page eight, line 20, you state that the cost of implementing Staff's distance-sensitive proposal ranges from seven and a half million to 12 and a half million dollars. Is that correct?
A. That's my testimony.
Q. Would Staff's proposal for three distance-sensitive bands filed in Staff's rebuttal testimony also cost within the ranges of seven and a half million to 12 million to implement?
A. Regardless of the number of bands for mileage, there is still a need to have an accurate mileage, because you need to know which band the mile -- the particular loop falls in. If your band is one

kilofoot distances or it's three kilofoot distances, if you have a variance of, using Mr. Montgomery's proposal, of 26 percent or 24 percent, you could, in error, go into one band versus the other inappropriately.

So I believe that you need to know, regardless of whether it's three bands or five bands, what the mileage is so you know which band you're in.

Q. I believe my question pertained to cost, though. Would it still be your position, then, that if the three distance-sensitive band proposal were implemented, the cost would be in the range of seven and a half million to 12 and a half million dollars?

A. I'm sorry, I didn't follow through. Yes, and the reason is for the reasons that I gave prior to my answer of yes.

Q. Okay. Is it true that there are two wire centers in downtown Seattle that have no loops over, what is it, 12 kilofeet?

A. I wouldn't know that.

Q. Would you believe that there would still be a need to identify the distance if, in fact, it were true that there are two wire centers located in downtown Seattle that don't have distances exceeding 12 -- what is it, 12 kilofeet?

A. Only if you implemented UNE deaveraging in those two wire centers alone. Once you introduce the other wire centers, the systems modifications must occur, because we do not do anything on a wire center basis. Our systems basically are regional in nature and they accommodate the entire state.

Q. Thank you. In response to Staff Data Request Number 10, you indicated that the bulk of the cost estimate is based on an estimated cost of $2 to $4 per line to manually convert each of the company's two and a half million lines. Do you recall that response?

A. I do.

Q. US West has not mapped the distances of its customers from serving central offices; is that true?

A. It has not -- you're asking me if it has mapped each loop from the central office to the customer premise?

Q. Yes.

A. I don't know that, but I don't believe that to be the case.

Q. What leads US West to believe that it needs to map the distances of all of its customers from the serving central offices when provisioning unbundled loops to CLECs on a distance-sensitive basis?

A. Because I'm assuming that every particular end-user customer in that particular wire center would be a potential customer of a CLEC. I'm not trying to say that only certain of them would be potential customers. I'm assuming the entire wire center is potentially a customer for the CLEC.
Q. I'd like to follow up now on one question that Mr. Kopta asked you just a moment ago. And I believe, in your response to that question, you referred to a new system implemented on October 31st. Do you recall that?
A. The system that was implemented on October 31st was a new version of an existing system.
Q. Right. Isn't it also true that that particular system contains loop distance information?
A. It does when that loop distance information is known. That is generally used by the data CLECs when determining whether or not a loop is qualified to provide DSL service. DSL service, however, only has one length requirement, and that is 18,000 feet. If it's 18,000 feet or under, they can provide DSL service, and as a result, there isn't as much of precision that's needed to know whether or not DSL is capable of being provided on this loop.
The other thing that's of interest is if

that loop length is unknown, it comes back to the -- the response comes back and says the length is unknown. And when that length is unknown, the data CLECs nor US West have that information, and so we do not provide data services to that particular end-user customer.

For example, my particular address, I did check on both sides, and I'm missing one piece of the algorithm. So as a result, I couldn't have DSL at my location because we don't know the length. So it's kind of an either/or, as opposed to you must know specifically on each one, which is what a billing kind of arrangement really does necessitate.

Q. So how is it that a company would know when the length is less than or greater than 18 kilofeet?

A. There is information in one of the databases, and many times the information in that database might be a little longer loop than normally what's in their -- let me back up.

The database that you're talking about, the system that you're talking about is called LFACS, it's L-F-A-C-S, Loop Facility Assignment Control System. LFACS was originally an engineering database, an engineering system. It's what the RBOCs used to go out and design their plant, their outside

plant. So they set out the distribution routes and they figured out what the lengths are going to be or what they anticipated those planned lengths to be.

Now, when they went out there and actually installed that plant, sometimes it was different. And so what happened is if you had a diligent central office technician and an outside plant technician, they updated the LFACS database with the accurate information.

Because voice isn't a -- and remember when all these systems were also developed, back in the '60s and '70s. Because voice is a pretty forgiving kind of service, if you're starting to have degradation on the voice, you can just throw a load coil on there or some repeaters and it will continue the voice stream going on. It's not -- it hadn't been, up to this point, critical to understand and to know the absolute loop length on each one, because you could still provide voice. It's only recently that distance-sensitive products are starting to be developed.

Q. Do you know what cable taper codes are?

A. No, I don't.

Q. I don't either. Now I'd like to ask you a few questions which I think they were deferred to you

by Mr. Thompson yesterday. The first is, is there a centralized function or location where a customer milage is determined for different states?

A. And I wasn't really sure what that question meant exactly, unless you were talking about the LFACS system, the LFACS database, which is really the only place that I know of where loop length has a spot, there's an actual field for it. But as we talked about it, as we've said earlier, it's not always as precise as it's needs to be for billing purposes.

MS. JOHNSTON: That's all I have. Thank you.

THE WITNESS: Thank you.

JUDGE WALLIS: Dr. Gabel.

E X A M I N A T I O N

BY DR. GABEL:

Q. Good morning, Ms. Brohl. I just want to follow up on the question about DSL and measuring distances. Are you aware of situations in which US West and the CLECs agree on an approach to estimating line distances in case a customer wants to do some prequalification testing for xDSL services?

A. No, I'm not.

Q. So you're not familiar with a website

called DSL Reports, which is used for prequalification by both the CLECs and US West?
A. No, actually, I'm aware of one called Megawot, which uses the RADSL, rate-adaptive DSL, calculation, qualification, because that's the type of DSL US West provides. So I'm aware of that one. And anyone can go on the -- you know, as an end-user customer, you could log in and do that. I could, CLECs could for their customers, US West as well.
Q. That website is Megawot?
A. Yes, M-e-g-a-w-o-t.
Q. Is that a US West website?
A. Yes.
Q. So it isn't also used by the CLECs?
A. It could be. It's outside the fire wall and they would have access to it. We have a carrier web page that is available to all CLECs, and we provide them that information, and it's one of the hotlinks from that page.
DR. GABEL: All right. I have no further questions. Thank you.
THE WITNESS: Thank you.
JUDGE WALLIS: Questions from the bench.

E X A M I N A T I O N

BY CHAIRWOMAN SHOWALTER:

Q. Well, after this morning's discussion of economic theory, it was very refreshing to be talking about MapBlast and MapQuest, because I actually use these things. MapBlast is my favorite. So I have some sense of what you're talking about.

I want to ask a couple questions in follow up to some of your other earlier questions. First is I can follow why loop length would be shorter than driving distance for a number of reasons, but it's hard for me to imagine the reverse. The reasons why it might be shorter is that, supposing there is a one-way street, the line goes down a one-way street, but a car cannot. That would make the MapQuest report longer than the actual length, or as a telephone pole goes behind my house, across the backyard and no car can go there.

But what are the situations that would likely arise and how likely would they be where the loop length is longer than the driving, than, say, shortest line driving distance?

A. There is one instance that comes to mind, and let me kind of take you back. Prior to US West and all of the ILECs being able to provide single party service for all customers, when you got into some of the newer development areas, didn't even have

to be rural, but sometimes in new development areas, there were party line services, so you might have two or three lines on the same general loop.

Then those -- and in order to provide additional services to -- say you had one customer on a line, then to provide additional customers on that same line, we would bridge in an additional portion of that loop. So if you think about it, here's the distance between this particular central office and this particular customer premise, but somehow we've got to be able to serve this customer over here. Well, what would happen is US West would go ahead and put in an additional loop here, and it's called a bridge, a bridge loop. That tapped into the original loop, and that's what is called a bridge tap.

Now, when party line service was no longer there, we no longer had to do that, it cost money, and probably we didn't keep very specific records and I think what really happened was it cost money to go out and send a technician to go out and remove that tap, that bridge tap. So as long as it's not causing any issue, there's no reason to get rid of that bridge tap. So then you could have another loop that's maybe no longer used by the original customer, but now customer number three needs it, and you would

bridge into that same loop.

So there are some times when that loop can be longer than the actual driving distance, because it didn't follow -- its original route, the way that we're using it here, had a very specific rational path, but as it became used later on and later on and later on, it might then continue to migrate into additional paths. And so that would be one instance where it could actually be a little bit longer.

Q. Okay. In addition to MapQuest or MapBlast or those sorts of techniques, are there other ways to get a good estimate of line loop, that you know of? And I don't mean perfect; I just mean good.

A. I do think that there are. There's some -- I don't know what specifically the acronym stands for, it's GIS, which I think is a geographic information system, and those are systems that are used also to accurately identify aerial miles, so as the crow flies.

Now, we need to be careful, because as the crow flies does not necessarily equate to loop length or appropriate loop length, because we still have to follow a right-of-way path. That would probably be about the closest one that I could think of, as well.

Q. But I gather from your testimony that that

methodology or MapQuest is something that you have not incorporated into your system at the moment?
A. At the moment --
Q. So that it would require a manual check of some kind, even if you had a very, very good estimator?
A. Yes, and I apologize for interrupting you. Yes, that's true. We have not incorporated those into our billing systems yet. And it would have to be incorporated into the pre-ordering system, because I would assume that the CLEC would want to know, when they're doing their pre-order negotiation with their end-user customer, what that loop is going to cost in order to know kind of how to package their products and services. It would have to be incorporated into the ordering process so that you would know exactly what the rate was to put on the CLECs' wholesale bill, as well as in the billing system, so that the bill could appropriately and accurately be mailed out.
Q. Then, when you said you -- I think you said you took a sample of some size and applied MapQuest to it, I couldn't understand how big your sample was. Was it just three loops or three zones or three wire centers?

A. There were three addresses that Mr. Montgomery provided.
Q. Just three addresses?
A. That was it.
Q. Okay.
A. So what we did is we wanted to make sure that we were not going outside the scope of what his testimony was, and just incorporated those three in our analysis.
Q. Okay. One was 24 percent off the mark. Which way was it off the mark? Was the driving distance longer or shorter than the actual?
A. I must have -- I think I caused everyone some misunderstanding with that. When I said it was off the mark, I meant that from the shortest driving distance to the longest driving distance, there was a 24 percent difference.
Q. Oh.
A. So there is no consistency within those particular --
Q. Okay. Did you make any comparison of, say, the shortest driving distance to the actual loop length?
A. No, we didn't.
Q. Okay. The last question I have is I think

you've said that it would be more practical for you to operate at the wire center level than the Staff proposal or Mr. Montgomery's proposal, but what about comparing the wire center level to the CMSA or MA level that US West has proposed. In terms of practicality only, are those equal, approximately?

A. They would be approximately equal between the wire center basis versus the CMSA basis. And the reason is because, at least in Washington, the analysis that we took showed that they were -- we couldn't find any wire centers that were split between two different MSAs. And as a result, a wire center for the state of Washington seemed to be completely contained within an MSA, which would be completely contained within a CMSA, so that would be an easier type of implementation than the mileage. Much easier.

CHAIRWOMAN SHOWALTER: Thanks. I have no further questions.

COMMISSIONER HEMSTAD: I don't have any questions.

E X A M I N A T I O N

BY COMMISSIONER GILLIS:

Q. I was trying to find in your testimony where you were talking about the MapQuest, but does

that database have in it, then, customer location information, where the customer is at? Is that part of it?

A. It wasn't in my testimony, because it was an oral surrebuttal to Mr. Montgomery's last round of testimony. And as far as the different mapping driving software tools, what you do is you give it the address that you're starting from and the address that you're going to, and then it maps out for you the driving route, the best driving route, based on the options that you've given it.

Q. I see. So as long as you have the address where the customer is and then the address where I suppose the central office is or the wire center, then that program gives you an approximation of how far it is?

A. Yes. And depending on the options that you provide it. For example, in Colorado, we only have one toll road. We're learning what toll roads are like. And if you wanted to bypass that, because you didn't want to pay the $2, it would give you -- it could give you a different driving route than the one going over E 470, even if E 470, for example, were the shortest route there, because of the option that you requested. So it really depends not only on the

addresses, but the options that you're requesting, as well.
Q. So in all cases, the algorithm follows the road; is that the way it works?
A. It does follow the road, yes.
Q. Okay. And it doesn't account for any, I guess, unusual barriers along the way, such as mountains or rivers or whatever, those kind of things?
A. Only in so much as how you go around those barriers through thoroughfares. In other words, if there's a bridge, it could calculate that, going over a lake. If it were through the mountains, you know, if there was a pass or a tunnel, it could use that, but it doesn't necessarily take into account those other things specifically.
Q. Do you have any idea how it handles rural locations, where you end up with P.O. boxes, rather than identifiable addresses and those kind of things?
A. I don't know. I really don't know.
Q. Okay. Do you have any sense of whether those types of estimates would generally be more -- well, based on what you said, you may not know, but do you have any sense of whether those types of estimates would be more accurate in urban-oriented

areas, where there are definable addresses versus outlying areas, where addresses tend to be less defined, P.O. boxes or down the road from the Jones' or whatever?

A. I think there are two things that would provide for its accuracy, so to speak. One would be how defined the to locations are, the to location and the from location. I would think that the other thing that would really enter into that would be what's been entered into that database. And this is pure speculation, but if I were the business of MapQuest, I'd have to adjust what addresses I would be putting in and data based on time frame. So I would want to get the first ones in there that would give you the biggest bang for the buck, which would generally be urban areas. And that's just an opinion.

Q. So this is a specific commercial database where the address has been pre-entered?

A. Yes.

Q. So it isn't a customer input or a user input type of database where you would enter any given address and then be able to calculate to --

A. You can enter any given address, but the address must be within the database already.

Q. It must have been already geocoded, in other words?
A. Exactly.
Q. Then would it suffer the same -- I guess the same problems of geocoding in general, to the extent an address has not been geocoded, then --
A. Mm-hmm.
Q. Then I suppose it would follow that, to the extent that rural areas are less geocoded, that the database would be less useful?
A. That would be my assumption.
COMMISSIONER GILLIS: Thank you. That helps.
JUDGE WALLIS: Ms. Anderl.
MS. ANDERL: Thank you.

R E D I R E C T E X A M I N A T I O N

BY MS. ANDERL:
Q. Ms. Brohl, you were directed by Ms. Johnston to your testimony on page five of Exhibit 111-T, with the discussion there of the necessity for various USOCs needing to be loaded into the service order process and the billing process to account for different kilofoot lengths. Do you remember that topic?
A. I do.

Q. And you were then directed by Ms. Johnston to Exhibit Number 70, which was US West's Centrex tariff, which showed various mileage bands, but did not contain different USOCs for those different mileage bands. Do you recall that?
A. I do.
Q. Does the existence of that Centrex tariff change your testimony in any way, that there would be a need for different USOCs in the instance of distance-sensitive loop lengths, as proposed by Staff or Mr. Montgomery?
A. No, it doesn't. The reason that I had stated that the -- that we would need to have a variation of USOCs for loop length is because in the billing system, in order to account for the wholesale bills to the CLEC, we bill on USOCs. A particular USOC has -- a particular USOC has a particular charge associated with it. That is a mechanized bill, and it comes out from a mechanized system.
What I heard Mr. Thompson testify to this morning, and I would believe that would be true, is that the Centrex mileage charges are done manually. And I think I heard him say that it was about 10 minutes or so per, so we would -- in order to be able to manage this in our service order processing

systems, we would have to have different USOCs that would be associated with the different mileage rates.

Q. So the need for different USOCs is connected with the need to mechanize the process?

A. Yes, and also to make sure that you are ordering and disconnecting the right UNE loop. For example, let's talk about this all the way through. You not only want to go ahead and connect that UNE loop appropriately, but at some point, that end user customer may move out of state, may transfer over to another CLEC, may decide that they just don't ever want to have a telephone again, for whatever reason.

There has to be a mechanism to be able to then remove that UNE loop from the CLEC's wholesale bill, as well as do the physical disconnection that's necessary. And in order to make sure that you are appropriately removing the correct one, especially if they're based on mileage and have different rates to them, you're going to want to have it done by USOC, so you can remove the appropriate one.

Q. There was some discussion about the LFACS database, and let me just ask you. To the extent that the LFACS database contains some loop length information, does that information link to US West's billing systems currently?

A. No, it doesn't. And I'm glad that you brought that up, because even if the LFACS database were 100 percent correct and had every single loop length in there, there would still have to be a connection between that and the pre-ordering, ordering, and billing systems that I've testified to earlier. And right now, that link does not exist.

MS. ANDERL: That's all I had on redirect. Thank you.

JUDGE WALLIS: Is there any follow-up questions? Let the record show that there is no response. Let's be off the record, please.

(Discussion off the record.)

JUDGE WALLIS: Back on the record. We are going to break now for our noon recess and we'll resume at 1:00 p.m. in this room. Thank you all.

(Lunch recess taken.)

JUDGE WALLIS: Let's be on the record, please, following our noon recess. At this time, GTE Northwest, Incorporated, is calling to the stand its witness, Terry R. Dye.

In conjunction with Mr. Dye's appearance, several exhibits have been prefiled. I am marking those for identification as follows. The first, the Direct Testimony of Terry R. Dye, is marked as

Exhibit 141-T for identification. Second, a document entitled Having Your Cake is marked as Exhibit 142. The responsive direct testimony of Terry R. Dye is marked as 143-T for identification. WUTC Staff proposal, Arbitrage Potentials, is marked as 144. And the rebuttal testimony of Terry R. Dye is marked as 145-T.

Mr. Dye, would you please stand and raise your right hand.

Whereupon,

TERRY R. DYE,

having been first duly sworn, was called as a witness herein and was examined and testified as follows.

JUDGE WALLIS: Please be seated. Ms. McClellan.

D I R E C T E X A M I N A T I O N

BY MS. McCLELLAN:

Q. Mr. Dye, could you please state your full name and business address for the record?

A. My name is Terry R. Dye. My business address is 600 Hidden Ridge Drive, Irving, Texas, 75015.

Q. And could you state your employer and whom you are testifying on behalf of today?

A. I am employed by GTE Service Corporation as

manager of price and policy, and I'm representing GTE Northwest, Incorporated in this proceeding.
Q. And did you cause the testimony and exhibits, labeled 141-T through 145-T to be prepared and filed in this docket?
A. Yes, I did.
Q. Other than typographical errors, do you have any corrections that would change the substance?
A. No.
Q. If I were to ask you the questions contained in the testimony today, would your answers be the same?
A. Yes, they would.
MS. McCLELLAN: At this time, Your Honor, I would like to move the admission of Exhibits 141-T through 145-T into evidence.
JUDGE WALLIS: Is there objection? Let the record show that there is no objection, and the exhibits are received in evidence.
MS. McCLELLAN: And I would like to make Mr. Dye available for cross.
JUDGE WALLIS: Ms. Proctor, do you have any questions for the witness?
MS. PROCTOR: I thought maybe US West was going to cross.

C R O S S - E X A M I N A T I O N

BY MS. PROCTOR:

Q. Mr. Dye, in your direct testimony, which has been marked as 141-T, you have a chart on page 12. I'd like to ask you some questions about that.

A. Okay.

Q. And looking at the column in the middle that's labeled Residence, I believe your testimony indicates that this purports to be the revenues from an average residential customer; is that right?

A. Right.

Q. So in GTE's view, this is typical of the revenues that would be generated by a residential customer in GTE territory in Washington; is that right?

A. That's correct.

Q. In the item total, which appears at line 11, it shows a UNE price of 27 cents. Is that supposed to be the amount that it costs a CLEC who might be purchasing the unbundled network elements from GTE?

A. Yes.

Q. And what elements were considered in there?

A. UNE switching and transport and tandem.

Q. For an assumed minutes of use?

A. For the same toll minutes that are generating the revenue on the retail side.
Q. Okay. And in turn, that 27 cents in cost generates $6.21 in toll revenues; is that what you're estimating here?
A. That's one view. The view I was trying to depict here was one of GTE revenues instead of CLEC cost, but for that particular column, they're one and the same. It's trying to depict that if GTE sold that usage as UNEs, that GTE would receive that 27 cents in revenues. Conversely, that would be 27 cents in costs that the CLEC would incur in providing that service. So it's depicting one and the same, looking at it from different points of view.
Q. So just so I'm clear, so the $6.21 is the revenues that GTE is estimating a typical residential customer generates?
A. Right.
Q. Okay. Now, the item underneath that, intrastate access, a residential customer doesn't pay intrastate access to GTE, does it?
A. That's right. Again, what I was trying to depict is the revenues that GTE receives when an end-user customer makes an intrastate toll call and GTE receives from that usage intrastate access

revenues. So it was a situation where it's trying to depict, again, the revenues that GTE receives from the average revenue customer, not necessarily the bill of the average revenue, of the average residential customer, but the revenues that GTE would receive.

Q. Okay. So then, would it be fair for us -- for this typical residential customer to total the $6 of toll, the 6.73 of intrastate access and the $8.10 of interstate access as the revenues that were generated for the typical residential customer? That would be a part of what makes up the $41 that you've totaled at the bottom of that column, isn't it?

A. Right.

Q. So for a typical residential customer, GTE is estimating about $21 attributable to toll and access?

A. That's approximately true.

Q. And that compares to the something under $2 in costs; is that right?

A. That's right.

Q. And then your calculations on the business side were basically done the same way?

A. That's correct.

Q. Now, in the case of a CLEC who was using --

purchasing UNEs from GTE to provide the service to serve the same customer, the access would be paid to the CLEC if the service -- if the toll service were provided by a different carrier, a long distance company, for example; is that right?

A. Well, if the CLEC were purchasing UNEs from GTE, that -- what I've depicted there would be the revenues that GTE would receive for that usage, given that that usage would be -- that the compensation that GTE would receive would be under the UNE prices. The CLEC presumably would be able to charge the toll provider access -- their access charges to be compensated by the toll provider for that usage.

Q. So presumably, the CLEC's access charges to the toll provider would be at or below, but possibly above GTE's access charges; is that right?

A. Right.

Q. If you could turn to your responsive direct testimony, Exhibit 143-T. On page two, at line 16, you recommend that the Commission should reject AT&T's deaveraging proposal; isn't that right? That's what the words say here on line 16?

A. That's what the words say, that's correct. I'm not -- that's correct. That's what the words say. The reason I hesitate is because I wasn't -- I

don't want to create an inference about -- given that Denney, in his final round of testimony, presented a proposal that I was not speaking to in this round of testimony. So it should be clear about which AT&T deaveraging proposal I was speaking to.

Q. So this was Mr. Denney's -- let's see, where are we in the round of testimony here? This was Mr. Denney's original proposal that you're addressing here?

A. Right.

Q. And you're saying that that should be rejected, because it's based on erroneous and deficient -- excuse me, an erroneous and deficient methodology; is that right?

A. Right, and I think Mr. Denney also recognizes that, as well.

Q. Well, Mr. Denney's testimony can speak for itself. Now, the GTE that you discuss on page three of that same testimony, the GTE methodology for deaveraging is based, according to your testimony at line 11 and 12, on the CostMod results already of record; is that right?

A. That's right.

Q. And CostMod is the name of the GTE cost model; is that right?

A. That's right.
Q. How are the three density zones determined that you refer to on line 12?
A. They were the standard density zones of CostMod, I don't recall exactly what the break points were. I think it's zero -- I don't recall the break points for the density zones.
Q. But that's where these results supposedly come from?
A. CostMod?
Q. That's where the density zones come from?
A. Right, and they're standard within the context of -- it's standard output in the CostMod model. They're standard density zones for the output.
Q. Now, in your rebuttal testimony, which has been marked as 145-T, on line three, when you're talking about basing the cost on wire centers, GTE wire centers --
MS. McCLELLAN: Excuse me, Susan, could we get a page number, please?
MS. PROCTOR: Three.
MS. McCLELLAN: I'm sorry, I thought you said line three.
Q. Page three, line 11 and 12, it states that

the rates are based on GTE wire center cost; is that right?
A. Right.
Q. CostMod doesn't estimate wire center cost, does it?
A. No, but Mr. Tucek presented wire center cost estimates in his testimony.
Q. And is that the testimony that was filed at the same time you filed your rebuttal testimony?
A. No, it was the previous set of testimony. It was the January 18th testimony.
Q. That's when he filed the wire center cost estimates?
A. That's right. That's what I refer to on page three, line 12, Mr. Tucek's responsive direct testimony.
Q. Okay. And do you have an understanding of the methodology that Mr. Denney used in preparing his deaveraging proposal?
A. Yes, a general understanding.
Q. And Mr. Denney's methodology was that he ran the Hatfield Model 3.1 and prepared wire center costs. That was his starting point. Is that right?
A. That's right. In his last round of testimony, he also indicated that it would be

reasonable for the Commission to adopt GTE's wire center cost estimates, as well.
Q. Addressing his methodology, his methodology starts with an estimate of wire center costs; isn't that right?
A. That's right, as does ours.
Q. And when you say ours, which of GTE's proposals starts with the wire center cost? Not your first one; right?
A. Right. The one that's in my rebuttal testimony, page three.
Q. That's where GTE now adopts the methodology of starting with wire center costs; right?
A. Right.
Q. And then Mr. Denney aligns those wire centers strictly on the basis of from the lowest cost to the highest cost; is that right?
A. Right.
Q. And is GTE now proposing to do the same thing?
A. That's what I proposed in my rebuttal testimony. That method of basically stack ranking wire centers costs from lowest to highest was the method that gave rise to the proposal that's on page three of my testimony.

Q. And then Mr. Denney identifies certain break points, if you will, in that stack of wire center costs. Is that sort of the final step?

A. Right, I think that's the -- that appears to be the only area of disagreement, if you will, at least as far as discussing reasonable outcomes, that is at odds, it appears to me, between GTE's method and AT&T's method.

Q. And at this point, you're just discussing the method; right?

A. Right.

Q. Not the cost estimates?

A. Well, again, Mr. Denney, on page 16 of his last round of testimony, indicated that GTE's costs and method would present a reasonable outcome for the Commission, so I'm just saying that it appeared to me that, given that Mr. Denney, representing AT&T, would present GTE's costs stacked-ranked, in the same method using the same costs, that the only area of disagreement would be where to draw the line between the zones.

So the method itself appears to me to be in alignment and agreement with Mr. Denney's testimony, when he presented on 16, that that would be a reasonable outcome to use GTE's costs and GTE's

method. The method is virtually identical to AT&T's.
Q. The method is the same method, but AT&T starts with use of the HM 3.1 cost estimates for wire centers and GTE starts with its own estimates of wire centers; would that be true?
A. That's true, but like I said, Mr. Denney presents both in his table on page 16 and says that both would be a reasonable outcome for the Commission to consider, so I'm assuming that Mr. Denney is saying that it would be reasonable to use GTE's costs and GTE's method, as well as AT&T's Hatfield 3.1 in stack-ranking the exchanges, and then the only area of disagreement would be where to draw the line. And he indicates that both the Hatfield Model and the GTE cost estimates would be reasonable in determining how to stack-rank those wire centers.
Q. Well, since Mr. Denney's being so reasonable, is it your position or GTE's position that you will be equally reasonable and it would also be reasonable for the Commission to use the Hatfield 3.1 estimates as the starting point for costs?
A. I believe that the Commission should use GTE's estimate of costs. And it has appeared that AT&T has said that it would also be reasonable to use GTE's estimates.

Q. I wanted to just be sure I understood that AT&T says it's reasonable to use GTE's cost estimates?
A. Right.
Q. But GTE does not believe it reasonable to use the HM 3.1 estimates, do you?
A. Right.
Q. And then the other area of disagreement, apparently, is that Mr. Denney has identified four zones, but GTE is combining those into three zones. Do I have that right?
A. Right.
Q. And that proposal is embodied in Mr. Denney's testimony, not in any GTE witness testimony, is it?
A. What proposal?
Q. The proposal that GTE wants the Commission to adopt. It is not in any GTE witness' testimony, is it?
A. That's true. One of the --
Q. It's only in Mr. Denney's testimony on page 16; right?
A. What GTE would suggest as --
Q. Could you answer my question, and then give your explanation?

A. Could you repeat your question?
Q. My question asked you, isn't it true that the proposal that GTE is now recommending that this Commission adopt is not contained in any GTE witness testimony, but rather is set forth in the testimony of Mr. Denney on page 16?
A. The proposal that GTE would want the Commission to adopt is in my testimony on page three. What GTE would suggest as a reasonable compromise between AT&T's position, as outlined in Mr. Denney's testimony on page 16, where he uses GTE's costs and four zones, that proposal, in comparison to GTE's proposal, using those same costs that are identified in Mr. Denney's four-zone proposal on page 16 of his testimony, GTE would consider it a reasonable alternative for the Commission to consider to simply collapse Zones One and Two in that proposal of AT&T, thereby making three zones by collapsing Zone One and Two and producing a rate in Zone One of $17.46, as agreed to by Mr. Denney when he was on the stand, and establishing Zone Two and Three, which is AT&T Zone Three and Four.
That's what GTE would consider a reasonable compromise between AT&T's position and GTE's position for resolution of the deaveraging proposal.

Q. So just so I'm clear, is that the proposal that GTE is recommending that the Commission adopt, or are you recommending that the Commission adopt your $22 rate that appears on page three of your responsive direct testimony, Exhibit 143-T?
A. GTE's proposal is on page three of my testimony. As I discussed, what we would consider to be a reasonable compromise between those -- AT&T proposal and the GTE proposal --
Q. I understand you're characterizing that as a compromise.
A. Right.
Q. Which one are you asking the Commission to adopt, the one on page three, the $22 rate for the high and medium-density zone and $30 for the low-density zone? Is that the proposal you're asking the Commission to adopt?
A. Yes. However, we would also consider it a reasonable alternative to adopt the proposal that I just laid out.
MS. PROCTOR: Thank you. That's all I have.
JUDGE WALLIS: Mr. Kopta.
MR. KOPTA: Thank you, Your Honor.
C R O S S - E X A M I N A T I O N

BY MR. KOPTA:
Q. Good afternoon, Mr. Dye.
A. Good afternoon.
Q. I'm Greg Kopta, representing CLECs, which is the easy -- I understand I'm referred to as the Godfather, because I'm the head of five families, but -- I'm sure Ms. McClellan will forgive me for stealing her thunder.
Would you turn for me, please, in Exhibit 141-T, which is your direct testimony, to page nine, and specifically referencing the last line of that page, in which I believe you are asserting that an arbitrage problem exists today with respect to how UNEs are priced and the revenues that are available; is that correct?
A. That's correct.
Q. How many unbundled loops does GTE provide in Washington today?
A. Oh, I think a little over 600.
Q. And what's the total number of access lines that GTE serves in Washington?
A. A little less than 800,000.
Q. So you don't have any disagreement with Mr. Montgomery's calculation that that's less than a hundredth of one percent of total access lines of GTE

that represent unbundled loops in Washington?
A. I don't know, 600 to 800,000, I don't know, whatever that comes out to be.
Q. Well, neither one of us will do the math, but somebody will.
A. Okay.
Q. And how many resold access lines does GTE --
A. I don't know.
Q. Is GTE providing what's referred to as a UNE platform in Washington?
A. I don't believe so.
Q. Would you turn, in that same piece of testimony, to page 12, which includes the chart that you and Ms. Proctor were discussing? With respect to the column labeled UNE Price, is it correct that the prices that you have included there do not include nonrecurring charges?
A. Right, the UNE price does not include nonrecurring charges, nor do the retail or resale prices. What I was trying to depict is the revenues that GTE receives from network elements, so I was trying to say, you know, here's a piece of the network that's generating this revenue under this scenario, retail scenario, resale scenario, and a UNE

scenario. So I was excluding non-UNE-related revenue streams.
Q. And so you were also -- well, let me withdraw that. You would agree with me that a CLEC, in addition to paying a recurring monthly rate for a UNE, also would need to pay a nonrecurring charge to pay access to that UNE, would it not?
A. Right, GTE would incur nonrecurring costs, and the CLEC would pay for those costs through nonrecurring charges.
Q. And have you reviewed Mr. Knowles' testimony in this docket?
A. Yes.
Q. Would you accept that he has calculated that, when converted to a monthly charge, that the nonrecurring charges for GTE, that GTE has requested in its compliance filing in this docket, would total $14.79?
A. That sounds right.
Q. So if that were added in the column for UNE prices, certainly on the residence side that eliminates your arbitrage per line, per month figure, since that $14.79 exceeds $10.55?
A. Yeah, but it wouldn't change the analysis. Because what I'm comparing, again, is the revenues

that GTE receives from UNEs, which would be -- we would still receive $28.28 from those -- that network, the loops and ports and switching and transport, that today GTE is receiving $41.14 for. It's just looking at those network elements under three separate pricing schemes, and it's not viewing other non-UNE-related costs or revenues.

Q. I understand that you're looking at this from GTE's perspective, but --

A. That was the intent of the chart.

Q. And my perspective is somewhat different, as you might imagine.

A. Right.

Q. If a CLEC were to look at these numbers, then obviously they're going to consider what their costs are to use unbundled network elements from GTE. And wouldn't you agree with me that the prices that a CLEC has to pay for unbundled network elements, based on your chart here, exceeds the revenues that GTE receives on an average annual basis for residential customers?

A. That could be true.

Q. I wanted to ask you a couple of more specific questions following up on Ms. Proctor's questions about how you calculated the costs for

toll. I'm a little puzzled. Does GTE provide unbundled network elements that CLECs can use to provide toll service?
A. Sure.
Q. So you provide unbundled interexchange transport?
A. We would provide unbundled ports, unbundled switching, and tandem switching and interoffice transport so that a CLEC could provide intraLATA toll.
Q. Well, let me ask this a bit differently, because it seems to me that not all the costs of provisioning toll are included in this UNE price category. Is that accurate, or are you trying to capture all of the costs that are incurred in the provisioning of toll service in this column on the UNE price?
A. What cost did I leave out?
Q. Terminating switched access?
A. If a CLEC purchased UNEs and provided toll, we would -- we wouldn't incur terminating switched access expense. This is the revenues that GTE would receive if we provided UNEs to a CLEC. So terminating switched access would not be an expense to us, nor would it be a revenue stream to us under

that scenario.
Q. But it would be an expense to the CLEC providing the toll service, would it not?
A. It would also be a revenue stream to the CLEC. The CLEC would receive terminating switched access for calls that terminated to the port that the CLEC purchased from GTE.
Q. And that's reflected in the intrastate and interstate access entries on this chart; correct?
A. That would be the expense. It's not speaking to the revenue stream that the CLEC would receive.
Q. Well, I think we've got a disconnect here. Let me pose sort of a situation. If a CLEC is obtaining unbundled network elements from GTE that would enable it to provide toll service to its customer, and the CLEC customer calls a customer of US West and that call is a toll call, somebody's got to pay US West terminating switched access charges to complete that call; isn't that correct?
A. That's correct.
Q. And under your scenario, those charges are not included in this UNE price for toll?
A. GTE would not receive revenues under that scenario. And what I'm trying to depict in this

chart is GTE's revenues.
Q. Okay. So then, just to clarify, what you're depicting in the price column is not necessarily the costs that a CLEC would incur to actually provide the service using these UNEs; is that correct?
A. It's the revenue GTE would receive from the CLEC if the CLEC purchased those UNEs to provide those same services and those same quantities that we currently sell on the retail side or the retail side. So it's simply trying to depict, in those three columns, three alternative revenue streams that GTE would receive in providing those services to the average residential customer.
Q. So you would agree with me that, from a CLEC perspective, as opposed to the GTE perspective, there will be additional costs the CLEC will incur to be able to generate the same amount of revenues that GTE has listed here?
A. Right, there would be other costs that the CLEC would incur.
Q. And those costs would include, in addition to the ones we've already discussed, things like collocation?
A. Right, there are costs that GTE would

incur, as well, such as collocation costs, that GTE would recover from the CLEC.
Q. Right, which is a cost to the CLEC. And similarly, CLECs have their own network costs and overhead costs and retailing costs and those sorts of additional costs that they would incur to provide those services?
A. That's why I compared resale to UNEs, assuming that retail costs are kind of excluded from both.
Q. Now, on your revenues for access, do those reflect -- well, let me back up and provide a foundation. Are you familiar with the settlement agreement that was executed between GTE, Bell Atlantic, and other interested parties in the Commission's docket reviewing the merger between GTE and Bell Atlantic?
A. Just vaguely.
Q. Are you familiar that GTE and Bell Atlantic agreed to reduce the annual revenue for intrastate access by $7 million no later than May 1st of the year 2000?
A. That sounds familiar.
Q. And are the revenue figures that you have listed in this chart reflective of that revenue

reduction?
A. No.
Q. Would that revenue reduction make a significant impact on the revenues that GTE is receiving, according to this chart?
A. Yes.
Q. While we are talking about the GTE/Bell Atlantic settlement, are you familiar with a provision in which GTE/Bell Atlantic commits to compete, through designated corporate affiliates or subsidiaries, in the provision of local telephone services in the Seattle metropolitan area within 18 months after closing their merger agreement, subject to exercise by the merged company, in its business judgment, considering economic factors germane to a competitive environment?
MS. McCLELLAN: I'm going to object to this on relevancy grounds. I don't quite see how this is relevant to Mr. Dye's testimony in this proceeding.
MR. KOPTA: This is a foundational question. I will demonstrate the relevance if I can be given a little latitude.
JUDGE WALLIS: Very well. The witness may respond.
THE WITNESS: Could you read the first part

of that again?
MR. KOPTA: It might be easier if I might approach the witness to allow him to read it.
JUDGE WALLIS: Mr. Kopta, would you include Ms. McClellan in your discussions, please?
MR. KOPTA: Yes.
THE WITNESS: And your question was am I aware of --
Q. Are you aware of that condition?
A. No.
Q. Will you accept --
A. I am now.
Q. Will you accept -- I guess, unless that was checking?
A. That was checking. I am aware.
Q. Okay. Is GTE planning on using unbundled loops obtained from US West in order to comply with this provision of the settlement agreement?
MS. McCLELLAN: Again, I'm going to object on relevancy grounds.
MR. KOPTA: If I might have one more question after that?
JUDGE WALLIS: Mr. Kopta.
MR. KOPTA: I am simply trying to explore, since GTE has been very forthcoming in what it will

be charging, I'm simply exploring what GTE would be willing to pay in terms of unbunbled loop prices when it is in the position of a competitor, as opposed to the incumbent, who's charging the unbundled loop rates.

MS. McCLELLAN: Your Honor, this particular settlement agreement has nothing to do, is completely irrelevant to GTE's deaveraging proposal in this docket for selling its own unbundled network elements.

MR. KOPTA: I'm simply trying to explore whether GTE would be willing to pay rates based on the same methodology that it is proposing here to charge.

JUDGE WALLIS: The witness may respond.

THE WITNESS: I don't know. I do know that our -- our CLEC that GTE has is largely competing through resale. But I don't know what their plans are or which strategy. I don't get involved in that side of the business at all.

Q. So as far as you know, GTE doesn't have any position on the proposals that US West has made or any other party has made for pricing unbundled loops provided by US West?

A. Evidently, our CLEC does not, or they would

be participating in this docket, so --
Q. And with respect to the provision that the obligation to compete in the Seattle metropolitan area is subject to exercise of the merged company, in its business judgment, considering economic factors germane in a competitive environment, would those economic factors include the price of unbundled loops that GTE would have to pay to US West?
MS. McCLELLAN: Again, I'm going to have to object about this. Mr. Dye has already testified he does not know anything about this provision. He's not aware of the business plans of the new merged company and their efforts to compete.
JUDGE WALLIS: Does the witness know the answer?
THE WITNESS: No.
Q. One other question. With respect to the impact of the agreement to reduce access charges on the rates -- or, excuse me, the revenues that you have listed in your testimony, have you made any effort to even quantify what the impact would be in terms of dollar amount in this chart?
A. No, but it wouldn't be that difficult to do. I mean, I have lines there and the monthly revenues there, and if it was seven million annually,

you would take seven million, divided by 12, divided by 800,000 lines, and get on a per-line basis what that reduction would be and reduce it on a per-line basis.

Q. And so at this point, you would, in the intrastate access line on the chart, reduce that revenue amount by the figure that you have just explained how we would calculate?

A. Yes. If the $7 million was an annual switched access reduction, one could determine the effect of that $7 million access reduction by converting it to a per-line basis by taking the seven million, dividing it by 12, and dividing by the number of lines I have on that chart to reduce the revenue amount by that.

Q. Would another way to do it be to take the total revenues that GTE receives from access and come up with a percentage calculation, what seven million represents to the total access, and reduce the number by that percentage?

A. That should give you roughly the same answer.

Q. And is this a proprietary number, what GTE's total revenues for switched access are in the state of Washington?

A. You could take the number of lines that are on that chart times the revenue per line and take it times 12 and you could get the numbers that you're talking about.

MR. KOPTA: Thank you. That's all I have.

THE WITNESS: Okay.

JUDGE WALLIS: Ms. Hopfenbeck, do you have any questions?

MS. HOPFENBECK: I do not. Thank you, Your Honor.

JUDGE WALLIS: Mr. Kennedy.

MR. KENNEDY: None.

JUDGE WALLIS: Commission Staff.

MS. JOHNSTON: Thank you.

C R O S S - E X A M I N A T I O N

BY MS. JOHNSTON:

Q. Mr. Dye, can you tell us why GTE has, in effect, changed its mind regarding the use of density zones in Washington for deaveraging?

A. I believe I asked myself that question on page three of my rebuttal testimony. I basically just said that those alternative rates better reflect the underlying cost differences among wire centers in Washington.

MS. JOHNSTON: That's all I have. Thank

you.
JUDGE WALLIS: Dr. Gabel.
DR. GABEL: Nothing.
JUDGE WALLIS: Commissioners.
CHAIRWOMAN SHOWALTER: I just have one question.

E X A M I N A T I O N

BY CHAIRWOMAN SHOWALTER:

Q. I gathered from your testimony that of any given methodology, you are in favor of three zones, rather than more than three zones?

A. Yes.

Q. On the theory that because -- that unless we have universal service funding and retail action at the same time, there's a distortion. So therefore, you're just, in general, in favor of fewer zones, rather than more; is that correct?

A. Generally speaking, that's correct. I mean, our position is that universal service, whenever you deaverage, you reduce the cost in some zones and raise the cost in other zones. And by raising the cost in some zones and lowering the cost in other zones, given that you have average rate-making on the retail side, you create distortions between wholesale and retail, you create

arbitrage opportunities and potentially threaten the funding of universal service.

So we're generally of the opinion that those should be done simultaneously, universal service and retail and wholesale deaveraging.

Q. Right.

A. And if you're inclined not to do that and not to do it simultaneously, for whatever reasons might constrain you, whether it's the FCC mandate or legislation needs to be passed or certain things need to be put in place before that action can be taken, in order to comply with the May 1 date, we would suggest, as a step at this time, to minimize the number of zones and minimize the distortion between wholesale and retail pricing.

Q. All right. Then assume a different hypothetical, then. Supposing we did have universal service reform at hand and the prospect of retail rebalancing at hand, then I'd like to ask you some questions about what makes sense in terms of wholesale deaveraging.

And first of all, as between the Staff proposal and what I'll call the Denney list, the wire center list idea -- so I'm talking about methodologies there, not how they're grouped --

what's your opinion on comparing those two?
A. Well, I think if you were unconstrained and could do things simultaneously, put together the perfect plan for both wholesale and retail, I think you would have to consider what sort of pricing scheme you would like to have on the retail side. In other words, what sort of public policy would the Commission like to adopt for pricing services to end users, and whether you start tipping the scales and having very minute and complicated rate schedules based on distance and density and many factors.

If that was the pricing scheme that you thought would be in the public interest to bring forward to the retail market, then that's the type of wholesale deaveraging you probably should adopt. I think you should consider in your deaveraging of wholesale what sort of pricing you would want to foster on the retail side, because, as most people have testified, in a competitive market -- and the market is becoming increasingly competitive -- is that retail rates will tend towards their costs.

And if you deaverage wholesale rates in a certain manner as competition comes, it's going to move retail rates in that direction, and likely to that structure. In other words, the retail rate

structure may be distance-sensitive, may be -- for instance, wire centers. Do you want to foster a retail price structure that is based on wire centers, rather than exchanges, where one-half of the exchange that's served by one wire center has a different retail price than the other half of the exchange served by a different wire center.

Q. Well, I'm asking you. What is your -- if wholesale deaveraging were of a piece with what you would regard as a good retail structure and universal service structure, what would you think would be preferable, a wire center methodology -- I mean, at the wire center level methodology versus the Staff overlay of the distance elements?

A. I would probably pursue a structure where I took several things into consideration. I would likely structure the rates around exchanges.

Q. Well, I asked you a question. Which do you think would be preferable? Maybe you don't have an answer, but which would be preferable, the wire center level or the Staff level, the Staff methodology. That's the -- of the two choices?

A. Two choices?

Q. Yes.

A. Oh, wire center.

CHAIRWOMAN SHOWALTER: Thank you. That's all I have.
THE WITNESS: Okay.
JUDGE WALLIS: Commissioner.

E X A M I N A T I O N

BY COMMISSIONER HEMSTAD:

Q. GTE operates in many states throughout the country. Have any other states where GTE operates had the circumstance that we have in front of us and have proceeded to deregulate wholesale rates without -- not deregulate, but --

A. Deaverage.

Q. Deaverage wholesale rates without deaveraging retail rates?

A. Have states deaveraged wholesale without deaveraging retail? Yes.

Q. All right. In what states?

A. There are certain states that are pursuing it now. States that have already deaveraged UNE prices, Missouri comes to mind, Hawaii comes to mind, but that's somewhat unique, in that they have approved or they've approved deaveraged cost, but they haven't approved deaveraged rates yet, and they -- we had a case where wholesale and retail were being deaveraged and they kind of got off track, but

Michigan comes to mind.
I was in a deaveraging case last week in Alabama very similar to this case. They're likely to move forward with deaveraging UNE prices, as well. Florida. We stipulated interim deaveraged prices in Florida. There's a few. Those come to mind.
Q. Has GTE, in any of those states, sought to deaverage retail rates?
A. Particularly in Hawaii, we did, we have, we're continuing. We have to file a rate case this year deaveraging retail prices. So that one's hot on the burner. We're pursuing it, or likely to pursue it in Florida this year. The majority of the rest of them are being decided because of the May 1 date, to meet the FCC mandate, so I'm not sure how we're going to react to that on the retail side, but we are.
Q. That was going to be my next question. Would it be GTE's intent to file a petition to deaverage retail rates were we to order deaveraging of wholesale rates?
A. We would have to see to what extent that deaveraging, what extent that would -- harm that the deaveraging would create. It depends on what level of deaveraging and how significant the deaveraging is whether we need to accelerate our retail deaveraging

plans. We'd have to look at the end result of that deaveraging to put together a response.

COMMISSIONER HEMSTAD: Thank you. That's all I have.

JUDGE WALLIS: Ms. McClellan.

MS. McCLELLAN: I have no redirect.

JUDGE WALLIS: Anything further of the witness? It appears that there's not. Mr. Dye, you're excused from the stand. Let's be off the record while this witness retreats and the next comes forward.

(Discussion off the record.)

JUDGE WALLIS: Let's go back on the record, please, following a brief recess. GTE is calling to the stand at this time its witness, David G. Tucek. And in conjunction with this witness' appearance, a number of exhibits have been presented for use in his direct or possible use on his cross-examination, and I would like to identify those for the record at this time.

His direct testimony is Exhibit 171-T. A document designated development of deaveraged loop costs is 172-C. Responsive direct testimony is 173-T. Comparison of distribution of GTE and US West wire centers by wire center size and density is 174.

The AT&T loop costs by wire center is 175. Analysis of adjusted HM 3.1 costs by cost drivers is 176. Analysis of GTE loop costs by cost drivers is 177.

Zone cutoffs resulting from GTE's alternative methodology is 178. Disk containing file DGT EXH.EXE is 179-C for identification.

Mr. Tucek's rebuttal testimony is 180-T. Citations to testimony that maintain that model doesn't matter is 181 for identification. Example of calculations underlying the geographic deaveraging of loop costs is 182. Comparison of deaveraged costs from different models is 183. Summary of regression of loop costs on main cost drivers is 184. Regressions of loop costs on main cost drivers, comparison of actual and predicted values is 185. Effect of constraining wire centers in the same exchange to the same zone is 186.

Excerpts from HAI 5.0 model description is 187. HAI 5.0a processing of geocoded locations is 188. Excerpt from HAI 5.0a model, description dealing with gross up, is 189. Error in HM 3.1 wire center area is 190. Disk containing files DGTRB 11.EXE is 191-C for identification.

In conjunction with his cross-examination, several documents have been presented for possible

use. These are the following. For AT&T, Exhibit 192 for identification is GTE's response to AT&T Data Request Number 2-003. GTE's -- that's 192 for identification. GTE's response to WUTC Data Request Number Eight is 193. GTE's response to WUTC Data Request Number 9 is 194-C.

And the Staff has presented two documents. These are designated data excerpted from GTE work paper file, that is designated 195-C for identification, and deaveraging using GTE wire center costs is 196-C for identification.

Finally, in conjunction with this witness, GTE is presenting a single-page document entitled response to request for cell references, and that is marked as 197 for identification.

As a housekeeping measure, I note that several of these exhibits, 187, 188, and 189, refer to model HAI 5.0a. Is it correct that these will not be offered?

MS. McCLELLAN: That is correct.

JUDGE WALLIS: So I'm merely going to strike those numbers.

MS. McCLELLAN: Excuse me, Your Honor. I misspoke. They are going to be offered, but subject to the Commission's decision on how to handle

references in the exhibits and the testimony relating to the Hatfield model.

JUDGE WALLIS: Very well. Well, let's then proceed and let you handle that in the way that you prefer. At this point, I will ask the witness to please stand and raise your right hand.

Whereupon,

DAVID G. TUCEK,

having been first duly sworn, was called as a witness herein and was examined and testified as follows:

JUDGE WALLIS: Please be seated. Ms. McClellan.

D I R E C T E X A M I N A T I O N

BY MS. McCLELLAN:

Q. Good afternoon, Mr. Tucek. Would you please state your full name and business address for the record?

A. My name is David G Tucek. My business address is 1000 GTE Drive, Wentzville, Missouri, zip is 63385.

Q. By whom are you employed and on whose behalf are you testifying today?

A. I'm employed by GTE Service Corporation, and today I'm testifying on behalf of GTE Northwest, Incorporated.

Q. Did you cause testimony and exhibits labeled 171-T through 191-C and Exhibit 197 to be prepared and filed on this docket?
A. Yes, I did.
Q. Other than any typographical errors, do you have any corrections to your testimony or exhibits that would change the substance?
A. There are no corrections. There is one typographical error I would like to correct.
Q. Okay.
A. That is in my responsive direct testimony, which is identified as 180-T, at page 29, line five, the word "that" should be "than". That's page 29, line five, the word "that" should be "than".
Q. With that change, if I asked you the questions contained in your testimony today, would your answers be the same?
A. They would.
MS. McCLELLAN: At this time, Your Honor, I would like to move the admission of the exhibits marked 171-T through 191-C, and Exhibit 197 into evidence.
JUDGE WALLIS: Is there objection?.
MS. JOHNSTON: No, Your Honor.
JUDGE WALLIS: Let me say that exhibits,

excluding 187, 88 and 89, are received in evidence, and I would like to inquire a little bit further as to those and ask whether there is any relevance in those documents, apart from the use of the HAI 5.0a model?

THE WITNESS: May I answer? These exhibits are primarily directed to rebut a statement made by Mr. Denney that Hatfield 5.Oa is merely an update of HM 3.1. Obviously, if that portion of his testimony were struck, there would be no purpose for these exhibits.

JUDGE WALLIS: Well, we have an interesting mosaic here, and what I'm going to suggest is that, for administrative purposes and for consistency, we will receive those exhibits, but consistent with the Commission's ruling, will disregard them or give them limited weight, consistent with the treatment of all other similar documents. Would that satisfy your concerns?

MS. McCLELLAN: That will. And I would remind the Commission that in the spreadsheet that GTE prepared outlining all of the testimony and exhibits that reference in any way the Hatfield 5.0a Model, that these exhibits were identified, and so that spreadsheet will explain to what extent these

exhibits should be disregarded.
JUDGE WALLIS: Very well. And you have not yet presented that; is that correct?
MS. McCLELLAN: That's correct.
JUDGE WALLIS: Very well. All right. So it's clear now. All right. Let's proceed.
MS. McCLELLAN: With that, Mr. Tucek is available for cross.
JUDGE WALLIS: Mr. Kennedy, do you have any questions?
MR. KENNEDY: No.
JUDGE WALLIS: Ms. Hopfenbeck.
MS. HOPFENBECK: Yes, I do.

C R O S S - E X A M I N A T I O N

BY MS. HOPFENBECK:

Q. Mr. Tucek, I know earlier today I elevated you to a Ph.D.

A. Thank you.

Q. I don't mean to withdraw that title from your name, but I think I will refer to you as Mr. Tucek. Mr. Tucek, for purposes of this examination, I'd like to direct your attention to Exhibit Number 173-T, which is your responsive direct testimony filed on January 18th, and in particular, the discussion that begins on page two at the bottom of

the page, lines 17 through 19.
I note there that you expressed your concern that there is little or no relationship, according to your analysis, between the Hatfield 3.1 results and such cost drivers as wire center line size, the size of the serving area, and the proportion of long loops. Do you see that?
A. Yes.
Q. Mr. Tucek, by this statement, do you mean that your analysis showed that the result generated on a per wire center basis, the cost result generated by Hatfield 3.1 was inconsistent with the way you would expect costs to be reflected based on the particular wire center's line size, for example?
A. By that -- the short answer is yes. And by that, I mean that there are certain characteristics of wire centers that almost all people will agree affect the average loop cost in the wire center. If you have a model that purports to estimate the loop cost to wire center, you would expect to see a relationship between those estimated wire center costs and the observable wire center characteristics for cost drivers.
The three that I chose were line size, number of lines the wire center serves, the

geographic area of the wire center, and the proportion of loops greater than 12 kilofeet. I chose the first two because together they --

MS. HOPFENBECK: Mr. Tucek, I think I'm going to just ask -- I would ask Your Honor perhaps to stop the witness' testimony at this point, because I think he's gone well beyond -- he's answered my question, and now I think he's going beyond what's necessary to respond to my question.

THE WITNESS: I understood her to ask if that was the relationship that I expected. I'm trying to convey that I didn't expect a specific relationship, but an overall relationship. There's a statistical measure that one could look at to see if it's there.

Q. Okay. I'd like to talk to you about a couple of those cost drivers. Directing your attention to page 14, as I understand your testimony --

JUDGE WALLIS: Exhibit 171-T.

MS. HOPFENBECK: Yes, this is Exhibit 173-T.

JUDGE WALLIS: 173-T, page 14.

Q. Yes, page 14. As I understand your testimony, it's your view that the larger the number

of lines served by a wire center, the greater the economies of scale, all things being equal; is that true?
A. That is correct.
Q. And does that mean that, in general, one would expect that in wire centers -- that wire centers with greater number of lines will reflect less cost on a per-line basis than wire centers with low numbers of lines. Would that be fair?
A. Other things being equal, that would be correct.
Q. Let's talk about other things being equal. In the real world that we're dealing with, other things are not equal, are they, when you're comparing wire center to wire center?
A. No, they are not. However, there are statistical techniques to look at the sole effect of line size, for example, on the relationship with, say, a Hatfield wire center cost.
Q. Okay. Mr. Tucek, are you familiar with the FCC's Fifth Report and Order issued in the universal service docket last year? It's often referred to as the platform order.
A. I've read parts of it, but it was last year.

Q. Well, let me just -- apart from what that order says, do you agree that the customer -- that a model's ability to accurately locate customers is an important consideration in -- or is important to the accuracy of the model's costs that are generated?
A. It is important. It's also equally important as to what one does with that information.
Q. Okay. Let's go back to line size and this question of economies of scale. Do you agree that two wire centers could be the same from a perspective of line size, and yet reflect a different average cost?
A. Yes, I do.
Q. And what would be the factors that would contribute to that difference in cost?
A. Let's give an arbitrary number. Say it's 5,000 lines each. And say that one wire center's geographic area is -- I'm got to get the math straight in my head, right -- is 10 square miles. So that would be 500 lines per square mile. Suppose the second wire center was twice as large, 20 square miles. So that would be 250 lines per square mile. The cables leaving the wire center -- they call it a wire center because that's where all the wires or the loops are centered -- would start off very thick. It

would be about the same size in both wire centers. But they would end much more quickly in the first than they would the second. As you went out in the network, you would get smaller and smaller cables, larger cables, and the per-loop cost would be greater.

However, let's flip it around. Suppose in the first wire center the customers were dispersed, just for talking purposes, like a donut, so there's kind of a, in terms of customer density, a kind of a very thin area at the center from the wire center, and then they're all distributed in a ring. Suppose they're beyond whatever point your engineers or GTE's engineers would agree that you have to have a pair gain device or a digital loop concentrator. In my testimony, it's 12 kilofeet, because that's GTE's engineering practice.

Those costs, those loops, even in the smaller wire center, the same line size, could be very much greater, because when you put in a DLC, you have to get the right-of-way, which may be in private property or public, you have to do the site preparation, you have to set the cabin, you have to buy the equipment, and you have to obviously have the fiberoptic cable from the DLC to the office.

So there are a lot of things that are not equal in the real world, but, as I indicated, I won't go on much farther, there are ways to take costs that are purported to be wire center average costs and see if they bear any relationship, any statistically significant relationship with the things that we know are important, that we have data on. That's what I've done in my testimony.

Q. So I gather from your answer you would agree that there are a multiplicity of factors that contribute to variations in costs from wire center to wire center even if you assume, for example, that the number of lines served in two wire centers is the same. That's fair?

A. That's true.

Q. Okay. Now, one of the cost drivers that you also isolated was this question of wire center serving area. Do you recall that?

A. Yes.

Q. And with respect to that cost driver, your statement is that the greater the physical size of the wire center, the higher the average loop cost would be, all things being equal; is that right?

A. That is correct.

Q. Okay. You would agree that a wire center

that has a very large serving area can have lower average loop costs than a wire center with a very small serving area because of the location of the cluster of customers that are being served in the large wire center, wouldn't that be true?

A. I would agree. We've seen testimony in this record that explains that. Dr. Carnall's criticism of Mr. Spinks' loop deaveraging proposal, based on distance.

Q. So there's no -- it would be fair to say that you can't look at a group of wire centers and predict consistently how serving area size will impact the cost of the average loop; isn't that right?

A. No, I disagree with that.

Q. Okay. Were you present when Mr. Denney testified yesterday?

A. Yes, I was.

Q. In your testimony, you state that the greater the proportion of loops exceeding 12 kilofeet is, the higher will be the average loop cost. Do you recall that testimony?

A. Yes, I do.

Q. And the reason that you cite for that is that such loops, as GTE engineers its network,

requires pair gain equipment?
A. That is correct.
Q. Do you agree that there are circumstances in which the use of pair gain equipment can actually decrease the cost relative to the cost to provide the loop without such equipment?
A. It depends on how you're making the comparison. I was making the comparison with loops that are served by a DLC, compared to loops that are not, because they are shorter. You can think of a loop cost, in the case of loops served by a DLC, really being broken into two components. One is how do you get from the switch to the end user. You do that in two steps. You have a fiber feeder cable from the switch to DLC, you have copper distribution network going out to the customer premises.
If you didn't have the DLC and you did it all in copper, you'd incur much of the same cost because a large part of that is the placement cost. If you're going to plow or dig a trench for a fiber cable, it costs you the same -- fiber feeder cable, it costs you the same to dig that trench for a copper feeder cable. So on the margin, if you look at those two situations, the cost of the DLCs is a significant increase. So that's why I disagree with what you're

trying to ask me to say yes to.
Q. But again, wouldn't you agree that the accuracy of the statement you've just made really depends in large part on the location of the customers that you are attempting to serve from the switch, from the wire center, and how they are clustered with respect to that wire center?
I mean, if they're all clustered in a tightly -- if all the customers are clustered in a tight area, 12 kilofeet from the central office, the cost to serve those customers could, on average, be lower than if all the customers were within 12 kilofeet, but were widely dispersed around the wire center within that 12 kilofeet band; isn't that fair?
A. I would agree with the question you just asked, but the question you asked initially was premised on customers served by a pair gain device beyond 12 kilofeet.
Q. Okay.
A. Pointed out 12 kilofeet in your question.
MS. HOPFENBECK: I have no further questions. Thank you.
JUDGE WALLIS: Ms. Proctor.
C R O S S - E X A M I N A T I O N
BY MS. PROCTOR:

Q. Hi. Do you have in front of you the responses to data requests that were marked as potential cross exhibits and are now about to become cross exhibits and hopefully some day might grow up and be an exhibit?
A. Yes, I have them.
Q. Thank you. Did you prepare these responses? And I guess I should do this in a more orderly fashion. Exhibit 192, which is GTE's response to AT&T Request Three.
A. Yes, I prepared that response.
Q. And Exhibit 193, which is GTE's response to Staff Request Number Eight.
A. Yes, I prepared that response.
Q. And GTE's response to Staff Request Number Nine, which has been marked as Exhibit 194?
A. The copy I have doesn't say who prepared it, but I prepared it over essentially Christmas weekend, yes.
Q. And what has been marked as Exhibit 194-C, is that the confidential attachment that belongs with that response to Request Number Nine?
A. Yes.
Q. And are these accurate copies of your responses, the responses you prepared on behalf of

GTE?
A. They're accurate as far as the content of the information. Whoever printed the confidential attachment, which is 194-C, didn't print it, I believe, in the way that I intended it to be printed. But it's just a portrait-landscape thing. It just makes it harder to read.
Q. I'm sorry, it was what?
A. Just a difference in printing it in a portrait mode or in a landscape mode. Landscape is when you turn the paper sideways. Portrait is eight and a half by 11-inch piece, goes up and down. The way -- the copy I have is hard to read because of the way it's printed.
Q. Okay.
A. But the information is accurate.
Q. That is the information that you provided?
A. Yes.
MS. PROCTOR: Your Honor I'd move the admission of Exhibits 192 through 194-C.
MS. McCLELLAN: No objection.
JUDGE WALLIS: The exhibits are received.
Q. Mr. Tucek, on Exhibit 173-T, your responsive direct testimony, page 27. At line 17 -- actually, beginning on line 16, you state, I agree,

however the zones are selected, the resulting groups of wire centers should have significant differences in their average costs. That is your testimony; is that right?
A. That is correct.
Q. Now, the proposal that Mr. Dye identified on page three of his testimony showed a loop rate of $22.92 for the high-density zone and $22.49 for the medium-density zones. Does that comport with your characteristic of having significant differences in cost?
A. Are you speaking with respect to Mr. Dye's direct testimony?
Q. It's Mr. Dye's responsive direct.
A. I'll have to pull it out and read it, then.
Q. Would you be willing to accept, subject to check, that those are the numbers that he provides?
A. I would just like to read the numbers to see what he's doing.
Q. Sure.
A. No, these numbers are not consistent with the testimony that you asked me about initially. That is one of the reasons why GTE has adopted the alternative methodology which was in my responsive direct testimony. The reason we filed these numbers

initially is we were unclear as to how to interpret the Commission's order on no new cost models.

We adopted the alternative -- or introduced the alternative methodology in my responsive direct, because it became quite clear that there was not a model on the record offered by any party that was sufficient to deaverage GTE's rates. Therefore, we had to look for additional estimates of GTE's wire center cost.

Q. And when you say there was no model on the record that would perform that function, you included in that GTE's own model, CostMod; is that right?

A. That is correct, because CostMod did not produce costs at the wire center level. And as I described in my responsive testimony, we took that information from CostMod, additional information, and produced those estimates.

Q. On page four, among other places in your responsive direct testimony, which is Exhibit 173, you talk about the calculations that you made to prepare those estimates of wire center cost; is that right?

A. That is a summary. The precise calculations are described at page 28, starting at line 10, going through page 29, ending at line 10.

Q. So did you start with costs produced from the cost model that's of record in this docket?
A. As I attempted to describe here, and I believe I did, we took intermediate results from the file model in this case. Actually, I could use the next cross exhibit that AT&T proffered to enlighten.
Q. Now they've grown up. They're exhibits now.
A. Yes, the exhibits, okay.
Q. Is that Exhibit 193?
A. That would be the response to Staff Data Request Number Eight. I've lost my little reference sheet.
JUDGE WALLIS: Exhibit 193.
THE WITNESS: Thank you. This response, or this request asks us to explain how density zone costs in our direct testimony were calculated. I am outlining here the process that the filed cost model goes through. With respect to the wire center cost for GTE underlying our alternative methodology, the only thing that has changed really is in the first paragraph, the item labeled Two, that would be the calculations described in the second sentence, the calculations described in the fourth sentence, second sentence starting off with the words, These are the

weighted average, and the fourth sentence starting off, In each instance.

What I've done is take intermediate results from CostMod, which give us the estimated monthly recurring cost of loops by kilofoot band, and instead of averaging them up to the density level and then averaging to the statewide level as we did in our initial filing, I took the response to Staff Data Request Number Six, which gave me the loop length distributions by kilofoot band by wire center and applied essentially the same arithmetic, taking the intermediate CostMod results by kilofoot band in the wire center loop length distributions and coming up with an overall loop cost for each individual wire center.

Q. Thank you. And the numbers that Mr. Denney showed in his alternative on page 16, the ones that Mr. Dye and I were discussing, and I believe you and Mr. Denney verified after -- or off the record, you also agree that those numbers are correctly calculated in Mr. Denney's exhibit?

A. On page 16 of his last round of testimony, he presents three columns in a table embedded in the testimony. The first two columns are based on Hatfield 3.1 numbers. The first column of those two

contain all the errors that I identified in --
Q. I'm sorry, I was only asking about the third column.
A. Yes, I'm getting to that.
Q. Okay.
A. In the right-most column, I want to make sure folks understand what we're talking about.
Q. Okay.
A. Based on GTE's wire center costs, and I was able to confirm that Mr. Denney calculated his four zone proposal rates accurately.
Q. Thank you. In the wire center estimates that you prepared based on CostMod, and then this response to the Staff data request, that response -- the information contained in the response had not been included in the record of this docket previously, had it?
A. No, but it's in the record now, because it was part of my work papers, which were --
Q. Right.
A. Which were admitted.
Q. And that was my final question, was that's in the work papers that are on, like, a disk or something?
A. Yes, that would be Exhibit 179-C.

MS. PROCTOR: Thank you. That's all I have.

MS. HOPFENBECK: Can I make an irregular request, which is -- I should have pursued one additional line of cross-examination with this witness, and I would like to beg the officers' indulgence and allow me to pursue that.

JUDGE WALLIS: Very well.

MS. HOPFENBECK: Thank you.

C R O S S - E X A M I N A T I O N

BY MS. HOPFENBECK:

Q. In my next appearance before this body, I will try to be more organized. Mr. Tucek, as I understand your testimony, one of your criticisms of the regression analysis that was performed by Mr. Spinks was that he omitted certain variables that you believe are important in explaining the costs of serving a wire center; is that fair?

A. That is correct.

Q. Okay. Now, in our earlier conversation, I believe you agreed with me that customer dispersion is an important cost driver in wire center cost development. Would you agree?

A. Yes, I would.

Q. And I think, in answer to a couple of my

questions, you also mentioned that placement difficulty is an important cost driver in determining loop costs in a wire center; is that fair?

A. I didn't answer that today, but I would agree with it. I believe it's in one of my three testimonies.

Q. Okay. Now, in our earlier conversation, you did reference a couple of times the statistical analysis that you performed comparing variances and regressions in Mr. Denney's analysis; is that right?

A. That is correct.

Q. Okay. Did the statistical models that you relied on incorporate the variables of customer dispersion and placement difficulty?

A. They incorporated customer dispersion in the sense that it can be approximated by density, but probably not to the degree that one is required. It did not incorporate placement difficulty.

There's a distinction between my criticism of Mr. Spinks' proposal and what appears to be the same defect of my own regression analysis. Mr. Spinks' proposal relies explicitly on an estimated coefficient in his regression analysis, and because he has omitted key variables, that estimate is biased.

Q. But I think the --
A. And in my analysis, I did not rely on the coefficients; I just relied on the overall goodness of fit. If, for example, I would add placement difficulty or placement type, is it aerial, is it buried, is it underground, the goodness of fit could only go up. That is also a fact. So the conclusions that I reach in my responsive testimony and rebuttal testimony with respect to the preference of GTE's model over all other models proffered for GTE in the record would be unchanged even if I would add those variables.
Q. I think the answer to my question that I asked you was that you did not incorporate those variables into your analysis?
A. And I answered that and explained further.
Q. Okay. Now, I think you state in your testimony that the true forward-looking cost of serving different wire centers is really unknown; is that fair?
A. That is true.
Q. That's why we engage in these statistical analyses; is that fair?
A. That's right. We engage in the task of model building because of that. I engage in the

analyses to judge the effectiveness of the model.
Q. I guess this is really the ultimate question. Bearing in mind that you don't know the true cost, none of us know the true cost, how can you be sure that the difference in variances that you observed in the wire center cost generated by the Hatfield 3.1 isn't just a characteristic of the forward-looking cost of serving those different wire centers, given the multiplicity of factors that affect cost in those wire centers?
A. The analysis I presented having to do with the difference in the variance, that the variance seemed to increase quite a bit for the low-cost -- excuse me, the high-cost, small wire centers, was one piece of the puzzle. It led me to investigate the efficacy of the Hatfield Model and GTE's model via the regression approach.
It's quite clear, when you look at the goodness of fit measure, that there is no relationship between Hatfield, things like loop length, geographic serving size and portion of long loops.
It's also quite clear, when you look at GTE's model, it's a very strong and statistically significant relationship. So the variance is --

analysis led me to what I believe is the real clincher, which is the regression analysis.
Q. You would have to agree that the difference in variances that you observed in the wire center costs that are generated by Hatfield 3.1 could be explained by variables that are important, such as customer dispersion -- and I recognize that you took that into effect to some limited extent, but not completely -- placement difficulty, and even fill factor, wouldn't that be fair? Isn't that true?
A. They could be, but I doubt it. I doubt it's right.
MS. HOPFENBECK: Thank you. I am finished now. Thank you.
JUDGE WALLIS: Very well. Let's be off the record for a moment.
(Recess taken.)
JUDGE WALLIS: Let's be back on the record, please. We're about to take up with the examination by Mr. Kopta; is that correct?
MR. KOPTA: I have no questions.
JUDGE WALLIS: You have no questions.
MS. JOHNSTON: I believe it's my turn, Your Honor.
JUDGE WALLIS: Commission Staff.

MS. JOHNSTON: Thank you.

C R O S S - E X A M I N A T I O N

BY MS. JOHNSTON:

Q. Good afternoon, Mr. Tucek. I'd like to ask you to please turn to what's been marked for identification as Staff Cross Exhibit 195-C. Do you have that?

A. Yes, I do.

Q. And do you recognize this exhibit as containing data from your work papers underlying Exhibit 178 and the alternative proposal made in your responsive direct testimony, Exhibit 173-T?

A. That's correct.

Q. Is this the same proposal that Mr. Dye recommends the Commission adopt in his rebuttal testimony, Exhibit 145-T?

A. It's the testimony that, when asked today what GTE's proposal was that the Commission adopt, it's the same proposal.

Q. In your direct testimony, 171-T, you made a three-zone proposal based on cost for low, medium and high-density zones, as shown on Bates page 000161 of the cost study filed in Phase I of this proceeding; is that correct?

A. Assuming that you've given the correct

Bates page number, yes, that's correct.
Q. Just to clarify the record, that information is contained in what has now been admitted in the record as Exhibit 193, and that was your response to Commission Staff's Data Request Number Eight. How were the density zones defined in that cost study?
A. I believe we've answered that response to Staff Data Request Number 10. I could read it into the record, if you'd like.
Q. Please do.
A. The question asked, Please explain why the three zones -- density zone ranges zero to 50, 50 to 1,000, greater than 1,000 -- were chosen by GTE, and provide any analysis that was undertaken by the company in selecting the three density zones.
The response: Three density zones corresponded to the system-wide classification used by GTE during the arbitration proceedings in Washington and other states. They were used in Phase I of the current proceeding in order to provide continuity with the cost studies used in the arbitration proceedings. The same density zones were used in Phase III of this proceeding in order to comply with the Commission's directive in its 19th

Supplemental Order. The parties based their presentations on the previously-made cost determinations. And there was no analysis provided in response, because none exist.

Q. Can you tell us why GTE changed its mind regarding the use of density zones in Washington for deaveraging?

A. Yes, I will. After reading the parties' direct cases, as I indicated earlier, it became clear that there was no set of wire center cost estimates for GTE that were sufficiently accurate for purposes of deaveraging. It became obvious that the Commission would have to look elsewhere for a set of wire center estimates for GTE in order to deaverage rates.

The Staff had asked for -- fortuitously, by the way -- for wire center level loop length distributions, and by that, I mean for a given wire center, how many loops are zero to one kilofeet, one to two, all the way up to 11 to 12, and then greater than 12 kilofeet. There may have been some bands beyond that, but I collapsed the greater than 12 kilofeet.

Given that information, and given the intermediate results produced by the company's cost

model, I was able to estimate the wire center estimates that my proposal relies on.

I would like to note that Staff has characterized Mr. Spinks' rebuttal testimony, I believe, that we've somehow disaggregated the CostMod results. Actually, what I've done is gone in before the results that I used are aggregated to a higher level and used the same type of arithmetic to get it to the wire center level. So it's not a disaggregation of what we filed; it's taking information that we filed and applying the same arithmetic using the greater wire center detail that Staff requested and getting wire center estimates for GTE that are sufficiently accurate and reliable for purposes of deaveraging.

Q. Under your original proposal, wire centers with high line densities, such as Everett, Bothell, Richmond Beach, Manor Way and Kirkland, were in Zone One; is that correct?

A. I don't believe I have information in front of me to answer that, but I'll accept it, subject to check.

Q. Thank you. Also under your original proposal, cities and towns having very low density, for example, Farmington, Mansfield, Garfield,

Waterville, and Naches, were included in Zone Three, is that correct, or would you accept that subject to cheek?
A. I would accept it, subject to check.
Q. Looking at the wire centers shown for the zones under the company's new proposal in Exhibit 195-C, is it correct that these very low-density locations, such as Farmington, Mansfield, Garfield, Waterville and Naches, initially included in Zone Three, are now included in Zone One?
A. That's correct. The reason for that is that GTE has adopted the methodology I suppose initially proffered by Mr. Denney and characterized by Mr. Dye, the stack ranking the wire centers based on cost, low to high. I believe that's a preferred method than trying to pick some wire center characteristic in line size area or density, using that characteristic only in developing a deaveraging proposal.
Q. On page 29 of your responsive direct testimony, which is Exhibit 173-T, you state that the calculations in your revised proposal involve nothing more than straightforward arithmetic. Do you recall that testimony?
A. Yes, that's the portion of the testimony

that I corrected the typographical error in.
Q. Is it your opinion that the resulting cost estimates are accurate representations of the actual loop cost for the wire centers?
A. What do you mean by actual loop costs? Book costs?
Q. Best estimates of the true cost?
A. For the best estimates in this record, the forward-looking costs of operating unbundling loops out of GTE's network.
Q. Is it GTE's position that the Commission should use different loop cost estimates for deaveraging versus determining the amounts of universal service funding a company would be entitled to?
A. I'm not the witness to direct that question to.
Q. Who would be the proper witness to respond to that question?
A. It might be Mr. Dye. I'm not sure. I think I owe him a six-pack.
Q. Is it your testimony that the cost of a loop in Pullman is lower than the cost of a loop in Everett?
A. I'm searching for your cost exhibit. Could

you repeat the question?
Q. Is it your testimony that the cost of a loop in Pullman is lower than the cost of a loop in Everett?
A. That is what the GTE wire center cost estimates indicate, yes.
Q. In your rebuttal testimony, which has been marked as Exhibit 186, you show the GTE alternative proposal on both a wire center and exchange level basis for two scenarios; is that correct? The two being identifying zones by using breaks in cost and by using an equal proportion of lines. Do you recall that?
MS. McCLELLAN: Are you referring to a specific page number or his testimony in general?
MS. JOHNSTON: I'm referring to the exhibit itself, Exhibit 186, formerly DGT-6.
MS. McCLELLAN: Okay.
THE WITNESS: Yes, I have it here. If I understood your question -- perhaps you could restate the question?
Q. Exhibit 186 depicts two scenarios, identifying zones by using breaks in cost and by using an equal proportion of lines; is that correct?
A. That is correct.

Q. Why were cost estimates produced using equal proportions of lines in each zone?
A. I was trying to convey in this exhibit the difference between, say, Mr. Denney's view of the world, that you should only deaverage at the wire center level, and Mr. Spinks' view of the world, that you should average at the exchange level, which sometimes can correspond to a wire center, but in GTE's case, several instances are made up by more than one wire center.

I wanted to show that the differences weren't dependent on how you drew the zones. That you could draw the zones a variety of ways and -- or at least two ways and see that there is a difference. I picked one-third, one-third, one-third as the other way.

Q. Do you see any advantages or disadvantages to a scenario wherein you would use an equal number of loops for each zone?
A. Perhaps from the Commission's perspective, if they didn't like the middle ground that Mr. Dye offered when he was under cross-examination and wanted to seek their own middle ground between GTE and AT&T, I tried to do it in a way in which parties -- the Commission in this case -- couldn't be accused

of gaming the rate design process to achieve low rates. One-third, one-third, one-third might satisfy that.

Q. Do you have Exhibit 196-C before you? That's Staff cross exhibit.

A. I have it.

Q. This exhibit contains an excerpt of your work papers for the equal proportion of lines proposal; is that correct?

A. Yes, it does.

Q. Is it also correct that under the equal proportion of lines proposal, it shows two wire centers would include Juanita, Kirkland and Hall's Lake?

A. Juanita would be Zone Two, Kirkland would be Zone Two, and Hall's Lake would be Zone Two.

Q. And those wire centers were included in Zone One in the company's initial proposal; is that right?

A. I'll accept that, subject to check.

Q. Okay. Is it correct that the Everett Casino wire center, which was also a Zone One with your initial proposal, now finds itself in Zone Three in this proposal?

A. That's correct. This is the proposal in

which we have not constrained wire centers in the same exchange to be in the same zone.
Q. On page 27 of your responsive testimony, marked as 173-T, at lines 16 through 17, you state that, quote, I agree that however the zones are selected, the resulting groups of wire centers should have significant differences in their average cost, end quote. And I believe, in response to a question by Ms. Proctor, you do recall that testimony?
A. Yes.
Q. With respect to your alternative proposal, did you test for significant differences among the zones?
A. I believe I did. If you'd check the work papers, you'll see that there are, for that particular proposal, there are T tests.
Q. Would you --
A. My recollection is I did. If I didn't, I'm sure the T tests would indicate that there are significant differences.
Q. Would you accept, subject to check, that a T test of the average local loop cost between zones -- test of the -- let me start over here. Would you accept, subject to check, that a, quote, unquote, T test of the average total loop cost between Zone One

and Zone Two and between Zone Two and Zone Three would show that they are not significantly different from one another?
A. Could you clarify which proposal you're speaking of?
Q. Your alternative proposal.
A. I don't believe I'd accept that.
Q. Page 30, lines six through seven of your rebuttal testimony, Exhibit 180-T, you state that one could arrange GTE's 99 wire centers in alphabetical order, divide them into groups of 33, and develop rates that were geographically deaveraged. Do you recall that testimony?
A. I recall the testimony. I didn't catch the page number.
Q. Page 30, at lines six through seven. If zones were developed in that manner, would you agree that each zone would likely contain high, medium and low-density wire centers?
A. I recall the testimony, but I must have misunderstood which testimony you're speaking of. Is it responsive or rebuttal testimony?
Q. Rebuttal.
A. You indicated it was on page 30?
Q. Correct. Page 30, at lines six through

seven.
A. I have it. Could you repeat your question?
Q. If zones were developed consistent with your rebuttal testimony, would you agree that each zone would likely contain high, medium and low-density wire centers?
A. Consistent with this statement, is that what you mean?
Q. Yes.
A. I would agree with that. I would indicate that I'm not proffering this as a proposal to be considered. I'm trying to explain why I disagreed with Mr. Spinks' position that Mr. Denney has not geographically deaveraged rates.
Q. If the FCC intended such a result, why do you suppose the FCC referenced and mandated, quote, unquote, geographically deaveraged rates in Part 51, as opposed to merely ordering deaveraged rates?
A. As I explained in this testimony, my interpretation of a rate design proposal that's geographically deaveraged is one in which the rate is charged -- that is charged for a given loop depends on the location of it, which -- for example, which wire center, the geography.
I go on to say that you could investigate

cost and resources without limit to get cost differences between type of customer, business and residence, and that would not be a deaveraged proposal, because it wouldn't depend on location of the loop; it would depend on the classification of the ultimate end user.

Q. Now I'd like to direct your attention back to your responsive testimony, Exhibit 173-T. On page 14, at lines six through 10, you state that the greater the proportion --

MS. McCLELLAN: Excuse me. Could you hold on one second and let him get to the page before you ask your question?

THE WITNESS: Thank you. Page 14?

Q. Lines six through 10.

A. I'm there.

Q. Okay. There you state that the greater the proportion of loops exceeding 12 kilofeet, the higher the average loop cost. Do you see that?

A. You directed me to the responsive testimony?

Q. It should be your responsive direct testimony, Exhibit 173-T.

A. Page 14, line six, the first complete sentence starts out, The reason for this. Is that

the sentence you read?
Q. It begins on line seven.
JUDGE WALLIS: Let's be off the record for just a minute.
(Discussion off the record.)
Q. Line seven of your responsive direct testimony, the end of the line reads, Finally, the greater the proportion of loops exceeding 12 kilofeet is, the higher will be the average loop cost?
A. I have it, and I think the problem was I zoned out when she read the sentence. I apologize.
Q. Then you go on to state that the reason for this is --
A. May I interrupt? Are we on the record?
JUDGE WALLIS: Yes.
Q. You go on to state that the reason for this is that such loops require a pair gain device, and are therefore more costly to provide. Do you see that?
A. Yes, I do.
Q. What is the basis for that statement?
A. The basis for that statement is, as I answered earlier, is that if you have customers that are to be served by a pair gain device, you can categorize the cost into two types, the cost of

connecting the customers to the switch, which is driven largely by the placement cost, and then the cost of the pair gain device.

So if you would do it all in copper, without the pair gain device and the fiber, you would save the cost of the pair gain device. You wouldn't meet the transition requirements that the network requires, but you'd have lower costs.

Q. So the only incremental cost change that occurs when you go beyond 12 kilofeet is the cost of the pair gain device itself?

A. Well, it's the pair gain device, it's the cost of the right-of-way, preparing the site, there's electronics in the central office. It's called a COT, central office terminal. There are other differences in the cost. The cost of the fiber costs less than the cost of the copper, the material cost. The placement cost is essentially the same. If you're digging a trench to put fiber in or digging a trench to put copper in, the trench is the same, for all intents and purposes.

Q. Would you agree that GTE has longer drops in its rural areas than it does in its urban areas?

A. I believe that's true.

Q. And is it also true that rural areas served

by longer loops have different terrain types than urban terrains?

A. That may be true, but it's not necessarily a characteristic that distinguishes loops above and beyond 12 kilofeet.

Q. So you would not agree, then, that drop length and terrain conditions could be considered two additional reasons why loop costs might be higher for loops greater than 12 kilofeet in length?

A. Again, we're confused about what the comparison's between. My comparison that I'm basing my statement on is between serving a customer located beyond 12 kilofeet from the central office one of two ways. One way, all copper, and another way, copper, pair gain device, and fiber.

So in my comparison, the customer's the same. So the factors you're talking about, the terrain characteristics, drop length, would all be the same. That would not be something that would change.

The point I'm trying to make is you have to connect the customer to a switch. The largest part of that, connecting the customer to the switch, is the placement cost, and that's not going to change that much. There will be changes in the material

cost, fiber and copper cost different, but because you put the pair gain device in, those loops are more expensive than the alternative that I'm comparing it to, say, if it was all copper.

Again, you don't put it in just to drive the cost up. You put it in because of the transmission requirements of the network mandate that you put the pair gain device in.

MS. JOHNSTON: Your Honor, I move for admission of Exhibits 195-C and 196-C.

MS. McCLELLAN: No objection.

JUDGE WALLIS: The exhibits are received.

MS. JOHNSTON: That's all I have. Thank you.

JUDGE WALLIS: Dr. Gabel.

E X A M I N A T I O N

BY DR. GABEL:

Q. Good afternoon, Mr. Tucek. I'd like to begin by asking you to turn to your responsive testimony, which is Exhibit 173-T.

A. I have it.

Q. I'd like to ask you to turn to page 16.

A. I have it.

Q. Lines eight to 10. Do I understand your testimony to state that, because you observe a large

amount of variance in small wire centers relative to large wire centers where -- when I'm using the adjective small and large, I'm referring to the number of lines in the wire center -- that because there's a higher variance in the small wire center, this indicates a problem with the Hatfield Model's ability to model cost?

A. As I tried to explain earlier, it's one part on a trail of analysis. I was trying to actually look at the data, so I looked at the data relative to what I thought would be important to determine the cost. And I saw this break in pattern and I tested it and it was a significant, I believe in this case, increase in variance, and that led me to the next level of analysis, which is let's try to use regression analysis, control for all the simultaneous effects to see if, at least overall, the Hatfield Model bore a relationship.

So it's not just this result that you directed my attention to here, but that's part of the path that I took to get to the conclusion that's presented in my testimony.

Q. Would you agree, Mr. Tucek, that the Hatfield Model includes as an input rock terrain, the cost of installing buried cables in different kinds

of rock?
A. I would agree to that. I would point out that actually in this proceeding, I believe in Phase I, we uncovered, through discovery, an e-mail from Mr. Donovan to Mr. Klick (phonetic) stating that the FCC is in a forum, make up some numbers to estimate the cost of different soil types and terrain types, the impact of different soil types and terrain types on costs. Those numbers have not changed from the Version 3.1 through at least Version 5.0a. So yeah, those are inputs, but --
Q. So they are --
A. -- they've made up what they've done -- do.
Q. But they're inputs that affect the cost estimates?
A. Yes, they are.
Q. And water depth is an input to the cost model that affects the cost estimates?
A. I'm not sure on Hatfield. I suspect that it is.
Q. And soil type?
A. I was just speaking to that.
Q. That was rock hardness and soil type.
A. I lump them all together.
Q. Okay. And did you, in either your

regression or in Mr. Spinks' regression, does he control for those variables? Do you or he control for soil type, rock hardness, or water depth?

A. Neither of us do. As I explained earlier, the impact and the conclusion one reached is unimportant with respect to GTE's wire center cost and in the analysis of Hatfield, and very important with respect to what Mr. Spinks' distance-based deaveraging proposal would do with that estimate.

Q. And the reason why it wouldn't be important to GTE, is it because these are not inputs to the GTE model?

A. No, it's because the regression analysis was designed to see if the set of GTE wire center costs were related to cost drivers that appears in the regression equation, line size, geographic size of the wire center, serving area, and proportional loops greater than 12 kilofeet, and also to see if Hatfield was, and then to see which of the two sets of wire center estimates had the strongest relationship.

So that's why it doesn't matter. I would add these variables, and the goodness of fit measure, the R-squared would only going up. The conclusion would be the same.

Q. Well, Mr. Tucek, if I wanted to run CostMod and look to see how sensitive the cost results were as I changed an input, and we'll call this input the effect of rock hardness on the cost of burying cable, could I do that with CostMod? Is that an explicit input in CostMod?

A. It is not an input with CostMod. You could not do it with CostMod. It is an input with Hatfield. You could not do it with Hatfield, because what it does with that input is made up. So you would not get an estimate of what the impact on cost is. You'd get a change in the output, but you would not be able to assign any meaning to that change.

Q. But we could test how the model's cost estimates are a function of soil type with Hatfield, but we couldn't do that with CostMod; is that correct?

A. That's correct. You'd only be interested in the test if you believed the model was giving you good results.

Q. So would it be correct to infer that the reason one would observe more variance in the Hatfield regressions, rather than the GTE regressions using the CostMod results, is because there's a problem of omitted variables of rock hardness, soil

type, and water depth when we're looking at the regressions using the Hatfield data, but those three variables were not inputs to CostMod, so we don't have an omitted variable problem with CostMod?

A. That is a possibility, but I direct your attention to the fact that the major determinants are line size, geographic size of the area, the proportion of long loops, at least relative to rock hardness and soil conditions. And the fact that Hatfield bears practically no relationship -- Hatfield results bears no relationships to those variables wouldn't be redeemed by adding rock hardness or whether it's sandy or clay or whatever the 55 or so characterizations they have.

Q. Now, when you say line size and loop length are primary determinants of the cost, those are explicit inputs to CostMod; is that correct?

A. I don't think I said loop length. I said proportion of loops greater than 12 kilofeet. That is part of the inputs to CostMod. Line size is also part of the inputs to CostMod, as it is for Hatfield. Serving area size is not directly an input to CostMod, although the intermittent results I spoke about earlier are broken out by density zone, the density zones I was responding to in the Staff Data

Request Number 10. So in that sense, the differences in serving area size are in some way related, as they are in Hatfield. Hatfield uses census block groups to model the size of the serving area. It does it poorly, but it does use it.

Q. Now, Mr. Tucek, I'd like to ask you to turn to your direct testimony. I'm sorry, your rebuttal testimony, which is Exhibit 180, page 12. No, actually, I'm not going to pursue that. Let me stay, therefore, I'm sorry, with your responsive direct testimony.

I'm having trouble finding the exact page. Let me see if I can ask the question without a specific page reference. Do you recall in your testimony discussing the value of R-squared from your regressions, the coefficient of determination?

A. Yes, I do. That's the footnote at the bottom of page 17.

CHAIRWOMAN SHOWALTER: Which exhibit?

JUDGE WALLIS: 173.

THE WITNESS: Responsive exhibit, which is marked as 173-T.

Q. And do you also recall in your testimony discussing how, when you analyzed Mr. Spinks' data, you found a low coefficient of determination, a low

R-squared value?
A. I recall that, yes.
Q. Okay. And do you also recall Mr. Spinks responding to these criticisms made of his regression, saying, well, overall, my coefficient of determination is around 90 percent?
A. I recall that portion of Mr. Spinks' testimony. And I'm going to need to go back and correct the other answer. But that 90 percent statement is based on his Hatfield 5.0a results, if you look at -- at least subject to any revisions of the testimony -- what he proffers as 3.1 results, the coefficients of determination, the R-squared is about .75, .76. That coefficient is based on the dependent variable regression, which is the logarithm of the cost.

If you convert that back to the original units, dollars per line, and calculate its equivalent R-squared measure, which you can do by calculating the correlation coefficient and squaring it, that's why they call it R-square, you're going to get a much lower result than .75, .76.

Now, I said I have to go back and correct your earlier criticism -- question. I'm not sure I criticized Mr. Spinks' R-squared in his Hatfield

regression that he used in his direct case, because that was the one based on US West, and that had an R-squared in excess of .9.

What I did criticize, and you may be remembering, is that, contained in his work papers, there was a regression for GTE in which the coefficient for average loop length was not significantly different from zero. That, I believe, was my criticism of his regression. And at least when I do the numbers using 3.1 and include all of GTE's wire centers, I get the same result. The average loop length coefficient is not significantly different from zero.

Q. Mr. Tucek, if you've already done this, please just point that out for me. But I believe when Mr. Denney was testifying yesterday about his Exhibit 2, a question was asked about how that exhibit could be corrected for some of the wire center classification problems that you identified in his direct testimony, and he said how to correct it is perhaps a question better presented to Mr. Tucek. And so I'd now like to ask you to explain how his work could be corrected.

A. In my responsive testimony, which is Exhibit 173-T, at page eight, I asked myself the

question, have you been able to adjust Mr. Denney's cost for the first three errors identified above. I won't read the answers in the record, because it's already there and I've done that. Those are the numbers that the cell references in the exhibit marked 197 point to, that Chairwoman Showalter was interested in yesterday.

Those are the estimates that Mr. Denney's used on page 16 of his final round of testimony in the center column of that table.

Q. Mr. Tucek, I'd like to make sure I understand how you obtained your wire center estimates using CostMod, and I have read your response to the Staff request, but could you still, without reading into the record a document that's already part of the record, explain how you made these calculations?

A. I'll be happy to. It seems to be a topic of interest. CostMod produces, before it averages things up to the statewide level and density zone level, estimates of loop costs by kilofoot band, zero to one, one to two, all the way up to 11 to 12, and for loops greater than 12 kilofeet.

In the CostMod Model, it takes that to an average level by density zone based on the

distribution of loops for that density zone by the same kilofoot bands. So that, for talking purposes, suppose the loop cost was $10 in the first kilofoot band, increased by $1 increments all the way up to the last kilofoot band, so that would probably give me $21 at the end, or 22 at the end. And that's only for talking purposes.

And if the first kilofoot band had five percent of the loops, it would be .05 times 10. If the second kilofoot band had seven percent of the loops, it would be .07 times 11. You do that all the way up to the last kilofoot band. You'd sum those products and get the average.

What I've done in my testimony, my responsive testimony, is I've taken the same estimates of cost produced in the company's cost model by kilofoot band, I've averaged, based on the data in the record, the estimates for residence and business to get at just a single set by kilofoot band, then I've taken the loop length distributions that Mr. Spinks requested in Staff Data Request Number Six, which is by wire center, and applied the same arithmetic.

So that, for example, in Acme, if the first kilofoot band had three percent of the loops, it

would be .03 times whatever the cost was for the density zone that Acme fell in under the CostMod scenario, and so on, and averaged them up, then gone back and added in what was the response to Staff Exhibit Number Eight, that item number one, the drop billing collection, I think the NID. I'm doing that from memory. But I described up to that point was the line described there is outside plant, the cost of the loop.

Q. Okay. I just have one follow-up question on that. The CostMod, where it's telling you the cost within a kilofoot band, is that telling you the cost of a loop that passes through that kilofoot band or the cost per foot of a loop that terminates in that kilofoot band?

A. It tells you the cost of a loop that terminates in that band, not the cost per foot, but the cost of the loop.

Q. Okay. Finally, Mr. Tucek, I'd like to ask you to turn to your responsive direct testimony, Exhibit 173, page 22, lines 14 through 17. You've received accolades from some witnesses on this pretty image of an omelet, but I'd like to explore that analogy a little bit with you.

In using your example, if we were to look

at educational expenditures at the state level, would there be costs included at the state level that are not included at the district level? For example, the State Board of Education?

A. There could be, but you could manage to exclude them. The analogy I'm trying to draw is not dependent on that. It really speaks to the level of the data.

Q. Well, all right. Let's say you can exclude it. Can you explain what statistical property tells us that you can't make reliable inferences from average cost data to micro-level observations?

A. We heard testimony today from Dr. Carnall, which he testified that he conducted a simulation exercise using Mr. Spinks' equation and generated a simulated loop length cost -- loop length -- simulated loop cost by loop length. And then he tried to reestimate the equation and got a different answer.

I would characterize that as he took Mr. Spinks' equation, generated the eggs, and didn't get back the same omelet, so that it's not a statistical result in the sense that it's a mathematical proof, but it speaks to a lot of the way other statistical results are developed, by Monte Carlo simulations.

So that's that.

Another way to think about this is if you would -- and firms do this, they get paid money for it, estimate a consumption function using national income account data. So they'd have, for the United States, total consumption expenditures in the given quarter as a function perhaps of, say, wage income, income from interest and rent, and perhaps some lag stock of consumer durables, and they would come up with a coefficient on wage income or salary.

Let's just say that that coefficient indicated that if you're -- if the national income data, level income data went up by 10 percent, that consumption expenditures would go up by .7 percent. I have no idea if those are reasonable magnitudes. It's just an example. But what Mr. Spinks is trying to do is say, Well, Chairwoman Showalter, if your income goes up by 10 percent, you're going to spend 70 percent of that, okay. And he's going -- he would be doing that on the basis of this national income type regression.

I don't think that you would agree that you or any one individual is necessarily driven by the average. It is not just a specific individual, but all people like you would, faced with a 10 percent

increase in income, would increase your consumption expenditures by seven-tenths, or whatever the number I gave.

That's the problem. Dr. Carnall spoke to it much more eloquently than I, but there's a lot of things that are not equal when it comes to determining loop costs of a given length. Not just individual loops, but loop costs of a given length that are averaged out in the data relied on by Mr. Spinks. And I know it sounds glib, but you cannot unscramble that omelet. Dr. Carnall's simulation has given us, I guess, the statistical basis for that.

Q. Well, since you bring up Dr. Carnall's Monte Carlo simulation, was Dr. Carnall's Monte Carlo simulation looking to see if you could take the averages and replicate micro-level data, which is at issue here, or was he saying can we take averages and use it to generate new averages and do we rep -- through this Monte Carlo experiment, do we get new averages which are similar to the first averages?

A. I understood him to say that he took the equation and generated micro-level data, which, if Mr. Spinks' theory is correct, would be representative of the loop costs for loops of the lengths that he generated. If that theory is

correct, you ought to be able to take that generated data and get back to the original equation. And you're not.

So he's demonstrated that you can't take an equation based on the aggregated data and get back the micro-level data. And I think the reason -- well, no, I have something else to say about that, but it's not germane. Sorry.

Q. Mr. Tucek, you also responded by providing an example of estimating the elasticity of demand for a product or consumption function. Have you ever looked at any econometric studies done of the elasticity of demand for telecommunications products?

A. The very first time I ever testified, which was a long time ago, I sponsored the elasticity of demand for -- I believe it was toll costs.

Q. And do you recall what your dependent variable was? And also, was your price variable an average price or was it the price of every individual toll call?

A. It was probably the average price.

Q. Well, then, my question is, why would it have been appropriate for you to use an average price as an explanatory variable, but it would be inappropriate for Mr. Spinks to use average loop

length as an explanatory variable?
A. There's quite a bit of literature on that that I'm sadly out of date on. I do know there's a book by Taylor, probably 10 years old, that did a survey of that. I would say it's appropriate because when people did it the way he suggests is appropriate, say looking at the cost per minute or trying to estimate the, say, the initial minute charge and the subsequent minute charge, they get results that are consistent with doing it on average prices, it's my recollection. So I would appeal to those results to say that was appropriate.
Q. Do you recall Lester Taylor --
A. Yeah, Lester Taylor.
Q. Lester Taylor's discussion of using toll models that have distance-sensitive rate bands, as opposed to toll models that have just a single price for toll calls? So one is an aggregate price that represents all distance bands and a second was econometric specification that has different prices for every distance?
A. I don't recall it. It has been a long time since I've read the book.
DR. GABEL: Thank you. I have no further questions.

E X A M I N A T I O N

BY CHAIRWOMAN SHOWALTER:

Q. Well, I'm trying to understand a little bit of this. Did I hear you say that what Mr. Carnall did is took the unscrambled omelet and rescrambled it and it came out a different omelet? Is that what you said, more or less?

A. More or less. What I said was he took Mr. Spinks' equation and generated the eggs, simulated, and then came up with a different omelet when he tried to mimic Mr. Spinks' analysis and in estimating the equation based on it.

Q. Okay. Metaphors can be very helpful and can be very dangerous, I'm aware of that, so what recipe was he using when he rescrambled the omelet, and then, If he wasn't going right back up the chain in the way Mr. Spinks had derived the eggs, what kind of chain or recipe was he using to get to the new omelet?

A. Well, he had two choices, and he didn't really say which he did. He could have estimated the equation based on the micro-level data, which would be -- here I have an observation for a generated loop that's five kilofeet and the cost is this, and I have another observation for a generated loop that's 10

kilofeet and the cost is something else, or he could have taken those generated loop lengths and averaged them up.

Either way, I think his evidence is compelling, because the proper way to do it would be to do it, in my mind, with data about specific loop lengths or the cost of loops of specific lengths. And the fact that he generated, which Staff's proposal would have to agree, are reasonable approximations of the cost of loop-specific lengths, did not get the same progression equation, whether he averaged them first or just did the regressional micro data, tells me that he started off with a bogus result, which is bogus for more reasons than just Mr. Carnall's simulation exercise.

Q. Okay. Another question. In looking at Mr. Denney's table on his page 16 of his testimony, that's Exhibit 4-T.

A. Mr. Denney's testimony?

Q. Mr. Denney's testimony, the table that he has on page 16?

A. I could almost do this one from memory, I think. I'll find it. I have the table.

Q. Okay. In looking at Column Three --

A. Yes.

Q. -- if you imagine the raw wire center data behind that table -- that is, not how Mr. Denney happened to group things, but just the data that he used in that table -- is that the same -- is that list of wire centers that's used in Column Three the same as Exhibit 175? No, not -- 195?
A. Is that what I've identified as Response Exhibit DGT-5?
Q. That was the cross exhibit you were cross-examined on by Ms. Johnston. It's a table of --
A. Oh, here we go.
Q. Okay.
A. Yes, these are the same costs.
Q. Okay. So that Exhibit 195-C is simply a list of all of the wire centers in order of lowest to highest, and you happen to have grouped them in a certain grouping, but if they were -- if you disregarded Zone One, Zone Two, Zone Three, they would be the full list that is the basis for Mr. Denney's Column Three on page 16; is that correct?
A. That is correct.
Q. Okay. Now, turning to the page right after page 16 is his Attachment A, which is another list from lowest-cost to highest of GTE's wire centers.

Is Table A identical to 195-C, or are there some differences or corrections that I don't know about?
A. I believe they are identical.
Q. Okay.
A. I'll do a spot check real quick. I believe they're identical, yes.
Q. So is the difference, then, between column -- well, Column Three on page 16 of Mr. Denney's testimony and your 195-C, that is, one is four groupings and one's three groupings. If you take Mr. Denney's Column Three and collapse rows one and two into a single zone, that's still a different set of three zones that your zone at 195-C; am I correct on that?
A. Yes, it is. That is the middle ground that Mr. Dye was speaking about earlier. The compromise, he described it as.
Q. So your 195-C is, what, your original zones, or --
A. I believe --
Q. I'm trying to get at what are your three zones in 195-C versus someone's proposed three zones that would take Column Three in 16 and collapse rows one and two?
A. 195-C's GTE's alternative methodology

presented in my responsive testimony. The Zones Two and Three there --
Q. On 195-C?
A. -- on 195-C happen to correspond to Mr. Denney's Zone Four.
Q. Well, that's interesting. So --
A. I learned it for the first time last night.
Q. So what that has to mean, that your Zone One in 195-C must equal, I gather, rows one, two and three of Mr. Denney's Column Three?
A. That is correct.
Q. Okay. So that if we actually had five zones, we would have your Zones Two and Three, and then your Zone One would be divided into Mr. Denney's Zones One, Two and Three, for a total of five?
A. That is one way to do that. There are disadvantages to it.
Q. Actually, I'm just trying to get a sense of -- I'm trying to get down to apples and apples, so I know -- so just to enlighten me, if this list were divided into five zones, just as I said, that is, Mr. Denney's Zones One, Two and Three, and then your Zones Two and Three would become Four and Five. What is -- that may or may not be a natural break. I don't know. I'm just trying to get at what are the

kinds of things you'd look at. Let's say we were going to do five zones. I recognize GTE's objection to doing anything more than the bare minimum, but what -- if we had overcome universal service issues that we do have, what sort of groupings would make sense on this list?

A. Constrained that there's five zones, or if you give me free rein?

Q. You can have free rein, but let's say five or more.

A. Well, I really don't think five's the appropriate number.

Q. I know.

A. Because even GTE's wire center cost estimates are not completely accurate. There are going to be pluses and minuses, and the larger number of zones you have, you lose the benefit of plus positive errors, although unobservable, and negative errors cancelling each other out. So that's why I think five is the wrong number.

Q. Meaning it's too many, regardless?

A. Yeah, it's too many. I think so.

Q. So you're saying even outside of universal service issues, three is better than five?

A. Mr. Dye spoke from the pricing policy point

of view; I'm trying to speak to the cost rates point of view. And lots of folks will say we need to set rates at cost and you'll be above cost if it's not at least this number. They fail to realize that those cost numbers are estimates. We're trying to come up with deaveraged rates that we believe are related to cost, and we take the best estimates we have.

But if we try to break it out to 99 zones, one for each wire center, we've lost that averaging of positive errors and negative errors. Same thing with the distance thing. Setting all the possibilities aside, you're losing the averaging that goes on in the estimation process of getting a wire center average if you try to take it down to loop length.

Q. I just want to stick to the wire center level at the moment.

A. I know. I'm getting back on track here. So that's the reason why I think three zones is important. But there's probably -- I'll borrow some of Mr. Dye's area, a policy reason, is that if you start off with three, it's easy to go forward and go to five or 10 or whatever, particularly if you have better cost models, and there are better cost models out there. I would submit it's probably difficult to

go backwards.
The reason is, if you start off with five or 10 or whatever, CLECs are going to make business plans based on that breakout of the zones. And then if you try to go backwards, they're going to say, oh, my goodness, I entered this market thinking the cost was here, but now they're averaging them together, I'm harmed. I've committed -- I have a customer base and it's costing me more to serve than before.
Another reason I would think that -- well, that's my answer, as far as why three zones is probably the max.
Q. Thank you. But then, by your logic, isn't two zones better than three and one zone better than two or three?
A. One zone wouldn't necessarily meet the deaveraging requirement.
Q. I know that, but I'm saying, by your logic?
A. Two zones would. No, because like all decisions, there's trade-offs. You go too far in one direction, you incur additional cost. And the additional cost, say, just going from three to two, depending on where you drew that line, is that the Zone One rate, which is really where all the competition in unbundled loops is probably going to

occur, I don't think any CLEC is going to unbundle a loop if it cost 20, 30 percent over the statewide average, okay.

Where you draw that line might result in a rate that is so high that there is no competition. And that would probably be contrary to what the Commission views as it's policy. But you could draw the line with just two zones, promote entry into GTE's network for a large number of customers or for a large number of lines, and still meet the FCC's requirements.

Q. But setting aside the FCC requirements for the moment, do you think that you get the most benefit --

(Telephone interruption.)

Q. I lost my train of thought. Just a minute here. Are you saying maybe that if you're going to deaverage, in your view, you get the most bang for the buck out of the first division, that is, two zones, and after that, in your view, there's diminishing returns -- or not even diminishing, but negative returns to going further than two, is what I hear you say?

A. Well, if we look at Mr. Denney's alternative proposal --

Q. Can you answer my question first, just so I could hang onto it in my head? Just yes or no, and then you can explain.
A. No, I don't think I'm saying that.
Q. Okay.
A. Because it would be true, depending on where you drew the Zone One and Zone Two lines. He's drawn it such as Zone Two is 19.71. And there are probably some CLECs that might compete at 19.71. It's probably, oh, about 25 percent less than the statewide rate that's ordered for -- or statewide -- yeah, statewide rate that's ordered for GTE. If there's people that would do it at 19.71, there's more that's going to do it at 15.44. So you could draw a three-zone proposal and you could get entry in Zone One and Zone Two, but you do that at an additional cost, is that you lower the strength of your belief that the rates that you're ordering are close to cost.
The reason is is that by slicing it up into smaller zones, you lose the cancelling out positive and negative errors with the wire center process. So it's not that it's just where you do Zone One. You could do a three-zone proposal, get Zone One and Zone Two low enough to encourage entry, but it comes at a

loss of the benefit of getting some confidence that the zone rates are close, close to your forward-looking cost.

CHAIRWOMAN SHOWALTER: I think that's all I can handle. Thanks.

COMMISSIONER HEMSTAD: Well, it would be exciting to pursue the Monte Carlo simulations, but I'll decline the opportunity. I have nothing further to add.

COMMISSIONER GILLIS: I have a couple questions for you.

E X A M I N A T I O N

BY COMMISSIONER GILLIS:

Q. On page 16 of your responsive direct testimony, Exhibit 173, there's some -- I have a few questions about the cost driver variables you have in some of your analysis.

A. That was page 16?

Q. Page 16, yeah. Take first the proportion of loops greater than 12 kilofeet. Is that model-designed loop lengths or is that actual observed loop lengths that you base that on, that variable?

A. What line of the testimony?

Q. Well, I'm just referring to your cost

drivers that's on page four of page 16?
A. Oh, I understand the question now. No, the data that entered the regression equation are the actual portion of loops greater than 12 kilofeet, not what the model generated.
Q. That's true of line counts and, what, your size of serving area?
A. Size of serving area and square miles, yes.
Q. So my question for you is do we have some level of confidence that those, I guess, designed variables are consistent with forward-looking technology?
A. Yes, we do. Line size affects cost through economies of scale. The more lines that you're putting in in a cable, say in a trench, the lower the cost per pair, both the material cost of the cable and also the relatively fixed placement cost. Same thing with area. It speaks to the probability that you're going to have longer loops, it speaks to the amount of dispersion you might have in the wire center.
Q. That wasn't really what I was getting at. The unit of analysis is wire center?
A. Yes.
Q. And you're using observed variables of

proportion of loop lengths, line counts, and geographic size, but isn't -- and it would seem, at least intuitively, that you have a whole portfolio of wire centers -- is this a Washington-specific analysis?

A. Yes, it is.

Q. You have a portfolio of observation in the state of Washington of wire centers, some built at different times than others, under I assume different engineering reasons. Maybe if you were to build today, forward-looking technology, you might decide to build two wire centers where you have one, or alternatively, you might have a larger wire center to accommodate an area if you were starting from scratch, which is, I understand, what forward-looking technology is.

I guess what I'm asking you is to convince me that numbers you observed for the existing wire center are representative of forward-looking technology.

A. Well, certainly the line size wouldn't change. Certainly the area of the wire center wouldn't change. The constraint on the forward-looking cost models at the wire centers' locations are presumed to be unchanged. Take it as a

given. Every model of -- the existing current version of Hatfield, the version that's in this record, GTE's current model, which is called ICM, all make that assumption.

I understand your point. It might be in the model network that the proportion of those greater than 12 kilofeet would differ than what is observed in the real world today. I would tell you that in the real world today and in the model network, the customers really haven't moved. It's just, you know, if they're out there a certain distance from the wire center, they're out there. But there would be a difference on the proportion of loops greater than 12 kilofoot.

Q. Part of the reason for my query is trying to understand what the level of confidence or value in the regression where you've used a dependent variable that at least is purported to be calculating forward-looking cost and your independent variables are -- may or may not be, at least one of them -- forward-looking design, and I guess I could conclude from that that there's not a correlation between forward-looking costs and an engineering design that's not forward-looking, but I'm not quite sure what that means or what I should conclude from that.

A. Well, the only issue is with proportional loops greater than 12 kilofeet, because the number of lines and area will not change. And it could be, in the model network, you would get some changes in that proportion, but I don't believe the changes to be that great. In GTE's model on this record, CostMod, it puts in forward-looking technology for those loops. A different model, ICM, would put in perhaps a different amount -- when I say forward-looking technology, I meant pair gain devices, digital loop carrier, as opposed to maybe using load coils on copper plant.

It may be that a different model would put a different amount of DLCs or pair gain devices in, but I don't think it would be that much different.

Q. Okay. The only other question I wanted to ask you is the issue of -- Mr. Spinks uses the exchange level deaveraging and you're one of them that uses wire center deaveraging in the calculations. I'm just curious about how significant that difference of opinion is on the ground. How many cases are there in the state of Washington where the exchange is not the same thing as the wire center?

A. I can't speak to US West's serving

territory.
Q. GTE?
A. GTE, out of 99 wire centers, maybe 15 exchanges that are made of more than one wire center. I think so. Another way to look at the difference is to, say, look at Mr. Dye's alternative proposal, compromise proposal, and say what would be the impact, say, on the Zone One rate if we impose that constraint. Luckily, I have it here. So without the constraint, it's 17.46, serving 38 percent of the lines. 17.46 represents a 27 percent decrease from the ordered average of 23.94.

With the constraint, the Zone One rate increases to 19.02. The number of lines covered increases, as well, from 38 percent to about 42.1 percent. So it's a higher rate, but it covers more lines. The 19.02 is just over -- well, it's 20.5 percent below the 23.94 ordered average for GTE.

And I can't recall if it's in my responsive or my rebuttal testimony, I acknowledge that rate designs isn't much an art as a science, and there may be reasons to impose that constraint. For example, Kennewick is one of the exchanges you asked about. That's composed of three wire centers. GTE is constrained by its tariffs until we do rate

rebalancing to charge the same rate for all three of those wire centers for, say, a flat-rated R1.

If you deaverage in Kennewick at the wire center basis, then those wire centers are and likely would be in different zones. GTE and the CLECs that would enter the Kennewick exchange wouldn't be competing on the same basis; they would have more pricing flexibility than GTE.

That is one reason, setting cost analysis aside, kind of putting on the rate design hat or the policy hat, that one might choose to impose that constraint.

COMMISSIONER GILLIS: Thank you.

JUDGE WALLIS: Dr. Gabel, do you have another question?

E X A M I N A T I O N

BY DR. GABEL:

Q. Mr. Tucek, I just want to make sure I understand why rates changed between your initial filing of testimony and your submission on February 7th. In both your initial testimony and the February 7th filing, you used CostMod as part of the process of estimating the cost; is that correct?

A. That's correct.

Q. And am I correct that the reason why the

numbers changed is, in the first filing, you were using lines in a wire center to classify wire centers into one of three groups, and in your final filing, instead, you're classifying wire centers by rank, ordering wire centers by cost, and then picking out ways of segmenting that line of cost estimates into three groups?

A. That is correct. And additionally, in responsive and rebuttal testimony, we used the more current view of lines that Staff used and Mr. Denney's used in his two proposals in the right-most columns on page 16. Actually, Mr. Montgomery ended up using, as well, as another source of the difference.

DR. GABEL: Thank you.

JUDGE WALLIS: Redirect?

MS. McCLELLAN: No, sir.

JUDGE WALLIS: Anything further?

C R O S S - E X A M I N A T I O N

BY MS. PROCTOR:

Q. I'm not going to venture into all the statistics stuff. I'm not as brave. I had a question on Staff Exhibit 195-C.

A. I have it.

Q. Okay. And I notice that, going down the

page, the difference in cost between the Farmington and Juanita wire centers is, say, 30 cents, but the difference in line counts is, I would assume, a significant difference?

A. Yes, it is. It's a 27-cent difference, actually.

Q. Okay. Is it okay to round that to 30?

A. Sure.

Q. And I think the Juanita exchange or wire center, is that what GTE would call a large wire center by line size, large by line size?

A. I believe it would be characterized as large, yes.

Q. Okay. And Farmington, by line size, would that be called small or very small?

A. That would be called small.

Q. Okay. And I think there's some other examples like that. Do you know why, with that difference in line size, there's such a minimal difference in cost?

A. Because line size is not the only cost driver that influences loop cost. I don't know the specifics of the examples that you've pointed out, but it's likely that the proportion of loops greater than 12 kilofeet would explain the difference, as

would the area, size of the serving area and the square miles.
Q. I was also wondering, in response to your -- in response to some questions from the Commissioners, you stated that with a very high loop cost, competition would not enter into the rural areas. Do you recall that response?
A. Not through unbundled loops, yes. I recall the response, and the response was there would not be competition through unbundled loops in those areas.
Q. Okay. Because I did not hear you say through unbundled loops.
A. Well, I'll amend my answer to include that.
Q. Okay. Well, we'll clarify that at this point. That's what you're doing, clarifying that that's what you meant?
A. I thought that's what I said.
Q. Okay. So you would agree that there could be competition through other media, such as fixed wireless?
A. I'm not familiar with that technology, but given that it exists and the cost characteristics were such to make it a sound business decision, yes, but --
Q. That is a possibility?

A. Those are all premises I'm not prepared to testify one way or the other on.

MS. PROCTOR: Okay, fine. Thanks very much.

JUDGE WALLIS: Anything further? It appears not. Mr. Tucek, thank you for appearing. Let's be off the record while Ms. Casey comes.

(Discussion off the record.)

JUDGE WALLIS: Let's be back on the record, please. GTE has called to the stand its next witness, Ms. Casey, who is presenting in part the testimony of Rodney Langley. And in conjunction with her appearance, there has been marked, as Exhibit 221-T for identification, the responsive direct testimony of Rodney Langley; 222-T, the rebuttal testimony of Rodney Langley; and 223-T, the testimony of Linda Casey, in which Ms. Casey adopts, for purposes of today's presentation, the testimony of Rodney Langley.

Ms. Casey, would you please stand and raise your right hand?

Whereupon,

LINDA CASEY,

having been first duly sworn, was called as a witness herein and was examined and testified as follows:

JUDGE WALLIS: Please be seated. Ms. McClellan.

D I R E C T E X A M I N A T I O N

BY MS. McCLELLAN:

Q. Ms. Casey, could you please state your full name and business address for the record?

A. My name is Linda B. Casey. My business address is 600 Hidden Ridge, Irving, Texas, 75038.

Q. By whom are you employed and for whom are you testifying today?

A. I'm employed by GTE Service Corporation, appearing on behalf of GTE Northwest, and I am adopting Rodney Langley's responsive direct and rebuttal testimony submitted in this proceeding.

Q. And are you familiar with the responsive direct and rebuttal testimony of Rodney Langley that has been marked as Exhibit 221-T and 222-T?

A. Yes.

Q. And did you cause to be prepared and filed in this docket the testimony that's been labeled 223-T?

A. Yes.

Q. Your testimony. If I asked you the questions contained in Exhibits 221-T through 223-T, if I asked you those questions today, would your

answers be the same as the answers contained in those exhibits?
A. Yes.
MS. McCLELLAN: At this time, I would like to move the admission of exhibits marked 221-T through 223-T into the record.
JUDGE WALLIS: Is there objection? Let the record show that there is no objection, and the exhibits are received.
MS. McCLELLAN: Ms. Casey is available for cross.
JUDGE WALLIS: Mr. Kennedy, any questions?
MR. KENNEDY: None.
MS. HOPFENBECK: No questions.
JUDGE WALLIS: Mr. Kopta.
MR. KOPTA: Thank you, Your Honor.
C R O S S - E X A M I N A T I O N
BY MR. KOPTA:
Q. Good afternoon, Ms. Casey.
A. Good afternoon.
Q. Greg Kopta, on behalf of several different CLECs, and hopefully I can make this short, with your Counsel's indulgence. Were you in the hearing room when Ms. Brohl testified on behalf of US West?
A. Yes.

Q. I'm going to ask you kind of some similar questions to the ones that I asked her, and these are in reference to your rebuttal testimony, which is Exhibit 222-T. Lots of Ts. Specifically, on page six, lines five through seven.
A. Yes.
Q. And at that point in your testimony, you were referencing your assertion that GTE would need to verify information provided to them and that Mr. Montgomery has proposed in terms of deaveraged prices for unbundled loops; is that correct?
A. Yes.
Q. Are you any more familiar with GTE's provisioning of pole attachments than Ms. Brohl was of US West's provisioning of pole attachments?
A. No, but I do accept that it is an industry standard approach.
MR. KOPTA: At this point, I might ask if the Commission would take administrative notice of Appendix J to the interconnection, resale and unbundling agreement between GTE Northwest, Incorporated, and Nextlink Washington, Inc., that the Commission approved in Docket Number UT-990378, which is the terms and conditions of pole attachments between GTE and Nextlink.

JUDGE WALLIS: Do you have copies of that document?

MR. KOPTA: I have a copy that I can provide.

JUDGE WALLIS: Does GTE have a copy or need a copy of the document?

MS. McCLELLAN: We will need a copy, and I'm not sure if this is the appropriate time, but we would object to its being used at this time on the grounds that, in essence, what Mr. Kopta is trying to do is use this interconnection agreement as a cross-examination exhibit that was not identified and provided to GTE as such. So on that basis, we would object to its use in this proceeding.

MR. KOPTA: It's not a cross-examination exhibit. It's simply something that the Commission already has in its records that I'm asking the Commission to take administrative notice of, just as I would be in citing statutes or rules or any other legal authority that I don't intend to use as an exhibit, but would ask that the Commission review as what is a legal document, as opposed to a factual.

JUDGE WALLIS: Let me ask a couple of administrative questions here. One is whether you intend to ask any questions based upon that document?

MR. KOPTA: I do not.
JUDGE WALLIS: And second is whether, under the circumstances, you can either, number one -- well, can you provide copies so that we will have those for discussion tomorrow?
MR. KOPTA: Yes, I can.
JUDGE WALLIS: All right. And my question is can we defer this until a later time?
MR. KOPTA: That would be fine.
MS. McCLELLAN: That's fine with GTE.
JUDGE WALLIS: All right. Let's do it in that manner, and I also intend to ask, and you need not respond now, how you intend to use the document.
MR. KOPTA: Fine.
Q. GTE also will condition lines, unbundled loops for CLECs by removing load coils and bridge taps; is that correct?
A. Yes.
Q. Does GTE's OSS have a database in which information related to line conditioning is included, such as which lines would require line conditioning?
A. We have plans to implement such a database -- if not already available, it's imminent -- that would allow a CLEC to access it and it would indicate whether or not it was digital-capable, which would

mean it would be indicating whether or not there was loop conditioning on it.

Q. So this database is or will be available to CLECs through the electronic interfaces that GTE maintains or allows CLECs to have access to GTE's OSS?

A. Yes.

Q. And GTE populates that database with information it has based on its network; is that correct?

A. Yes.

Q. And CLECs don't have access to GTE's networks to verify that the information in the database is correct?

A. No.

Q. And I assume that the inability of CLECs to verify that data by their own examination would not, in GTE's view, preclude GTE from charging CLECs for providing line conditioning?

A. No.

MR. KOPTA: Thank you. That's all I have.

JUDGE WALLIS: Ms. Johnston.

MS. JOHNSTON: No questions, Your Honor.

JUDGE WALLIS: Dr. Gabel, Commissioners, redirect?

MS. McCLELLAN: No, sir.
MR. KOPTA: There's an advantage to being at the end of the day.
JUDGE WALLIS: Ms. Casey, thank you for appearing today. You're excused from the stand at this time. Let's be off the record for a scheduling conference.
(Proceedings adjourned at 5:00 p.m.)