BEFORE THE WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

In the Matter of the Continued Costing and Pricing of Unbundled Network Elements and Transport and Termination.	) Docket No. UT-003013) Volume XXIII) Pages 2694 to 2860

A hearing in the above matter was held on April 3, 2001, at 9:30 a.m., at 1300 South Evergreen Park Drive Southwest, Room 206, Olympia, Washington, before Administrative Law Judge LAWRENCE BERG and Chairwoman MARILYN SHOWALTER and Commissioner RICHARD HEMSTAD and DR. DAVID GABEL.

The parties were present as follows:

COVAD COMMUNICATIONS COMPANY, by MEGAN DOBERNECK, Attorney at Law, 7901 Lowry Boulevard, Denver, Colorado 80230.

THE WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION, by GREGORY J. TRAUTMAN and MARY TENNYSON, Assistant Attorneys General, 1400 South Evergreen Park Drive Southwest, Post Office Box 40128, Olympia, Washington, 98504-0128.

QWEST CORPORATION, by LISA ANDERL, Attorney at Law, 1600 Seventh Avenue, Suite 3206, Seattle, Washington 98191.

VERIZON NORTHWEST, INC., by JENNIFER L. MCCLELLAN and MEREDITH B. MILES and JEFF EDWARDS, Attorneys at Law, Hunton and Williams, 951 East Byrd Street, Richmond, Virginia 23219.

Joan E. Kinn, CCR, RPR
Court Reporter

ELECTRIC LIGHTWAVE INC.; ADVANCED TELECOM GROUP, INC.; AT&T COMMUNICATIONS OF THE PACIFIC NORTHWEST, INC.; MCLEOD USA TELECOMMUNICATIONS SERVICES INC.; FOCAL COMMUNICATIONS CORPORATION OF WASHINGTON; AND XO WASHINGTON, INC.; by GREGORY J. KOPTA, Attorney at Law, Davis, Wright, Tremaine, LLP, 1501 Fourth Avenue, Suite 2600, Seattle, Washington 98101.

WORLDCOM, INC., by ANN HOPFENBECK, Attorney at Law, 707 - 17th Street, Suite 3600, Denver, Colorado 80202.

RHYTHMS LINKS, INC. AND TRACER, by ARTHUR A. BUTLER, Attorney at Law, Ater Wynne, LLP, 601 Union Street, Suite 5450, Seattle, Washington 98101.

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P R O C E E D I N G S

JUDGE BERG: This is a continued hearing in Docket UT-003013. Today's date is Tuesday, April 3, 2001. We begin the morning with the continued cross-examination of Verizon witness Mr. Kevin Collins.

Mr. Collins, I will just remind you that you remain subject to the affirmation oath you took yesterday.

THE WITNESS: Yes, sir, Your Honor.

JUDGE BERG: And then at this time, WorldCom?

MS. HOPFENBECK: WorldCom has no questions for this witness.

JUDGE BERG: All right, Ms. Doberneck.

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

BY MS. DOBERNECK:

Q. Good morning, Mr. Collins. I'm Megan Doberneck, and I'm with Covad, and I do have a few questions for you this morning regarding dark fiber. Would you agree with me that Verizon is not obligated to build fiber for CLECs?

A. In the area of dark fiber, yes.

Q. I'm sorry, I should have specified dark fiber, I apologize. So that would mean then that Verizon is only obligated to provide spare dark fiber in

its network to CLECs that request dark fiber?
A. I believe Mr. Lee would have testified to that last week, yes.
Q. Is it also your understanding that Verizon reserves for itself the right to reclaim dark fiber from CLECs upon 12 months' notice?
A. I'm aware of that, but I'm not familiar with the intimate details.
Q. But as a general proposition, Verizon is entitled to reclaim dark fiber from CLECs?
A. I had a discussion with Mr. Lee, and he had mentioned that at one time, yes.
Q. Okay. Verizon assumes a 65% fill rate for fiber, doesn't it? And what I mean by that is looking at 100% of the fiber deployed in Verizon's network, 65% of that fiber is utilized?
A. I'm afraid that number doesn't ring a bell. Can you point me to a specific place maybe?
Q. It's my understanding that that is the fill rate established by this Commission, and let me back up. During Mr. Lee's cross-examination by Mr. Harlow, who is local counsel for Covad, Mr. Harlow told me that in some respects, Mr. Lee had referred some of these dark fiber questions to you. So to the extent we're getting outside of the bounds of your knowledge, please specify.

A. Okay.
Q. If you could assume for me in the next couple of questions then that the fill rate is 65%, I'm not pinning you down on this, I'm just saying please assume that.
A. As a hypothetical, I can take that, yes.
Q. As a hypothetical, thank you. If we're looking at Verizon's right to reclaim dark fiber, and again assuming the accuracy of that 65% fill rate, what that means from Verizon's perspective is that it has the right to reclaim 35% of the fiber in its network; is that right?
A. I think you are beginning to get outside of the bounds of my knowledge.
Q. Okay.
A. The only thing I could say to that from a costing perspective is if you have a 65% fill rate, that would be an average fill. And any particular route may have a different fill than the average, so it would come down to individual circumstances where maybe a reclamation may be required, but we are beginning to get a little outside of the bounds of my testimony.
Q. Okay, we'll have a couple more questions, and it may be beyond your abilities to answer this, so just let me know. Assuming that Verizon is entitled to

reclaim dark fiber from CLECs, would it be your understanding then that Verizon would never be required to install additional fiber capacity to meet its own needs because it can reclaim that from CLECs?

MS. MCCLELLAN: I am going to object to that as being outside the scope of this witness's testimony. Mr. Lee was the dark fiber policy and product witness. Mr. Collins is only the cost analyst for the rates that are proposed for dark fiber, and I believe you're starting to get outside of the scope of his testimony.

MS. DOBERNECK: The reason I'm -- let me explain why I'm getting into this area, and I'm looking specifically at your rebuttal testimony, and my pagination may be wrong because I printed your testimony off the web site, but I'm looking at page --

COMMISSIONER HEMSTAD: What exhibit?

MS. DOBERNECK: Oh, I'm sorry, it's --

THE WITNESS: I believe it's 1174.

MS. DOBERNECK: Thank you.

JUDGE BERG: And, Ms. Doberneck, we're going to treat this as a pending objection.

MS. DOBERNECK: Certainly.

JUDGE BERG: For the Bench to resolve here.

MS. DOBERNECK: All right.

JUDGE BERG: But we do want to hear your

response.

MS. DOBERNECK: And looking at 1174, and the page I have is page 37, from Mr. Collin's rebuttal testimony, in which he responds to Richard Cabe's position on dark fiber and the reclamation issue.

CHAIRWOMAN SHOWALTER: What's the beginning of the answer?

JUDGE BERG: That would actually be page 36 on the Commissioners' copies beginning at line 8, section Roman Numeral V, response to Cabe, followed by two questions.

MS. DOBERNECK: Right, the question is, that I'm looking at specifically, is:

Do you agree with Mr. Cabe's notion that the restrictive nature under which dark fiber will be provided changes the nature of cost to this element?

And the answer begins:

No, Mr. Cabe is attempting to argue that somehow the cost characteristics change.

Through the end of that paragraph.

MS. MCCLELLAN: And I guess if your question is going to be about the cost characteristics, then I would not object. But it sounded to me like your question was about Verizon's right to reclaim a

percentage of dark fiber.
MS. DOBERNECK: Well, what Mr. Cabe points out is that the nature of this -- the reclamation right does affect the cost of the fiber, because it gets to the validity of Verizon charging capacity cost, for example, the cost of the fiber itself in its dark fiber rates. So I realize we're in an overlapping area of the terms and conditions of the product as well as the rate proposed by Verizon for the product, but it appeared to me that Mr. Collins by the virtue of his rebuttal testimony would be able to answer this.
JUDGE BERG: The objection is overruled, the witness should answer the question to the extent he can. It seems that this question is more in the lines of a setup question to, in fact, determine this witness's knowledge with the issue of reclamation to further explore the impact that reclamation would have on costs.
MS. DOBERNECK: And I have now, of course, forgotten the question that I asked you, so let me back up. And this may be a paraphrase, so I will withdraw my prior question just so we have a clear record.
BY MS. DOBERNECK:
Q. Because Verizon has the right to reclaim dark fiber from a CLEC, would it be your understanding that Verizon would not be required to install additional

capacity to meet its own needs?
A. I'm not sure how to answer that from a costing perspective.
Q. Well, let me move on, and maybe we can get to some questions that -- using that same -- along the same lines just so you know that you may be able to answer.
Would you agree with the statement that Verizon would not incur future costs in laying fiber because it can reclaim that existing dark fiber from a CLEC?
A. Again, we're departing from the costing principles that I advocate in my testimony, long run incremental costing principles. But as a practical matter, there would be different costs if Verizon could reclaim fiber, the cost of that would be different, of course, than constructing new facilities. That would be more of a sort of a cash flow capital outlay issue, but it would not be relevant to a long run or a TELRIC type analysis.
Q. Could you explain just a little further what you mean by your prior statement? I'm not quite positive I'm following you, so if you could just give a little bit more specificity, that would be great.
A. As I state in my testimony, here in my rebuttal testimony in my response to Mr. Cabe, he's

confusing the concepts of short run costs with long run costs. And in this case, we're looking at, or at least in Mr. Cabe's case, he's looking at maybe utilizing -- the possibility of Verizon utilizing some spare capacity that may be available at the moment. But in the long run study, we don't hold constant the capacity or the size of the network. That can be adjusted. So in the long run study, you take into account the capital costs, whatever capital costs are required to accommodate demand.

Q. And when you're referring to capital costs, are you talking specifically about building new fiber and the associated cost with building that fiber?

A. Yes, whichever cost -- whatever costs are required to build the size of plant in order to accommodate the demand. What a long run study does not do, it does not hold constant the size of plant and then just incrementally increase the demand and just say, well, it doesn't cost us any to add one more unit because we already have the fiber there. That would be more of a short run concept.

Q. If we could get back to the fill rate issue, and again, assume for purposes of these questions that I'm correct in saying that there's a 65% average fill rate. In establishing the rates that or in proposing

rates that Verizon has for fiber in use, do those rates include a capacity cost, meaning the cost of the fiber per strand?

A. I'm sorry, could you specify what -- when you say fiber in use, are you talking strictly about dark fiber or fiber that's being used for some purpose right now?

Q. Fiber that's being used for some purpose right now.

A. And what was your, I'm sorry, what was your question about dark fiber?

Q. Sure, my question is, in the rates that Verizon is proposing for fiber that's in use right now, is part of one of the components of that rate designed to allow Verizon to recover its capacity costs? And like I said before, what I mean by that is the cost of the fiber per strand.

A. Yes, if you're referring to something like our high capacity cost study. As a base, we identify the capacity cost, which is basically taking the total capacity placed divided by the total, I'm sorry, the total cost divided by the total capacity placed, not the total capacity in use. And the answer would be yes, the cost would include and would be above that number.

Q. I'm sorry, you said that it was the total of

the capacity in use, not the capacity in place; is that right?
A. I'm sorry, I may have confused matters here. Let me try again.
Q. Okay.
A. The capacity cost would be the total cost of the facilities divided by the total capacity, so it would be expressed on a per unit of capacity basis. And it is at that point in time is when a fill factor is applied to account for the fact that there is extra capacity or unused capacity in the facilities.
Q. Would the rates Verizon is proposing for its fiber in use, does that also include the installation related costs or the infrastructure surrounding use of that fiber?
A. Yes, it would include -- it would include all costs caused by the need to provide that particular type of service, which would include material costs to installation costs and supporting structure costs.
Q. Does it include operation and maintenance costs?
A. Yes, of course, it would too.
Q. Looking at -- strike that.
Can you tell me, if you know, what percentage of Verizon's total capacity and associated installation

costs it recovers through its rates for fiber currently being utilized?

A. Well, that's a rather difficult question. First, it gets into the area of pricing and revenue or cost recovery, which I didn't deal with specifically in my testimony. But there are so many different types of services that utilize fiber, it would be very difficult for me to say whether or not we recover everything. I know it's a very complex question. I don't know that I can give you an answer, a good answer to it.

Q. Would it assist you in answering the question if you broke it down between say transport and fiber loops?

A. Okay, if we can simplify it, then your question -- I'm sorry, would you mind repeating the basis of your question?

Q. Sure.

A. Thank you.

Q. What percent of Verizon's total capacity and associated installation cost does it recover through its proposed rates or its rates for fiber currently being utilized, and we can break that down between transport and the loop?

A. I guess conceptually, if the price was based on this in our particular cost study, which would take

into account the facilities required, the average fill rates, and everything, if the price would cover that cost, then we would be recovering our -- we would at least have the ability to recover those costs if we were priced above that, and that would be the, I think you mentioned the structure costs, the installation costs, and so forth.

Q. You premised your response on the word if. Do you know for a fact one way or another whether Verizon's rates are set to permit it to recover its capacity and related costs?

MS. MCCLELLAN: I'm going to object. I think Mr. Collins has already specified that he is not the pricing witness and doesn't really get into pricing at all. He just develops the underlying costs. Mr. Trimble then takes those costs to develop the rates. So I think this line of questioning is more appropriate for Mr. Trimble.

MS. DOBERNECK: I just simply wanted to clarify whether Mr. Collins knew one way or another, because he did provide a response.

MS. MCCLELLAN: Well, I think he has already testified that he does not, that you're getting into pricing and that he does not know the basis of the pricing. I think he has already answered that question

whether or not he knows.
JUDGE BERG: It's not clear to me, so let's let that question go to the witness.
MS. MCCLELLAN: Okay.
A. I guess the reason I'm having difficulty is because the, in our hypothetical here, our case, I don't know what prices we're really talking about. Are we talking about existing prices? I don't know the degree to which they are recovering our costs. I have no idea what the basis of those prices that might be in place today would be. So it's getting beyond my ability -- my ability to even speculate about the pricing side, which I don't normally cover as part of my responsibilities.
MS. DOBERNECK: So I guess I can take it your answer is no.
I have no further questions for this witness.
Thank you, Mr. Collins.
JUDGE BERG: Mr. Butler.

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

BY MR. BUTLER:
Q. Good morning, Mr. Collins.
A. Good morning.
Q. I just have a few questions for you. And I really tried hard to find a couple that used that nine

volume cost study, and I was terribly disappointed when I checked with my office and found out we did not have the nine volumes; I had a CD instead. I assume it's the same thing.

MS. MCCLELLAN: It is.

Q. So unfortunately not having the satisfaction of being able to pull out all of those notebooks, I decided to cut those questions to a minimum.

Let me just ask you first, with respect to the ICM model that you have included in your testimony am I correct that that study in effect designs plant to meet what is referred to as ultimate demand as opposed to current demand?

A. No, not necessarily. It is based on current demand. I believe when you use the term ultimate demand, that only comes into play when we're designing distribution plant for the local loop, and that is what our engineers actually do is design to accommodate ultimate demand because of the extreme cost of digging up sidewalks, you know, in the case that growth causes the need to replenish or reinforce facilities.

Q. And that's your Exhibit 1170 at page 33, that's what you're referring to, line 9?

A. Yes, exactly.

Q. And the 2.34 lines per lot that you use

there, that represents Verizon's opinion about what ultimate demand for distribution is, to a residential lot at least?

A. That is based on our engineering practices. It is an average of high, medium, and low density areas, and it averages 2.34 lines per lot. So when the engineer goes out to a particular area, that's how they engineer the distribution plant or distribution portion of the loop plant.

Q. Are there studies that predict that residential customers will be ordering an average of 2.34 lines at some point in the future?

A. No, there would be no study that would tell us that there is an expectation that residential customers would order 2.34 lines in the future. Because if that were the case, if we had a reasonable expectation that the customers would order 2.34 lines per lot, then we would have to up that sizing factor to a much higher number, because distribution plant or capacity in distribution plant is not portable. You do not know where that demand may materialize. You may have one house on one street that may need six lines, and just the next block over they may only want one line. You don't know where that will occur, but if you don't have the facilities, you can't pull them out of

the ground and move them over. So we have to account for these uncertainties in demand when we size distribution plant, so it would be much more than 2.34.

Q. But what is the current number of lines per residential lot experienced in Washington in Verizon territory?

A. I believe it is about 1.11, 1.12.

Q. At page 34 of that Exhibit 1170, you talk about the way in which you have developed the costs for loops and for transport pieces for dark fiber costs. Do you see that in the middle of the page?

A. Yes.

Q. And you have stated there that you have a termination piece and a distance sensitive piece, in other words, fiber cost per mile for the transport portion; is that correct?

A. Yes, that is correct.

Q. But you do not have a developed fiber cost per mile for the loop portion; is that correct?

A. That's correct.

Q. Can you tell --

A. We base it on annual average distance.

Q. Can you tell me why you decided not to develop those costs on a fiber cost per mile and instead do it only on an average loop length basis?

A. Well, first of all, I was not requested to provide it on a per mile basis. Secondly, that is the same structure we used for local loops. In fact, we basically mirrored the structure we have for both loop services and for transport.

Q. And the average loop length that you assumed in your cost studies for fiber, that's the business, average business loop length; is that correct?

A. Yes, I believe so.

Q. Is that number confidential?

MS. MCCLELLAN: I don't think it is, but Mr. Collins?

A. (Shrugging.)

Q. 14.556 kilofeet, does that sound familiar?

A. Very familiar, yes.

Q. Can you tell me where that came from? How did you develop that figure?

A. I believe that it comes straight out of ICM.

Q. It comes from ICM, not from a loop length study?

A. Correct.

Q. Does ICM run for Verizon's territory in Washington, or is that --

A. Yeah, I believe it is a run looking at business lines in the state of Washington.

Q. Has Verizon performed a loop length study for this case of DS1 loops?
A. You mean a specific study of actual loop lengths?
Q. Yes.
A. For DS1s, no.
Q. Have you performed a study of actual loop lengths for DS3 loops?
A. Not that I'm aware of at least, no.
Q. Does Verizon have any study indicating where, for example, DS3 customers are located in its service territory in Washington?
A. I'm not aware of any. The basic assumption we have made is that DS1, DS3 customers are typically business customers, and we have the locations of our businesses within ICM, and so therefore we use the average business loop length from ICM to reflect where our likely customers would be business customers.
Q. Would you agree that a DS3 in particular is the type of service, high capacity service, that's unlikely to be purchased by any business customer, I mean by an average business customer, probably a subset of business customers that would likely be candidates to purchase the DS3?
A. As a general proposition, I would agree that

it would tend to be perhaps the larger business customers, but I have no basis upon which to say whether or not they would be closer to a wire center or further away from a wire center. Therefore, we use the average business loop length to indicate what the average DS1, DS3 loop lengths would be.

Q. Again, you, if I understand your testimony correctly, you performed no study or analysis to determine, in fact, where the DS3 customers are located in the Washington service territory?

A. That's correct, I'm not aware of any specific study.

Q. If you could turn to Exhibit 1174, page six. Do you see on the top portion of that page, you're criticizing or including a quotation from the Commission or criticizing the proposed growth adjustment that a Tracer witness had reached in a previous case?

A. Yes, I see that.

Q. Now the issue behind that growth adjustment was that issue of ultimate versus current demand that we were discussing a few minutes ago; do you understand that?

A. No, I don't know that it is exactly that. That is one piece of it, yes.

Q. The matching or the fact that investment

might be made to produce or to meet ultimate demand, for example, but that it would be divided by the level of current demand versus a proposal to divide investment for ultimate demand by some estimate of the expected future demand, that would justify the placement of those facilities. Is that roughly your understanding?

A. Yes.

Q. Has Verizon conducted any studies or analysis to compare the costs of carrying investment designed to meet future demand, in other words, excess capacity in the network, versus the costs of building to meet that demand when it materializes?

A. I'm not aware of any specific studies, but as a general practice, of course, that as I mentioned, we build our distribution plant to accommodate ultimate demand. That is basically one of our engineering guidelines, and it is done throughout the telecommunications industry. I think it's well recognized that the costs of reinforcing that type of plant, distribution plant, far outweigh any costs of carrying additional capacity.

The other area where this comes into play would be in feeder plant, and that's the kind of plant that can be reinforced without great expense. And as our engineering guidelines indicate that we should look

forward three to five years and size the plant to accommodate a three to five year growth horizon, and at that point, we would reinforce the facilities. And in many cases, with feeder plants you don't have to dig up the streets. We can just add additional capacity either end of the feeder plant or even pull new cable through conduit. That practice would logically be the result of our experience in the tradeoff between reinforcing the cost of reinforcing plant and the cost of placing some additional capacity to allow the plant to be used through time until it is filled.

Q. Can I ask you to turn to page eight of that same exhibit. Your testimony at the top of that page I take it is responding to an argument presented by Mr. Klick that Verizon should be using the nominal cost money in its cost studies; is that correct, is that the point you're responding to?

A. Yes, I believe that was his proposal.

Q. Isn't Verizon's intention to periodically update its cost studies or to update the cost estimates, generated prices, and inputs over time?

A. As a general matter, I would expect that through time we would want to update costs and prices. As cost characteristics change, as market conditions change, there should be some periodic updates.

Q. And update the UNE prices that result; is that correct?
A. Yes.
Q. I just have a couple more questions. Let me ask you to go back to your dark fiber study. I'm trying to fulfill my promise here and look in those notebooks. I think that's tab 22.
A. Yes.
Q. And you have the dark fiber study along with the DS1 and the DS3 studies, and there you note that you use a particular sized fiber cable, I don't know if that's a confidential number, what the size is for that study as an average sized fiber cable.
A. That's correct.
Q. Can you tell me how the average was determined? Was that -- do you have a wide variety of cable sizes, and you pick the average of them? Or this is just the one that is most prevalent, or how did you settle on this as an average size?
A. My understanding is that we looked at the sizes of cables and number of states, and then the average came out to around 24, so that was used. That was the number that was used.
Q. Okay. So it must not be confidential, so I can use that number?

A. Not anymore.
Q. So that's an average system wide and not for the state of Washington; is that correct?
A. Yeah, I believe that's correct. I think we looked at as much data as we could, and it should include states outside of Washington.
Q. And under the loop application heading, you have percentages for fiber and distribution?
A. Pardon me, what did you say again?
Q. There is something called loop application?
A. Oh, I thought you said fiber and distribution, I may have not heard you correctly. You're talking about the feeder distribution numbers.
Q. I'm looking at page two under the dark fiber. Overall heading, cost narrative. Following that, it's investment/cost totals and then something that says loop application, and you have a fiber percentage and a distribution percentage.
A. I know the print is rather small, but in my copy, that should read feeder percentage, distribution percentage.
Q. I'm sorry, feeder, yes.
A. Yes.
Q. My eyes are even worse. So feeder percentage and distribution percentage?

A. Yes.
Q. Can you tell me the basis for those percentages?
A. You know, I can't recall off the top of my head what the exact source for that was. It would -- conceptually, it would be trying to capture the characteristics of a fiber, fiber type facility, where there would be very little distribution plant, but I'm sorry, I can't recall.
Q. Is that intended to reflect the percentage opposite the distribution figure indicates the portion of the total loop length that is distribution, and the other feeder percentage is the portion of the total loop length that is feeder, or is that some other --
A. It would be indicative of the relative loop lengths, but it is actually a factor that is applied to the investment. To the degree that the investment differs between feeder and distribution, it would not then --
Q. So it's a percentage reflecting the -- a percentage of total investments, not a percentage of the loop length; is that what you are saying?
A. Yeah, that's how it should be applied.
Q. The structure mix percentages that are indicated in the study between aerial, buried, et

cetera, what is the source for those? Is that -- I take it from your answers to Mr. Kopta yesterday, it's not the result of any decisions that were made by the Commission in its Eighth Supplemental Order in the previous cost case. Is this a reflection of the percentages of the type of plant found in Verizon's network system wide, or is it Washington specific, or what is the basis for those?

A. I'm having difficulty with that sort of a compound question. First, your characterization of the Eighth Supplemental Order, I'm having a little trouble with that. I'm not aware that specific plant mixes were ordered for high capacity facilities or dark fiber, for one thing.

Q. Well, just, you know, just tell me what the basis for these are, the source for these particular percentages was?

A. Okay. I think you're looking on page three of the study. It would be down if you look at the very -- at the very bottom, there is a footnote that says the plant mix is based on the ICM output file, and that would be the percent aerial, buried, and underground.

Q. So is that Washington specific, or is it system wide?

A. That would be Washington specific.

Q. One last question. Back in Exhibit 1170, page 26, at the bottom of the page, you're discussing the loop module portion of the ICM model, and you have a discussion of use of line count estimates by census block from PNR Associates, et cetera.

A. Yes, I see that.

Q. In the description of this. Can you tell me to what extent, if any, the ICM method for locating customers differs from the FCC's hybrid cost proxy model?

A. I think I can provide an answer if you maybe could help me a little bit. The hybrid cost proxy model, I believe that is locating customers by a census block group?

Q. Are you familiar with the model?

A. It has been a while, and I'm afraid I can't recall exactly how it locates customers.

Q. Are you familiar at all with the FCC's orders with respect to its hybrid cost proxy model platform?

A. Yes, I have been through those orders, but it has been quite awhile.

Q. Is it correct that the Verizon ICM is inconsistent in the way in which it determines costs as compared to the hybrid cost proxy model in a number of respects?

A. I would have a lot of trouble buying that argument.

Q. Would you agree that the FCC's platform model orders with respect to the hybrid cost proxy model require that the model design plant to meet current demand and then divide by current demand as opposed to designing to met ultimate demand and then dividing by current demand?

MS. MCCLELLAN: I'm going to object here, because the witness has testified that while he has read those orders, it's been a while, he can't remember off the top of his head what they say. And we also established in a prehearing conference that if counsel was going to ask a witness about an FCC order that they would indicate as much and provide a copy. I would not object to this line of questioning if Mr. Butler would provide a copy and point out the sections he's going to ask questions about. But if he's going to paraphrase and ask the witness to agree to his characterization and then ask a question, I'm going to object.

MR. BUTLER: Well, I hadn't planned to use the order, but I can get a copy and provide it if that's necessary.

JUDGE BERG: In this particular instance where Mr. Butler is not asking the witness to actually

interpret or respond to what the FCC says, if this is a matter that either is posed as a hypothetical or subject to check, it seems to me that it would be proper.

You're not looking for this witness to actually interpret, but to accept a given --

MR. BUTLER: That would be fine.

JUDGE BERG: -- a given statement. Does that satisfy your objection, Ms. McClellan?

MS. MCCLELLAN: Not entirely. I guess the bottom line of my objection is that we established during the prehearing conference that if counsel was going to ask questions relating to an FCC order that they would give advance notice, and we didn't get that advance notice, and I don't think it's particularly fair to ask this witness questions relating to an FCC order that it has probably been quite some time that he has looked at even if they are asked as a hypothetical. We have no way right now of knowing whether there's something else in that order that we would want to ask on redirect that might be inconsistent with the hypothetical that he's providing, and so it would hinder our redirect efforts on this point.

CHAIRWOMAN SHOWALTER: I guess I might add, if the question really is about an FCC order as opposed to a hypothetical, if that's what you're really trying

to engage in, I would find it very helpful as well to have in front of me what paragraphs you're worried about.

MR. BUTLER: I would be glad to provide a copy. Could you give me five minutes?

JUDGE BERG: I think what we can do is handle that on recross, and there would always be a chance for response. I don't want to take a five minute break now. If it's necessary to give you an additional opportunity to complete your questioning after Commission Staff, that would be fine.

MR. BUTLER: Yeah, I can answer that question, I'm done.

JUDGE BERG: We're going to be breaking in about 20 minutes, about five minutes until 11:00, so I don't necessarily want to take five minutes off right now, nor do I want to deprive you of the opportunity to follow up in a proper fashion.

MR. BUTLER: Then I have no further questions at this time.

JUDGE BERG: All right.

Mr. Trautman.

MR. TRAUTMAN: Thank you.

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

BY MR. TRAUTMAN:

Q. Good morning Mr. Collins.

A. Good morning.

Q. I wanted to start with some -- a couple of follow ups to some question that Mr. Kopta asked you yesterday. If you recall, he asked you some questions regarding structure sharing in the ICM model; do you recall those?

A. Yes.

Q. Can you explain how structure sharing works in the case of poles that have both aerial cable and electric lines on them?

A. You're talking about in ICM?

Q. Yes.

A. In that case, we would have two users of the pole. We will assume for the moment that it is a Verizon owned pole being shared with the electric company. It would take the investment in the pole and divide by the number of users, so Verizon would get half the investment of the pole assigned to it.

Q. And how would it be allocated between the aerial and the electric?

A. Just by simply dividing by two it would be 50/50.

Q. Okay. And you indicated yesterday that the plant mix for the ICM model was the current mix; do you recall that?

A. Yes.

Q. And when you said current mix, did you mean for Washington or for Verizon overall?

A. I actually specified then, it is the current mix for Washington by wire center, so it is a very detailed set of inputs that reflect the individual conditions within each wire center. You know, some wire centers may have requirements for additional or prohibitions against aerial plant. There may be other environmental factors which would drive these mixes. So we wanted to reflect those to the greatest degree possible, and we have identified the inputs by wire center.

Q. You have filed Exhibits 1171 and C-1171, and do they contain the CD-ROMs that have the ICM model and the supporting documentation?

A. Yes, there should be nine binders of hard copy output plus a CD-ROM, which would include the contents of the binders, and, I'm sorry, and would include the ICM model itself.

Q. Now is it correct that the CD-ROM has a file folder named disk1?

A. Yes, that's correct.
Q. And does that folder disk1 contain a file named setup.exe?
A. That's correct.
Q. Is it correct that in order to create a working version of the model, the model needs first to be installed on a computer using the setup.exe file?
A. That's correct.
Q. And when the model is installed on a computer, there's a folder created called ICM and two subfolders called database and mapgroup?
A. That's correct.
Q. Does the ICM model use mathematical formulas to calculate costs?
A. Yes, yes, it does.
Q. A model reviewer could examine the various mathematical formulas used in the model by examining the detailed model documentation; is that correct?
A. Yes, they could look at a number of different places. They could look at the actual code to see the logic within the code. They could look at the -- well, sometimes it's more convenient to look at the hard copy documentation where we have provided the code with some explanation around the code that's actually written in English. And we have also provided some sample

calculations, so one could actually with a calculator calculate through the certain section of the code.

Q. So in other words, I think as you have indicated, if one looks at the documentation, you would have the computer code, and you would have, as you said, explanations in English explaining it, correct?

A. Yes, and if you wished to have anything -- the explanation at a higher level, we provided separate books that describe the operations of the code from a higher level, more conceptually of how a plant is placed, for example, in ICM.

Q. Now if I were just to examine the computer files that are located in the ICM folders that one generates when the model is installed on a computer, if I were to do that, could I examine all of the various mathematical formulas used in the model?

A. Let me make sure I understand your question. You're talking about the folder called disk1 only or the entire CD?

Q. Anywhere on the entire CD.

A. Okay. If you include the entire CD, then the -- all of that information is included on the CD.

Q. But now if I backed up and if I were only to look at the ICM folder and the two subfolders that I referred to earlier, if I looked only at those, could I

examine all the mathematical formulas?

A. That's a different question, that's why I wanted to be clear. The -- when you look at the CD, there is, as you said, an ICM folder, or I mean, I'm sorry, a folder called disk1, and that contains the actual software for ICM to install it on a computer. Then I believe there are other folders -- I know there are other folders, I just can't recall their names off hand, but there are separate folders for each of the modules. There's a documentation folder, a miscellaneous documentation folder, that has the contents of all of the binders and -- I mean those are the folders would have the algorithms for -- that you could read and the annotated algorIthms and also the higher level documentation.

But the folder you're focusing on is just that one folder called disk1, that only has the ICM model itself. So if one were to go in and only look at that and only use the ICM model, you would not be able to go in and look at any of the mathematical formulas. You would have to --

Q. Because those formulas are basically converted to computer language with compilers?

A. That's correct, yeah. If you were to look at the compiled code, it would be nonsensical to most of

the human population. It's generally not much more than ones and zeroes.
Q. Now if you could turn to your rebuttal testimony, which is Exhibit T-1174, and I'm on page 26, and beginning at line 9, you discuss concerns regarding acceptance of the model in other states; is that correct?
A. Yes, that's correct.
Q. And at line 13, you indicate that in response to Staff's Data Request Number 2, the ICM Version 4.1B has been filed in only two states, those being Washington and Ohio; is that correct?
A. Yeah, that's correct.
Q. And do you have with you the response to Staff Data Request Number 2? And this has been marked as Exhibit 1354. It was -- actually, it's been identified by Verizon along with Mr. Spinks' exhibits as a cross exhibit. It's a three page exhibit.
A. Yes, I do have that.
Q. And this exhibit shows that prior versions of the ICM were accepted in Michigan and North Carolina; is that correct?
A. Yes, that's correct.
Q. And were you a witness in those proceedings?
A. No, I wasn't, not in the original

proceedings. I did come in later in a similar proceeding to this in North Carolina and supported ICM Version 2.11.

Q. And when you indicate in your testimony that the model was accepted by the Commissions, what do you mean by that term?

A. Well, accepted, what I mean is it was adopted by the Commission, and the results from that model were approved.

Q. Do you know if the ICM model was the only model that was accepted in those proceedings?

A. The only one that was accepted?

Q. Mm-hm.

A. I believe so. Yeah, I don't believe either of the commissions took an average of two models or anything like that. They -- it's my understanding that they adopted or they accepted ICM.

Q. So are you certain of that?

A. About 99% certain.

Q. Is it correct prior to the merger with Verizon that GTE operated in 28 states?

A. Yes.

Q. Would it then be correct that prior versions of the ICM were accepted in only two of GTE's 28 states?

A. That would be -- well, there are two ways of

looking at it. One way would be, yes, it was accepted in two of GTE's 28 states. The other way would be to look at the number of states that had completed their UNE dockets, and it was accepted in both of those states. Many of the other dockets are still underway or are on hold for right now.

Q. What are the differences between the earlier versions of the ICM and the current version?

A. There are quite a large number of differences. We have, of course, this is all a learning process, so we have found ways to improve the model over time. There are many, many revisions that have been made between those versions and this one, many minor revisions, but there is a couple -- there were a couple of major revisions in 4.1B that you would not have seen in the earlier versions that were approved.

Q. And what are those major revisions?

A. Well, we have added a feature, one, I think it's a rather nice feature, it's the visual interface in ICM. So you can call up the model on the machine, click on the visual interface, and actually see the network that ICM is placing. You can look at the feeder network and by wire center. You can click on a button and see where the digital loop carriers or DLCs are placed. You can also look at the density characteristics of each of

the wire center serving areas. These are color coded dots on the map. You can also click and see the clustering, how the clustering routine in the model has worked in its placement of the DLCs.

And at the same time, you can look at the statistics, at what kind of -- it's an inventory file that you can peek at by clicking on a specific area in the map of the wire center, and on the right-hand side you can see what feeder plant was placed, what distribution plant, how many NIDs, how many poles, what the cable sizes were, and so forth.

So that's one very huge change between the model versions. It makes it much more easy for the reviewer to see what's happening as opposed to just having this mathematical model staring at them. That's one piece. Did you want me to go through --

Q. No, well, I was going to ask, would there be integration of customer location data into the model or geographic customer location data?

A. I'm not sure I follow.

Q. Does that --

A. Integration of customer location, all versions of the model from Version 2 all the way up to 4.1B basically use the same input interface. There is a demand file that is created that identifies customers in

a demand, all the demand characteristics, the terrain characteristics. So I guess I'm having a little trouble understanding --

Q. So you don't --

A. -- the nature of the question.

Q. Okay. So that particular feature or aspect does not, in your mind, is not a change from the earlier version?

A. The only change for -- if you're talking about customer location, the only change there from a demand file perspective is that we in this version use a much smaller geographical unit. We have a much finer level of granularity. We go down and look at the -- at what we call a demand unit or has been referred to as a grid, which is 1/200 of a degree of latitude by 1/200 of a degree longitude. This far north, it's probably about 1300 feet across and 1800 feet high, each one of these rectangles. That is a change. The other -- the previous versions used 1/100 of a degree square geographical units. So in terms of customer location, we've got a much finer level of detail. Did you want me to continue with the --

Q. No.

A. Okay.

Q. How does the -- how does the ICM model differ

from the loop MOD model that GTE filed in Phase I of Docket 960369?

A. There's quite a large difference. The loop MOD was a very rudimentary model. You're really testing my memory here. Loop MOD, it would basically take a wire center and split it into quadrants and then had a kind of a rigid set of taper points, and it would -- it would basically take one route and taper it down to the end user customer, I believe, and then identify the investment per kilofoot band and then overlay on top of that the customer dispersion or distribution by kilofoot band to identify an average cost for a wire center for a loop.

It was very -- I would say very rudimentary model. ICM is much more sophisticated. It is much more of an engineering based model and builds the network from the ground up as an engineer would build it.

MR. TRAUTMAN: Okay, I don't know if this would be a good point to break, because I was going to move into an exhibit.

JUDGE BERG: It sounds like those questions would go more than a minute or two, so this is a good time to break. We're going to take a recess now until 11:30.

Off the record.

(Recess taken.)

JUDGE BERG: Mr. Trautman, will you please resume your questioning of Mr. Collins.

MR. TRAUTMAN: Thank you.

BY MR. TRAUTMAN:

Q. If you could turn to pages 32 and 33 of T-1174, your rebuttal testimony. And at these pages, I believe you discuss the documentation for the pole cost used in the model.

A. Yes, that's correct.

Q. And if you could also refer to what's been marked as Exhibit C-1175, and these are three pages that have been excerpted from C-1171, which is the integrated cost model; is that correct?

A. Yeah, it comes straight from the documentation.

MR. TRAUTMAN: I would move for admission of Exhibit C-1175.

MS. MCCLELLAN: No objection.

JUDGE BERG: So admitted.

BY MR. TRAUTMAN:

Q. And are these three pages in the Exhibit C-1175 the documentation that you refer to in your testimony on pages 32 and 33?

A. Yes, they are.

Q. Looking to the first page of the exhibit, the bottom of the page says page 43 of 49 in the lower right-hand corner. Do you have that page?
A. Yes, I do.
Q. And in column C, does that show what Verizon actually paid for the pole?
A. It shows the raw material cost of what Verizon would pay for a pole if they were to buy it today, and that is the pole only.
Q. Does Verizon obtain its poles and other materials from its supply affiliate, GTEAMS?
A. Actually, GTEAMS is the system we use, sort of a price quote system. But that is -- you are correct that we do obtain our materials from a GTE affiliate. It used to be called GTE Supply. I do not know what the name is today.
Q. Does Verizon Northwest obtain poles from any other source?
A. Not that I'm aware of.
Q. Going back to Exhibit C-1175, on the first page, looking under column H, do those costs represent the pole cost that is used in the ICM model?
A. Yes, that would be the cost of the -- of a pole that is either wholly owned by Verizon or owned by Verizon and shared with another. That is the base cost,

which includes the shipping, the handling of the pole, minor materials, everything required to get the pole ready to place.

Q. Those costs do not include the cost of installing the pole; is that correct?

A. That's correct, there is a separate cost that we -- or price we pay to our vendors in the state of Washington to actually place the poles on our behalf.

Q. And column D shows the material loadings that are added to the base cost of the pole; is that correct?

A. Yes, that's correct.

Q. Turning to the second page of the Exhibit C-1175, and this page shows the supporting documentation for the material loading; is that correct?

A. Yes.

Q. And if I look down to line 14 and across to column H, does that show the loading factor for material loading?

A. Yeah, for a pole, yes.

Q. And turning to the last page of the exhibit, this page shows the support for the supply, the minor material, and the material loading factors; is that correct?

A. Yes, that's correct.

Q. Did Verizon provide any supporting

documentation to show how the loading factors were determined, these factors that I see on the third page of the exhibit?

A. No, we didn't. These are traditional factors that we have used throughout the years in all of our filings in front of the Washington Commission and filings that have been approved. You know, the basis for the disk Factfinder database which the costs analysts have seen over the years is ARMIS data. We generally do not provide documentation beyond ARMIS for our financial records that we, you know, generally ARMIS is considered to be a source, sort of a root source for our data.

Q. Did you indicate that these factors had been approved by the Commission?

A. I did not indicate that anywhere.

Q. I thought you just said that.

A. Oh, I'm sorry, I thought you meant in the written documentation.

Q. No, I meant in your answer.

A. I did not say that these particular factors are -- have been approved. I do not know that for a fact. But I know that throughout the years that these factors from the same source have been used in our filings in front of this Commission, at least in my 15

year career here at GTE.
Q. But there was no -- there is no other supporting documentation in this docket?
A. In this docket to support this any further, I would have to go and provide you with the details behind ARMIS data, and we generally do not go beyond our ARMIS records in terms of supporting documentation.
Q. The title of this page says Factfinder 1998; what is Factfinder?
A. That is a database of ARMIS type data, which basically gives us these loading factors.
Q. Is the supply factor calculated based on charges from the supply affiliate to the operating company, Verizon Northwest?
A. The supply factor includes a combination of items. It includes the freight, the sales tax, and it does include handling charges from the supplier, which would include procuring of the item, the warehousing, and also, you know, the handling cost charges, so it's a combination of items.
Q. And is it correct that the three year average used to calculate the factors uses data from the years 1995, 1996, and 1997?
A. Yeah, that's correct.
Q. And is it Verizon's position that this data

represents its forward looking costs?

A. Yes, it is. These tell us very clearly what our experience is in terms of these loadings as a percentage of the raw material cost, and they're -- yeah, leave it at that.

Q. If you could turn to page 34, line 7, of Exhibit T-1174, and there you state, referring to what's known as the NID or the N-I-D; do you have that?

A. Yes, I have that.

Q. You state that the ICM does not use a 12 pair NID. Could you explain what that means?

A. I think part of the concern or the issue is that there are three sized NIDs. There's a 6 pair, a 12 pair, a 25 pair NID shown in the ICM inputs. But going through the model itself, I have looked and seen that we do not or ICM does not even utilize a 12 pair NID. In fact, that input should not even be there at all, so it has caused some I guess undue concern.

Q. Why is it included in the model if it doesn't use it?

A. Other versions of the model may have used it, or I guess at best I would consider that a placeholder in case in the future we wanted to incorporate an additional NID size. But just on -- it's been unfortunate that that was included in there to cause the

concern.
Q. How would you serve customers with 7 to 12 lines?
A. With a 25 pair NID.
Q. If you could turn to page 35 of Exhibit T-74, this is a confidential page. Do you have that?
A. Yes.
Q. Actually, this -- the table on page 35 is referred to on both pages 34 and 35, and you refer to Mr. Spinks' Exhibit TLS-C4; is that correct?
A. Yes, that's correct.
Q. Is it correct that neither the wire centers nor the loop lengths that are shown in your exhibit under the column labeled Spinks exhibit are shown in Mr. Spinks' Exhibit TLS-C4?
A. Not having that in front of me, I don't recall if there were any wire centers that were coincident with Mr. Spinks.
Q. Would you accept subject to check that all of the wire centers are different?
A. Sure.
Q. Is the objective of the ICM model to estimate the actual forward looking costs of Verizon's network?
A. It is ICM's objective to estimate the, in this case TELRIC for Verizon, any UNEs that Verizon may

provide.

Q. Would it be important for a cost model to accurately estimate costs to accurately reflect the ILEC's existing network characteristics such as the existing number of wire centers and access lines?

A. Yes, that would be very important, and that's exactly what ICM does. It identifies the exact wire center locations or nodes and reflects the current actual wire center line counts.

Q. Are you familiar with the Eighth Supplemental Order in Docket UT-960369?

A. Yes, I am.

Q. And are you familiar with the statement, this is from Paragraph 227 of the Order, and the Commission states:

> In future proceedings, we will require proxy model sponsors to address the relationship between the study's average loop length estimates and the ILEC's actual average loop length.

A. Yes, I see that.

Q. Can you explain why Verizon did not address loop length adjustments in direct testimony in this proceeding?

A. I'm not sure I heard you right. You first

read this statement on Paragraph 227 saying we should address the relationship between the study's average loop length estimates and the ILEC's actual average loop length.

Q. Mm-hm.

A. Your question then used the word adjustments, and I'm a little confused.

Q. Do you see that as a different question, a different concept?

A. Well, did you --

Q. Well, let me ask it this way. Could you explain why you didn't address the relationship between the loop length estimates and the average actual loop length in the direct testimony?

A. I think -- I believe I do cover it in my rebuttal testimony, and I explain why this -- the problems with trying to use this as a sanity check or a measure of a model. It's very difficult to compare actual average loop lengths to model loop lengths due to the, at least in Verizon's case, to our difficulty in getting accurate actual data.

A more reasonable test might be the total sheath feet placed by a model compared to the actual sheath feet in a network. That's something that we can obtain and give some pretty accurate actual data, you

know, on a company wide or state wide level. And I have made that comparison and found that the modeled total sheath feet is slightly less than the actual sheath feet. So therefore, ICM is accurately placing its customers and accurately placing the correct amount of plant relative to the actual.

Q. So when you say sheath feet, for instance, total cable miles, is that what you're -- or is that a different concept?

A. Yeah.

Q. But it's Verizon's position that loop length comparisons do not provide a meaningful basis from which to draw conclusions about the validity of the model?

A. As I state in my rebuttal testimony, it's just a very difficult thing to carry out in practice. Again, speaking from Verizon's perspective, we have difficulty in getting accurate actual data. That's why I try -- that's what I tried to show on my rebuttal testimony, why it swings in some of the actual figures. And it would be unfortunate to make a decision or determination of a model's accuracy when perhaps the problem lies with the actual data it is being compared to. So my suggestion then would be to maybe perhaps find another measure to provide the Commission with a sanity check to see that this model is not placing way

too much plant or way too little plant.
Q. Now if you would look at the second column of your table 1 on page 35 of Exhibit T-1174, and the second column is entitled updated data 1998 study; is that correct?
A. Yes.
Q. And is it correct that the data in that column are average residential loop lengths?
A. Yeah, they should both -- both columns -- the first and the second column should be measuring average residential loop lengths.
Q. And back on page 34, line 22, you indicate that the data was contained in the response to Bench Request 19 in Docket UT-980311A, that was the universal service docket; is that correct?
A. Yes.
Q. Now just to clarify the record, would you accept subject to check that the average residential loop lengths were contained in the update to Verizon's response to Staff Data Request Number 2 in the universal service docket, and that Verizon's response to the Bench Request 19 contained only the overall average loop lengths rather than the residential loop lengths?
A. I guess I could accept that subject to check.
Q. Would you also accept subject to check that

if one were to compare the updated loop lengths shown in your table 1 with the loop lengths produced by the ICM model, that the ratios of ICM to actual loop lengths would vary from .65 for the Rosalia wire center to 1.42 for the Burlington wire center?

MS. MCCLELLAN: Your Honor, I'm going to object to this. To the extent that he's asking him to check the subject to check, it's a very technical question, and I think it would be more appropriate for him to make this a record request so that we could provide an answer in writing.

JUDGE BERG: We think that's the more appropriate way to proceed with these lines of questions, particularly where the questions are postulated on a document not filed in this proceeding but in some other proceeding.

BY MR. TRAUTMAN:

Q. All right, can you provide, in a record requisition, can you compare the updated loop lengths that are shown in your table 1 with loop lengths produced by the ICM?

A. You mean for these wire centers?

Q. Well, actually, for all of the wire centers, not just for those in table 1, now that I look at it.

A. Yes.

JUDGE BERG: I have a clarification on that, Mr. Trautman. Which column in table 1 are you referring to?

MR. TRAUTMAN: Well, I'm referring to the second column.

JUDGE BERG: Okay.

MR. TRAUTMAN: But that only includes nine wire centers, and there are far more than nine, so I need all the wire centers in Washington.

JUDGE BERG: All right, so what you're looking for is to have all of the wire centers, all of the loop lengths and wire centers in Washington as generated by the ICM.

MR. TRAUTMAN: As compared --

JUDGE BERG: And then you could just do the comparison yourself.

MR. TRAUTMAN: No, as compared to the actual. He should be able to do the actual. He refers to this information in the Bench Request 19, I mean so he should have the information to do the calculation.

JUDGE BERG: All right, so you're looking for a comparison of what you're characterizing as the actual loop lengths as provided in response to Bench Request 19 with the loop lengths for all wire centers in Washington as generated by the ICM?

MR. TRAUTMAN: Yes.
CHAIRWOMAN SHOWALTER: Is this information you have already?
MR. TRAUTMAN: We don't, I don't.
JUDGE BERG: Off the record for a moment.
(Discussion off the record.)
JUDGE BERG: Let's go back on the record, please.
MS. MCCLELLAN: Let me clarify just a bit part of what our objection was as to why we think it's inappropriate for this witness to accept something subject to check based on Bench Request Number 19 provided in Number 980311A.
Mr. Trautman asked a series of questions about what was contained in that Bench request. Number one, I didn't make this part of the objection because I thought we would just handle it in a record request, but number one, that Bench request was never identified as a cross exhibit for this witness. Mr. Collins does testify as to a portion of it, but Mr. Trautman started to ask questions about a different portion to compare that Bench request to something that is contained in Mr. Collins' testimony, and we felt it's more appropriate in getting into that comparison rather than to ask the witness to accept that subject to check and

then have to go obtain a copy of a Bench request that Mr. Trautman could have provided as a cross exhibit for him to make that as a records request so that we can obtain the actual Bench Request Number 19 response and then do that calculation.

JUDGE BERG: This is just a record request. The document isn't being offered for admission, so I'm --

MS. MCCLELLAN: Well --

JUDGE BERG: -- so any objections you would have to its relevance --

MS. MCCLELLAN: I'm not objecting to its relevance. What I'm objecting to is Mr. Trautman began to ask Mr. Collins questions about portions of that Bench request response that are not referenced in Mr. Collins' testimony. And Mr. Collins testified that he didn't remember that portion of that response. And so then Mr. Trautman said, will you accept subject to check, I don't remember the exact question, but will you accept subject to check that that Bench request said, and then he went farther than what's contained in Mr. Collins' response.

Well, Mr. Collins doesn't have that Bench request response in front of him, and he could have had it in front of him if Mr. Trautman had provided it as a

cross exhibit. So I guess what I'm saying is it would be more appropriate rather than asking the witness, will you accept subject to check that that Bench response says X and then compare X with what you have in your testimony on the stand, do it just as a records request and say can you compare what's in that Bench request to what's in your testimony.

JUDGE BERG: I think that's where we're going. This isn't a records request being directed at Mr. Collins per se. This is a records request being directed at Verizon, and Verizon would respond with whatever resources it has that are appropriate.

MS. MCCLELLAN: Okay, I just wanted to clarify.

MR. TRAUTMAN: I have Bench Request 19. Now that does not contain the ratios. It does have average lengths. We can provide that. It never occurred to me that asking a question about a Bench request that Mr. Collins refers to in his testimony would be raising something that's outside of his knowledge to comment on. It would seem entirely appropriate to ask him about that.

But what we do -- if it's couched in a Bench request, we need a comparison of all the wire centers, not just the ones that are in Mr. Collins' table 1,

because as I indicated, that does not include all the wire centers. And, in fact, it includes wire centers all of which are different from those that Mr. Spinks had referred to.

JUDGE BERG: All right, well, let's just get the question down.

MR. TRAUTMAN: I think we did.

JUDGE BERG: All right.

MR. TRAUTMAN: I think we did. We wanted a comparison of the actual loop lengths, the actual average loop lengths as reflected in the Bench Request 19 in the universal service docket compared to the loop lengths produced by the model, by the ICM model, and the ratios.

JUDGE BERG: All right.

MR. TRAUTMAN: Produced.

JUDGE BERG: That's Record Request 106.

Mr. Trautman, can you provide an estimate of how much more cross-examination you have?

MR. TRAUTMAN: I think I have one question.

JUDGE BERG: All right, go ahead.

BY MR. TRAUTMAN:

Q. When was the ICM 4.1B model first submitted in a proceeding?

A. I believe it was first submitted here in

Washington, but I'm checking to see if there may be another state. I'm looking at my response to Staff Data Request Number 2, and it indicates that costs were filed in Ohio on June 30th, 2000, using ICM 4.1B.

Q. And Staff Data Request 2 is Exhibit 1354?

A. 1354, yes.

MR. TRAUTMAN: Thank you, that's all I have.

JUDGE BERG: All right, then we will be taking our lunch break, and we will return at 1:30.

When we return, Mr. Butler, I will have you follow up with questions based on the FCC 10th Report and Order in the Federal State Joint Board on Universal Service Order Docket, and then questions from Dr. Gabel and the Bench.

We will be off the record.

(Luncheon recess taken at 12:05 p.m.)

A F T E R N O O N S E S S I O N

(1:35 p.m.)

JUDGE BERG: Mr. Collins, just as a matter of course, I will remind you that you are still subject to the affirmation oath that you took yesterday and which you reaffirmed this morning. Mr. Trautman, I believe you had some further questions of this witness.

MR. TRAUTMAN: No, I'm done, Your Honor.
JUDGE BERG: All right.
Then, Mr. Butler, let's go ahead and pick up with your line of questioning related to that FCC order.
MR. BUTLER: It's a very short line.

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

BY MR. BUTLER:

Q. Mr. Collins, you have been handed a copy of the FCC's 10th Report and Order in CC Docket Number 96-4597-106160, FCC 99-304, released November 2, 1999; is that correct?

A. Yes, it is.

Q. And you had an opportunity to review paragraphs 199 and 200?

A. Yes, I have.

Q. Those are found on page 86 and continuing on to 87; is that correct?

A. Yes, that's correct.

Q. And after having reviewed that, can you confirm that the FCC determined that for purposes of its model in that proceeding that investments should reflect with respect to distribution current demand as opposed to plant necessary to meet ultimate demand?

A. That's what they tentatively concluded there.

However, in Paragraph 32, they warned, and it says:

> We caution parties from making any claims in other proceedings based upon the input values we adopt in this order.

So they make very clear that the purpose for which this order was intended was for Federal high cost fund purposes only and not for UNE dockets.

Q. With respect to your answer, you mentioned that they tentatively concluded. Do you see the first sentence in Paragraph 199 states, we affirm, we also affirm our tentative conclusion, so that is their conclusion; is that correct? It's not a tentative conclusion, it is the conclusion; would you agree with that?

A. That's correct, they affirmed their tentative conclusion of that for use in the federal mechanism.

Q. Okay.

A. That that subject should be made --

MR. BUTLER: Okay, that's all I have, thanks.

JUDGE BERG: Dr. Gabel.

E X A M I N A T I O N

BY DR. GABEL:

Q. Good afternoon, Mr. Collins. I would like to begin with Exhibit 1170, this is your direct testimony,

page 26, lines 18 to 21. In this portion of your testimony, I understand you're describing how ICM identifies the location of customers; is that correct?

A. Yes, it is.

Q. All right. And am I correct, Mr. Collins, that you have appeared in universal service funding proceedings where this subject was explored, and part of exploring that topic, there was a distinction made between households and housing units; do you recall that?

A. I have a vague recollection of that now, yes.

Q. All right. Well, is it your understanding that a cost model might include both occupied households as well as housing units which may include unoccupied?

A. That's correct, it would be proper to include, I believe, housing units, which would include unoccupied houses, homes, because there is, at any given point in time, there is a certain portion of the house inventory in the United States that is vacant.

Q. Within ICM, are you using both the -- are you building a network out to both occupied and unoccupied households or just occupied households?

A. It would have to be in this case occupied households, because we use our current line counts, and that would include only active lines.

Q. Wouldn't your line count tell you how many lines there are in use at a wire center, but it wouldn't tell you if they go -- say there is -- say you know that there are 1000 lines in use in a wire center, would ICM assume that 1000 lines go to 1000 households, or how would you know if they go to 1000 households or if there are 900 households occupied with 1.1 lines per household and then there are 100 unoccupied housing units?

A. The one distinction we do make is that we identify the number of second lines, residential second lines, and the penetration of those second lines as being I believe I said somewhere between 11% and 12%, so that would be a way to identify then housing, households I guess.

Q. I see. I guess this is an issue that this Commission addressed in 98-0311, and that is do you build a network out to households or housing units. Do you know if ICM builds out telephone plant to housing units or households?

A. Boy, I can't tell you off the top of my head. I believe it would be to --

Q. Well, let me just -- if you don't know for certain, why don't we just take it as a Bench request.

A. Yes.

DR. GABEL: Would you look into this

question.

JUDGE BERG: And that would be Bench Request 35.

BY DR. GABEL:

Q. This morning Mr. Trautman was asking you about loop lengths and the degree to which the output from ICM is consistent or inconsistent with the loop length measurement which GTE has developed. And I understood you to respond that you thought that a way of checking the reasonableness of ICM was, rather than look at loop lengths, was to look at sheath cable mileage. Did I correctly understand that to be your position?

A. Yeah, as a practical matter, that is one area where we do have actual data that can be used.

Q. Okay. And did I understand you correctly that you had made such a comparison?

A. Yes, that is correct.

Q. And could you describe what kind of data you were comparing and what was -- what you found when you made that comparison?

A. I don't remember the exact report, but it's an ARMIS based report. I believe it's called telephone plant statistics, and that identifies total sheath kilofeet, I believe. I took that grand total of sheath kilofeet in terms of fiber and copper, took that total

and compared that with the total sheath feet produced by ICM.
Q. And that would include both loop and interoffice facilities?
A. I would have to check. I don't recall which comparison I made.
Q. Would you agree that the ARMIS data would provide sheath miles for both interoffice facilities and loops?
A. Yes, I believe it would.
DR. GABEL: All right. Well, then as a Bench request, could you provide the results of this comparison that you have discussed today, and indicate in the response if you were comparing the loop plus interoffice sheath mileage output of ICM with the ARMIS data or if you were only looking at the loop sheath mileage.
JUDGE BERG: That will be Bench Request 36.
BY DR. GABEL:
Q. Yesterday, Mr. Collins, you were asked by Mr. Kopta and this morning by Mr. Butler about the fill factors used in ICM. Do you recall those discussions?
A. Yes, I do.
Q. All right. And I think specifically you were being asked about Paragraph 183 of the Eighth

Supplemental Order. Do you have a copy of that order here?
A. Yes, I do.
Q. And did I understand it to be your position that the fill factor is an output, not an input, to ICM?
A. Yes, that's what I said yesterday. It's a reflection of the engineering of a network using our engineering guidelines and combining that with the demand characteristics of our serving territory in Washington, and the result of that process would be a fill factor or a series of them.
Q. Are you familiar with the term breakage?
A. Yes, I am.
Q. Could you explain what that term means and how it affects utilization?
A. My understanding of the term breakage, I think we have also used the term modularity, I think it talks -- this refers to the lumpiness of the investment in terms of cable. For example, you can get cable in increments of you can get 25 pair of cable, 50 pairs of cable, 100, 200, 500 pair of cable. So, for example, if you needed 201 pairs of capacity, you would have, or let's say 101 pairs, you would buy a or use a 200 pair cable, because they don't make a 101 pair cable. I guess that's my interpretation of breakage or

modularity.

Q. Thank you, that was very helpful. And did I understand in response to questions from Mr. Butler that you stated that as an input to ICM, you assumed that there would be 2.34 pairs per household and that the number of lines in use was actually 1.12 per household?

A. I don't have the exact numbers in front of me, but the 2.3 that you mentioned, that would be the number of, that's directly from our engineering guidelines, that would be the number of pairs per household that we would place or -- yeah, per household. In recognition of the fact that some households currently have more than one pair operating, you know, are using more than one line, we, in fact, do that number down to approximately 2.1 lines per -- we would place 2.1 lines per line.

Q. Okay.

A. And what that is is an explicit reflection of that penetration of second lines. Also, the reason we do that is because ICM deals with on a line basis as opposed to a household basis.

Q. So if there's 2.1 lines per revenue producing line, is it fair to conclude that the utilization level is less than 50% in ICM as an output?

A. Yes, I believe that would -- it would

definitely drive a lower than 50%.

Q. All right. And if one had as an objective to have a utilization level of say 60%, you could multiply 60% times the number of installed lines, and that would be the input that you would use for the model for that number of revenue producing lines?

A. I don't know if that would happen. I guess I would have to -- if you wanted to do something like that, I would have a couple of suggestions, and keep in mind that for all of these inputs we're talking about, these are all user adjustable. As I said, ICM does not, in its default mode, does not use fill factors as inputs, but you could. You could play with the inputs. We have an input, that 2.1 that we were talking about, the number of lines per -- lines placed per line or it's a ratio of installed to working lines, that's a user adjustable. You could work with that until you achieved any resulting fill factor that you wanted.

We also have an override, a manual override, where the user can go in, and you click on a box, and you can define your own fill factors as an input. But we don't recommend that you use that because -- I think the preferable method would be to allow the model and its engineering characteristics to determine the fill. But if one wished to do that, you could target certain

fills by inputting them yourself, and it would force the model to achieve those fill factors.

Q. In recognition of the possibility of making those adjustments to ICM and also turning back to the Eighth Supplemental Order, Paragraph 183:

> We adopt the use of a 60% fill factor for the running of the GTE model in this proceeding.

Did you consider going through the steps you just described to me in light of what the Commission concluded at Paragraph 183 of the Supplemental Order?

A. I didn't think that would be a terribly worthwhile exercise in itself, because just the very format of that 60%, keep in mind that the model we were using back then, what was it called, the loop technology module, and it did not distinguish between feeder and distribution plant in terms of fill factors. So we had a composite fill factor, and that's what -- I think it was 55%, and in this order, we were ordered to use a composite of 60%. And that really wouldn't make a lot of sense using that number in ICM, because ICM distinguishes between feeder and distribution plant, which in practice generally have dramatically different fill levels. And I think you would tend to distort the results if you were to force fit that.

Q. So as a -- and this I guess also gets to sharing percentages where you were also asked by Mr. Kopta about the degree to which your running of ICM reflects the Commission's findings on either utilization or sharing. You have a concern that you can't take inputs from one model and, to use the phrase you just used, force feed them into another model?

A. Yeah, that's definitely one of the concerns. I would not want to just take what's wrote in this Eighth Supplemental Order and use an input that's taken or interpreted in a different way in a model such as ICM where you would get I won't say nonsensical results, but you wouldn't get your intended results.

I think it would be worthwhile to understand the context in which the numbers were ordered in the Eighth Supplemental Order and then make sure we understand how they would apply to the different model, which would be ICM. In terms of the -- you mentioned the sharing percentages, I believe I identified, at least when I read through these order, I don't see where any specific sharing percentages were applied to GTE at the time, so I had nothing to go by on that. So I think I said that I -- we had used the GTE's or Verizon's current sharing experience in the state of Washington as the input to ICM, and those inputs are all user

adjustable too.

Q. Thank you, Mr. Collins. Just sort of turning now to a different input, but still the same issue about the validity of taking information from the Eighth Supplemental Order or the last docket, I would like to ask you to turn to Verizon's response to Bench Request Number 14 in this current proceeding.

A. (Complies.)

Q. I would like you to look at the two attachments, attachments on white paper, attachment 14-A and 14-B.

JUDGE BERG: And before we proceed, perhaps, Ms. McClellan, you can confirm for me that these being on white paper, they are not confidential?

MS. MCCLELLAN: That's correct, all the confidential portions are on the pink paper that was attached in the envelope.

JUDGE BERG: Thank you.

A. Yes, I have those in front of me.

BY DR. GABEL:

Q. Okay, let's just look at one account. Let's look at account 6122. Is that the expense associated with maintaining buildings?

A. No, I believe that's the furniture and art work expense.

Q. Okay, thank you for the correction. So account 6122, am I correct that in the last proceeding, Verizon or Qwest treated this expense as exclusively a common cost?

A. That appears to be the case based on this attachment 14-A.

Q. And so 100% of the 6122 expense was proposed by Verizon to be recovered in its common cost markup because none of it was treated as a direct cost; is that correct?

A. Yeah, that's correct.

Q. Okay. And turning to attachment 14-B, would you concur that in this proceeding, Verizon has concluded that about 58% of that account's expense is common, and the remaining 42% can either be characterized as a network direct cost or as a special study cost?

A. Yeah, that's correct.

Q. And if a cost is treated as a special study cost or a network direct cost, does that mean that the cost is directly assigned to either resale or a wholesale service?

A. Not to one particular service, but it would be directly attributable to a cost causative -- in a cost causative manner to any single unbundled network

element service or a family of unbundled network elements or services.
Q. Okay. And in running ICM, for example, you may have -- in development of -- in using ICM to develop the UNE cost for different rate elements, those direct cost estimates produced by ICM would include where appropriate a direct assignment for account 6122; is that correct?
A. Yeah, to the degree to which there is a cost causative basis for assignment of those costs, yes. When you mentioned the term direct, we also have a grouping called shared costs when we can not causally attribute a particular expense say to one single unbundled network element or service. So that shared category would also be included in the TELRICs that we provided in this case.
Q. And am I correct in Verizon's submission in this proceeding that it hasn't used a common cost markup that reflects the data that appears in attachment 14-B, but rather conceptually it still reflects the assumption that 100% of the account 6122 expenses are common costs?
A. I think this is an area that Mr. Trimble would probably better be able to address, but it is my understanding that we -- the common cost factor that -- well, the one that we are using here is the one that was

adopted or ordered in the previous docket. So we did not attempt to relitigate that issue here, nor did we attempt to refile any other -- a service that had already been established, for example, the two wired loop. That's about all.

Q. I think Mr. Trimble is the rate expert, you're the cost expert, so I just want to understand that the decision to use the factor that was established in the 17th Supplemental Order, UT-960369, that was your decision as the cost analyst rather than Mr. Trimble's decision as the rate analyst?

A. No, actually, I do not make decisions on the common cost issue, because that seems to -- that is the dividing line that we have in terms of how do you recover those common costs, that goes directly to our pricing and policy folks.

Q. Okay, well, we just discussed about -- we just had a discussion about structure sharing and utilization, and you said that when you ran ICM, you had a concern about taking data from another cost model and putting it into ICM. Do you have a concern about using a common cost factor that was associated with these old cost models and using it as a loader to your direct expenses that you produce when you run ICM?

A. Well, that's a bit of a different issue. I

do not think that the common cost factor that we proposed in that case was adopted, so I don't know the basis for that factor, so I guess I can't comment any further. Had it been, had our number been adopted, then that might be a different story. But I can't say anything as to what the appropriate common cost factor would be in this case. That's where I leave it to Mr. Trimble.

Q. Did you review this response to Bench Request Number 14?

A. Yes, I did.

Q. And looking at the question, it refers to Paragraph 204 of the 17th Supplemental Order, did you happen to review -- or Paragraph 203 of the 17th Supplemental Order; did you review that order prior to testifying today?

A. I didn't focus as much on that one. I probably reviewed it very quickly.

Q. Now, Mr. Collins, I would like to turn to your rebuttal testimony, which is Exhibit 1174, page 47.

A. (Complies.)

Q. Here, Mr. Collins, as I understand your testimony, you're discussing what's the cost of terminating ISP traffic on a digital switching machine; is that correct?

A. Yes.
Q. Okay. And a lot of this testimony or some of this testimony deals with ISDN PRI trunks. First, just as an introductory question on this subject, could you describe for the Commission what is a PRI trunk and contrast it with an ordinary interoffice trunk?
A. Well, a PRI trunk, ISDN PRI trunk stands for primary rate interface, and that is at a -- basically at a DS1 level. You have 23 D channels and 1 C signaling channel, or it can be broken into that or any combination thereof. That is generally a trunk that is provided to an end user on the end user side of the switch. And it is a trunk that is not subject to any blocking within the switch, because you are allocated a time slot on the switching module. You know, and that's the point I was trying to make in my testimony and, you know, the comparison you wanted with an interoffice trunk.
Q. Well --
A. That would be a similar concept. It would be a trunk hitting the trunk side or the interoffice trunk side of the switch.
Q. And they would both -- well, first, as a preliminary question, you would agree that on a prospective basis, Verizon is only purchasing DMS -- or

let me restate it. No, let me just ask it. Would both an ISDN PRI trunk and an interoffice trunk terminate on a digital trunk controller if the office is a DMS Nortel switch?

A. Well, you've got me on the specific architecture there, but I believe they would both have to terminate on some sort of digital trunk unit.

Q. Okay. And could you also explain why ISPs are often served by ISDN PRI trunks rather than say just an ordinary T1 trunk?

A. You're starting to get me on my knowledge, but I guess I would have to speculate that the ISDN PRI provides the customer, the end user customer, the ISP, with a lot of flexibility in the way that they can manage that bandwidth that they get using that trunk. I believe a T1 would be just, you know, just a straight 1.544 megabytes per second. You wouldn't have much flexibility. A PRI with the software inherent in the switch allows you to dynamically allocate bandwidth based on any traffic requirements. So I think it's just a better, more user, well, say a more customer friendly service.

Q. At lines 18 and 19, you state that an ISDN PRI connection does not have any line CCS costs associated with call duration. Would you explain what

you mean by a line CCS cost?
A. I believe I have an explanation in my testimony. If you turn to page 40 of my rebuttal testimony, Exhibit 1174, I discuss how in traditional voice traffic that the busy hour line CCS costs are traffic sensitive, because they arise from a shared facility. And I say that, namely the sharing of one circuit path among approximately six customer lines, in other words a six to one concentration ratio, that gives rise to line CCS costs.
Q. And --
A. Or they're basically congestion costs.
Q. All right. Now you stated earlier you have a copy of the Eighth Supplemental Order. I would like to ask you to turn to Paragraph 289, that's at page 59.
A. (Complies.)
Q. Have you had an opportunity to review that paragraph, Mr. Collins?
A. Yes.
Q. Could you explain the relationship between what you have characterized as a CCS line cost in the topic that the Commission addressed at Paragraph 289?
A. I'm not sure if I can address the difference. These two seem to be different concepts.
Q. Could you explain why, please?

A. No, I can't right now.
DR. GABEL: Okay, well, as a Bench Request, could you?
THE WITNESS: Oh, certainly.
JUDGE BERG: That will be BR 37.
BY DR. GABEL:
Q. Okay, Mr. Collins, could I ask you to turn forward to page 41 of Exhibit 1174, lines 11 to 14. The sentence reads, because the circuit, and the circuit here, you mean an ISDN PRI circuit?
A. Yes, I do.
Q. Is virtually dedicated to the ISP line, the use of the facility does not impose congestion costs on other users. I would like you to explain for me, Mr. Collins, when an interoffice trunk is terminated at a CLEC, where does the -- and that interoffice trunk is being used to carry ISP traffic, where does the ISDN PRI trunk start to pick up the traffic that has come in over the interoffice facility?
A. I will take a shot at that, and then I think Mr. Jones after me might better be able to explain this. But visually, if I draw a simple picture in my mind, I look at a central office, and I see an interoffice trunk coming in let's say the left-hand side of this box. There would be a trunk termination there. And from that

point, it is switched through the switch fabric to the other side of the office, at least visually in my mind, to where the digital trunk unit is serving the ISDN PRI line. So that's how I would follow conceptually the path of the call.

Q. So I guess my question is, could there be congestion at this first termination point for the trunk, that is where the interoffice trunk is terminated on a trunk module, could there be congestion there? And then also, could there be congestion in what you have referred to as the switch fabric?

A. What I visualize is a switching module on both sides or two switching modules, one on either side of the switch. Generally the interoffice trunks, and again, Mr. Jones can verify this, interoffice trunks are engineered or have a one to one concentration ratio just as the PRI trunks do, so there would be no congestion, if you will, going through the switch.

Q. But if there -- and it's your contention that there could be no congestion in the switch fabric either, that that's designed on a non-blocking basis?

A. I believe so, I believe that's on a one to one also. So each of the switch modules, switching modules, would be also engineered at one to one, so that would be a dedicated path.

Now the line, the trunk CCS cost does arise in the interoffice side of the switch, because that is an item even though it has a one to one concentration ratio, meaning that there's a virtually dedicated path and a time slot through that switching module, that is something that Verizon does have to engineer to accommodate the traffic going through the interoffice facilities. That gives rise because there is a sort of a congestion concern there, that the -- even though each trunk is concentrated at a one to one ratio, we may not have enough trunks to accommodate that traffic. So that is an engineered item, so there, you know, having to engineer that, that would give rise to congestion costs or a trunk CCS cost. So on that side of the switch, there would be a volume sensitive or traffic sensitive trunk CCS cost.

It's when you get to the other side is when there are no line CCS or trunk CCS costs on the PRI side, because that is something we do not engineer, we can not engineer. We provide a virtually dedicated path to that PRI customer. It is up to them to decide how many PRI circuits they need, and that is not a traffic sensitive cost to us.

Q. So just, I want to make sure I understand your position on this correctly, Mr. Collins, I'm going

to try to paraphrase what you said, and please correct me if I'm wrong. Your position is that once a decision is made to install so many interoffice trunks to carry traffic from the ILEC to the CLEC, once those trunks are installed, there's no blocking. There may be blocking of traffic on the originating end, but not on the terminating end.

A. I believe that would be the case. It would have -- you would have to know you don't have enough trunks to route a call, so I think we would know that at the originating end. I think Mr. Jones could clarify if you misunderstood that.

Q. Then returning to your testimony at page 47 and then continuing on through page 48 and 49, here you discuss how it may also be possible to identify what's the cost setup versus the usage related cost for ISP traffic. Am I correct that that's what you do especially on page 48 and 49?

A. Yes, in fact, I use ICM, which has the added flexibility of -- has the detail required to separately identify the call setup costs from the duration costs, and that's something we don't have from the Eighth Supplemental Order. We don't have that ability to separately identify that, and furthermore, we wouldn't be able to, with that lack of detail, we wouldn't be

able to separately identify any ISP bound traffic costs. Therefore, I have used ICM, which does have those characteristics, for my -- to populate my table.

Q. And the methodology that you use is described at page 48, lines 15 to 20?

A. Yes.

Q. Let's start, if we could, with the sentence at lines 15 to 16. You state:

Instead, one half of a trunk to trunk call duration cost is utilized.

Would you elaborate on that sentence? I'm not sure what you mean.

A. Basically the trunk to trunk cost that we have could be associated, for example, with tandem switching where you have the trunk side, a trunk coming in and a trunk going out. And in a tandem, in the case of a tandem, where it's our traffic, we have to engineer both ends of that. So when we go into our cost model, both the costs of both sides of that switch are -- they're -- let me put it this way. There are trunk CCS costs. These are traffic sensitive costs because of the congestion possibilities, the fact that we have to engineer those with the trunking capacity on both sides of that switch.

When you look at an ISP case, things change.

All of a sudden, we don't own both ends of that switch. We only have the incoming end that we have to engineer for. And the outgoing end, which is the PRI circuit going to the ISP, that's none of our business. It's up to them to make those decisions as to how many trunks that they need.

So what I did -- and from our perspective, that's where these costs are coming from is that those costs cease to be traffic sensitive. They are non-traffic sensitive costs. And our costs in that regard vary only in direct proportion to the amount of ISDN PRI trunks that a customer would order. So that's why I had to make that change to the trunk to trunk calling and pull out one half of the trunk CCS piece.

Q. So you're essentially pulling out the port side, the ISDN PRI port costs, conceptually not --

A. Conceptually, anything on that side is no longer considered traffic sensitive, so it is pulled out.

Q. Then when you do report your costs for carrying this ISDN PRI traffic through the switching machine, I'm having a hard time understanding what traffic sensitive costs you're picking up in your cost model if it is your belief that there's this one to one mapping between the ISDN PRI trunk and the interoffice

facilities. Did I correctly understand you to state that because there's this one to one mapping that the investment is non-traffic sensitive?

A. On the PRI side, yes. From our perspective, it is non-traffic sensitive. But even though we have that one to one concentration ratio on the trunk side, the interoffice trunk side of the switch, that is something that we have to -- we have to engineer, therefore, that gives rise to traffic sensitive costs. Our cost varies in direct proportion to the amount of traffic that goes interoffice. But when you get to the PRI side, those costs cease to be traffic sensitive. They are non-traffic sensitive, and our costs only vary when the customer orders more PRI ports.

Q. So the -- when you report at page 49 the output from ICM, are you reporting costs associated with what you previously referred to as the network mesh in between the interoffice trunk termination and the ISDN PRI?

A. No, what I would be reporting would be, you know, as I mentioned, we took out half of the trunk to trunk traffic sensitive costs. We still have half of it left, that is the interoffice trunk side of the switch. So that's what you're seeing under the row called MOU or minute of use or duration costs. We just took half, the

other half out that ceased to be traffic sensitive and is now non-traffic sensitive and associated with the PRI port.

Q. Okay.

A. But it didn't all go away.

Q. So that you would have -- earlier -- let me start again.

Earlier you described the network as there's this interoffice trunk that comes in, it's terminated on a module, then the traffic runs through this network, and then the traffic is terminated on an ISDN PRI trunk. Is that a correct characterization?

A. Yeah, I think I, conceptually, I put a switching module at each end.

Q. All right.

A. That has a digital trunk unit on it.

Q. And your -- I guess what I'm having a hard time understanding, Mr. Collins, is I understand why you want to eliminate the ISDN PRI portion, but it seems in your description you still have this traffic sensitive switching module that terminates to interoffice trunk, and then you still have the investment associated with running the traffic through the switch. So why is an adjustment of 50% the proper adjustment here?

Just a real simple way of looking at it is

there are three different stages to terminating the traffic. One is the termination of the interoffice trunk, then the second stage, running the traffic through the switching fabric, and then terminating the traffic on another switching module which is dedicated to ISDN PRI trunks. Why not just say, well, one third is associated with ISDN PRI, and two thirds is to recover the fabric and the module that's used to terminate the interoffice facility?

A. Oh, okay, now I understand. What I did is I used the -- I looked at the SCIS output, and there are only two components to a trunk to trunk cost when it comes to the SCIS model output, and that is trunk CCS. And you have two sides, you have trunk CCS on one side and trunk CCS on the other, and those are the only two items. So all I did was I removed one of those trunk CCS costs and then re-ran the ICM with one of the trunk CCS costs removed, which would be that PRI side that we discussed.

Q. Are you able to say by making that adjustment that you properly pick up the cost of both terminating the interoffice trunk on the switching module as well as picking up the cost of the -- using the net of the, not the net, of the switching fabric?

A. Actually, I'm not sure where that cost --

first of all, I don't expect that to be much of a cost to begin with. Secondly, I don't know where that would be captured.

Q. That being the switching fabric?

A. Yeah, the fabric itself.

Q. Okay. Isn't, within SCIS, isn't the switching fabric a CCS related cost?

A. That I'm not sure.

DR. GABEL: Well, why don't we take that as an additional Bench request, and the question is, in making the adjustment that you have proposed on page 48 and 49, how have you effectively treated the cost of the switching fabric, the ENET on a DMS-100 switch.

JUDGE BERG: That will be Bench Request 38.

BY DR. GABEL:

Q. Staying, Mr. Collins, on page 49, you have a call setup cost.

A. Yes.

Q. All right. Could you describe how the call setup cost is developed by the switching cost information system?

A. Conceptually the call setup cost, that's where you use a processor time, and the SCIS model identifies processor cost on a per millisecond and cost per millisecond basis. For any feature of the switch

that uses processors, it then attributes costs to those features based on the processor millisecond requirements. So the call setup cost would reflect the number -- the amount of processor milliseconds required to do all the functions to set up a call, which I think Mr. Jones could probably go through and point much better detail than I could. But conceptually, that's what's happening.

Q. And is it your belief that there is congestion on the central processors that are used by Verizon in its network?

A. I'm not sure if I understand what you mean by congestion. I mean there is the possibility there is a load on those processors, and when you start introducing new features, especially some of the most recent features, they're very processor intensive, and you can exhaust your processor, if that's what you're talking about.

Q. Well, Let me clarify, I'm sorry, Mr. Collins. Earlier we were talking about when we looked at ISDN PRI trunks, you were talking about if an investment should be considered traffic sensitive or non-traffic sensitive. And did I understand correctly it was your position that if there isn't congestion on a facility, then you shouldn't characterize the investment as being

traffic sensitive?
A. In the case of a line CCS, yes.
Q. Okay, all right, so now I'm -- we're turning to a different part of the switch and start instead of talking about where the ISDN trunks are terminated, we're now talking about the central processor. And I used the -- in presenting you that question that used the word congestion, I meant it in the same way in which you used the word congestion when you talked about ISDN trunks. And so my question is, I guess I'm going to start off with when SCIS allocates the central processor costs to different functions in the way in which you have just described, is SCIS effectively assuming that there's congestion on the network in its use of the central processor?
A. I believe congestion in the sense that the processor has a finite capacity, and that it is used as a method to attribute costs based on the intensity of use of that resource. You know, the amount of demand upon that resource would require a processor to be sized, you know, in accordance with that demand. So in a long run sense, you would have to have the appropriate sizing that would -- that gives rise then to traffic sensitive costs.
Q. Have you reviewed Verizon's confidential

response to Bench Request Number 15 in this proceeding?
A. Yes, I have.
Q. And am I correct that this response indicates the processor utilization factors currently being experienced by Verizon in its network?
A. It is an update of a previous Bench request response showing today's processor utilization factors for the same switches.
Q. And in reviewing this data, did you notice any trend in the processor utilization? Did it seem to you that the utilization was rather flat, or did it appear that utilization had increased subsequent to when this data was initially requested in UT-960369?
A. I generally saw pretty strong evidence of an increase. In one switch, the increases were rather dramatic. In another switch -- it is a bit hard to compare, because in the footnote we mentioned that we actually had to replace our processors, so now the reading you get now is with the newer processor, it's very hard to make a direct comparison. But the very fact that we had to replace the processors indicates that we ran into processor exhaust problems.
Q. Lastly, on this topic of the cost characteristics of switching machines, have you had an opportunity to review the company's confidential

response to Bench Request Number 16, those are the company's contracts for Lucent switches, I'm sorry, not Lucent, Nortel switches?

A. Yes, I have.

Q. Now would you concur that the general pricing structure is a pricing structure that focuses on an investment or payment per line?

A. That's actually a very misleading number. It is very easy to look at that number, it's a confidential number, and say, wow, that's pretty cheap on a per line basis. But if you were to look at all the components that go together, that need to go together to put together a functioning switch, you would be surprised at what the investment per line is, the investment required per line. And then the number, it's also a very bare bones number, it does not include the software required to even let the switch function, and software investment is a very significant number that is purchased separately out of a separate contract.

Q. Mr. Collins, I wasn't asking you about the levels. I just wanted to ask you about the structure. But the structure of the contract is for a fixed amount per line?

A. That's what I mean, it's very misleading. You look at one number, and that does not include

everything you need. It's not like you can take that number and multiply it by the number of lines and have some meaningful number of the cost per switch. There are so many other items that are required to make a switch function. That's why I was commenting that maybe both the level and the structure is very misleading.

Q. All right. Well, one item where you said -- one item you said is not included in the investment per line is software. Now would you agree, again, we're just talking about the structure of the contract, that the contract refers to a fixed payment by Verizon for the software that is needed and that the payment for software isn't a function of say the number of calls that are processed by the switching machine?

A. The software costs would be not so much a function of the number of calls, but it would be more a function of the types of features that you purchased.

Q. So if I could ask you, Mr. Collins, in Confidential Attachment 16-A, starting at page 4, Section 10.

A. I have it.

Q. Again, does this indicate that there is a fixed payment for software that is independent of the number of calls that run through the central processor?

A. Not exactly. You know, I'm not a contract

expert, but many times in our contracts, we have objectives that are given to us by our vendors. They say we will give you a certain discount if you hit so many million dollars of purchases, and those would be the types of numbers. So it's a commitment to purchase. Sometimes you read in the paper we have committed to purchase, you know, so many units for so many million dollars. That does not mean that that's the price we, you know, pay per unit. We may have to pay separately per unit all the way up to that point. And then beyond that point, we may get perhaps even a bigger discount. Or if we fail to within a certain period of time hit that total target, we may pay some penalties, so, you know.

Q. And in this same document, Mr. Collins, if we look at Attachment D or any of the attachments, can you point to me where in the contract the payment that Verizon makes to Nortel is a function of the number of calls that are processed by these switching machines?

A. I wouldn't expect them to be a function of the number of calls. We're talking about features. Now granted a call is a feature, the capability of originating and terminating calls is a feature of the switch. However, we're also talking about vertical features, which are not -- I guess they are a function

of the calls, yeah, each call would require so much processor time. But the amount we would pay would be a function of the number of features that we purchase. And the feature cost, we don't charge features on a per use basis, or at least we don't identify the cost of features on a per use basis. We would identify them on a per feature basis on a per month basis, so we would not try to do that per call, identification of costs.

Q. Mr. Collins, I would now like to ask you to return to Exhibit 1174, your rebuttal testimony, lines 2 to 3.

CHAIRWOMAN SHOWALTER: Page?

Q. I'm sorry, page 15, at the top of page 15. Mr. Collins, you state when voice grade UNE loops and DS1 loops use the same amount of copper facilities, they are both assigned the same cost. I just want to be clear on this. When a -- for the DS1 loops, you're not assuming that they're only provided over copper, are you?

A. No.

Q. So within ICM, you would also be modeling providing DS1 service over fiber?

A. Not fiber only. It would be if the customer was served by a fiberfed digital loop carrier, then there would be a portion of the loop that would be fiber

based.

DR. GABEL: Thank you, Mr. Collins, I have no further questions.

JUDGE BERG: Madam Chairwoman.

E X A M I N A T I O N

BY CHAIRWOMAN SHOWALTER:

Q. I have only the smallest clarification. You were speaking of the granularity of the ICM, and you said it was at a unit of 1300 feet across and 1800 feet high, and does high mean a north-south axis?

A. Yes, the length and width.

Q. So it's a geographical area?

A. Yes, correct.

CHAIRWOMAN SHOWALTER: Thank you.

COMMISSIONER HEMSTAD: I don't have any questions.

JUDGE BERG: All right, any subsequent cross?

Mr. Kopta.

MR. KOPTA: Thank you, Your Honor.

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

BY MR. KOPTA:

Q. I do have one question, Mr. Collins, and it's a follow up to the last question that Dr. Gabel had on

DS1 loops. Did I understand your testimony correctly that the only occasion on which DS1 loop would be provided to a customer would be through fiberfed DLC, and then only a portion of the loop would be over fiber?

A. No, I believe the question had to do with DS1 loops and whether or not they were 100% copper. I said that there would be some loops that would be, you know, the longer loops that are normally fed or provided by a fiberfed DLC, and then could -- then continuing from that position or point on over the copper, that that would be a part of that loop cost.

Q. But there would be occasions when a DS1 loop would be provided entirely over fiber, correct?

A. Not in this study here within ICM, the DS1 loop study.

Q. So the ICM assumes that a DS1 loop is always provisioned at least in part over copper; is that correct?

A. Yes, that's correct.

Q. Is that true in practice?

A. Generally yes, for this application. This is an end user type service, and it would be provided over the existing facilities.

Q. So if you have, for example, a DS3 loop into a large building, are you saying that none of those

fibers off -- none of the DS1s within the DS3 would be used to serve any individual office within that office building completely over fiber?

A. I'm not sure if I followed that, because what we're talking about here is just a simple DS1 loop, which is the copper application that you generally see with an end user type customer that has a small demand. And I think you were talking about maybe a DS3, maybe a higher bandwidth, and I'm just not clear on what you're asking.

Q. Well, what I'm asking is, if you have an office building in downtown Everett, for example, multistory, many business customers are located within that building, and many of them have a requirement for DS1 service, my understanding would be that one way to provision that would be to provide a DS3 circuit to the building and then take DS1 circuits off that DS3 to service individual offices within that office building. Is that not technically feasible or something that Verizon does not do in Washington?

A. Yeah, I'm sure in some cases, yeah, that would be technically feasible depending on the demand.

Q. But ICM assumes that you don't do that, that Verizon does not do that in Washington?

A. It's basically taking a simple business loop

and just providing a DS1 circuit, I mean DS1 capability over that.

MR. KOPTA: Thank you.

MS. HOPFENBECK: Can I go?

JUDGE BERG: Eye contact and nod means all systems are go.

MS. HOPFENBECK: Okay.

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

BY MS. HOPFENBECK:

Q. Mr. Collins, I have a couple of questions to ask you with respect to Dr. Gabel's discussion of ISDN PRI and CCS costs, and we'll start here. What is the difference between CCS costs and line concentration costs? Your testimony refers to CCS costs; Mr. Jones' testimony refers to line concentration costs.

A. If you were talking about line CCS costs versus line concentration costs, I would see those as being the same thing.

Q. Okay. And it's true that those line concentration costs are not recovered in the TELRIC switching costs; is that right?

A. No, I believe they should be. Just -- if you're talking about the TELRIC of a minute of use for just POTS service, the line CCS costs would be traffic

sensitive, and it would be at least captured in a TELRIC.

Q. Well, the equipment, the line concentration equipment, is not included in the average TELRIC switching cost, correct?

A. No, I don't think so. That would be a switching module, which is where you have that typically a six to one concentration ratio. The costs for that equipment, that equipment has to be sized in accordance with the usage characteristics, so that would be traffic sensitive and included in a TELRIC.

Q. I am quoting from Mr. Jones' testimony, and I will quote the whole sentence just so you get -- because I'm trying to clarify this point. Mr. Jones states at page seven in his rebuttal testimony --

JUDGE BERG: That would be Exhibit T-1180.

MS. HOPFENBECK: Thank you.

BY MS. HOPFENBECK:

Q. While this equipment itself, and he's referring to -- the question states first:

Why is line concentration equipment important when considering the appropriate reciprocal compensation rate?

And he responds:

While this equipment itself is not included in the average TELRIC switching cost, the volume of line concentration outlays is directly proportional to switch model investment by an ILEC. Do you agree with that statement, to switch module investment by an ILEC?

A. I'm sorry, would you mind reading that one more time?

MS. MCCLELLAN: Your Honor, I think it might help if I could approach and provide the witness a copy of Mr. Jones' testimony.

JUDGE BERG: I think that would be a good idea.

MS. MCCLELLAN: Or if Mr. Edwards might approach.

MR. EDWARDS: I want to serve some function.

BY MS. HOPFENBECK:

Q. I have been reading from lines -- actually, my line may not be the right line, so.

A. I will have to admit I don't fully follow the gist of what Mr. Jones is saying here. What I do see is on page -- I mean line 16 of page 7, this is what I was saying, that the switching module, that's where the concentration occurs. It says switch module investment

is incorporated into TELRIC switching costs.
Q. That's what I'm trying to clarify, that there appears to be a distinction between switch module investment, which is impacted by line concentration equipment it appears to be saying, and line concentration equipment on the other hand. You don't -- I will ask Mr. Jones this, I just wanted to clarify this because you seemed to be discussing this issue with Dr. Gabel at some length, and I was trying to get clear on what costs we are trying to recover through as part of TELRIC switching costs and what costs we're talking about covering. I will discuss this further with Mr. Jones.
A. Yeah, I think he would much better be able to answer that. I think there is a consistency there that on line 16, I do agree with that statement. I just don't fully understand the context in which he is discussing this, the other pieces of this question and answer.
Q. Okay. When you were referring to CCS costs in your testimony and in your discussion with Dr. Gabel, were you -- did you have in mind switching module investment cost?
A. Yes, if that's where the concentration is occurring. You know, if your concentration ratio

changes in a switch, you would have to then go out and purchase more switch modules to accommodate the -- it would be perhaps because of increased traffic, therefore the investment in those modules would be traffic sensitive.

Q. Okay. So and as I understand your discussion with Dr. Gabel, when an end user has a trunk side connection to a switch, there will be switching module investment that is dedicated to that end user?

A. Yes, it would be a dedicated time path or time slot through that module.

Q. And it is -- and when -- and in that instance, it's your view that that is a non-traffic sensitive cost, because that will only change if that end user -- that cost will only change if that end user adds another trunk side connection, but does not change with the amount of traffic that flows down that single trunk; is that fair?

A. Yes, that is.

Q. Okay.

A. They could use it 24 hours a day or not use it at all, it would not change our investment.

Q. But for purposes of sizing the switch, I mean for purposes of Verizon's switch module investment, Verizon has to take into account not only the traffic

that leaves the switch and goes to the end user, but also the traffic that comes into the switch on its interoffice trunking facilities; is that right?

A. Yes, it would have to look both ways.

Q. And for purposes of the switching capacity that's necessary and the switching investment made that's necessary to meet -- to handle the traffic that's coming into the switch on the interoffice network, that investment is traffic sensitive; is that right?

A. Traffic sensitive in the sense that you have to engineer the interoffice facilities to be sufficient -- of sufficient size and capacity to accommodate the traffic flows, the interoffice traffic flows.

Q. Okay. Now moving to just a different area of that discussion, Verizon has assumed for purposes of the analysis that you did to quantify the impact or to show that the cost of ISP bound calls is lower than POTS calls that ISP traffic is served or an ISP end user is served via ISDN PRI, correct?

A. Yes, that's the assumption.

Q. And that assumption is based on what Verizon, the technology or the type of service that Verizon provides currently to its ISP customers; is that right?

A. I would assume that we do that. I think Mr. Jones might have a better handle on that. It's also

based on what I have been told by the CLECs. I have been told that that is the predominant technology used to provide service to ISPs.

Q. I didn't see that anywhere in your testimony, and that was my question to you in terms of what kinds of survey or study Verizon has done in order to establish what the CLECs are using in order to serve their CLECs. How many conversations, you referenced a conversation that you had, how many CLECs have you discussed this with?

A. I don't recall exactly. I was involved in the California reciprocal compensation case where it was not only brought out in the testimony of the CLECs when they identified the technology they used, but I guess I assumed too much, I assumed that was just common knowledge that that is the predominant technology used by ISPs.

Q. Well, in general, I think it's important to identify the CLECs. For example, do you have direct knowledge that WorldCom employs ISDN PRI technology to serve customers in the state of Washington?

A. No, I don't have that specific knowledge. What I do know is that generally trunk side connections are used.

Q. Okay. Do you have knowledge, for example,

that any other CLEC operating in the state of Washington uses that technology to provide service in the state of Washington?

A. Again, it was based on my recollection of what is used by various CLECs. I can't name them right now. I could go find out who wrote this in their testimony and admitted to it, then I could probably find out if they operate in Washington. But I just don't know off the top of my head. I just assumed it was common knowledge and common practice that did not need any additional support.

Q. Now I wanted to talk to you briefly about your discussion with Dr. Gabel about fill factors. You referenced the fact that ICM allows someone to do a manual override, it's not recommended, but to input a fill factor and then have the model run. And what I would like to get an understanding of is how the model uses that input to then engineer its plant and how that differs from the way the model runs without that manual override.

A. Well, without the override, the model properly sizes the plant in accordance with the engineering guidelines of placing so many lines per housing unit, for example. It combines that with the demand characteristics of a particular area. Again, it

does it grid by grid. And as Dr. Gabel mentioned, the term modularity comes into play, because you have discreet sizes of cable. So it is the combination of all of those factors that would lead to resulting fill factor.

Q. Would it be fair to say that the model run without the manual override assumes an ultimate demand and builds the network back from the distribution area back to the central office?

A. I think in terms of the sizing, the sizing of the cable, you would have to know the demand in the distribution area and the sizes of cable there, and they would have to determine going back to the central office the ultimate size of the feeder cable.

Q. And the assumption that drives that is the assumption of the 2.21? What was the assumption as to lines per household?

A. Well, actually, it's an installed to working lines ratio. We would -- ICM would install approximately 2.1, maybe 2.18 lines per working line.

Q. Per working line?

A. Yeah.

Q. Okay. And when it's 2.1 per working line, there are more working lines than there are households, correct?

A. That's correct.
Q. Okay. That's an important distinction.
A. Yeah, that does reflect the penetration of second lines, residential second lines.
JUDGE BERG: Ms. Hopfenbeck, can I have an estimate of how much further cross you want to conduct before we take a break?
MS. HOPFENBECK: I think the maximum this would go would be another ten minutes.
JUDGE BERG: All right. In that case, we will take our break now, and we will be back at 3:20.
(Recess taken.)
JUDGE BERG: We will be back on the record.
BY MS. HOPFENBECK:
Q. Mr. Collins, so we were talking about the fill factor or the, not the fill factor, we were talking about the assumption that's in ICMs to the number of lines -- number of installed lines to working lines, and that's what the 2.1 figure represents; is that right?
A. That's correct.
Q. And that means the number of lines per household is more than 2.1, correct?
A. Yes.
Q. Okay. Now as it stands now, the way ICM works is that it then designs a network employing

Verizon's engineering guidelines to place the optimum plant to serve that quantity of lines in the network; is that right?

A. It would place the plant to serve the demand based on our -- the engineering factors like the 2.1 that you mentioned. But it would be driven entirely by the demand within the small geographic units I was talking about, the 1/200 degree of squared areas.

Q. Okay, when -- when you -- but it builds back from the -- it builds the network back from the distribution from the number of lines that are assumed out in the distribution network, right, as opposed to building it forward from the central office out?

A. You know, I really don't know -- I haven't looked at the code to see which way it goes conceptually. But at least from a conceptual level, it obviously has to know what the demand is, the cable sizes. So at least in my mind conceptually, it would have to know that first, and it would have to go to the very smallest geographic unit where our people or our customers are located and then would have to size the feeder plant to accommodate those customers.

Q. Okay. Then just to short circuit this a little bit, that demand is a demand that's not current demand but ultimate demand from Verizon's perspective;

is that right?
A. Well, we use the term ultimate demand, I mean that's just an industry standard that all companies that I'm aware of employ. But it would probably be more accurate to say that the install to investment, I mean, I'm sorry, the install to working lines ratio is a reflection of our guidelines. I don't know if that would mean that we were installing to ultimate demand. I mean there are cases where we do have to augment facilities in the distribution areas.
Q. But the network is designed in order to try to avoid having to augment the distribution plant; isn't that right?
A. Yeah, that's correct, they're designed to try to minimize that. In fact, I believe our guidelines are going to be changing or have changed recently to an even higher number in light of the recent acceleration of second line growth.
CHAIRWOMAN SHOWALTER: A higher number of what?
A. A number of lines installed to working lines. Again, it's very important to at least conceptualize that in distribution plant, we can't just move our supply over to accommodate demand as it materializes in various neighborhoods, so we have a very -- it's very

fixed in location, so we do have to have that access capacity in there to accommodate lumpiness in demand, shifts in demand, and so forth, in addition to growth.

Q. And it is intended to accommodate the growth and demand over a period of time; isn't that right?

A. That is one piece of it. It's certainly not the whole thing.

Q. What's a reasonable -- I mean what's the time horizon that Verizon is thinking of in terms of its, what, is it five years worth of demand that this model -- that ideally you want to avoid having to reinforce distribution plant over the next five years given what you've got?

A. I don't believe there's any time limitation. I think what -- if I were an engineer, I would be looking at the -- at least the potential. You know, you have many areas have developed areas and undeveloped areas, they would have to look at the potential for growth in that area of size and plant. And I don't know that any particular time period is involved in the distribution side of things. On the feeder side, I think I explained earlier that we do take into account a three to five year time horizon.

Q. But certainly you're standing ready, by assuming that there's somewhat more than 2.1 lines per

household, you're assuming, you're trying to stand ready to meet the need for more than one line per household that you -- that will occur, for example, over some reasonable time horizon; wouldn't you agree?

A. Yes, it would -- we certainly would be building that plant to accommodate various demands over time, and even today to accommodate any shifts in demand.

Q. And certainly to the extent that there's growth in demand, then that cost that's being estimated in ICM will then be spread over larger and larger numbers of working lines. Would that be fair to the extent that growth occurs?

A. I'm not sure if I followed. I don't know if that would be a fair characterization. I mean if you're talking from a TELRIC perspective, that would be incorrect.

Q. Well, let me ask you this. I mean you're -- ICM produces an investment cost per line for a given amount of plant; would you agree?

A. Yes.

Q. And to the extent that that quantity of plant is capable of serving not only current demand but a certain amount of growth in demand over a reasonable forward horizon -- is that only half a question

probably?
CHAIRWOMAN SHOWALTER: Yeah, that was the comma.
Q. Yeah, that was the comma. I mean let's turn that comma, just and it assumes a certain amount of plant that will accommodate not only current demand, but a certain amount of growth over time, correct?
A. Yeah, it certainly could accommodate growth, yes.
Q. And Verizon is certainly producing a cost per line that is based on using working lines as -- I mean you take the investment and divide it by the number of working lines to produce a per line cost with that model, correct?
A. That's correct.
Q. But it's also true that as that demand grows and exceeds current demand, Verizon could recover the same investment cost over a larger number of lines than the number of working lines today; is that right?
A. Again, I go back to the TELRIC principles, that would not be an issue from a TELRIC perspective. Because in the future, you may have, yeah, you will have growth, that's correct. But at any future point in time, if we wanted to do another TELRIC, you would certainly accommodate or build plant or you would -- you

would have a higher level of demand, but you would build -- you would resize your plant at that point in time because of the long run nature of TELRIC. So I mean I'm very restricted here, because I'm strictly a cost person.

Q. Okay.

A. I think you're asking me about expenses.

MS. HOPFENBECK: I think I understand Verizon's perspective. Thanks, I don't have anything further.

JUDGE BERG: Ms. Doberneck.

MS. DOBERNECK: I have no further recross.

JUDGE BERG: Mr. Butler.

Just a few more questions from the Bench before redirect.

MS. MCCLELLAN: Okay. Your Honor, if this would be an appropriate time, Verizon would see a need to seek clarification on one of Dr. Gabel's Bench requests. After conferring with the court reporter and the witness, we're not entirely sure what he's asking for.

JUDGE BERG: Sure, let's do that right now.

MS. MCCLELLAN: All right. I believe it is Bench Request Number 38.

DR. GABEL: I believe we were discussing

Mr. Collins' testimony where Mr. Collins says that for a trunk to trunk call, he took the SCIS output and divided it by one half. And I understood he divided it by one half to reflect that one half of that trunk to trunk connection is the ISDN PRI termination. And in applying this factor of 50%, my concern is has he eliminated the right amount of switch fabric costs. And when I used the term switch fabric, I'm going back to his illustration of how he visualizes a switching machine, which is a trunk module connected to the switch fabric connected to the switch module that leaves the office on interoffice facilities.

MS. MCCLELLAN: Thank you.

DR. GABEL: So I think what I said at the time is in his visualization of the network, there are three parts, the trunk termination for the ISDN PRI, the switch fabric, and the trunk termination for the interoffice facility. And so if all costs were equal, it seems like you would want to eliminate one third of the costs, not one half, and that is because there is still the switch fabric, and there is still the trunk module that is used for the interoffice facilities.

MS. MCCLELLAN: Thank you, I think we understand now.

E X A M I N A T I O N

BY DR. GABEL:

Q. And I guess the thing that I still was hoping I could obtain a little more clarification on, Mr. Collins, is for that one third of this vision of the switch, and that is where the ISDN PRI trunk is terminated, it is your testimony that that is non-traffic sensitive investment?

A. Yeah, not only would the actual trunk termination, conceptually I would equate that with a trunk card or a line card, that of course is obviously non-traffic sensitive and part of the port. But it would be the -- in the switching module itself where the concentration is occurring or lack thereof, that would also be associated, that investment would be associated or driven by the number of ports.

Q. Okay.

A. And non-traffic sensitive.

Q. Would you agree that if a CLEC served two ISPs, and one ISP received 20 CCS of traffic and the other ISP received 2000 CCS of busy hour traffic, that the larger ISP, the one that's receiving 2000 CCS of busy hour traffic, would need more trunk terminations?

A. Numerically I'm not sure. It sounds like they would, but I don't know what the CCS, total CCS

capacity of a single PRI termination would be. If it does exceed that, then they would, yes.

Q. Okay. So as a -- well, let me just ask a more general question. Would you agree that the number of ISDN PRI terminations that are ordered by the ISP is a function of the amount of traffic that the ISP will be receiving?

A. Yes, that is an item that they need to engineer, and we incur the cost in relation to the number of ports that they purchase.

Q. They being the ISP?

A. They being the ISP, yes.

Q. So you -- so it would -- I just want to make sure I understand your testimony. It's you do believe that the number of ISDN PRI trunks that are ordered is a function of the amount of traffic, but that's a decision made by the ISP, not by Verizon?

A. Yeah, I guess I should clarify. From our perspective, the number of trunks ordered is a function of the desires of the customer. It is basically none of our business why they want to order the number of trunks that they do. And it just so happens that indirectly it is probably a function of the quality of service that they want to provide their customers in terms of, you know, blockage and busy signals. I mean there may be

other reasons too; I don't know.

JUDGE BERG: That's all from Dr. Gabel, thank you, Mr. Collins.

Madam Chair.

All right, now would be a good time for redirect.

MS. MCCLELLAN: I thought you were going to say for a break.

JUDGE BERG: Well, I was trying to find an appropriate adjective, scintillating, to put in front of redirect. I thought that might be inappropriate.

CHAIRWOMAN SHOWALTER: You supply the stimulating.

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

BY MS. MCCLELLAN:

Q. All right, Mr. Collins, do you remember this morning Mr. Kopta and I believe probably some other attorneys, but I remember Mr. Kopta asked you questions about the structure sharing mix assumed in Verizon, I mean in ICM?

A. I think we talked about both the structure sharing inputs and also plant mix being the percent aerial, buried, and underground at least at various times.

Q. All right. Are both of those user adjustable inputs?
A. Yes, they are.
Q. And is the cable sizing that Mr. Kopta was referring to at page 33 of your direct testimony, the cable sizing based on an assumption of 2.34 lines per lot, is that also a user adjustable input?
A. Yes, it is.
Q. Okay. And yesterday when you testified about the structure sharing for dark fiber, and you testified that the structure sharing assumptions for dark fiber would not be relevant for underground; do you remember that?
A. Yes, I said that the model built the investment on a per fiber per strand basis.
Q. And does your dark fiber study include structure sharing input?
A. I have to apologize to Mr. Kopta. When I did go back through the study and look in more detail, there is actually an input for structure sharing for underground facilities. That's something I had found in another state that I had brought up to our model development folks, you know, saying that that was an improper application of sharing, because we were expressing a cost on a per stranded fiber basis, and

that sharing would be irrelevant. I thought that had been removed, and it should have been removed. So what we have basically done is we have taken a model that did not, at least for underground, we have taken a model that did not require any accommodation for sharing because it's not relevant, and we have applied on top of that a sharing percentage. So we have basically understated the investment slightly as a result.

Q. Okay. And also in your discussions with Mr. Kopta, you talked about whether the fill factor discussion that you two had relating to ICM would apply to a DS3 circuit in your separate study; do you recall that?

A. Yeah, I think the questions had to do with would you expect to see the same fill factors in the two wire loop, four wire loop, DS1, DS3, and various types of facilities.

Q. And would you expect the fill factor to be the same for each of those?

A. No, no, I wouldn't expect to see -- only by incredible coincidence would you see the same fill factor on a DS3 loop that you would on a basic, on a two wire loop. There's no reasonable expectation that they should be the same.

Q. Okay. And a couple of times in cross, and

the first time this happened was in a discussion with Mr. Kopta on the dark fiber assumptions regarding how many ducts are in a trench, and you were asked whether that assumption was Washington specific or a system wide basis, and you said a Verizon system wide. Do you recall that?

A. Yes, I think I said that was an engineering assumption that was based on I guess an engineer's experience system wide.

Q. And when you said system wide, were you referring to the former GTE states system wide or the entire Verizon nationwide East and West Coast?

A. I wasn't very clear on that. I was referring to the former GTE system wide.

Q. Okay. And then you also had a discussion about the aerial versus buried cable assumptions in ICM; do you recall that?

A. At various points in time, yes.

Q. Is that a user adjustable input?

A. Oh, yes, the plant mix inputs are all user adjustable. And I think I said earlier, maybe earlier today, they're user adjustable on a wire center basis.

Q. Do you recall that Mr. Trautman discussed with you what has been marked as Exhibit 1354, and it's Verizon's response to Staff Data Request Number 2?

A. Yes.
Q. And you reviewed this response before it was filed, didn't you?
A. Yes, I did. I wanted to make sure it wasn't from the previous docket.
Q. Okay. No, I mean the one that's been marked as 1354.
A. Yes, I did.
Q. So the results depicted in the chart in the attachment are accurate to the best of your knowledge?
A. Yes, they are.
MS. MCCLELLAN: Your Honor, I would like to move for the admission of Exhibit 1354 into the record.
MR. TRAUTMAN: No objection.
JUDGE BERG: So admitted.
BY MS. MCCLELLAN:
Q. And I believe today you had a discussion about the source for the loading factors assumed in what was marked as exhibit and admitted as Exhibit C-1175, three pages printed from ICM.
A. Yes.
Q. And I just wanted to clarify, is the source of those loading factors ARMIS?
A. Yeah, that is the Factfinder database uses ARMIS data.

MS. MCCLELLAN: I have no more questions.
JUDGE BERG: Any additional cross?

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

BY MR. KOPTA:

Q. Just a couple of follow up if I might. Are you saying that for the buried or underground portion of the model, that there was a sharing component of it that was applied even though in theory that wasn't necessary or appropriate in the model; is that what I'm understanding you're saying now?

A. Yes, it is a methodological error in the model.

Q. And how does that impact the model? How was that applied into the model even though it's not supposed to be there?

A. In the model, there is a -- basically what the model does is it sets up two scenarios, a shared scenario and a non-shared scenario, and then it weights the two together. And it multiples in the percent sharing that the percent sharing would apply to the shared. It would be the weight applied to the shared scenario.

Q. And am I correct that as the model is currently constructed, that would be appropriate for the

above ground facility, the poles, but not for the underground; is that correct?

A. Actually, yeah, that is correct, because the underground investment costs, the material costs and labor costs, are all expressed on a per foot basis, and then they're broken down into a per strand basis. So like I said yesterday, there's no need then to apply any sharing percentages.

When it comes to the costs for the poles though, we have run into some difficulty, because poles, we don't get poles by the foot, so we have to express those somehow on a per foot or per strand foot basis, so then we do apply our ICM sharing percentages to the poles, to the aerial structure.

Q. And what was it, was it the same structure sharing amount that you used for both the aerial and the underground on the model?

A. I'm sorry, you mean -- what do you mean same structure amount?

Q. You, as you described the underground portion of it, you said that it shouldn't have a sharing component to it, but that the aerial does. Did you, or not you maybe specifically, but whoever it is that you were speaking with that applied this to the model, was it the same sharing percentage that is supposed to be

used for the aerial that was applied to the underground, or was it a different sharing percentage that was applied to the underground?

A. Oh, if you're speaking about the inputs for sharing percentage, they were dramatically different ones. We have a fair amount of sharing that occurs in the aerial plant, and that was the sharing input from ICM that we used for the aerial.

Q. And what was the sharing input for the underground that was used but shouldn't have been used?

A. I don't recall the exact number, but it was a pretty -- a very small percentage, maybe 9%. I can't remember now.

Q. So any underestimate of the costs that you testified, results from that would be very small?

A. Right, they would be very small.

Q. You also had a discussion on redirect about fill factors and whether they would be the same for a two wire loop as for a DS3 loop, and you testified, I believe, correct me if I'm wrong, that you would not expect them to be the same; is that correct?

A. That's correct.

Q. And could you explain why you would not expect them to be the same?

A. Well, you have -- compare a two wire loop

with a DS3 or DS3 loops, if you will, I mean the capacities are so dramatically different. And we talked earlier about modularity, just the fact that you've got huge lumps of capacity when it comes to DS3s as opposed to smaller lumps of capacity in copper facilities of, you know, 50, 20, 25, 50 pair, 100 pair cable. Just those differences in and of themselves would lead to differing fill factors. Also what would come into play might be the characteristics, the end user characteristics or the customer characteristics might be different. The fill for two wire loop includes both business and residential customers, and the fill for DS3 would be predominantly driven by business customers.

Q. And as I understand it, the fill factor would be looking at the difference between copper wire and fiber cables as opposed to really a service distinction, wouldn't it, in terms of how you're going to cost the facilities that are used to provide each of those types of loops?

A. Well, when you apply the fill factor or the fill factor in copper versus fiber, the predominant difference would be driven by the, in the fiber case, would be the fill of the equipment at the ends of the fiber. And, of course, in the copper case, it would be the fill on the cable itself.

Q. So you're saying that there may be a finite fiber capacity in the cable, but the electronics at the central office would determine how much of that fiber could be used?

A. I wouldn't say it exactly that way. I think the equipment at the ends of the fiber determine the capacity of that particular facility, and that would be the cost driver, and that's where you get the biggest application of the fill factor.

Q. Wouldn't, in that circumstance at least looking strictly at the cable without looking at the electronics, be the difference between lit and dark fiber?

A. Looking at the cable only?

Q. Yes, in terms of shar --

A. Oh, how many are lit versus dark you mean?

Q. Well, in terms of determining how to assign costs, replacement costs for the fiber cable. Wouldn't you be looking at lit versus dark fiber in terms of what we would think of as a fill factor for the cable?

A. You would look at the number of cables, I mean number of strands used within a particular cable as opposed to those unused.

Q. And in the case of fiber, would that be lit versus dark, or is there another distinction?

A. I think lit versus dark would make sense.
Q. And would you expect the ratio of lit to dark fibers to be significantly different than the fill factor for copper cable?
A. I don't know if I have any basis to compare the two.
Q. Then I'm wondering how you can come to the conclusion that you would expect fill factors to be different between DS1 and DS3 facilities, or not DS1 and DS3, but two wire loop versus DS3?
A. Well, as I said before, the main fill factor that should be a concern would be the equipment -- the fill of the equipment at the ends that determines the total capacity. What we're talking about in terms of the cable itself, the fiber, is a very small piece of the overall pie.
Q. So you --
A. We're talking about just a few strands of fiber.
Q. So you may be talking about two different types of fill factors?
A. That's correct.
MR. KOPTA: Thank you, that's all I have.
JUDGE BERG: Any further redirect?
MS. MCCLELLAN: No, sir.

JUDGE BERG: All right, Mr. Collins, you have been here a long time on the witness stand, I appreciate very much your patience and your attention to detail. At this point, your testimony is concluded, and you are excused from the hearing.

THE WITNESS: Thank you, Your Honor.

JUDGE BERG: And at this point, we will segue into the testimony by Howard Lee Jones.

And if we can just stay on the record, I'm going to read three exhibits into the record for identification. T-1180 is rebuttal testimony of Howard Lee Jones, previously identified as HLJ-1T. Exhibit 1181 is Verizon Response to Joint Intervenor Data Request JI-24, also previously marked as HLJ-2. And Exhibit 1182 is Verizon Response to Joint Intervenor Data Request JI-22, also previously identified as HLJ-3.

We will be off the record.

(Discussion off the record.)

JUDGE BERG: Ms. Doberneck, even though we have appearance contact information from parties' representatives in this case, at the start of the hearing we, for the purpose of incorporating that information into the transcript, each attorney gave their name, address, phone number, fax number, and E-mail. Would you please do that at this time.

MS. DOBERNECK: Certainly. Megan Doberneck, Covad Communications Company, 7901 Lowry Boulevard, L-O-W-R-Y, Denver, Colorado 80230, telephone number (720) 208-3636, fax area code (720) 208-3256, E-mail address, mdoberne@covad.com.

JUDGE BERG: Thank you.

We will be off the record.

(Discussion off the record.)

JUDGE BERG: Mr. Jones, would you please raise your right hand.

Whereupon,

HOWARD LEE JONES,

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

JUDGE BERG: Thank you, sir.

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

BY MS. MILES:

Q. Good afternoon, Mr. Jones.

A. Good afternoon.

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

A. Howard Lee Jones, 600 Hidden Ridge, Irving,

Texas 75038.

Q. Okay. And did you file or cause to be filed in this proceeding exhibits numbered T-1180, 1181, and 1182?

A. Yes, I did.

Q. And do you have any changes or corrections to those exhibits?

A. Just a few. The first, of course, comes on the very first page. My new title as of approximately a month or so after I wrote this anyway is Manager Service Cost for Verizon.

Q. Okay.

A. Secondly, on page two of the testimony, lines 8 and 9 presently reads, next generation technology is the source of SS7 signaling gateway equipment that I refer to later in my testimony, I will delete that sentence since I don't refer to that later in my testimony.

And just a typo on page 16, line 5, the characters O-T at the end of the line should be reversed to say in proportion to the amount of traffic on that line.

MS. MCCLELLAN: And we will file a written errata for the Bench.

JUDGE BERG: Thank you, Ms. Miles. We will

identify that errata as E-1180.

MS. MILES: Okay.

BY MS. MILES:

Q. Other than that, is the testimony in the exhibits T-1180 through 1181 and 1182 true to the best of your knowledge?

A. Yes.

MS. MCCLELLAN: At this time, I move the admission of those exhibits.

JUDGE BERG: All right, T-1180 through 1182 including E-1180 are admitted.

MS. MILES: With that, Mr. Jones is available for cross-examination.

JUDGE BERG: 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. Jones.

A. Good afternoon.

Q. I'm Greg Kopta representing several CLECs in this proceeding, and I have a few questions for you. And I would like to begin with your rebuttal testimony in Exhibit T-1180 on page 3, specifically the sentence beginning on line 18.

A. Yes.

Q. And you're discussing ISP or the costs that new entrants have incurred to provide service to ISPs, and you state in that sentence that I referenced that:

> It's especially true for the Commission to focus on the costs that new entrants incur when new entrants have focused their marketing efforts on a specific type of customer and then design and deploy their networks to meet a specialized service demand.

Is it your testimony that CLECs in Washington have focused their marketing efforts on ISPs?

A. I would -- a little later on in this testimony, I show that the CLEC bills are 17 times the minutes of use it receives in return. Actually, Verizon's bills from CLECs in Washington are 17 times the minutes of use it receives in return from the CLECs which we bill to the CLECs. In my experience, that situation where you have an out of balance condition like that would mean that in general, not for every CLEC, but in general that that kind of ratio between inbound and outbound traffic would indicate that ISP traffic was most likely involved.

Q. So --

A. On the CLEC side, going to the CLEC.
Q. So your statement then is in support for your statement is the traffic imbalance that Verizon is being billed for; is that --
A. Right, actually the statement itself, sir, doesn't necessarily say that, you know, which CLECs have concentrated or all do or anything like that. It just advises the Commission that in this instance, it would be appropriate to look.
Q. So you haven't reviewed any CLEC marketing efforts in Washington?
A. No, sir, not personally.
Q. Or price lists on file with the Commission in terms of the types of services that are being offered in Washington by various CLECs?
A. I'm basing this on our interconnection traffic flows.
Q. If you would please turn to page five of the same exhibit.
A. (Complies.)
Q. And specifically referencing the table that you have on this page, the footnote at the very bottom states:

> The source of this information is a 2000 year end unit report from Verizon's

demand analysis forecasting departments.

Am I correct that this is an estimate based on a particular department within or departments plural within Verizon in terms of how these lines are --

A. I wouldn't characterize it as an estimate. It's not a forecast. It is the -- the database which the forecasting department uses actually obtained this in February, so they had their 2000 end year data, and so it is the numbers that the forecasting department would be using to base their future prognostications upon, and it is an actual retrieval from the billing system.

One of the reasons that I put the footnote in, sir, is that in terms of preciseness, if you want to call it that, because of the moving target nature of installed lines and so forth, certain end year numbers that may be submitted to the Commission, and these particular numbers I'm certain they wouldn't vary by any great degree, 1% or 2% at the most, but because of the use that the forecasting department makes of this, they -- they don't necessarily file those on Form Ms or anything like that, and that's the reason that I put the footnote in.

Q. And where does the demand analysis forecasting department get this information?

A. From the billing system.
Q. From the billing system. So Verizon identifies in its billing system which lines are served by ISPs and which are not?
A. Yes, it's not a requirement of billing, but Verizon has bifurcated, if you want to call it that, the account handling of ISPs into a separate group, and so all ISP sales reps are only commissioned on selling ISPs in that group, and that's very important to them that they be separated.
Q. So ISPs self identify to Verizon when they're ordering service?
A. Yes, more or less.
Q. Is it more or less? I mean it's not -- is it a requirement before an ISP to obtain service that Verizon --
A. It's not a regulatory requirement, no.
Q. Is it a company requirement that you ask when a business customer calls up?
A. Yeah, you ask. It's pretty easy to tell, because the ISPs order services that have very few incremental vertical features at all. So generally when you have business customers would order these kind of dial tone services, you would get requests for any number of call waiting kinds of services or PBX

functionality interfaces and certain signaling arrangements. These -- these services are pretty straightforward, and if you get in a request for a couple of hundred of these, you're going to have a good indication this is an ISP. And, of course, ISPs will have, you know, customer names like AOL, and this becomes fairly straightforward.

Q. That's true certainly for AOL, I will grant you that. As I look at this exhibit, and I'm comparing the business trunk served lines in the top grouping here that has the number of lines being 23,355 with the total lines of ISP, or actually the ISP is trunk served lines of 44,377.

A. Right.

Q. Am I correct in looking at those numbers, and if you can trust a lawyer to do math, concluding that approximately one third of Verizon's trunk served lines are non ISP customers?

A. That being a line DS0 equipment lines, yes. But yes, one third of the trunk capacity is going to -- trunk served capacity is going to ISPs.

Q. On the next page of this exhibit, page six, toward the bottom of the page I believe is where you were referring earlier in terms of the imbalance between the traffic. And I'm looking at the sentence that

begins on line 18, and at that sentence, you draw the conclusion that:

> The traffic imbalance indicates that the CLECs are serving a customer base containing a majority of ISPs since no other business type exists that can create this kind of volume for one-way dial traffic.

Have you conducted any studies of other business types to determine whether they are predominantly inbound or outbound calling at a level that would approximate 17 times?

A. I have conducted a lot of studies over 22 years of telecommunications looking at billing tapes and so forth, but I looked up something that gets to that question in a data request from Joint Intervenors, let's see here, JI-21, and this is in the confidential pink color, but I believe on the top of page 10-11, it talks about -- and this is a study that I paid for actually. The first observation is that:

> Retail stores such as restaurants don't have nearly the same volume of traffic as large Internet service providers, as a large Internet service provider. The ISPs in the previous section handle as

much as half a million minutes of use daily, while the busiest Pizza Hut in the study handled only 286 minutes of use. In fact, the largest non ISP users of the switches under study were voice messaging systems. These systems recorded minutes of use in the 3000 to 5000 range. Next were hospitals and large hotels in the range of 1000 to 3000.

So the comparative numbers are half a million, and the highest number that this study gives is 5000 for voice messaging systems.

Q. And that is not one of the exhibits that was previously identified that you are sponsoring in this docket; is that correct?

A. That's true.

Q. But I'm seeing two things here. One is that you're talking about the volume of traffic, and the other is you're talking about the imbalance. So I want to focus on the imbalance. You're not testifying, I take it, that there are not businesses out there that have the same kind of imbalance of inbound versus outbound calling, are you?

A. There may be some businesses, sir, but if

we're talking about a telecommunications provider and a telecommunications provider interconnection between two telecommunications providers, we're going to necessarily I think looking at more than one end user, okay. So if I look at end user percentages of totals that the pizza business might generate, I would never find a ratio that would come as a expected ratio of 17 to 1.

When I looked at Pizza Huts in an average of Verizon's customer set, which would have been basically go back to the table 1, I mean those residence and business lines are 97.7% of all different kinds of customers. If there were Pizza Huts in there, that wouldn't change the numbers of the ratio at all.

Q. And I guess what I'm saying is that you're drawing the conclusion that a majority of the customers that a CLEC serves are ISPs, and based on the volume of the traffic, as I understand it. And I guess what I'm asking you is, isn't it likely that there may be even more other customers than ISPs that have a similar traffic imbalance, not at the same volume, but also have a similar traffic imbalance so that you can't really tell by the traffic imbalance the total number of customers that a CLEC has and the nature of those customers on a customer count basis?

A. If a CLEC were to concentrate on let's say

particular, just particularly Pizza Huts, I don't think that even then you would necessarily get this kind of ratio in a broad traffic basis. But I think that with the holding time combined with the traffic ratios, you can at least predict that there is a significant quantity of ISP traffic involved.

Q. And I understand that that's what your testimony is. I guess my concern goes to the conclusions that you draw from that that somehow the majority of customers served by CLECs in Washington are ISPs just based on traffic volumes. And it certainly is my lay understanding that there are many businesses that would have predominantly inbound as opposed to outbound calling patterns, and that therefore there may be a number of additional customers that a CLEC would have in addition to ISP customers that would still result in the traffic imbalance that you have noticed.

A. It's conceivable, but the first avenue that I would look to to cause the imbalance like that is ISP traffic.

Q. Would you turn to the next page in your Exhibit T-1180, that's page 7. And again focusing at the bottom of the page, beginning at line 19, actually carrying over to the end of the sentence on the top of the next page, is it your testimony that CLECs in

designing their networks do so in a way that excludes line side trunking for customers?
A. No it's not my testimony that that would exclude anything. It's just that given the volume that would be trunk side one way, there wouldn't need to deploy nearly as much capacity for line side.
Q. And given that there is traffic flowing to Verizon since the assumption in the 17 to 1 ratio is that the 1 is traffic that's coming to Verizon, obviously CLECs do have customers that originate calls that terminate to Verizon; isn't that true?
A. Well, some of them do, yes.
Q. And those are maybe line side as well as trunk side served business customers from the CLEC?
A. A small proportion of them probably could be. I expect that CLECs have presented before in some of them in this case that they serve mainly large business customers, and those would normally be trunk side served or at least largely.
Q. Does Verizon provide unbundled loops to CLECs in the state of Washington?
A. Yes.
Q. And those would be line side or trunk side connections?
A. Those would be line side.

Q. On page 11 of your Exhibit T-1180, you discuss in the first answer on that page beginning on line 5, an algebraic model that can be used to determine a statistically valid estimate of ISP bound traffic, and I believe that's what you have attached to your testimony and is now identified as Exhibit 1181; is that correct?

A. Yes.

Q. Would you turn to that exhibit, please, and it is the first page of that exhibit I'm interested in, although the number at the bottom says 27. And continuing our theme of looking at the bottom of pages, I'm looking at the numbered paragraphs, which, correct me if I'm wrong, seems to be the method for calculating the ISP minutes that you referenced in your testimony; is that correct?

A. Right.

Q. And as I look at number 1 of this calculation, are you saying that you assume that calls that last 30 minutes or longer are ISP calls, and calls that are less than 30 minutes are voice calls?

A. I wish it were that simple. You would have to go to the next page to define the mathematics.

Q. Well, I guess I'm trying to understand how you determine when an ISP call is being made as opposed

to when a voice call is being made. And as I look at this, it looks as though you're simply doing it based on hold times of the call; is that not right?

A. That's correct, but it does not simply cut off the time frame and categorize calls at 30 or above 30 as ISP and everything else as voice. What it does is it nets the voice call minute calculation out of the ISP number and creates a percentage of ISP calls essentially. The purpose of this was on a bill that I received from a CLEC, because I'm going to get the minutes and I'm going to get the calls, and so what it's doing is it's grouping all the calls that have a mean average of 30 minutes together. Some have less and some have more than 30 minutes, but none has less than 6 minutes. And then it groups all the calls that have a mean of 6 minutes around the 6 minute percentage. And so percentagewise anyway, that's how it splits the bill.

Q. So if I go home tonight and log on to my law firm's computer network and check my E-mails for half an hour, would that be a call that would be considered an ISP call using this formulation?

A. Yes, probably.

Q. Similarly, if I have gone home and found my wife on the phone with her mother and it's a 30 minute conversation, would that be considered an ISP call under

this formulation?

A. Yes, it would, but given that we have such a huge volume of ISP calls versus other calls that are long in duration or -- and ISP calls sometimes are short in duration too, those kinds of exceptions, those kinds of, in terms of statistics anyway, very minor contributions to the weighted averages of the numbers wouldn't tend to distort this thing to any great degree. I believe the percentage of confidence in this thing is -- actually, I have that. It's in the high 90's, 94% or 95%.

Q. Have you done any separate studies of call hold times for other trunk side business lines like local area networks?

A. Not local area networks. We, you know, have done the study that I referred to earlier that was about large businesses and retail stores and such.

Q. But at least with respect to data traffic, my calling up my computer system at work, telecommuting, that sort of thing?

A. Right, I doubt again that that would constitute anywhere near the volume that ISP calls create, but no, we haven't particularly looked at LAN access.

Q. And do trunk side connections generally

generate more traffic than line side connections on a per trunk basis?
A. Yes, they probably would during the business day.
Q. I'm going to change topics and refer to page 17 of your rebuttal testimony, Exhibit T-1180, where you're discussing two principles that govern Verizon's approach to compensation for local interconnection facilities. And I just kind of wanted to run through a couple of questions for you to see how they fit within these principles or don't fit within these principles. But first, would you agree with me that interconnection facilities are those facilities that connect Verizon's switch with a CLEC's switch?
A. Yes.
Q. And as a matter of principle, is Verizon willing to pay its proportionate share of facilities that are actually used to connect those two switches?
A. Its proportion as stated here for the capacity necessary to deliver Verizon traffic within a reasonable distance, yes.
Q. But with the reasonable distance aside, let's take that as a given for now, but Verizon is willing to pay for its proportion share, which I would define as a percentage of traffic that Verizon delivers to the CLEC

to be terminated on the CLEC's network as a percentage of the use of the interconnection facilities. With that clarification, is Verizon as a general matter willing to pay its proportional share of interconnection facilities that are actually used to connect the two switches?

A. Sir, there had been some positions in the past that if that facility were used for ISP traffic, then there would be some examination of that question. At present, however, this reads as it reads and would indicate a positive answer.

Q. I gather that was a yes with some qualification?

A. Yes.

Q. Okay. Does that include entrance facilities that Verizon provides for interconnection, entrance facilities being a defined product term or product offering or service that Verizon offers, or do you know?

A. I don't know.

Q. What about Verizon interoffice transport?

A. To whatever extent that's in a reasonable distance. Depends on exactly what product you're talking about. This is just interconnected local traffic. Now there are certain other arrangements, EELs and various other things, that I'm not talking about. I'm talking about strictly local traffic, our

originators switched to you.

Q. And I'm obviously assuming something that you are not, so just to make it clear, when I'm referring to interoffice transport, it's my understanding that entrance facilities are the facilities that go from Verizon's switch to a point outside the CLEC's switching center, and that interoffice transport would be required if you wanted to have a dedicated path from the CLEC switch to a different office that's further away. So you would have transport between the two Verizon offices and then entrance facilities from the closest Verizon central office to the CLEC switching center.

A. I'm going to have to defer that to Mr. Trimble, if you don't mind.

Q. Okay. I'm gathering that as I talk about specific facilities that that's not something that you are --

A. Comfortable with.

MR. KOPTA: Comfortable with, all right. Then I will save those for Mr. Trimble, and those are all of my questions, thank you.

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

BY MS. HOPFENBECK:

Q. Mr. Jones, my name is Ann Hopfenbeck, I'm

with WorldCom. I'm going to just follow up briefly on a few of the areas that Mr. Kopta questioned you about. Initially, I would like to go back to your rebuttal testimony, T-1180, page 6, and I would like to focus again on this statement that you make that this traffic imbalance "indicates that the CLECs are serving a customer base containing a majority of ISPs". Okay, and based on your answers to Mr. Kopta's questions, what I understood you to say is that you draw the conclusion based on this traffic imbalance that the majority of traffic goes to ISPs; is that right, that the traffic volume is largely ISP traffic that goes from Verizon to the CLECs, correct?

A. I'm not getting the question, please, can you --

Q. Well, you have observed that Verizon's bills are 17 times the minutes of use it receives in return traffic from CLEC. Okay, you make that statement?

A. Yes.

Q. And from that, you draw certain conclusions. And is one of those conclusions that the majority of the traffic volume flowing to CLECs is ISP traffic?

A. It is a conclusion and a likelihood.

Q. Okay. But I want to follow up on Mr. Kopta's questions about what it tells you about the CLEC's total

customer base. You can't really determine the number of customers that a CLEC is serving based on that traffic volume, can you?

A. No.

Q. So I mean a CLEC could be serving one or two ISPs with lots of traffic running to them and also be serving many customers with line side connections; is that fair?

A. That's probably true, but I might qualify that that we're talking about the volume of traffic, not the quantity of customers.

Q. Right, but that's my -- I wanted to focus on this statement that said that this indicates that the CLECs are serving a customer base containing a majority of ISPs. And I just want to make sure, that's not really what we're talking about here, it's a volume of traffic issue, right?

A. Yes, in essence, it should say customer base that generates a majority of traffic to ISPs.

Q. Okay. And in designing its network, a CLEC that is serving a lot of different customers including ISPs doesn't design its network solely to serve sort of one small geographic area with just trunk side connections, does it?

A. Networks are based upon capacities, so, you

know, even though there would be a what you might want to call less profitable set of customers, that the CLEC would have a choice to invest facilities in to basically be used at a lesser capacity, the capacities required here would indicate that that's where the investments and the design work would get done.

Q. Well, I would like you to turn to your testimony at page 8, this is T-1180 again. And I would like to ask you on line 14, you use the phrase or you say, geographically concentrated trunk side switching platforms, and that's the kind of platforms that you suggest CLECs are deploying, and I want to know what you mean by that phrase, geographically concentrated trunk side switching platforms.

A. Essentially that means that in a given metropolitan area, a CLEC may only have one concentrated switching platform, and that would serve largely ISPs, and it would be one way concentrated traffic.

Q. But you would have to agree that that switch, that CLEC's -- that -- I mean I assume you're referring to sort of what we have talked about in this proceeding as a SONET ring technology that many CLECs deploy?

A. (Shaking head.)

Q. No?

A. Not necessarily, that's the transport.

Q. Right, and SONET allows a CLEC to deploy a much more limited number of switches than are deployed typically by the ILECs, doesn't it?

A. Yes.

Q. Now a CLEC that has deployed a single switch can use a single switch depending on the rest of the network it employs, such as a SONET ring, to serve a very wide geographic area; isn't that fair?

A. SONET is -- I really don't know that this whole picture is true. SONET is just as equally available to ILECs or to Verizon, so it's not a matter of network design that you have SONET, one has SONET and one does not.

Q. Are you aware that this Commission has found in the past that at least one CLEC, MFS in particular, has a switch that serves an area that is -- that serves an area that is comparable in geographic scope as a tandem switch that Qwest has in its network, for example?

A. Yes, I'm aware of that.

Q. I would like to ask you a little bit about your testimony at page 13. There you're addressing Mr. Argenbright's discussion as to why a functional analysis of ISP bound traffic does not support assertions that a call to an ISP terminates at some

point beyond the ISP. Do you see that testimony, that discussion?

A. Yes, I do.

Q. Okay. You agree that the CLEC does take care of the call completion signaling in the case of when it delivers ISP traffic; don't you?

A. If you're talking about the off hook signaling.

Q. Uh-huh.

A. That's true, but I don't think that that is the, quote, completion of signaling in an ISP bound call.

Q. You disagree with the significance of that fact?

A. Yes, I do.

Q. But you don't disagree that it happens; is that right?

A. Well, first of all, you -- I -- it does happen, there are some signaling exchange, and there's additional signaling over the Internet that is required and so forth, but signaling does not define call completion.

Q. That's your point here. With respect to the signaling that you referenced that takes place over the Internet, that is not the signaling that is performed by

either of the telecommunications carriers that are handling this call, is it?

A. That's true, but it's necessary to complete the call.

MS. HOPFENBECK: Nothing further, thanks, Mr. Jones.

E X A M I N A T I O N

BY DR. GABEL:

Q. Mr. Jones, good afternoon. I would like to ask you to turn to page six of Exhibit 1180, and am I correct that at the top of the page, you provide an explanation of why ISPs may want to use a PRI ISDN connection?

A. Yes.

Q. And you explain at line four it's because if somebody dialing up the ISP wants a full 64 kilobyte per second path, that's available when the ISP uses ISDN PRI?

A. Only, yes.

Q. Based upon your familiarity with this market, and I read your background, how is this desire for or demand for BRI or PRI being influenced by the growth and availability of DSL and cable modems and maybe fixed wireless high speed connections to the Internet?

A. Well, first of all, anything that starts from zero takes a long time to affect the dial up modem market. So basically DSL services started in late '99 for GTE, the former GTE, probably later for lots of other players, but I will let them speak for themselves. So we're right now nationwide, last time I looked, now at a significantly lesser number of DSL services than the one Interstate modem service that I was the product manager of has half a million modems in the former GTE territory. And that -- each of those modems, each of those half a million modems can serve ten customers.

And so when you talk about the impacts of DSL on dial up modem traffic, also given the fact that there's elasticity in demand, it's going to be a long time before the vast amount of CCS traffic on the dial network is impacted to a huge degree, at least begins to go down from DSL and cable modems and everything else.

Q. All right, I understand your response, Mr. Jones, to be that at this point in time, there are many more customers dialing up than relying on DSL service. I would like you to consider a subset of those dial up customers, and those are the ones who were most interested in getting high speed access to the Internet. Now are those the type of customers who were ordering BRI service?

A. Yes.
Q. And BRI service would be more expensive than a plain old POTS service?
A. Right, and also this is something that I didn't include, but I probably could have, if you order BRI service, you can bond your two 64 kilobyte channels and get 128 kilobytes. So there is quite a market for BRI, at least prior to the arrival of DSL services, the bonding feature which came late to the modem market but began to sell.
Q. And am I correct that DSL service might be at 256 kilobytes per second or at a faster rate?
A. Yes.
Q. Okay. For those customers who wanted to be on the leading edge of getting high speed connection to the Internet, do you have any knowledge of the degree to which they have started to substitute DSL or cable modems for BRI service?
A. I can only talk from being at technical forums and so forth. I was in a forum in, a Lucent forum, just a month or so ago or two months, I think they were talking somewhere around 25% of the total adoption of the Internet subscribers was now DSL based.
The issue here, sir, is that even if you have a, you know, T1 speed access to the Internet, if the

server where you're looking at the web site is only connecting at 56 kilobytes to the backbone of the Internet, you're not going to get any faster speed out of your service anyway, as well as there can be web server congestion, which is going to slow you down too.

DR. GABEL: Thank you.

CHAIRWOMAN SHOWALTER: I have one question, and it relates to your testimony T-1180, page 10, lines 1 through 3. You make reference to a filing or a letter or something, an ex parte by Commission Staff to William Kinnard on December 14th, and I'm just wondering if you could provide me with a copy of that. I guess that comes in the form of a Bench request. I'm unclear what document you're referring to.

THE WITNESS: Okay, I would be very glad to.

MS. MILES: I think we've got one handy, so we will make copies.

JUDGE BERG: That will be Bench Request 39 referencing the Washington Commission Docket on page 10 of Exhibit 1180.

CHAIRWOMAN SHOWALTER: And I will determine when I see it, but you presented this as the Washington Commission position, but then it's something that you say is presented by Commission Staff, and I'm mainly wondering if it is, in fact, representing the Commission

or Staff, so I will decide that for myself, thanks.

THE WITNESS: Okay.

JUDGE BERG: Redirect, Ms. Miles?

MS. MILES: Just a couple, and can I have one moment?

JUDGE BERG: Absolutely.

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

BY MS. MILES:

Q. Initially, Mr. Jones, you referred to a Verizon response to a Joint Intervenor request earlier. We're not prepared at this time as we don't have copies to offer that, but we will probably make copies and reserve the right to offer it for admission maybe tomorrow if that's okay with the Bench and the parties, once, of course, you have a copy to see it.

MR. KOPTA: Yeah, I would like to see it since this was something that I did not bring up. It was something that the witness volunteered for the first time on cross, so I would have some concerns about bringing in a study at this point in the record. But I will reserve any objections that I would have at such time as Verizon seeks to offer that.

JUDGE BERG: I think we can take that up when the parties have had a chance to look at the document

for Verizon to have it marked.

MS. MILES: Right.

JUDGE BERG: And offer it, and we will take objections.

MS. MILES: Okay.

JUDGE BERG: But my understanding was Mr. Kopta was asking a question at the time of any other types of businesses which had been reviewed by this witness, and the witness was saying that, in fact, he had studied or reviews other businesses, and then went on to cite the source of his testimony, which often is a follow up type question anyway. We understand where it comes from, and as to whether or not the document itself is appropriate as an exhibit, we will take up after the parties have a chance to look it over and present it.

MS. MILES: Okay.

BY MS. MILES:

Q. If you could refer, Mr. Jones, to your direct testimony T-1180 at page five, and do you recall Mr. Kopta was asking you about this table specifically, doing a little math, comparing the 23,000 to 44,000 down there, some odd numbers. I believe that he asked you to say whether that represented two thirds of the trunks served business traffic, if ISP served over two thirds of the trunk served business traffic; do you recall

that?
A. Yes.
Q. I believe you --
A. Two thirds of all trunk traffic.
Q. I believe the record will show that you said one third; did you mean two thirds?
A. Perhaps I misunderstood the question.
Q. Okay.
A. I mean that ISPs are two thirds and businesses are one third.
Q. Thank you. And one last question. When Mr. Kopta was asking you about your Exhibit 1181, which is a description of how ISP traffic is determined, you mentioned that you believed the confidence rate in that method was high, say 94%. How is a confidence rate determined, or why is it so high?
A. The confidence rate is based upon the statistical calculation of the sample size. I believe this was done on a dataset that we got in Michigan, and it talked about if I have 100,000 call records and I determine the mean is 30 minutes for ISP calls and then have different datasets, one of all voice calls and one of all Internet service provider calls, then I can -- then I can say with X% confidence, given the size of my sample, that I am within plus or minus 3%.

Q. And finally, Mr. Jones, have statistically valid methods quote, unquote, been employed by telecommunications companies in the past in relationships among carriers when billing situations are in question?

A. Yes, they have.

Q. And can you give an example?

A. The example that comes to mind from working with interexchange carriers is the percentage of Interstate use, which is the amount of traffic I believe on a terminating basis that the carrier would basically calculate, and you would verify with statistics was the percentage of actually I think it's intrastate use, but it doesn't really matter, the flip side of the coin one way or the other is the percentage of feature group traffic coming down the trunk that is this jurisdiction or another.

Q. And the fact of the matter is that what one company pays to another is based on statistically valid estimates rather than actual numbers; is that correct?

A. Yes, it is.

MS. MILES: Okay, I have nothing further.

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

BY MR. KOPTA:

Q. A couple of follow ups. Just to start in reverse, does Verizon mix interstate and intrastate toll traffic on the same trunk groups?

A. Yes.

Q. Does Verizon mix intrastate and interstate toll with local traffic on the same trunk groups?

A. No, sir.

Q. Why not?

A. The same trunk groups, I assume you mean to carriers or CLECs.

Q. Yes.

A. The generally local traffic and toll traffic are handled and engineered, and of course there's exceptions to every rule, but are handled and engineered as separate trunk groups.

Q. And why is that; they could be carried over the same trunk group, couldn't they?

A. They could be.

Q. And if you could develop a percentage of traffic with the same level of reliability, then couldn't you mix the traffic on the same trunk group and apply a percentage so that you would be able to determine which type of traffic you were talking about

at which compensation level was on that trunk group?

A. I think it's an engineering concern mainly, primarily. Local traffic wouldn't have all the signaling and billing information necessarily that toll traffic would have, so it's a efficiency or whatever of splitting that traffic.

Q. But it is technically feasible to interconnect with Verizon at its access tandem for the delivery of local traffic, is it not?

A. Oh, yes.

Q. And the other area I wanted to ask you about in follow up is in your Exhibit 1181. You were talking about a study that was done in Michigan, and you were contrasting voice traffic with ISP traffic. Did that study consider other types of data traffic?

A. No, sir.

MR. KOPTA: Thank you, that's all I have.

MS. HOPFENBECK: I have nothing further.

JUDGE BERG: Any further redirect?

MS. MILES: No, Your Honor.

JUDGE BERG: All right, Mr. Jones, thank you for being here and testifying. You are excused from the hearing.

THE WITNESS: Thank you.

JUDGE BERG: Parties, rather than trying to

start with Mr. Trimble in what little time we have left, we will start with Mr. Trimble first thing in the morning. By that, the start of the hearing, the Commissioners join us on the Bench at 9:30.

We will adjourn the hearing for the day and be off the record.

(Hearing adjourned at 5:00 p.m.)