1   BEFORE THE WASHINGTON STATE

2   UTILITIES AND TRANSPORTATION COMMISSION

3   In the Matter of the Review of)
    Unbundled Loop and Switching   ) DOCKET NO. UT-023003
4   Rates; the Deaveraged Zone   )
    Rate Structure; and Unbundled)
5   Network Elements, Transport,   ) Volume XV
    and Termination (Recurring   ) Pages 1211 to 1466
6   Costs)   )
    _____)
7

8   A hearing in the above matter was held on

9   June 3, 2004, from 9:30 a.m to 6:55 p.m., at 1300 South

10 Evergreen Park Drive Southwest, Room 206, Olympia,

11 Washington, before Administrative Law Judge THEODORA

12 MACE and Chairwoman MARILYN SHOWALTER and Commissioner

13 RICHARD HEMSTAD and Commissioner PATRICK J. OSHIE.

14

15   The parties were present as follows:
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6             GERALD HARRIS, JOHN HINTON
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18        WILLETT G. RICHTER, TIMOTHY J. TARDIFF,
19          FRANCIS J. MURPHY, CHRISTIAN M. DIPPON
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1   P R O C E E D I N G S

2   JUDGE MACE: Let's be back on the record in

3   Docket Number UT-023003. This is the review of

4   unbundled loop and switching rates, the deaveraged zone

5   rate structure and unbundled network element transport

6   and termination. Today's date is June 3rd, 2004, and

7   we're convened for purposes of evidentiary hearing in

8   this docket.

9   We're scheduled to begin the day with the

10   Verizon panel testimony regarding the loop model, and I

11   would like to swear the witnesses in at this time.

12   If you would, Mr. Richter, I don't think you

13   need to be sworn in again, but the rest of you probably

14   do, so please raise your right hands.)

15   (Witnesses David G. Tucek, Gerald Harris, and

16   John Hinton were sworn in.)

17   JUDGE MACE: All right, please be seated. I

18   note that Ms. Smith is back in the room, so we can begin

19   presentation of the witnesses.

20   MR. RICHARDSON: Judge, we have two

21   housekeeping matters to address first if we could. One,

22   during Mr. Turner's testimony yesterday, there were some

23   questions about VzLoop version 7a which had been made

24   available in California, and the question I think from

25   the Bench as to when that might be available in

1   Washington. We have checked overnight with the Verizon

2   service costs people, and that has been made available

3   on the VzCost web site for all parties in Washington.

4   JUDGE MACE: So it is on the web site at this

5   point?

6   MR. RICHARDSON: Yes, it is.

7   JUDGE MACE: Thank you.

8   MR. RICHARDSON: And we were, I'm not quite

9   sure whether we got a Bench request for this or not or

10 were anticipating one, but we would like to have the

11 opportunity to supplement the record with a

12 demonstration of the impact or not of the version 7a.

13   JUDGE MACE: What would that involve?

14   MR. RICHARDSON: It would be a demonstration

15 of the investment impact of running it compared to

16 version 7.

17   JUDGE MACE: So there would be a hard copy

18 exhibit?

19   MR. RICHARDSON: It would be a sensitivity

20 run, yes.

21   JUDGE MACE: And does anyone have an

22 objection to that?

23   MS. STEELE: Well, my only concern, Your

24 Honor, is that we would of course like the opportunity

25 to review it and do our own sensitivity and perhaps file

1   additional testimony in response to that, or lacking

2   that an opportunity to cross-examine at least on the

3   supplemental filing.

4   CHAIRWOMAN SHOWALTER: Is this were you

5   proposing to file testimony or a data run?

6   MR. RICHARDSON: It would be a data run.

7   CHAIRWOMAN SHOWALTER: Well, given that this

8   all arose because AT&T's consultants in essence proposed

9   it or designed it, is it probable that a flat out data

10   run you could look at, and if you have a problem of how

11   it's run, or were you thinking of making a different run

12   with different inputs?

13   MS. STEELE: No, my concern would be we would

14   want to have an opportunity to, you know, determine

15   whether the changes that we have proposed have, in fact,

16   been made, how the run was done, that kind of, you know,

17   we would just like to have the opportunity to examine it

18   and make sure it's what it purports to be.

19   MR. RICHARDSON: We have no problem with

20   that.

21   CHAIRWOMAN SHOWALTER: Seems to me that

22   that's what we should do, call it a Bench request even

23   though it's our real request was just make it available,

24   but your document would be a run based on that, and you

25   would have the opportunity to contest it if you felt it

1   wasn't what it purported to be.

2   MS. STEELE: And what we would hope to do in

3   that case if we found that it was not what it purported

4   to be is to present our own revised run in that

5   circumstance.

6   JUDGE MACE: Well, I guess what I think might

7   be beneficial at this point is to determine when you

8   would have that sensitivity run done and then set some

9   type of date within which AT&T would review that run,

10 and then so that we're not sitting here two months from

11 now and AT&T comes back and says, well, we need to do

12 something about this sensitivity run.

13   Now when do you think you would have the

14 sensitivity run finished, and not just finished but

15 filed?

16   MR. RICHARDSON: Could I just take a minute.

17   We could have that by Monday.

18   JUDGE MACE: That's June 7th.

19   And how long would it take AT&T to review

20 that?

21   MS. STEELE: Unfortunately Mr. Turner who

22 would be doing the analysis isn't here.

23   JUDGE MACE: Perhaps you could confer

24 sometime during the day today and we could get a date

25 from you. And then that way we would have something on

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1 the record that would show how the process is going to

2 go forward.

3   And Ms. Smith and Ms. Frame, do you have any

4 interest in reviewing this as well?

5   MS. FRAME: Covad doesn't at this point.

6   MS. SMITH: Nor does Staff, Your Honor.

7   JUDGE MACE: Thank you.

8   MR. RICHARDSON: The second matter is as

9 to --

10   CHAIRWOMAN SHOWALTER: Have we given this a

11 Bench request number?

12   JUDGE MACE: Yes, this is Bench Request

13 Number 9.

14   Go ahead.

15   MR. RICHARDSON: Thank you. The only other

16 opening item was two errata to two of the panel

17 testimonies.

18   JUDGE MACE: The commissioners have those

19 changes before them. One is to Exhibit 201TC, it's two

20 substitute pages of testimony. And the other is to

21 226T, and it's one page of substitute testimony.

22   And I'm assuming you distributed these

23 changes to the parties as well.

24   MR. RICHARDSON: Yes, we distributed those

25 yesterday.

1

2 Whereupon,

3   DAVID G. TUCEK, WILLETT RICHTER, GERALD

4   HARRIS, AND JOHN HINTON

5 having been first duly sworn, were called as witnesses

6 herein and were examined and testified as follows:

7

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

9 BY MR. RICHARDSON:

10   Q.   I would like to begin by asking all four

11 panel members to state their name and business address

12 for the record.

13   A.   (Mr. Tucek) My name is David Tucek, my

14 business address is 13024 Vinson Court, V-I-N-S-O-N,

15 Maryland Heights, Missouri 63043.

16   A.   (Mr. Richter) My name is Will Richter, I work

17 with Verizon engineering regulatory support. My

18 business address is 85 High Street, Pawtucket, Rhode

19 Island, P-A-W-T-U-C-K-E-T.

20   A.   (Mr. Harris) My name is Gerald Harris and my

21 business address is 6710 Meade Drive, M-E-A-D-E,

22 Colleyville, Texas, C-O-L-L-E-Y-V-I-L-L-E, and the zip

23 code is 76034.

24   A.   (Mr. Hinton) My name is John Hinton, my

25 business address is 540 Broad Street, 15th Floor,

1 Newark, New Jersey, and the zip is 07102.

2   Q.   And I would like the panel members to refer

3 to their copies of three panel exhibits that have been

4 pre-marked Exhibit 201TC, which is Verizon's June 2003

5 panel testimony, Exhibit 226T, Verizon's January 2004

6 supplemental panel testimony, and Exhibit 228TC,

7 Verizon's May 2004 rebuttal panel testimony. And

8 Mr. Tucek's, finally a fourth exhibit, Mr. Tucek's

9 Exhibit 401TC, his reply testimony with respect to loop

10 deaveraging.

11   As revised by the errata provided to the

12 Commission during this proceeding, are these two

13 exhibits true and correct to the best of your knowledge?

14   A.   (Mr. Tucek) All four exhibits are true and

15 correct.

16   A.   (Mr. Richter) Yes, they are.

17   A.   (Mr. Harris) Yes, they are.

18   A.   (Mr. Hinton) Yes, they are.

19   Q.   And if you were asked the same questions

20 posed in those exhibits today, would your answers be the

21 same as corrected by the errata that we provided to the

22 Commission?

23   A.   (Mr. Tucek) They would.

24   A.   (Mr. Richter) Yes, they would.

25   A.   (Mr. Harris) Yes, they would.

1   A.   (Mr. Hinton) Yes, they would.

2   JUDGE MACE: Mr. Richardson, just to let you

3   know, we actually have already admitted these exhibits.

4   MR. RICHARDSON: Oh, I see.

5   JUDGE MACE: They were admitted when an

6   earlier panel was cross-examined. So the only exhibit

7   that was not admitted or the exhibits that were not

8   admitted were Mr. Tucek's 401TC and 402C, so just to let

9   you know.

10   MR. RICHARDSON: Okay, and all of the

11   accompanying exhibits to those exhibits were also

12   admitted?

13   JUDGE MACE: That's correct.

14   MR. RICHARDSON: Okay. Then at this time I

15   would like to move the admission of Mr. Tucek's Exhibit

16   401TC and 402C.

17   JUDGE MACE: Is there any objection to the

18   admission of those two exhibits?

19   MS. STEELE: No objection.

20   JUDGE MACE: I will admit them.

21   And the panel members will be giving a

22   summary of their testimony?

23   MR. RICHARDSON: Yes.

24   JUDGE MACE: Who will begin?

25   MR. HINTON: I will.

1   JUDGE MACE: Okay, Mr. Hinton, I will give

2   you a 30 second warning.

3   MR. HINTON: Okay.

4   I'm John Hinton, and my principal area of

5   responsibility is the description of Verizon's cost

6   model VzCost. Although we have introduced VzCost in a

7   couple of other states, Washington is the first

8   commission that will have the opportunity to evaluate

9   it. We have put a lot of work into this new model, and

10   it has a lot of advantages over others that you have

11   seen.

12   I would like to start with just three very

13   high level points about VzCost. First, it is a cost

14   model that can be used not just in UNE cases but also in

15   retail and access cost dockets. For example, we're

16   using it in California now not only for studying UNE

17   costs but also for proposing retail price. Second,

18   VzCost is available through the Internet to all parties

19   and commission staffs. This is a new concept, and it

20   provides a lot of advantages in terms of access in one

21   place and the ability to share work with others.

22   Finally, the VzCost is both a web site for our cost

23   studies and a cost calculator itself. As a web site, it

24   provides easy access to our studies and supporting

25   documentation filed in this docket. As a calculator,

1   VzCost performs the last step in our cost studies. It

2   takes what we call the investment elements which are

3   initially calculated by the three container programs we

4   use, loop, switching, and interoffice facilities. It

5   then transforms them into the building blocks needed for

6   various UNE's by applying the appropriate cost factors

7   to them and then calculating the specific monthly

8   recurring rates that flow into those costs. The user

9   can see, understand, and change the inputs and

10   assumptions used in the calculations. AT&T's arguments

11   about that are really about the initial loop investments

12   which we do in VzLoop.

13   Mr. Harris will address the basis under which

14   the model network is developed, Mr. Tucek will explain

15   its underlying assumptions, and Mr. Richter will explain

16   how important those assumptions are to the design of the

17   telephone network.

18   CHAIRWOMAN SHOWALTER: Excuse me, but in that

19   last sentence, were you talking about VzLoop or VzCost

20   when you said what the other three witnesses were going

21   to explain?

22   MR. HINTON: We're talking about VzLoop.

23   CHAIRWOMAN SHOWALTER: Thank you.

24   MR. HINTON: Mr. Harris.

25   MR. HARRIS: Good morning, my name is Gerald

1   Harris, and my principal responsibility today --

2   JUDGE MACE: Mr. Harris, you need to speak

3   directly in the microphone.

4   MR. HARRIS: My principal responsibility

5   today will be to address how Verizon made extensive use

6   of real world data systems to develop the information

7   that forms the basis of the network within VzLoop. The

8   development of this data is generally referred to as

9   loop preprocessing. Verizon located a series of company

10 databases that are used on a day-to-day service in the

11 provision of the day-to-day service to our customers

12 that contain either an address or some other type of

13 location coordinate that allowed for the relative

14 placement of major network components which provides a

15 foundation for the forward looking network modeled

16 within VzLoop. These data inputs were then developed

17 into an input file to be used by VzLoop which is called

18 the network table.

19   Verizon's loop preprocessing accumulated an

20 unprecedented amount of information to model a network

21 that identifies real world constraints. The differences

22 that may exist in the precise location of real world

23 SAI's, service area interfaces, for example are

24 immaterial for purposes of modeling. Contrary to what

25 Mr. Turner has stated, these SAI's are inputs, and these

1   inputs can be changed. We used one of the same methods

2   for relocating an SAI to make the change to the Bothell

3   wire center shown in our rebuttal that we provided to

4   AT&T in our meeting in February of this year. We also

5   used the same tools we gave to AT&T in this February

6   meeting to identify and validate the SAI location

7   changes that were made.

8   I would like to also address the issue of

9   VzLoop computer code. AT&T has suggested that VzLoop is

10   somehow a black box because you can't see how the code

11   operates and that makes it impossible to track the logic

12   of the model. This model was developed in house by

13   Verizon on a Pentium IV PC with 1.4 gigahertz and 112

14   megabytes of RAM with a Windows 2000 operating system

15   using Delphi Studio Version 7 Enterprise with the

16   default vendor supplied libraries. No special libraries

17   were created during the development process. There's no

18   mystery to the data base structure used to develop the

19   model also. The Oracle data bases were available in the

20   documentation, but they do require someone with a

21   knowledge of data bases to set up. The only other

22   software that would be required would be personal

23   Oracle.

24   Thank you.

25   MR. TUCEK: Good morning, my name is David

1   Tucek, I am Verizon's loop witness. There are three

2   things about a loop model I want to cover this morning

3   for you.

4   First, even though we use information on the

5   existing network as a starting point, I want to make it

6   clear that our model network is not our existing

7   network. Our model network and our -- I also want to

8   make clear that our model costs are not our embedded

9   costs. Our model network is based on forward looking

10   technology and does not include older technology that is

11   found in today's network. Our model network includes

12   plant and equipment such as additional remote terminals

13   that is not present in the existing network. So the

14   model network and the existing network are different

15   because the technology and the mix of the plant and

16   equipment are different. And the model cost and the

17   embedded cost are different for the same reason and for

18   the reason that the model investment is based on current

19   input prices and not on historical book investment.

20   Second, I want to explain why we used

21   information on the existing network as a starting point.

22   By using this information we have narrowed the gap

23   between our model and the real world. In particular,

24   our model network more accurately reflects the available

25   right of way in Verizon's Northwest serving territory.

1   This not only means that the model generally follows

2   that right of way, but it also means that it reflects

3   the impact of global conditions on structure mix, on all

4   the placement of serving area interfaces, and the

5   placement of remote terminals.

6   Finally, I would submit that the proof is in

7   the pudding. There will be instances in which the model

8   network crosses water or doesn't appear to follow the

9   roadways, but in most cases it is aligned with the real

10 world. You can see this by looking at the maps in

11 Mr. Dippon's reply Exhibit CND-6. I would also

12 encourage you to read the discussion of average loop

13 lengths at page 27 of the panel's May 12th rebuttal

14 testimony. It is clear that our model does a much

15 better job in estimating the average loop length than

16 any other model presented before this Commission in this

17 proceeding or earlier dockets. To me getting the loop

18 length right means you get two important factors right,

19 the location of customers relative to each other, the

20 location of customers relative to the rest of the

21 network. In other words, you have gotten right the real

22 world constraints that determine the length, size, and

23 layout of the cable model.

24   There is no TELRIC requirement that a model

25 must put everything in the wire center and the customer.

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1   It stands to reason that a model which recognizes real

2   world constraints will come closer to producing

3   economically efficient rates than a model that either

4   ignores or simply makes guesses about those constraints.

5   MR. RICHTER: Good morning, I'm Will Richter,

6   the engineering witness supporting VzLoop. There's one

7   important message I'd like the Commission to walk away

8   with at the end of the day relative to engineering a

9   forward looking model that we all contemplate. That is

10   engineering a telecommunications network is not simple,

11   has never been, and it isn't in this forward looking

12   model. Engineers must not only be technically astute,

13   but they must be good managers of the business, good

14   communicators, and have good negotiation skills with the

15   public.

16   The engineer assumptions our model uses as a

17   foundation for UNE rates represents the most accurate

18   forward looking representation of a network possible for

19   two reasons. One, it does the best job accounting for

20   the real world constraints that engineers must work in,

21   and two, it leverages a cumulative intelligence gained

22   over time about how a network integrates in the real

23   world both technically and practically.

24   JUDGE MACE: Do you tender the witnesses for

25   cross-examination?

1   MR. RICHARDSON: Yes, Your Honor.

2   JUDGE MACE: Thank you.

3   Go ahead, Ms. Steele.

4   MS. STEELE: Thank you.

5

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

7   BY MS. STEELE:

8   Q.   Good morning, panel. I have to admit I have

9   been doing these cost cases for a long time, but this is

10   the first time I have actually cross-examined a panel,

11   so I'm going to try to as far as I understand it direct

12   my questions to specific individuals within their areas

13   of expertise. I may at some point tell you what area

14   I'm going into and ask you which witness should answer

15   the question.

16   First, Mr. Hinton, you just said this morning

17   that one of the advantages of VzCost is that it, because

18   it's on the web, users can share information within that

19   context; is that correct?

20   A.   (Mr. Hinton) That's correct.

21   Q.   It's true, is it not, that until recently

22   only internal Verizon users could actually share

23   information through that system?

24   A.   (Mr. Hinton) That is correct.

25   Q.   And so during most of the course of this

1   proceeding, the external users, the experts from the

2   other parties, have not had that advantage; is that

3   correct?

4   A.   (Mr. Hinton) That's not quite true.

5   Initially we offered an alternative where the external

6   users could share work. It was through the use of

7   sharing an ID. During that time we had come up with an

8   additional solution which allowed them to share work in

9   the same fashion that internal users share work.

10   Q.   Now what I want to go through with you this

11 morning first is a discussion of how the model works,

12 and then I want to talk about various inputs into the

13 model, and I think it might help us to look at a

14 representation of that, and I found one in your

15 testimony at Exhibit 203. So perhaps we could turn

16 there and walk through that.

17   Now, Mr. Hinton, would it be appropriate --

18   JUDGE MACE: Hold on just a moment until we

19 get to that.

20   MR. RICHARDSON: Could you describe Exhibit

21 203.

22   MS. STEELE: Exhibit 203 is just a flow chart

23 of --

24   JUDGE MACE: It's titled VzCost System Flow

25 Chart.

1   CHAIRWOMAN SHOWALTER: It was RP-3.

2   BY MS. STEELE:

3   Q.   And, Mr. Hinton, would you be the right

4   person to walk through this with us?

5   A.   (Mr. Hinton) I have to have a look at the

6   flow chart, I don't have it in front of me.

7   MS. STEELE: It would be very helpful for all

8   of the witnesses to have their testimony available to

9   them. Is that something we can do?

10   JUDGE MACE: Let's be off the record.

11   (Discussion off the record.)

12   A.   (Mr. Hinton) It depends on what area you

13   cover. Some questions I will be able to answer, some

14   questions I might refer to the other members of the

15   panel.

16   BY MS. STEELE:

17   Q.   Well, let's just talk about how the model is

18   put together. Now when we talk about VzCost, what we're

19   talking about when we look at this exhibit are the

20   things on the right side of the dark black bar; is that

21   correct?

22   A.   (Mr. Hinton) That is correct.

23   Q.   And everything that is on the left side of

24   the dark black bars are things that are done before you

25   get to the web based VzCost; is that correct?

1   A.   (Mr. Hinton) That is correct.

2   Q.   So these would be preprocessing that takes

3   place that is not web based and is not available on the

4   web; is that correct?

5   A.   (Mr. Hinton) Currently that is correct.

6   Q.   Now --

7   A.   (Mr. Harris) Excuse me, not quite correct.

8   Part of it is preprocessing. Part of it is there are

9   external investment calculators that aren't part of the

10   web based approach. Preprocessing, at least in the

11   context of what we have used it, I wouldn't call the

12   container programs that exist as far as the switch

13   container program, the IOF container program, I would

14   call those more external investment calculators that

15   haven't been brought up into the web based environment

16   at this time.

17   Q.   Thank you for that clarification.

18   My understanding is that the actual

19   investment calculator of VzLoop is available on the web,

20   but the other investment calculators, that is the things

21   that pull the investments for particular elements

22   together, are not available on the web at this point; is

23   that correct?

24   A.   (Mr. Harris) That's correct.

25   Q.   Now my understanding of the way it works is

1   that once the investments are put together, whether in

2   VzLoop or on the external investment calculators, that

3   we move into this module 1 on VzCost, and we place the

4   investments into various elements; is that correct?

5   A.   (Mr. Hinton) If you're saying that we take

6   the inputs and we create elements, that's correct.

7   Q.   And then when we move to module 2, what we're

8   doing is we're applying various factors, depreciation

9   for example, and the capital and expense factors to

10   those investments; is that correct?

11   A.   (Mr. Hinton) Not completely. In addition to

12   that we also apply loadings, loadings that we call

13   engineering furnished and installed.

14   Q.   Okay. And then when we finish with that, we

15   get to module 4, which is when we actually have

16   something that you could file in a cost proceeding; is

17   that correct?

18   A.   (Mr. Hinton) That's correct.

19   A.   (Mr. Tucek) May I say something. You

20   misspoke when you asked your question, you asked him if

21   he applied the expense factors to module 2, but you were

22   clearly speaking about module 3, because you went then

23   to module 4.

24   Q.   Thank you for that clarification.

25   Now before we get to the actual VzCost, we

1 have a preprocessing that takes place, and I want to

2 talk about that preprocessing. Mr. Harris, I believe

3 you were the appropriate witness for that; is that

4 correct?

5   A.   (Mr. Harris) That's correct.

6   Q.   Okay. The preprocessing that's done before

7 we get to this web based system is described, and I want

8 to concentrate on VzLoop preprocessing, that's described

9 in Exhibit 207; is that correct?

10   A.   (Mr. Harris) Yes, that's correct.

11   JUDGE MACE: 207, is that one of the CD's?

12   A.   (Mr. Harris) I think you're referring to the

13 exhibit that's entitled VzCost Technical Documentation

14 Vz Preprocessing.

15   Q.   I am, was that only filed electronically? I

16 have a hard copy.

17   JUDGE MACE: We don't have that.

18   MS. STEELE: Okay.

19   JUDGE MACE: We have it in -- I think that's

20 one of the CD's.

21   CHAIRWOMAN SHOWALTER: Are you going to be

22 asking questions about certain pages of it?

23   MS. STEELE: Well, I'm going to try not to.

24 I had intended to, but it makes it difficult when no one

25 has it available, so.

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 1          CHAIRWOMAN SHOWALTER:  Because if you want to

 2   and you have the pages, we can have them reproduced if

 3   that makes a difference.

 4          MS. STEELE:  I think that we can avoid

 5   needing to rely too heavily on the document.  I think we

 6   can do this without too heavy reliance on that document.

 7   I will just repeat the sections that I want to discuss.

 8   BY MS. STEELE:

 9      Q.    Now it's fair to say that before we get to

10   VzLoop, and VzLoop is what we would call the investment

11   calculator for the loop; is that correct?

12      A.    (Mr. Harris) That's correct.

13      Q.    It's fair to say that there's extensive data

14   preparation that takes place; isn't that right?

15      A.    (Mr. Harris) That's correct.  As I stated in

16   my opening comments, the data is pulled from our

17   day-to-day operating systems, and there's a lot of

18   preparation to format it and get it in a form that can

19   be used within VzCost.

20          JUDGE MACE:  Mr. Harris, I need you to speak

21   more directly into the mike, and please speak up.

22          MR. HARRIS:  All right.

23   BY MS. STEELE:

24      Q.    And when you talk about those systems, those

25   are Legacy systems that reside on main frames in Texas;
```

1   is that correct?

2   A.   (Mr. Harris) I'm not sure they're in Texas,

3   but they are on main frame computers. They're all

4   across the country. Some are in Florida, some are in

5   California I believe, so I don't think it's correct to

6   say they're necessarily in Texas.

7   Q.   But in order to see how these systems

8   operate, one would actually have to go to the site where

9   they reside; isn't that correct?

10   A.   (Mr. Harris) No, I don't believe so. I mean

11   we actually presented those systems during a meet and

12   confer in February where we brought experts in and they

13   used the Internet to access those systems.

14   Q.   Those systems are not available on the

15   Internet through VzCost though; is that correct?

16   A.   (Mr. Harris) No, they're not, because they

17   really weren't used in that form. We had downloads made

18   of the system, and in many cases they were just

19   downloads of data pulled out of the system that we

20   identified.

21   Q.   And when you say they're available on the

22   web, they're not available to any external users other

23   than Verizon on the web; isn't that correct?

24   A.   (Mr. Harris) That's correct.

25   Q.   Now the activities that take place in these

1   Legacy systems is that you download data, and then you

2   have to do various reconciliations of that data in order

3   to put it in a form to use in VzCost; is that correct?

4   A.   (Mr. Harris) It's more of some of the Legacy

5   systems have some of the data we need, some of the

6   Legacy systems have other pieces of the data we need, so

7   we have to go to a number of different areas to pull all

8   together what we need as far as what we're creating in

9   the network table.

10   Q.   And some of that processing that you're

11   discussing is actual manual work, isn't it?

12   A.   (Mr. Harris) That's correct, but we explained

13   most of that manual work in our February meeting as well

14   as we had a number of meet and confers on the AAIS

15   databases with the individuals that worked on the

16   California case I know, but I believe we made it clear

17   that we would expect they would use the same knowledge

18   in Washington.

19   Q.   Now my understanding of the way that this

20   works, and I think we can -- because you filed the

21   preprocessing document, I'm not going to spend a lot of

22   time discussing what's in it, but the way I understand

23   that it works is that you pull information from these

24   various Legacy systems, prepare it to be put into the

25   VzLoop system; is that correct?

1   A.   (Mr. Harris) That's correct, we prepare it as

2   an input file into the VzLoop system.

3   Q.   And it goes into something that you have

4   called the network file?

5   A.   (Mr. Harris) That's the final step, and it

6   goes into the network file as well as the demand file,

7   the demand value file. There's several files that it

8   goes into.

9   Q.   My understanding is that once you finished

10   the preprocessing and are now in the VzLoop context that

11   what you have is a base line network design that has the

12   existing feeder routes, the existing distribution areas,

13   and the existing serving area interfaces; is that

14   correct?

15   A.   (Mr. Harris) That's correct, they're all in

16   that particular tool.

17   Q.   And it also uses the existing mix of copper

18   feeder, I'm sorry, copper and fiber feeder; is that

19   correct?

20   A.   (Mr. Harris) All of those inputs are part of

21   the network table, yes.

22   Q.   And it would place digital loop carrier

23   everywhere that it is today as well as some other

24   places; is that correct?

25   A.   (Mr. Harris) The network file's purpose is to

1   identify existing DLC locations as well as identify

2   potential new sites for the model to actually put in.

3   Q.   Now my understanding of the way it works, and

4   maybe we can try and walk backwards from the customer to

5   the wire center, okay. What you have are existing

6   distribution terminals which would be the closest to the

7   customer; is that correct?

8   A.   (Mr. Harris) Yes, I call them serving

9   terminals, but yes.

10   Q.   Serving terminals, okay, I will use your

11   terminology. Those serving terminals are associated

12   with particular serving area interfaces; is that

13   correct?

14   A.   (Mr. Harris) They're associated with both the

15   customers and the serving area interfaces, yes.

16   Q.   Now you don't know the precise route from the

17   serving terminal to the serving area interface; is that

18   correct?

19   A.   (Mr. Harris) The program doesn't use the

20   routing that is in the current network, no. It uses a

21   minimum spanning approach to connect serving terminals

22   to the SAI's, yes.

23   Q.   And then you have various feeder control

24   points that go from the SAI back to the wire center; is

25   that correct?

1   A.   (Mr. Harris) Well, we have control points, we

2 have cross connect boxes, we have DLC's, we have all the

3 network components that I was talking about. The way

4 the network -- the way the network table is created is a

5 minimum spanning approach that uses those components to

6 go back to the central office.

7   Q.   So you know where various pieces of equipment

8 are between the serving area interface and the wire

9 center?

10   A.   (Mr. Harris) That's correct.

11   Q.   You don't know the precise route; is that

12 correct?

13   A.   (Mr. Harris) Not the precise route. I know

14 very, very close to the precise route simply because the

15 network components are so close together.

16   Q.   And so you connect the dots essentially with

17 this minimum spanning tree algorithm; is that correct?

18   A.   (Mr. Harris) Yes, that's correct.

19   Q.   There's been some confusion about the term

20 minimum spanning tree, and I would like to try and

21 approach that with you. The minimum spanning tree

22 algorithm that VzLoop uses is different from the minimum

23 spanning tree algorithm used in the HAI model; isn't

24 that correct?

25   A.   (Mr. Harris) I'm really not familiar with the

1 one that's in the HAI model, so no, I can't really

2 address that.

3   Q.   The minimum spanning tree algorithm used in

4 the Verizon model uses straight line distances; is that

5 correct?

6   A.   (Mr. Harris) Yes, it does.

7   Q.   So it wouldn't use something that we would

8 call rectilinear routing; are you familiar with that

9 term?

10   A.   (Mr. Harris) I'm familiar with that term, and

11 no, it doesn't.

12   CHAIRWOMAN SHOWALTER: May I just interject,

13 I think it would help us if the witness gives a

14 definition of what minimum spanning tree is about.

15   MS. STEELE: Sure, okay.

16   CHAIRWOMAN SHOWALTER: I think I have an

17 idea, but.

18   MS. STEELE: Okay.

19 BY MS. STEELE:

20   Q.   Would you mind doing that for us?

21   A.   (Mr. Harris) No, that would be fine. I mean

22 what is happening in a very simplistic form is there's a

23 series of dots that, as the counsel has said, that are

24 found in the network as far as the major components are

25 concerned. And there's a hierarchy that exists, and

1 then again you know what dots are in the system, and

2 there's a program, a spanning program that you use to

3 connect those dots to bring it back to the central

4 office. So you see, and we use -- we have a tool that

5 we can see and you can look at, you see where the

6 distribution and the feeder routes are as a result of

7 that minimum spanning when you bring that back.

8   So what we're saying is there's nothing in

9 the program that is superimposing the route information

10 out of the records. The route information as to how it

11 goes back to the central office comes from all of the

12 network components that you put in the system and that

13 you have connected back. But as I said, it's very close

14 to the route information in those areas where the

15 components are fairly close together, because you know

16 you're going to end up following the streets and

17 following the natural barriers that you, you know, are

18 trying to avoid.

19

20   E X A M I N A T I O N

21 BY CHAIRWOMAN SHOWALTER:

22   Q.   But do the dots correspond to locations in

23 the real world?

24   A.   (Mr. Harris) They are close to real world,

25 they're modeled. Some of them aren't as precise as

1   others, but they're very close as shown in the exhibit

2   that Mr. Dippon is sponsoring. It shows the results of

3   the models.

4   Q.   And minimum spanning tree location refers to

5   the most efficient way to connect the dots or just a way

6   to connect the dots?

7   A.   (Mr. Harris) It's a way to connect the dots,

8   and we believe it's the most efficient way when you're

9   not building a network from the ground up like a

10   Hatfield model would be doing. So we have used

11   rectilinear approaches in the past, but I'm not sure

12   exactly how happy I was using it, but we didn't believe

13   that we needed to use it in this particular program.

14   CHAIRWOMAN SHOWALTER: Thank you.

15

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

17   BY MS. STEELE:

18   Q.   Now as I think that you have indicated that

19   when we talk about minimum spanning tree, there are

20   different minimum spanning tree algorithms; is that

21   correct?

22   A.   (Mr. Harris) Yes, there are.

23   Q.   And the one that you have referenced, both of

24   us have referenced, rectilinear routing would actually

25   produce a longer length between dots than the minimum

1   spanning tree algorithm that you used in your model; is

2   that correct?

3   A.   (Mr. Harris) That's correct.

4   Q.   Now it's true that this process of locating

5   for example the existing distribution terminals isn't

6   perfect; is that correct?

7   A.   (Mr. Harris) It's not perfect, no, there is

8   no perfect system. And the data bases that we're

9   pulling are so extensive that you're not going to get

10 perfect data out of them.

11   Q.   And so you have not been able to find the

12 physical location for all of the distribution terminals

13 and all of the demand that you know is actually in the

14 network today; isn't that correct?

15   A.   (Mr. Harris) That's correct, like any type of

16 data pull, you don't get 100% of the items you're

17 looking for.

18   Q.   Now the way I understand that the model deals

19 with this is that rather than trying to figure out where

20 these missing distribution terminals, the missing demand

21 is, what you do is you calculate the investment based on

22 what you do know; is that correct?

23   A.   (Mr. Harris) That's correct, that's when

24 we're in the area of where the VzLoop does the

25 calculation. But as far as the way the information is

1   set up for the system to use, yes, that's correct.

2   Q.   So you've got investment based on the demand

3   that you have actually been able to locate, which would

4   be a certain dollar figure; is that right, total

5   investment?

6   A.   (Mr. Harris) Okay, I'm going to refer to

7   Mr. Tucek.

8   A.   (Mr. Tucek) That's actually a VzLoop

9   question.

10   Q.   Okay.

11   A.   (Mr. Tucek) What we do, as counsel explained,

12   we model the network based on the distribution or

13   serving terminals that we can locate. We know that

14   there is a certain amount of lines that are in the

15   network that we have not been able to locate the

16   distribution terminals for. We take the total

17   investment that we modeled and increase it by the, say

18   if we had 10% of the lines that we couldn't locate, by

19   1.10, and then we go to the basic component mapping. We

20   divide by the total lines, which ultimately gives us the

21   per line investment that corresponds to the network that

22   we modeled for the customers or the serving terminals

23   that we could locate. The reason we do that is that

24   there is no way for anyone to say that if we could have

25   located those distribution terminals if the cost would

1   have gone up or down.

2   Other modelers in this situation have chosen

3   to find surrogate locations for missing customers. We

4   decided not to do that, to just rely on the information

5   we have, and felt that was probably conservative mainly

6   because if you can't locate the customer, it's probably

7   because they have an address that is not geocodable.

8   Those addresses are things like P.O. boxes or rural

9   route addresses. If we could locate those customers,

10 some fraction of them, I would think a significant

11 fraction, would be out in the area of the wire center

12 where the cost per loop is higher. So I'm not trying to

13 surrogate those or make the assumption that it's always

14 going to bring down costs. I think we have come up with

15 a reasonable approach.

16   Q.   You simply don't know whether it would

17 increase cost or decrease cost if you were able to

18 account for those customers; isn't that correct?

19   A.   (Mr. Tucek) That's what our rebuttal

20 testimony said, nobody knows.

21   Q.   Now it is possible that accounting for these

22 lines would allow the application of scale economies,

23 which would actually decrease the cost; isn't that

24 correct?

25   A.   (Mr. Tucek) It is possible, but as I said,

1   you don't know. It could be that if I could -- if I

2   could locate these distribution terminals, it might

3   trigger a larger sized DLC. So I might have a model DLC

4   that has an average fill of 80%, but because I need to

5   go to the next largest size, that particular DLC, I have

6   an effective fill for that particular model DLC of 60%,

7   which would, if that was my typical effect, would

8   increase the model cost.

9   The same thing applies to cable. If I could

10   locate these customers, they may be served by a cable in

11   the model network that is close to capacity, and I could

12   locate it, it would trigger a larger cable, a larger

13   effective fill -- a smaller effective fill on that route

14   and a higher average cost overall for the wire center.

15   We didn't know, nobody knows, you can't say

16   if it's going to go up or down, so we took the average

17   investment based on the network that we could model.

18   Q.   Now the network that you are modeling in

19   VzLoop, particularly talking about the loop, the average

20   fill, for example, for distribution is under 40%; isn't

21   that correct?

22   A.   (Mr. Tucek) Yes, it is, and that sounds like

23   a low number. I would encourage the Commission not to

24   look at the fills, look at how the cable is sized. I

25   believe in our April 20th reply testimony, I'm sorry, I

1   can't remember the exhibit number, we have an exhibit,

2   it's identified as DGT-2, which shows that we have made

3   the assumption that there are two and a half pairs per

4   location, engineered pairs per location, and developed a

5   sizing factor which is subject to check 2.19 pairs per

6   working line. That's on the left-hand side of that

7   exhibit.

8   The right-hand side of the exhibit applies

9   the same math to the Hatfield sizing factor for

10   distribution cable. They divide by I think .75, that's

11   1.33 if you -- if it's applied as a multiplicative

12   factor. But the bottom line is that the implicit or

13   underlying pairs per location assumption underlying the

14   Hatfield number is I think 1.55. That is at the very

15   low end of the range that Mr. Donovan and now

16   Mr. Fassett has testified to, other AT&T witnesses in

17   other states have testified to. For example, Mr. Riollo

18   in Florida to a pairs per location number of 2 to 3

19   pairs with 2, if I read his testimony correctly, it's

20   kind of the, you know, the minimum.

21   And actually I went back and looked at

22   Mr. Fassett's testimony in the very first cost docket in

23   Washington --

24   JUDGE MACE: Excuse me, I think I'm going to

25   interrupt at this point too. I know that we want to get

1 information onto the record that will be helpful to the

2 Commission in making a decision, and we do give latitude

3 to witnesses in their responses. I think you have gone

4 quite far beyond the question that was asked, and in

5 view of the amount of time we have available for

6 cross-examination, it would be helpful if you could more

7 confine your answer to the question and leave it at

8 that.

9   MR. TUCEK: I will do that.

10 BY MS. STEELE:

11   Q.   I promise you, sir, I will give you a chance

12 to talk about fill factors later, but my point in asking

13 the question was this. When you look at the network

14 that's designed by VzLoop, we're talking about fill

15 factors for distribution for example that are under 40%

16 for feeder, copper feeder fill that is in the range of

17 50%. Isn't it fair to say that if you add additional

18 demand, that could be accommodated by the fill factors

19 that are already built into the model?

20   A.   (Mr. Tucek) No, it's not fair to say, because

21 you would have to locate those customers at specific

22 points in the network. The fill factors in the model

23 are very -- are measured at a point in the network. At

24 some point back, for example, the distribution back

25 towards the customer, if I could locate that customer,

1   he may trigger a larger cable or at the SAI a larger SAI

2   or at the DLC a larger DLC. The point is you don't

3   know. We relied on the information that we did know and

4   used the average model investment that came from that.

5   Q.   Thank you.

6   Now I want to talk about distribution areas

7   and the way they are engineered. Would that be

8   Mr. Richter, or who would be the best person?

9   I should say I do have a couple preliminary

10   questions about the modeling, and I thought maybe

11   another witness should answer that. But one of the

12   issues that we're discussing in this case is the size of

13   the distribution areas that are modeled in the HAI model

14   versus the VzLoop model, and one of the reasons that

15   we're doing that is that the VzLoop model in general has

16   smaller distribution areas than those in the HAI model.

17   Is that your understanding?

18   A.   (Mr. Richter) Yes, that's correct. Well,

19   when you say size, are you talking geography size or

20   pair size?

21   Q.   Pair size, the number of lines.

22   A.   (Mr. Richter) I don't know that for sure.

23   Q.   Okay.

24   A.   (Mr. Richter) I don't know. I would assume

25   so based on the relative geographic size of their

1   distribution areas, yes.

2   Q.   And in general what we're talking about is

3   the fact that in the HAI model there are fewer but

4   larger distribution areas modeled using larger equipment

5   sizes; is that correct?

6   A.   (Mr. Richter) I believe that's correct.

7   Q.   Okay. And my understanding is that the

8   current network modeled by Verizon uses distribution

9   areas that are based on engineering guidelines that

10   would indicate size of distribution areas at between 200

11   and 600 living units; is that correct?

12   A.   (Mr. Richter) When you say engineering

13   guidelines, it's not that parameter is a -- it's a guide

14   that's used that's generally written for the size in the

15   distribution areas, that's correct. But I believe that

16   the distribution areas that we model or that VzLoop

17   models, you know, given that they consider the -- that

18   the number of customers in existing locations, but that

19   may vary.

20   Q.   Well, actually, the model uses the existing

21   distribution areas, does it not, the ones that exist in

22   the network today?

23   A.   (Mr. Richter) That's correct.

24   Q.   And so those would have been based on those

25   engineering guidelines; is that correct?

1   A.   (Mr. Richter) Well, not entirely. I mean you

2   have there when you talk about distribution areas the

3   original distribution areas that were defined in long

4   range outside plant plans years ago. They -- you don't

5   necessarily -- some of those areas were not as well

6   defined as other areas, for instance in rural areas, so

7   the distribution areas that are mimicked in VzLoop may

8   not exactly correspond.

9   Q.   Well, my understanding is that what VzLoop

10   does is it takes those existing serving area interface

11   locations and the existing terminals that are associated

12   with those existing serving area interfaces, that's the

13   distribution area; is that correct?

14   A.   (Mr. Richter) Right, that becomes the defacto

15   distribution area.

16   Q.   So what we're using in VzLoop is these long

17   ago, long ago planned distribution areas from however

18   long ago they were planned; isn't that correct?

19   A.   (Mr. Richter) No, not entirely. Again, some

20   areas have been developed subsequent to those long range

21   outside plant plans, and when the engineer went out to

22   design those areas, for instance a condominium complex

23   that may have been built in the middle of a farmer's

24   field or whatever, that may have become the arrangement

25   that the engineer designed to there, placing the SAI and

1   distributing the cable, will have become the defacto

2   distribution area in the model.

3   Q.   So let me see if I understand what you're

4   telling me. What you're telling me is someone may have

5   planned a distribution area that has 200 to 600 living

6   units, but maybe 20 years later somebody plopped a

7   condominium down there; is that correct?

8   A.   (Mr. Richter) It's more likely the case that

9   that was a rural area that did not have as tight a

10   definition of a distribution area 20 years ago, and

11   today just simply understanding the concepts of

12   distribution area, the engineering plan would have

13   designed that.

14   Q.   But so if there were a new engineering plan

15   today, looking at these areas you might in fact design

16   different distribution areas; isn't that correct?

17   A.   (Mr. Richter) No, it's unlikely, because when

18   the planners have existed since those initial LROPP's

19   were designed, and they continually monitor the wire

20   centers or group of wire centers to decide how to

21   allocate pairs.

22   JUDGE MACE: You said ELROP's, is that an

23   acronym for what you have been referring to as --

24   MR. RICHTER: LROPP is a long range outside

25   plant plan. It was --

1   JUDGE MACE: And the E is the engineering

2   part, you said ELROP's?

3   CHAIRWOMAN SHOWALTER: The letter L.

4   JUDGE MACE: Oh, I'm sorry.

5   CHAIRWOMAN SHOWALTER: This is why when you

6   can remember to use the real words it helps.

7   MR. RICHTER: I'm sorry.

8   CHAIRWOMAN SHOWALTER: It's hard enough for

9   us to get the meaning even when the real words are

10 there, but if it's the letters and we don't even know if

11 it's a letter or two letters, it's difficult.

12   MR. RICHTER: 18 years of being in the

13 telecom industry, can't help it.

14   JUDGE MACE: It can do things to you.

15   MS. STEELE: To all of us.

16 BY MS. STEELE:

17   Q.   Now my understanding, and maybe someone else

18 needs to answer this question, but my understanding is

19 that, for example, the largest SAI, serving area

20 interface, that's modeled within VzLoop is 5,400 lines;

21 is that correct?

22   A.   (Mr. Richter) I would have to accept that

23 subject to check. I'm not exactly sure what the maximum

24 is. I know there is a 5,400 pair cross box.

25   JUDGE MACE: There's a 5,400 pair?

1   MR. RICHTER: SAI.

2   JUDGE MOSS: Okay, it would be really helpful

3   if you would try to carry your voice at the same level

4   through, because you're sort of dropping off, and I'm

5   not hearing what you're saying at the end of your

6   sentences.

7   MR. RICHTER: I'm fading.

8   BY MS. STEELE:

9   Q.   And it is true that there is larger equipment

10   available today; isn't that correct?

11   A.   (Mr. Richter) Larger than 5,400 pair?

12   Q.   Yes.

13   A.   (Mr. Richter) Yes.

14   Q.   And the largest remote terminal again for

15   example used in the VzLoop model is 2,016 lines; is that

16   correct?

17   A.   (Mr. Richter) Yes, I believe that's correct.

18   Q.   And, in fact, there are remote terminals

19   available today that would serve more than 8,000 lines;

20   isn't that correct?

21   A.   (Mr. Richter) Yes, that's correct.

22   Q.   It's fair to assume that if these remote

23   terminals in larger sizes are available, somebody is

24   buying them; isn't that correct?

25   A.   (Mr. Richter) Yeah, I assume so.

1   MS. STEELE: I would like to take a look at

2   an exhibit which we have designated as a cross exhibit,

3   it's Exhibit 265. Now we designated a compact disk, I

4   do have hard copies of what I want to talk about here

5   available that I would like to give to folks to make

6   this a little easier.

7   JUDGE MACE: And it's in yellow, so I'm

8   assuming it's all confidential.

9   MS. STEELE: It is, and I will not be

10   referring to the numbers.

11   And, sir, if you could try to avoid that as

12   well, that would be helpful.

13   BY MS. STEELE:

14   Q.   Are you familiar with this document?

15   A.   (Mr. Richter) Yes, I am.

16   Q.   Can you tell me what it is?

17   A.   (Mr. Richter) It is a draft engineering

18   guideline that is one of the first significant attempts

19   to consolidate some of the practices across the Bell

20   Atlantic and GTE.

21   Q.   And so has this document been actually

22   adopted yet?

23   A.   (Mr. Richter) No, it has not.

24   Q.   Is it in the process of being adopted?

25   A.   (Mr. Richter) To my knowledge, yes.

1   JUDGE MACE: Can you tell me the number of

2   this again?

3   MS. STEELE: 265.

4   JUDGE MACE: 265, thank you.

5   MS. STEELE: I would like to move for the

6   admission of Exhibit 265.

7   JUDGE MACE: Any objection to the admission

8   of 265?

9   MR. RICHARDSON: No objection.

10   JUDGE MACE: I will admit it.

11   BY MS. STEELE:

12   Q.   Now I want to look at the portion of this

13   document that talks about distribution areas and first

14   focusing on page 13 of 22 in Paragraph 3.2 and Paragraph

15   2, would that language be considered confidential, is

16   that something I could read into the record?

17   A.   (Mr. Richter) I don't believe so.

18   CHAIRWOMAN SHOWALTER: Which way is the

19   answer?

20   JUDGE MACE: In other words it's not

21   confidential?

22   MR. RICHTER: No, I don't think that's

23   confidential.

24   BY MS. STEELE:

25   Q.   So the statement made here is that we should

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1 be placing larger interfaces to serve in areas as

2 opposed to establishing --

3   JUDGE MACE: Could you slow down just a

4 little.

5   MS. STEELE: I'm sorry.

6 BY MS. STEELE:

7   Q.   As opposed to establishing many smaller ones

8 to serve the same area; is that correct?

9   A.   (Mr. Richter) Yes.

10   Q.   Now if we were to assume that the existing

11 serving area interfaces did not exist today, this

12 guideline would suggest that we should look at putting

13 larger ones in place; is that correct?

14   A.   (Mr. Richter) I think we need to clarify what

15 larger means. When you design a distribution area very

16 much the size of the interface in terms of the number of

17 the pairs that are in there depends on obviously the

18 number of customers you plan on serving, but you could

19 have a geographically small area in an urban environment

20 where you have a large interface, or you can have a very

21 small interface in a very large geographic area with

22 very few customers. So this reference to larger

23 interfaces does not necessarily -- it's all relative.

24   I mean, you know, we will look for instance

25 in an urban environment for opportunities to place large

1   -- larger interfaces to accommodate as many customers as

2   we can to be as efficient as we can. But there is a

3   limit on the size of these very large interfaces. For

4   instance, the 5,400 I believe is somewhere on the order

5   of 6 feet tall and 2 feet wide, and it requires a

6   concrete pad to place, and it requires right of way,

7   which often is difficult to acquire in an urban

8   environment. So we are many times forced because of our

9   inability to acquire that space to use smaller

10   interfaces.

11   This reference is, you know, I believe refers

12   to that more so than the idea of a large interface,

13   trying to accommodate as many customers as you possibly

14   can.

15   Q.   Now I have looked through this document, and

16   I don't find in it any reference to the 200 to 600

17   household guideline for sizing distribution areas. Is

18   that -- are you aware that that is somewhere in this

19   document?

20   A.   (Mr. Richter) I don't recall it being in

21   here, no.

22   Q.   In fact, if you look at on page 15 of 22

23   where it describes design of distribution facility

24   areas, there's no limitation here on the number of

25   households; isn't that correct?

1   A.   (Mr. Richter) Specifically where, I'm sorry?

2   Q.   Sorry, I'm starting with Paragraph 3.5 where

3   it's describing design of distribution facility areas.

4   A.   (Mr. Richter) No, there's no -- there's no

5   specific number in this document. The sizing of the

6   distribution area -- and I can give a quick example if

7   you look out the window. You will see across the

8   highway there's a complex of buildings, and there's a

9   complex of buildings here as well. When an engineer

10   goes out to decide how to distribute the cable plant in

11   the network, he or she will, you know, look at things

12   like divided highways that may cause problems.

13   For instance, if the bridge that goes across

14   that highway has a choke point in it for cable, the

15   engineer may be forced, if you will, to put a

16   distribution area that just accommodates this

17   particular, this Evergreen loop and then put another one

18   across the street at that other cluster of buildings.

19   Those become the determinants for the size, quote,

20   unquote, of the distribution area or SAI. So it's very

21   difficult to, you know, to peg a number to how big a

22   standard DA should be. There's a lot of practical

23   issues that come into play when that's decided.

24   JUDGE MACE: I think, Mr. Richter, that the

25   question was somewhat different though.

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1   Could you repeat the question, please?

2   MS. STEELE: Well, my question was -- you

3   know, I'm having trouble remembering what my question

4   was.

5   JUDGE MACE: Well, my recollection of the

6   question was that in this area, page 15, 3.5, there is

7   no reference to the 200 to 600 living unit requirement

8   that's referenced in some other testimony.

9   MR. RICHTER: I believe I answered that, no

10   reference.

11   JUDGE MACE: All right, thank you.

12   BY MS. STEELE:

13   Q.   I think this is a question for Mr. Harris.

14   Let's make a hypothetical assumption that the Commission

15   decided that it would be appropriate to model larger

16   distribution areas within VzLoop. That's not something

17   that the parties could do themselves; isn't that

18   correct, a party, any party other than Verizon?

19   A.   (Mr. Harris) No, that's not correct. I mean

20   the VzLoop if you decided to abandon the real world

21   network approach, you wouldn't -- you would not use the

22   data base as it currently exists. You would redesign

23   the data base in order to put in a new approach which

24   didn't include all of the real world network interfaces.

25   I mean you can't have -- you can't have all of that

1   mixed together because it doesn't make sense. If you're

2   going to go to a more of a scorched note type approach

3   to placing SAI's, you wouldn't really adjust this data

4   base, you would probably start with a new data base.

5   Now VzLoop could accept any type of new data

6   base that had this same type of table structure taken

7   in. But all the parties have abilities to prepare these

8   type of data bases. I mean the basis under which the

9   serving terminals have been located is not dissimilar to

10   a customer location type of approach to geocoding. And

11   so I mean AT&T has developed several different

12   approaches to preprocessing, and I think they have the

13   expertise to be able to do it. Is it adjustable to make

14   it be both hypothetical and real world, no, the database

15   wasn't built to be that way.

16   Q.   Well, I think we have gone through the

17   preprocessing, and we have talked about how the

18   distribution areas are done, I want to talk what happens

19   in the preprocessing phase is we come up with these

20   tables that are loaded into VzLoop; is that correct?

21   A.   (Mr. Harris) That's correct.

22   Q.   And then to these tables we apply things like

23   materials pricing and placement costs to come up with

24   the loop investment; is that correct?

25   A.   (Mr. Harris) That's correct, but that's more

1   Mr. Tucek's area.

2   Q.   Okay. And that is actually done in the

3   VzLoop process rather than in preprocessing; is that

4   correct?

5   A.   (Mr. Tucek) Yes.

6   Q.   Now I want to look just very briefly at

7   direct testimony on page 6, that's Exhibit 201. And at

8   the bottom on lines 23 and 24 and then going on to the

9   next page there's a statement made that --

10   JUDGE MACE: Could you hold on for just a

11   moment, please.

12   MS. STEELE: Sure.

13   JUDGE MACE: Page 6, lines 23 and 24?

14   MS. STEELE: Right.

15   JUDGE MACE: Go ahead.

16   BY MS. STEELE:

17   Q.   There's a statement made that:

18   Verizon Northwest costs are the product

19   of a cost model and cost studies that

20   fully comply with the Commission's

21   previous orders, particularly regarding

22   transparency, openness, and ease of use.

23   Do you see that?

24   A.   (Mr. Tucek) Yes, I do.

25   Q.   Now it is not the case that the inputs used,

1   for example placement costs, materials costs, those do

2   not match the Commission's previous orders on those

3   issues; isn't that correct?

4   A.   (Mr. Tucek) I'm not sure if that's true or

5   not specifically with regard to placement, material

6   costs. We in a prior docket, UNE docket, had to do a

7   compliance filing to -- using our earlier model, ICM. I

8   was involved in that. The placement material costs to

9   my recollection were not changed for that compliance

10   filing. They were different than what we filed in this

11   docket, but they were developed along the same concept,

12   they represented what we actually incur. So no, I think

13   the answer to your question is that's not correct.

14   Q.   Well, for example, there was no attempt made

15   to match the structure sharing assumptions of the prior

16   orders, I'm sorry, VzLoop does not use the Commission's

17   prior orders with respect to things like structure

18   sharing; isn't that correct?

19   A.   (Mr. Tucek) It can, but it -- or it can be

20   made to do that. But no, our filing did not reflect

21   that.

22   Q.   And there are other inputs that also there

23   was no effort made to reflect the Commission's prior

24   orders; isn't that correct?

25   A.   (Mr. Tucek) I believe that's the case. If

1   you could give me a specific example, I could confirm

2   it.

3   Q.   Well, we'll look at a few of those as we go

4   along, okay. I do want to talk specifically about

5   placement costs that are used in the model and the

6   assumptions with respect to placement costs. I don't

7   know whether that's Mr. Tucek or Mr. Richter.

8   A.   (Mr. Tucek) It's probably either, why don't

9   you try with me first.

10   Q.   Okay. Mr. Tucek, are you an engineer?

11   A.   (Mr. Tucek) No, ma'am, I'm not.

12   Q.   I think I would like to start with

13   Mr. Richter, because I do have some engineering

14   questions that would be more appropriately addressed to

15   him, and the first thing I want to do is to get some

16   terms straight. My understanding that when we use --

17   that when telephone engineers use the term growth

18   project they are talking about new development; is that

19   correct?

20   A.   (Mr. Richter) Generally, yes.

21   Q.   So that would be a project where there's no

22   existing infrastructure; is that correct?

23   A.   (Mr. Richter) I would have to say generally,

24   yes.

25   Q.   And so when you're essentially going out and

1   placing new cable to homes that might be going up in a

2   new subdivision, that would be called a growth project;

3   is that right?

4   A.   (Mr. Richter) Yes.

5   Q.   Now other types of projects that are done

6   would be things like augments; is that correct?

7   A.   (Mr. Richter) Yes.

8   Q.   And that's where you're going and placing

9   cable, additional cable where there's already existing

10 cable; is that correct?

11   A.   (Mr. Richter) Correct.

12   Q.   And then there are, of course, repairs that

13 are done; is that correct?

14   A.   (Mr. Richter) Correct.

15   Q.   Hopefully as soon as possible; is that right?

16   A.   (Mr. Richter) Always.

17   Q.   Now the placement costs used in the model, my

18 understanding is they come from contracts that Verizon

19 has today; is that right?

20   A.   (Mr. Richter) That's correct, but Mr. Tucek

21 is more adept in answering that question.

22   Q.   Okay. Mr. Tucek seems very adept at

23 answering most questions.

24   MR. RICHARDSON: Your Honor, I think what we

25 tried to do is to have an engineer on the panel who can

1   answer engineering assumptions based on what engineers

2   do. Mr. Richter is not the person who negotiates

3   placement contracts for the company, and that's an input

4   into VzLoop. So I think we have a panel because we have

5   different areas of expertise, and obviously they overlap

6   in some areas.

7   JUDGE MACE: Surely, I think we're on a good

8   track with that.

9   MS. STEELE: I apologize for my gest, it was

10 meant in gest.

11   MR. TUCEK: I took it as being dead serious.

12 BY MS. STEELE:

13   Q.   I want to look at Exhibit 251, which as I

14 understand it is one of the contracts that used -- it's

15 used in developing these placement costs.

16   A.   (Mr. Tucek) That is correct.

17   Q.   And I should indicate that there is an error

18 in the way the exhibit was put together, and that is

19 that the contract is exhibit -- is pages 1 through 30,

20 and so if you get to page 30 there are some extra pages

21 on the back, and those are -- those can be discarded,

22 those are not part of the exhibit.

23   JUDGE MACE: Thank you.

24 BY MS. STEELE:

25   Q.   Now my under --

1   JUDGE MACE: Does everybody have 251?

2   Looks like it, go ahead.

3   BY MS. STEELE:

4   Q.   My understanding is that there are actually

5   two contracts that are used in developing the placement

6   cost; is that correct?

7   A.   (Mr. Tucek) I will accept that subject to

8   check.

9   Q.   And when I'm talking about placement costs,

10   I'm talking about the things like trenching and plowing

11   and that kind of thing. Do we have the same

12   understanding?

13   A.   (Mr. Tucek) That's my understanding.

14   Q.   And my understanding is that both of these

15   contracts are in the same form, that is they're both

16   what we would call, and if I'm looking here, single

17   source contracts; is that correct?

18   A.   (Mr. Tucek) I believe so.

19   Q.   My understanding of the way that single

20   source contracts are used is that you have a contract

21   with a company out there who does trenching and things

22   like that, and you agree in advance on the prices that

23   they will -- that Verizon will pay for those services,

24   but you don't agree on a scope of work at that time; is

25   that correct? Let me back up. You don't agree on any

1   specific jobs at that time; is that correct?

2   A.   (Mr. Tucek) Yes.

3   Q.   And so when Verizon has a need, they would

4   call up the contractor and say, you know, here's our job

5   order essentially, go out and do this; is that correct?

6   A.   (Mr. Tucek) I believe so.

7   Q.   My understanding is that these single source

8   contracts are used for things like repairs and augments;

9   is that correct?

10   A.   (Mr. Tucek) I believe so. I don't know if

11 that's all they're used for though.

12   Q.   And they might be used for small growth

13 projects; is that correct?

14   A.   (Mr. Tucek) You're asking me to speak to

15 something that I'm not familiar with.

16   Q.   Is there anyone on the panel who could answer

17 this?

18   A.   (Mr. Richter) I believe that these, although

19 I'm not familiar with the specific contract you're

20 referring to here, generally you have these contractors

21 available to you for any type of work you need.

22   Q.   It is the case, however, and it is general

23 practice in the telephone industry that when you have a

24 large project you will put it out for a separate bid;

25 isn't that correct?

1   A.   (Mr. Richter) I suppose it depends on what

2   you define large to be.

3   Q.   Well, let's look at the engineering

4   guidelines in Exhibit 265, and maybe that can help

5   answer this question.

6   A.   (Mr. Richter) Are those the ones we had

7   earlier?

8   Q.   That's right, and I'm specifically referring

9   to -- well, I thought I knew where I was specifically

10 referring to, but obviously I'm wrong. It's going to

11 take me a second, I'm sorry.

12   JUDGE MACE: We're going to take a 15 minute

13 recess at this point.

14   (Brief recess.)

15 BY MS. STEELE:

16   Q.   I want us to keep Exhibit 265 open, because I

17 am going to refer to it in just a second, but I have a

18 couple follow-up questions on another area that I was

19 exploring with Mr. Tucek. We were talking, I'm sure you

20 remember this, about the fact that the model can't

21 locate all of the distribution areas, and we talked

22 about how the investment is grossed up to account for

23 that; is that correct?

24   A.   (Mr. Tucek) Actually could not locate all of

25 the distribution terminals.

1   Q.   Distribution terminals, I'm sorry. And so

2   the investment is grossed up to account for that; is

3   that correct?

4   A.   (Mr. Tucek) Well, the total investment is

5   grossed up because we also gross up the denominator you

6   divide by to get the cost, so it's really just a

7   mathematical exercise to carry forward the modeled per

8   loop investment based on the distribution terminals that

9   we could locate.

10   Q.   And I think you testified earlier that you

11   believe it's more likely that locating those

12   distribution terminals would have resulted in

13   decreasing, I'm sorry, in increasing costs rather than

14   decreasing costs; is that correct?

15   A.   (Mr. Tucek) Well, what I believe I said is

16   that it's likely there's a significant number of the

17   terminals that you couldn't locate because they didn't

18   have a geocodable address assigned to them, and those

19   addresses are often in the rural part of the exchanges,

20   and those rural part of the exchanges tend to have

21   higher cost loops.

22   Q.   It's correct, is it not, that when you look

23   at the universe of loops and you look at let's just

24   divide them into residential and business. If you

25   looked at the business loops in the model, you were able

1   to locate a smaller percentage of the business loops in

2   the model than the residential loops; isn't that

3   correct?

4   A.   (Mr. Tucek) That is correct.

5   Q.   So this gross up factor that you use is

6   larger for the business loops than for the residential

7   loops; is that correct?

8   A.   (Mr. Tucek) Yes, it is.

9   Q.   And so when you talk about -- well, let me

10   just move on.

11   Now, Mr. Richter, you and I were talking

12   about the fact that we have a one source provider

13   contract that's being used to develop the costs in this

14   model for placement, and we talked about whether or not

15   Verizon would instead of using this contract bid out

16   certain projects. Do you remember that line of

17   questioning?

18   A.   (Mr. Richter) I remember we were -- yes.

19   Q.   And I attempted to refer you to Exhibit 265,

20   which are the draft engineering guidelines, and I have

21   found the reference now, it's on page 17 of 22 in

22   Paragraph 4.0, paragraph 6 underneath that.

23   A.   (Mr. Richter) Okay.

24   Q.   And the statement there is that new

25   construction with a certain estimated cost should be put

1   out to bid to substantially reduce the average cost; is

2   that correct?

3   A.   (Mr. Richter) Yes, that's what it says.

4   Q.   Now do you know whether that's Verizon's

5   current practice, to put larger projects out to bid

6   rather than using its single source provider contracts?

7   MR. RICHARDSON: Your Honor, could I just

8   check with the witness to see whether that's

9   confidential or not.

10   JUDGE MACE: Surely.

11   Well, I'm a little troubled by this. I think

12   if the witness is aware that it's confidential, he can

13   tell us on the record. I think you're referring to

14   what's marked, am I correct, it's Paragraph Numbered 6

15   under 4.0, is that what you're referring to, and is that

16   confidential? Can you talk about that on the record?

17   MR. RICHTER: I'm afraid I don't know, Your

18   Honor. That was the question. There are dollar figures

19   in here that I --

20   JUDGE MACE: Well, I don't know that we're

21   referring to dollar figures.

22   MS. STEELE: I avoided that in my question.

23   MR. RICHARDSON: My only question is that I

24   don't know whether Verizon's practice for putting these

25   out to bid are proprietary or not.

1   CHAIRWOMAN SHOWALTER: What exhibit page

2   number are we on?

3   MS. STEELE: We're on Exhibit 265, page 17 of

4   22, and we're looking at Paragraph 4.0, Paragraph 6.

5   CHAIRWOMAN SHOWALTER: Well, it seems as if

6   you -- well, it seems to me that if you leave the dollar

7   amounts out, there's just about no way it could be

8   considered proprietary. In other words, put it this

9   way, let's just leave out the conditions under which the

10   second part of the sentence operates, so it will not be

11   known, dollar amounts or anything else, of conditions.

12   So you're simply saying under certain conditions the

13   second half of the sentence applies. Is that what you

14   want to do?

15   MS. STEELE: That's correct, whether or not

16   Verizon currently bids out new construction under

17   certain conditions that are indicated here in this

18   paragraph.

19   A.   (Mr. Richter) I'm afraid I'm not qualified to

20   talk to what corporate sourcing folks -- how they would

21   go about trying to get average lower costs. I don't

22   know what their strategies are.

23   BY MS. STEELE:

24   Q.   And do you know what the common practice is

25   in the telecommunications industry regarding bidding out

1   projects rather than using single source contracts?

2   A.   (Mr. Richter) Well, I can tell you that I

3   know even single source contracts are competitively bid.

4   They're typically for certain time frames, you know,

5   rather than -- to try to leverage the amount of work, we

6   try to give -- we try to take advantage of the fact that

7   there are certain volumes of work that need to be done

8   in a given time frame, and rather than, you know,

9   initiate a new arrangement every time we want to hire a

10   contractor, we know that there is X number of amount of

11   work that needs to be done, you know, in a given area,

12   and that's typically what we use these single source

13   provider contracts for, and they are competitively bid,

14   my understanding.

15   Q.   Now I want to talk about, and again I'm still

16   talking about placement costs, but I want to talk about

17   how the model determines them, so perhaps Mr. Tucek is

18   the better person. Just to give us a sense of how this

19   works, I want us to go back to that contract, which is

20   Exhibit 261.

21   JUDGE MACE: I thought it was 251.

22   MS. STEELE: I'm sorry, 251, you're right.

23   BY MS. STEELE:

24   Q.   And just again avoiding use of the numbers to

25   avoid confidentiality issues, I'm looking at page 24 and

1   on, which is essentially a price list; is that correct?

2   A.   (Mr. Tucek) Yes, it is.

3   Q.   And my understanding of the way the model

4   works is that you select certain activities that would

5   be needed to place plant and that you would take the

6   prices for those activities from a list like this; is

7   that correct?

8   A.   (Mr. Tucek) The inputs in the model are based

9   on the corresponding prices in this exhibit.

10   Q.   Now placement costs would depend in part on

11 the type of structure that's used to do the placement;

12 is that fair to say?

13   A.   (Mr. Tucek) Yes.

14   Q.   So, for example, aerial placement would have

15 one cost, underground placement you would be dealing

16 with placing conduit or buried placement would have --

17 they would have different costs associated; is that

18 correct?

19   A.   (Mr. Tucek) Well, it's by activity. So for

20 example to place a aerial plant, you have to place a

21 pole. You would do that with underground and buried, to

22 place a conduit system you have to dig a trench, you

23 would do that both with underground and buried.

24   Q.   Okay. And so the way the model develops

25 these costs is it looks at the structure and the

1   activities that are required to put that structure into

2   place; is that correct?

3   A.   (Mr. Tucek) Well, it determines, for example,

4   for a given amount of aerial plant that it's going to

5   model how many poles would be needed, and it would place

6   -- it would model the investment on the Verizon owned

7   poles based on the inputs in the material table. So if

8   it needed ten poles, it would be ten times that input,

9   whether -- the input also varies whether it's a solely

10   occupied or a jointly occupied pole.

11   Q.   And we'll get to that issue as well. But the

12   initial decision on the structure, meaning whether it's

13   aerial or buried or underground, is based on what's in

14   the existing network. That is, for a particular segment

15   of plant, you look at the predominant structure in that

16   segment, and the model then would decide initially that

17   the segment should be whatever it is today

18   predominantly; is that correct?

19   A.   (Mr. Tucek) That is almost correct. It does

20   look, for example, if on a -- on a given feeder route,

21   if the model says that's an aerial feeder route, it will

22   model aerial plant. It will go to underground if the

23   number of cables required exceed a certain number, user

24   specified value. The same thing if the original

25   structure was buried but you're going to put I think

1   more than two in the trench, it would model underground.

2   And the reason we do that, as I said in my opening

3   statement, is that that is the way we reflect the local

4   conditions that help determine the structure.

5   Q.   So the initial structure mix, let me try and

6   see if I understand what you're saying, the initial

7   structure mix, the model takes what's in the existing

8   network for a particular segment. And then it looks at

9   how many cables are on the existing structure as

10 modeled. Well, okay, let me back up, you're telling me

11 I'm wrong, so I'm going to try and do it right, okay.

12   You initially look at the existing structure;

13 is that correct?

14   A.   (Mr. Tucek) Yes.

15   Q.   And then you look at or you designate in the

16 model there's an input that tells you if you have a

17 certain number of cables on that structure, for example

18 you said I believe three for aerial, then you would go

19 to underground, and so instead of being aerial

20 placement, which is in the existing network, you would

21 model it as underground; is that correct?

22   A.   (Mr. Tucek) Yes.

23   Q.   Okay. And it's fair to say that underground

24 is typically the most expensive type of placement; isn't

25 that correct?

1   A.   (Mr. Tucek) I believe so, yes.

2   Q.   So even if we have in the real world as you

3 have indicated aerial structure, in some cases the

4 network would model underground structure; is that

5 correct?

6   A.   (Mr. Tucek) Yes. And the reason we do that

7 is that if you have demand on a route such that today it

8 requires say three cables per pole, that is an

9 indication that it's dense enough that it would require

10 something other than aerial plant.

11   Q.   I want to focus on buried placement, and my

12 understanding is that's the most prevalent placement

13 that is used in the model; is that correct?

14   A.   (Mr. Tucek) I'll accept that subject to

15 check.

16   Q.   Now when you do assume buried placement,

17 that's when you just put a cable in the ground without

18 any conduit or other structure; is that correct?

19   A.   (Mr. Tucek) That's correct, the structure is

20 a trench.

21   Q.   And if you look at the price list that's

22 attached on Exhibit 251, there are various ways of

23 placing buried plant; isn't that correct?

24   A.   (Mr. Tucek) Could you direct me to a specific

25 page and line, please.

1   Q.   Well, you don't, let me back up, you don't

2   really need to look at the exhibit to find that out.

3   There are different ways to place buried plant; isn't

4   that correct?

5   A.   (Mr. Tucek) Yes.

6   Q.   For example, you can plow it into the ground;

7   is that right?

8   A.   (Mr. Tucek) Yes.

9   Q.   Or you can dig a trench; is that correct?

10   A.   (Mr. Tucek) Yes.

11   Q.   Now typically the cheapest way to place it

12   would be to plow it into the ground; isn't that correct?

13   A.   (Mr. Tucek) Assuming that the local

14   conditions allows you to run the cable down the route

15   you're plowing, yes.

16   Q.   And when you're trenching, there are various

17   things that you -- the model makes assumptions about

18   regarding how the trenching will be done. For example,

19   it assumes that in some cases you're going to have to

20   bore; isn't that correct?

21   A.   (Mr. Tucek) Yes.

22   Q.   And in some cases you're going to have to

23   hand dig; is that correct?

24   A.   (Mr. Tucek) Yes, and those -- the frequency

25   of those tasks are driven by user inputs.

1   Q.   Okay. And it's fair to say that making an

2   assumption that you're going to be required to bore, for

3   example, is more expensive than assuming that you simply

4   have to use a backhoe to open the trench; isn't that

5   correct?

6   A.   (Mr. Tucek) Yes, boring costs more than just

7   digging a trench with a backhoe.

8   Q.   And we can see those prices reflected in this

9   Exhibit 251; is that right?

10   A.   (Mr. Tucek) I believe so, yes.

11   Q.   Now although you look at the existing

12   structure type when you're modeling the network, if you

13   have, for example, if the existing structure type is

14   buried, you don't then go back and decide and look at

15   how it was originally placed in the real world; is that

16   correct? So you don't go back and say, oh, this cable

17   was plowed, so we're going to reflect plowing; is that

18   right?

19   A.   (Mr. Tucek) No, we have no ability to do

20   that.

21   Q.   So instead of looking at how it was

22   originally placed in the real world, you make

23   assumptions about how it's going to be placed; is that

24   correct?

25   A.   (Mr. Tucek) Yes.

1   Q.   And when you make those assumptions, part of

2   the way you make those assumptions is driven by -- well,

3   let me back up.

4   It's fair to say that there is plant placed

5   today that's plant that's placed in green field

6   situations, meaning there are no existing structures; is

7   that right?

8   A.   (Mr. Tucek) Yes.

9   Q.   And you don't assume in the model that the

10   plant will be placed in that way; is that right?

11   A.   (Mr. Tucek) We're building to existing

12   demand, so there's no way we could make a green field

13   assumption.

14   Q.   And so the assumption is that you've got

15   roads, you've got sidewalks, you've got lots of stuff

16   already out there; is that right?

17   A.   (Mr. Tucek) I don't think it's an assumption,

18   I think it's a fact.

19   Q.   But that's the way the model works; is that

20   right?

21   A.   (Mr. Tucek) The model doesn't explicitly try

22   to determine is there a sidewalk here or some other

23   obstacle, a driveway.

24   Q.   Well, I want to focus on the trenching

25   scenario, and I want to look at Exhibit 256, and this

1   again is confidential, so we'll avoid using the numbers,

2   but we can see them and refer to them in our briefing

3   here. This is the way that assumptions regarding the

4   amount of time you have to hand dig and the amount of

5   time you have to bore are inputs into the model; is that

6   right? I'm just looking at the very first page. Well,

7   actually, there is only one page.

8   A.   (Mr. Tucek) Yes, this is the workpaper for

9   the percent hand dig, the percent boring, and the

10   percent of cutting and restoring concrete and asphalt.

11   Q.   Now my understanding of the way this is done

12   is that you have various accounting categories for

13   various activities and that this information was taken

14   from the company's records; is that right?

15   A.   (Mr. Tucek) Yes, it's taken over a three year

16   period.

17   Q.   And so this would reflect, would it not,

18   boring and hand digging requirements for activities like

19   augmenting existing cable or hand or repair work; is

20   that correct?

21   A.   (Mr. Tucek) You require -- the actual

22   experience we have had over this period that required

23   those activities for any plant that was placed.

24   Q.   Well, this only includes trench that's owned

25   by Verizon; isn't that correct?

1   A.   (Mr. Tucek) Yes.

2   Q.   And it is the case in the real world today

3   that when Verizon places facilities in a new development

4   that we don't use Verizon owned trench, that the

5   developer actually provides the trench; isn't that

6   correct?

7   A.   (Mr. Tucek) I believe that's true.

8   Q.   In fact, there's a tariff here in the state

9   of Washington that requires the developer to pay the

10   trench, to pay for the trench; isn't that correct?

11   A.   (Mr. Tucek) I believe that's true.

12   Q.   So if we were to include in this developer

13   provided trench, it's fair to assume that the

14   percentages of hand digging and boring, for example,

15   would decrease; isn't that correct?

16   A.   (Mr. Tucek) I believe so, yes.

17   Q.   And that's because when a developer is

18   placing a trench, they're doing it in that green field

19   environment where there typically are no existing

20   structures; isn't that correct?

21   A.   (Mr. Tucek) I don't know if they have poured

22   the sidewalks or the driveways before they do the

23   trenching or not.

24   Q.   A smart developer might dig that trench

25   before pouring the sidewalks; wouldn't you agree?

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 1        A.    (Mr. Tucek) I'm trying to think about my own

 2    subdivision.  I've only been there 16 years, I should

 3    remember.  I can tell you that the cable company came

 4    through after everybody was moved in, so I guess it

 5    depends on the developer in this situation.

 6        Q.    Now I understand that there's a variable in

 7    the model which would allow you to put into the model

 8    some presumption about there being some trench that's

 9    provided by someone other than Verizon, meaning the

10    developer; isn't that correct?

11        A.    (Mr. Tucek) Yes.

12        Q.    And in the model as filed here, the

13    assumption that's made by Verizon is that there is no

14    trench provided by developers; isn't that right?

15        A.    (Mr. Tucek) That is correct, that is an

16    assumption that we have had at least with respect to the

17    loop, the closest thing to a predecessor model.  That's

18    never been an assumption that we filed or had any party

19    oppose anything other than zero.

20        Q.    Well, if we're trying to reflect the real

21    world, however, in the real world Verizon does get

22    trench or does place facilities in trench that's

23    provided by developers for free; isn't that correct?

24        A.    (Mr. Tucek) That is true, that would be at

25    the very end of the distribution network since it would
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1 be applied to all buried trench, all buried trench

2 required. It would have to be a very small percentage.

3   Q.   Now are you aware that the Commission did, in

4 fact, look at the assumptions regarding the amount of

5 boring that would be required to place trench in the

6 state of Washington during the first cost proceeding?

7   A.   (Mr. Tucek) I was there, I don't recall that

8 though.

9   Q.   And it's fair to say that there's no attempt

10 in the Verizon model as filed to comply with the

11 Commission's determinations on that point; is that

12 correct?

13   A.   (Mr. Tucek) Well, I'm not sure what they

14 determined at that point, but what we're trying to do is

15 to estimate our costs today.

16   Q.   I'm going to move on from placement costs,

17 although it's related to placement costs, and I don't

18 think we need to refer to this, but in the direct

19 testimony there's a statement made that placement costs

20 are adjusted to include engineering costs. I can refer

21 you to that if you need to, but --

22   A.   (Mr. Tucek) I'm aware of the adjustment.

23   Q.   And is the amount of the adjustment

24 confidential?

25   A.   (Mr. Tucek) let me check.

1   We don't believe it's confidential.

2   Q.   Well, the placement costs are, in fact,

3 increased by 30% to account for engineering costs; is

4 that correct?

5   A.   (Mr. Tucek) That's correct, and just so we do

6 the math correctly, if it cost $1 to replace a pole, the

7 SSP contract, the input to the model would be $1.30,

8 which 30 cents over $1.30 is about 23%.

9   Q.   Now are you aware of anything that Verizon

10 has filed with its testimony or in its supporting

11 documentation that provides the support for that figure?

12   A.   (Mr. Tucek) Nothing that we filed. I believe

13 it's an estimate perhaps Mr. Richter could speak to. I

14 do know that I anticipated this question. I did look at

15 the inputs to ICM, our prior model, which had some

16 planning installation hours for DLC's and engineering

17 hours as well, computed what would be the analog of the

18 30%, I got numbers much, much higher. These are hours

19 that I guess by default this Commission accepted with

20 our compliance filing, for example the Florida

21 commission and others have accepted.

22   Q.   And in those cases, the engineering dollars

23 were not actually challenged; isn't that correct?

24   A.   (Mr. Tucek) All I can say is Florida

25 commission, for example, said we accept the inputs.

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1   Q.   And my understanding of the basis for the

2   dollar figure, or I'm sorry, for the percentage that was

3   filed here is that it goes -- comes from a 1997

4   calculation; isn't that correct?

5   A.   (Mr. Tucek) I'm not sure.

6   MS. STEELE: I do have a document here that

7   was not designated as a cross exhibit. I can try and

8   use it to refresh the witness's recollection. It is a

9   data request response.

10   JUDGE MACE: Why don't you go ahead with

11   that. If you have copies, why don't you distribute

12   them.

13   MS. STEELE: I have copies.

14   MR. RICHARDSON: Your Honor, I understood

15   yesterday when I wanted to ask Mr. Turner some questions

16   about a document that was not predesignated that that

17   would be inappropriate because I didn't designate it as

18   a cross exhibit.

19   JUDGE MACE: Well, my understanding of that

20   exchange was that you had not asked the question in

21   discovery so that there was no cross exhibit. I guess

22   that was the basis on which we made the ruling, that you

23   had not inquired about that information in the discovery

24   phase so that it would have been available to make a

25   cross exhibit.

1   CHAIRWOMAN SHOWALTER: And my recollection is

2   you asked the witness about a document, he didn't have

3   any knowledge of it, then you wanted to introduce that

4   document. It's okay to use documents that the witness

5   knows of, to ask them if they know about it, then it may

6   or may not become an exhibit later. But where the

7   witness couldn't respond to the document, then you

8   wanted to put the document in, that's really -- that was

9   in essence either direct or some kind of responsive or

10   rebuttal testimony on your part. So we haven't gotten

11   that far in this issue yet. I suspect counsel is going

12   to ask questions based on this document, and then the

13   evidence in front of us is the testimony that the

14   witness gives.

15   MS. STEELE: That was my intent, Your Honor.

16   MR. RICHARDSON: Do I understand that the

17   purpose of designating cross exhibits in advance is to,

18   particularly where they're prepared by persons other

19   than the witness, to have an opportunity to review them

20   before the hearing?

21   CHAIRWOMAN SHOWALTER: That's a different

22   issue, and so if you're objecting to the use of this for

23   cross examination because you haven't -- because you

24   haven't seen it, you should make that objection. But

25   it's not the same as your issue yesterday. That's all I

1   was pointing out.

2   JUDGE MACE: And I just wanted to note, this

3   is a Verizon response to a discovery request, so I'm

4   assuming that some part of the panel must have seen this

5   at some point in time and have some familiarity with it.

6   MS. STEELE: Mr. Sanford was one of the

7   original members of the panel. I'm not sure --

8   JUDGE MACE: Well, you have distributed this

9   to the panel, is that right, or to Mr. Tucek?

10   MS. STEELE: I have given it to Mr. Tucek, I

11   have another copy that --

12   CHAIRWOMAN SHOWALTER: Do we have an

13   objection, are you objecting --

14   MR. RICHARDSON: I am objecting because it

15   hasn't been predesignated as a cross exhibit.

16   COMMISSIONER HEMSTAD: Well, we don't have a

17   question yet, so.

18   MS. STEELE: At this point I'm simply using

19   it to see if I can refresh the witness's recollection as

20   to the source of one of the inputs into the model that

21   Verizon is presenting in this proceeding.

22   JUDGE MACE: Go ahead.

23   BY MS. STEELE:

24   Q.   And is your recollection refreshed as to the

25   source of the input for engineering costs?

1   A.   (Mr. Tucek) This is the first time I have

2 seen the document, so I have no recollection of it to

3 refresh. What I thought I testified to previously is

4 that we used a 30% factor.

5   Q.   And you simply don't known then what the

6 source of that factor is; is that correct?

7   A.   (Mr. Tucek) Not when I answered your question

8 earlier.

9   Q.   And is there anyone on the panel who can

10 provide testimony as to the source of that input; do you

11 know?

12   A.   (Mr. Tucek) I'm not sure what the status of

13 this document is, if it's a legitimate cross exhibit or

14 not.

15   CHAIRWOMAN SHOWALTER: At this moment you're

16 just being asked about what you have direct knowledge

17 of.

18   MR. TUCEK: Well, my knowledge has changed as

19 a result of seeing the exhibit.

20 BY MS. STEELE:

21   Q.   And the record at this point then, unless

22 there is someone else on the panel, is that there's

23 simply no supporting information in the record about the

24 source of the 30%; is that correct?

25   A.   (Mr. Tucek) Not about the source.

1   JUDGE MACE: I just wanted to inquire which

2   one of you adopted Mr. Sanford's testimony?

3   MR. TUCEK: I did.

4   JUDGE MACE: Thank you.

5   BY MS. STEELE:

6   Q.   I want to move on to a discussion of the

7   issue of sharing, and I want to look at Exhibit 260, and

8   again there are two extra pages on this document, the

9   three yellow pages are the exhibit itself.

10   JUDGE MACE: I'm sorry, counsel, could you

11 repeat where you are?

12   MS. STEELE: I'm at Exhibit 260.

13   JUDGE MACE: Thank you.

14   MS. STEELE: So the last two pages can be

15 removed. We figure it's better to have too much than

16 too little.

17 BY MS. STEELE:

18   Q.   Do you have that in front of you, sir?

19   A.   (Mr. Tucek) Yes, I do.

20   Q.   And my understanding is that these documents

21 provide the workpapers for the derivation of the sharing

22 percentages used in the or the sharing assumptions used

23 in the model; is that correct?

24   A.   (Mr. Tucek) The single page that you have

25 identified as a cross exhibit does that for the poles.

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    1   Q.   Well, maybe we have some confusion. My

    2   exhibit has three pages.

    3   A.   (Mr. Tucek) So does mine, I thought you said

    4   to ignore the last two.

    5   Q.   Oh, no, there were two white pages, I'm

    6   sorry.

    7   CHAIRWOMAN SHOWALTER: Can you just say page

    8   1, 2, or 3; what page are you referring to?

    9   MS. STEELE: I'm referring to pages 1 through

   10   3.

   11   MR. RICHARDSON: Are those pole sharing, duct

   12   sharing, and trench sharing?

   13   MS. STEELE: Yes.

   14   A.   (Mr. Tucek) To answer your question, I

   15   understand now it's a three page exhibit, if you turn to

   16   Footnote 117 on page 63 of our May 12th rebuttal

   17   exhibit, you will see that the second page for conduit

   18   sharing has been updated.

   19   BY MS. STEELE:

   20   Q.   Okay, so I have with the update included in

   21   your rebuttal testimony --

   22   JUDGE MACE: Could you again give the

   23   reference to the footnote?

   24   MR. TUCEK: The footnote is Footnote 117 on

   25   page 63, and just so we know what we're talking about,

1   the factor is 0.35%, not 9.22%.

2   JUDGE MACE: Can you tell me that one more

3   time.

4   MR. TUCEK: The factor is 0.35%, not 9.22%.

5   There was an error in the data entered actually all the

6   way down the line.

7   JUDGE MACE: Let's be off the record.

8   (Discussion off the record.)

9   BY MS. STEELE:

10   Q.   Now when we talk about sharing, what we're

11   talking about is the percentage of the investment for a

12   particular structure that's assigned to the telephone

13   company versus the percentage that we assume would be

14   paid by others that are using the same structure; is

15   that correct?

16   A.   (Mr. Tucek) No, that's not correct.

17   Q.   Okay.

18   A.   (Mr. Tucek) Our inputs relate to the percent

19   for the physical structure, not the investment.

20   Q.   So, for example, when you're talking about

21   the trench sharing input, which is the -- on the third

22   page, probably not a good one since there's no sharing

23   assumed, but we would assume that -- and that is -- that

24   number is not confidential, that number is not

25   confidential; is that right?

1   A.   (Mr. Tucek) That is correct.

2   Q.   Okay. We would assume that 100% of the

3   trench feet that are placed are placed by the telephone

4   company and that all of the cost of that is assumed by

5   the telephone company; is that correct?

6   A.   (Mr. Tucek) That is correct.

7   Q.   Okay. And, in fact, it is your assumption in

8   this model that Verizon is paying for all of the

9   trenching; is that correct?

10   A.   (Mr. Tucek) For buried plant, yes.

11   Q.   And the derivation of that is from a

12   calculation that looks at trench owned only by Verizon;

13   is that correct?

14   A.   (Mr. Tucek) Yes.

15   Q.   And as we talked about before there, Verizon

16   does place facilities in trench that is developer owned;

17   isn't that correct?

18   A.   (Mr. Tucek) Yes.

19   Q.   And so to the extent Verizon gets free trench

20   from developers in the real world, that should be

21   reflected in the model; isn't that correct?

22   A.   (Mr. Tucek) Well, that would be reflected via

23   the input you spoke about earlier.

24   Q.   Which in this case is set at zero, meaning

25   there's no developer provided trench; is that correct?

1   A.   (Mr. Tucek) That's how we answered the

2   question earlier, yes.

3   Q.   Now the change that you have made on duct

4   sharing, so today what you're assuming is that Verizon

5   will, in this model, Verizon will not share any trench

6   and now will share almost no ducts; is that correct?

7   A.   (Mr. Tucek) That is correct.

8   Q.   So essentially the only sharing that is

9   reflected in the Verizon model is for poles; is that

10   right?

11   A.   (Mr. Tucek) That's right, and the reason for

12   that is that in order to share structure, particularly

13   buried structure, you have to have what I have called in

14   the past a coincident of need, space, and time. What

15   that really means is that if I'm going to trench cable

16   down a particular road, the utility that's going to

17   share with me has to want to go down that road at that

18   point in time. And we do try to coordinate joint

19   sharing, but our experience has been that it's very

20   difficult to do, and we have very low sharing

21   percentages for conduit because of that, and for buried.

22   Poles on the other hand, if the pole is tall

23   enough somebody can come back later along that route,

24   say a cable TV company, and share that pole. So there

25   is an opportunity to share that pole after it is placed,

1   and that's why typically the sharing percentage for

2   poles are so much higher than for buried or underground

3   plant.

4   Q.   (Mr. Tucek) Now it's fair to say that this

5   Commission and a number of other commissions have looked

6   at the issue of sharing in other proceedings; is that

7   correct?

8   A.   (Mr. Tucek) Yes.

9   Q.   Have you ever been involved in a proceeding

10 where a commission has accepted Verizon's -- accepted

11 the position that there should be no sharing for trench

12 and virtually no sharing for conduit?

13   A.   (Mr. Tucek) Yes, I have. In the Florida

14 proceeding, I think Mr. Richter in his testimony cited a

15 quote from it, I don't remember the page, but their view

16 was this, that if you have a model that assumes that

17 you're going to have sharing that is much, much greater

18 than what you actually experience today for buried

19 plant, that is a ridiculous assumption. Because even if

20 -- and I do not buy into that philosophy that you have

21 to develop your inputs that you're actually rebuilding

22 your network anew. The people that you're going to

23 share with are not rebuilding their network, the

24 electrical company, the cable company, they have their

25 networks in place. So even if Verizon were to build a

1   completely new network, there would not be this dramatic

2   increase in sharing. That was the gist of the Florida

3   decision.

4   Q.   This Commission did not accept that position

5   in the last proceeding; is that correct?

6   A.   (Mr. Tucek) I'm not sure.

7   Q.   Did you not look at what the Commission

8   decided in the last proceeding in developing the inputs

9   into this model?

10   A.   (Mr. Tucek) I wasn't a witness in the last

11 proceeding. The last proceeding is not the first

12 proceeding that started in January '97.

13   Q.   No, I'm asking you whether you looked at the

14 Commission's, for example the Commission's Eighth

15 Supplemental Order in the first cost docket in

16 developing the inputs for the model that Verizon is

17 using here?

18   A.   (Mr. Tucek) No.

19   MS. STEELE: All right.

20   JUDGE MACE: We're going to take our lunch

21 recess now until 1:30.

22   (Luncheon recess taken at 12:00 p.m.)

23

24

25

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

2   (1:30 p.m.)

3   JUDGE MACE: I know we need to resume your

4   cross-examination, but Ms. Frame had a concern about

5   scheduling, and it had to do with her flight plans for

6   tomorrow afternoon.

7   MS. FRAME: And my question of the Commission

8   is are we thinking that we're going to run late tonight

9   and late on Friday night, or are we going to try to at

10   all continue the hearing if we need to on Saturday? I

11   just need to figure out if I need to change my flight

12   arrangements.

13   CHAIRWOMAN SHOWALTER: How are you doing on

14   your cross-examination schedule?

15   MS. STEELE: I have about 30 to 45 more

16   minutes, maybe even a little less, to finish up.

17   CHAIRWOMAN SHOWALTER: Well, it seems to me

18   the best strategy is to try to get through both panels

19   today and go late if we need to and then try to finish

20   on Friday and go late if we need to.

21   COMMISSIONER HEMSTAD: I think Saturday would

22   be quite difficult.

23   MS. FRAME: Okay.

24   COMMISSIONER HEMSTAD: For lots of people.

25   CHAIRWOMAN SHOWALTER: But you would probably

1   be able to judge. If we are able to finish today's

2   stuff today, then --

3   MS. FRAME: That's correct, I will be able to

4   figure out a little bit more by the end of today. And

5   if I need to make alternative arrangements tomorrow, I

6   will do so.

7   JUDGE MACE: All right, having said that,

8   let's go back to cross-examination.

9

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

11   BY MS. STEELE:

12   Q.   Well, and I promised Mr. Tucek that he would

13   get a chance to talk about fill factors, so we're going

14   to move to fill factors. And perhaps the best way to do

15   this is to take a look at the direct testimony, and the

16   discussion of that I believe starts Exhibit 201 on page

17   39.

18   A.   (Mr. Tucek) Did you say page 39?

19   Q.   Yes.

20   A.   (Mr. Tucek) Okay.

21   Q.   At the bottom.

22   A.   (Mr. Tucek) Okay.

23   Q.   And first, so we know what we're talking

24   about when we talk about fill factors, what we're

25   talking about is usage of a particular element in

1   relationship to total capacity; is that correct?

2   A.   (Mr. Tucek) Yes.

3   Q.   And so to give a simple example, if I had

4   digital loop carrier that could serve 200 lines and

5   there were only 100 lines actually being served, we

6   would say there was 50% fill; is that correct?

7   A.   (Mr. Tucek) That's correct.

8   Q.   Okay. Now as your testimony explains

9   starting on page 39, fill factors are not actually an

10   input into the VzLoop model; is that correct?

11   A.   (Mr. Tucek) That's correct.

12   Q.   Rather the fill that comes out at the other

13   end is a result of application of sizing factors; is

14   that right?

15   A.   (Mr. Tucek) Yes.

16   Q.   And my understanding of the way it works is

17   that for VzLoop, and let's just talk about distribution

18   right now, the distribution fill calculation is

19   described on page 40, the last Q&A, going over to page

20   41; is that right?

21   A.   (Mr. Tucek) That does not describe the

22   calculation of distribution fill. It describes the

23   sizing of distribution cable.

24   Q.   Yeah, what I -- I may have misspoke. What I

25   meant to discuss is the -- it describes how the sizing

1 factor is derived; is that correct?

2   A.   (Mr. Tucek) Yes.

3   Q.   Okay. And the sizing factor is derived by

4 taking 2.5, which is the mid point between a figure of

5 -- it's the mid point between 2 and 3 pairs; is that

6 correct?

7   A.   (Mr. Tucek) We have an engineering guideline

8 that says that you will install between 2 and 3 pairs

9 per location for residential customers, and 2.5 is the

10 mid point of that range.

11   Q.   Okay. And that between two and three pairs

12 that's included in the engineering guidelines, that

13 would be a guideline designed to place distribution

14 cable according to ultimate demand; is that correct?

15   A.   (Mr. Tucek) It is designed to place

16 distribution cable to meet ultimate demand. And by that

17 we mean you place distribution cable with the

18 expectation it's not going to be reinforced. The reason

19 you do that is if you have to reinforce distribution

20 cable, you're coming back into very congested areas, an

21 established neighborhood, and digging up the plant. The

22 flipside of that is feeder cable that is designed with

23 the idea that it will be reinforced.

24   Q.   Now you take that 2.5, which is the mid point

25 between the 2 and 3 pairs, and you divide it by the

1   current demand for second lines that comes out of

2   Verizon's records; is that correct?

3   A.   (Mr. Tucek) Yes, the sizing factor is

4   installed pairs per working pair. That's basically what

5   it ends up to be. We get that by taking the 2.5 pairs

6   per location that's from the engineering guideline,

7   dividing that by working pairs per location for

8   residential customer, the location if you do the math

9   Campbells out and you come up with 2.5 installed pairs

10 per working pair.

11   Q.   Now it's fair to say that the demand for

12 second lines is decreasing; isn't that correct?

13   A.   (Mr. Tucek) I have not seen information on

14 that for Washington.

15   Q.   Okay. Overall in Verizon's network, is it

16 true that the demand for second lines is decreasing?

17   A.   (Mr. Tucek) I have not seen information for

18 Verizon network overall.

19   Q.   Okay, so you simply don't know; is that

20 correct?

21   A.   (Mr. Tucek) That's what I testified to.

22   Q.   Now isn't it true based on -- mathematically

23 based on your calculations that as the demand for second

24 lines decreases and therefore your number of working

25 pairs decreases, your sizing factor is actually going to

 1   increase?

 2   A.   (Mr. Tucek) Yes, mathematically that's what

 3   that would work out to be.

 4   Q.   Now my understanding is that when you look at

 5   the other end and look at the actual realized

 6   distribution, we talked about this a little bit before,

 7   the realized, I'm sorry, the realized fill factors, the

 8   realized fill factor for copper distribution is 38% in

 9   this model; is that correct?

10   A.   (Mr. Tucek) Yes, 38.44%.

11   Q.   Okay. And the realized fill for copper

12   feeder is approximately 52%; is that correct?

13   A.   (Mr. Tucek) Yes.

14   Q.   Now did you review the Commission's prior

15   orders regarding fill factors in determining the inputs

16   into the Verizon loop model filed in this proceeding?

17   A.   (Mr. Tucek) I believe those orders related to

18   the fills to be used in -- as inputs to those models. I

19   did not interpret them or recall that they related to

20   the fills that are outputs to the model.

21   Q.   Well, do you recall that U S West, now Qwest,

22   in the first cost proceeding proposed using a sizing

23   factor similar to the one that Verizon is proposing

24   here?

25   A.   (Mr. Tucek) What I recall about Qwest's

1   position on sizing and distribution cable was that they

2   maintained that the appropriate pairs per location was

3   three, and I recall that Mr. Fassett testified quite

4   adamantly that two was the correct number.

5   Q.   Now I want to move away from VzLoop and talk

6   a little bit about transport, and fills is a nice

7   bridge, because we can talk about that in the transport

8   part of the model as well. Now VzLoop is the calculator

9   that's used to develop loop investments; is that

10 correct?

11   A.   (Mr. Tucek) Yes.

12   Q.   And the development of transport investments

13 is done in a different part of the model; is that

14 correct?

15   A.   (Mr. Tucek) Yes.

16   Q.   And the development of transport investment

17 is actually done outside of VzCost and then used as an

18 input; is that correct?

19   A.   (Mr. Tucek) Yes, it is. There is a linkage

20 between VzLoop and the transport cost, and that is that

21 the transport cost uses the per foot per fiber model

22 cost out of VzLoop. What we do in VzLoop is we assume

23 12 fibers per RT, per terminal, to get the economies of

24 scope one would have in sharing the transport network

25 with the local network. We assign half of that modeled

1 fiber investment to the local loop. We take based on

2 all 12 fibers cumulative as you move through the

3 network, we take the per fiber per foot cost and use

4 that in the transport model to account for those

5 economies of scope.

6   Q.   So what you're telling me is that you go

7 through VzLoop, and VzLoop will place 12 fibers and

8 develop the investment that way; is that correct?

9   A.   (Mr. Tucek) It develops the fiber investment

10 based on 12 fibers per remote terminal, so that as

11 you're going down the route, there's another remote

12 terminal, you would put on another 12 fibers, so it

13 would be a 24 fiber ribbon. But for the loop cost, only

14 half of that investment is assigned to the loop. We

15 take the entire fiber investment that's modeled and

16 divide it by the amount of modeled fiber feet to get a

17 cost per fiber per foot to use in the transport model.

18   Q.   So you take half for the loop, but you don't

19 then take the other half and assign that to transport;

20 is that correct?

21   A.   (Mr. Tucek) That is correct. You're the

22 first person who has gotten that right the first time.

23   Q.   It wasn't the first time.

24   A.   (Mr. Tucek) First time on the record.

25   Q.   Now from your explanation of the development

1   of fiber, I'm sorry, I'm looking in your direct

2   testimony, Exhibit 201, and starting at page 118 going

3   on to page 119. And I will caution you that there are

4   confidential numbers on 119, so let's avoid those. So

5   when you start in the transport model, you've got a per

6   foot per fiber cost; is that correct?

7   A.   (Mr. Tucek) Yes.

8   Q.   And in order to develop the fiber investment

9   for the transport model, you then apply utilization

10 factors; is that correct?

11   A.   (Mr. Tucek) Yes, we applied two utilization

12 factors, one of which is confidential. That one is

13 based on the, in our existing network, the ratio of

14 revenue producing fibers to total fibers in the network.

15 And just for talking purposes, let's say that number was

16 50%. We also then want to get that cost per working

17 fiber down to a cost per working circuit. The circuit

18 equipment on either end of the fiber has a fill factor,

19 is an assumed fill factor of 75%. So to get the cost of

20 fiber per circuit, we have to apply both fill factors of

21 50% and of 75%. And just for the record, the 50% was a

22 hypothetical number that I have used for talking

23 purposes to avoid using the confidential.

24   Q.   And the confidential number is actually found

25 on page 119 on line 11; is that correct?

1   A.   (Mr. Tucek) Yes.

2   Q.   And that number is based on a calculation

3   that looks at Verizon's current utilization; is that

4   correct?

5   A.   (Mr. Tucek) Yes, that's correct.

6   Q.   Now when we're looking at a transport model,

7   we have the fiber, but we also have electronics; is that

8   correct?

9   A.   (Mr. Tucek) Yes.

10   Q.   Now my understanding of the way that the

11   electronics investments are developed is that you take

12   the material prices for the various pieces of equipment

13   and then apply loading factors; is that correct?

14   A.   (Mr. Tucek) Yes, they applied the circuit

15   equipment loading factor to get the engineering

16   installed, engineering furnished and installed cost,

17   yes, EF&I.

18   Q.   EF&I, yes.

19   A.   (Mr. Tucek) The infamous EF&I.

20   Q.   I always forget what the E stands for, but I

21   think that you discussed that beginning on page 133 of

22   your direct testimony, Exhibit 201.

23   So just to explain how this works, if you've

24   got say for example an add/drop multiplexer, you don't

25   try to figure out how long it actually takes to install

1   that piece of equipment and then apply the labor rate to

2   that time to get the cost of installing the piece of

3   equipment; instead you apply the factor; is that

4   correct?

5   A.   (Mr. Tucek) That's how the factor is applied.

6   I need to tell you that the witness that sponsored that

7   was here last week, that's Mr. Jones. He is the factors

8   witness.

9   Q.   Okay, and I don't have -- the only question I

10   have about that is this. Is it your understanding that

11   it is the same EF&I factor, that it's applied to every

12   piece of equipment in the transport model?

13   A.   (Mr. Tucek) It's applied on an account basis,

14   and I am not sure if every piece of equipment falls into

15   the same account, so I can't tell you that because --

16   that would be a question for the factors witness.

17   Q.   That factor is based on Verizonwide, it's

18   used Verizonwide, isn't it?

19   A.   (Mr. Tucek) That would be a question for the

20   factors witness.

21   MS. STEELE: All right, I will withdraw that.

22   With that, I have no further questions for

23   this panel. I would like to move for the admission of

24   certain exhibits.

25   JUDGE MACE: Go ahead.

1   MS. STEELE: I have discussed and would like

2   to move to admit Exhibits 251, 256, 260, 263, and 265.

3   JUDGE MACE: 265 has been admitted.

4   Is there any objection to the admission of

5   the proposed exhibits?

6   MR. RICHARDSON: No objection.

7   JUDGE MACE: All right, we'll admit them.

8   MS. STEELE: There are certain exhibits that

9   we predesignated but I have not discussed that are

10 relevant to this panel that I would like to move to

11 admit at this time.

12   JUDGE MACE: Go ahead.

13   MS. STEELE: Those are Exhibits 233, 235,

14 243, and 244.

15   MR. RICHARDSON: I'm sorry, could you just --

16   MS. STEELE: 233, 235, 243, and 244.

17   JUDGE MACE: Is there any objection to the

18 admission of those exhibits?

19   MR. RICHARDSON: No objection.

20   JUDGE MACE: We'll admit them.

21   MS. STEELE: And the final thing I would like

22 to do, I have referenced Verizon's, one of Verizon's

23 tariffs, which is the general local exchange tariff, and

24 I have referenced certain sections of that tariff, and I

25 think it would probably be appropriate to request

1   judicial notice of the sections. I do have copies of

2   the ones I'm interested in.

3   JUDGE MACE: And have you talked to counsel

4   about this?

5   MS. STEELE: No, I have not, I'm sorry, I

6   should have.

7   JUDGE MACE: Is there any objection to the

8   taking of notice of these tariff provisions?

9   MR. RICHARDSON: No objection.

10   JUDGE MACE: All right, do you want to supply

11   us with copies of that, please.

12   MS. STEELE: I will do that, yes.

13   JUDGE MACE: I will take notice of those

14   provisions, but I would like to refer to them on the

15   record specifically.

16   The section referred to is section --

17   CHAIRWOMAN SHOWALTER: Is this an exhibit

18   number?

19   JUDGE MACE: This is not an exhibit, we're

20   taking notice of it. It's a tariff that's filed with

21   the Commission. I can make it an exhibit if the

22   Commission would prefer to have it made an exhibit,

23   but --

24   CHAIRWOMAN SHOWALTER: Yeah, it's easier to

25   refer to it.

1   JUDGE MACE: All right, we'll make it Exhibit

2   266, and I will admit that at this time.

3   MS. STEELE: I have nothing further for the

4   panel.

5   JUDGE MACE: And we have cross-examination on

6   the cross-examination grid from Covad and Staff.

7   Ms. Smith.

8   MS. SMITH: Thank you, Your Honor, I do have

9   a few questions, and they are all directed at Mr. Tucek,

10   and I don't have very many of them.

11

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

13   BY MS. SMITH:

14   Q.   Good afternoon, Mr. Tucek, I'm Shannon Smith,

15   I'm here representing Commission Staff. You were one of

16   Verizon's witnesses in the prior cost docket, 003013,

17   were you not?

18   A.   (Mr. Tucek) I don't recall if I was or not.

19   I was in the trilogy docket, not trilogy, the one that

20   did three orders that started in January '97.

21   Q.   You know, I don't know.

22   A.   (Mr. Tucek) I thought it ended in 369.

23   Q.   There was a 369 docket, and following that

24   there was a 0013 docket, 003013 docket, sort of a -- it

25   was sort of the middle cost docket I guess.

1   A.   (Mr. Tucek) I think so, I think I showed up

2   and testified on deaveraging.

3   Q.   Okay. Well, let me ask you this question

4   then. Are you familiar with the ICM 4.1 cost model that

5   Verizon has sponsored in prior proceedings?

6   A.   (Mr. Tucek) Yes, I am.

7   Q.   Would you accept subject to check that in a

8   compliance filing in the prior cost docket, Docket

9   UT-003013, that Verizon filed a compliance filing that

10   had a statewide average two wire loop rate of around

11   $17?

12   A.   (Mr. Tucek) I will accept that subject to

13   check.

14   Q.   Now in this docket Verizon is proposing a

15   statewide average two wire loop rate of just over $33;

16   is that correct?

17   A.   (Mr. Tucek) That's correct.

18   Q.   Could you explain what the differences are

19   between VzCost and the prior ICM 4.1 model that would

20   account for the differences between the $17 statewide

21   average two wire loop rate in the prior docket to the

22   $33 rate in this docket?

23   A.   (Mr. Tucek) I can tell you about the

24   differences in the model. I can't recall

25   instantaneously the differences in the inputs. I would

1   suggest you probably look at the cost of money and

2   depreciation lives. You should probably look if there

3   were any extraordinary sharing assumptions ordered in

4   that prior filing. Those are just possibilities. I

5   have not done a one to one comparison of the inputs.

6   Q.   So you --

7   A.   (Mr. Tucek) To account for the change you're

8   talking about.

9   Q.   I guess then in addition to the inputs that

10   you have listed that may have changed between the

11   different proceedings, is there anything about the

12   models themselves that would add to the difference

13   between the $17 rate and the $33 rate? And if that's a

14   question that could be better answered by one of the

15   other witnesses on the panel, feel free to refer that

16   on.

17   A.   (Mr. Tucek) I don't think there's anyone here

18   that knows as much about ICM as I do. I just have never

19   really thought about what impact the changes in the

20   modeling methodology would have on the cost, for example

21   would cause the cost to go up.

22   Well, one thing that does occur to me, even

23   though at ICM we tried to constrain the amount of

24   modeled cable to the amount of roadway, road feed in our

25   -- in each wire center, that constraint may have been --

1   may not have -- how do I want to say this -- accounted

2   for the actual routing that you would have to do in the

3   real world. It was kind of like Mr. Spinks' loop length

4   adjustment, although he wouldn't have characterized it

5   this way, I characterize it the second best solution.

6   It's something we had to do in order not to get

7   inordinately high costs. I think what we're doing today

8   gets you a better take on how much cable you would

9   actually have to route through the network. Beyond

10 that, that's really all I can say.

11   Q.   Does the new model, the VzCost model, use

12 more equipment, does it model more equipment than the

13 ICM model?

14   A.   (Mr. Tucek) Certainly not by design.

15   MS. SMITH: That's all, thank you.

16   JUDGE MACE: Ms. Frame.

17   MS. FRAME: Covad doesn't have any additional

18 questions at this time.

19   JUDGE MACE: Thank you.

20   Dr. Gabel.

21

22   E X A M I N A T I O N

23 BY DR. GABEL:

24   Q.   Good afternoon, panel. Let me just begin

25 along the same line of Staff's last question, that is

1   changes in numbers. Initially in Exhibit 202, the

2   VzLoop proposed an ISDN BRI loop cost of $40.76. That

3   was your June 2003 filing. In January you filed what's

4   now known as Exhibit 226, and the rate had increased

5   from $40.76 to $53.16. So within this docket can you

6   explain why for the one product the price increased from

7   $40, or the cost estimate increased from $40.76 to

8   $53.16?

9   A.   (Mr. Tucek) I know we have looked at that. I

10 don't recall the answer, but we would be happy to take

11 it as a Bench request.

12   DR. GABEL: Okay, so as a Bench request,

13 please explain why the cost estimate for ISDN BRI

14 increased from $40.76 in Exhibit 202 to $53.16 in

15 Exhibit 226.

16   JUDGE MACE: That's Bench Request Number 10.

17 BY DR. GABEL:

18   Q.   Now I would like to begin where Ms. Steele

19 began, and that is just to talk about the general

20 operation of customer locations and VzLoop. Am I

21 correct that the model begins with information regarding

22 which serving terminal is linked to a customer location?

23   Well, I guess maybe begins is the right --

24 wrong word. Let me just ask, your model contains

25 information which links a customer location to a

1   particular serving terminal; is that correct?

2   A.   (Mr. Harris) That's correct, for those

3   customers we were -- those serving terminals and the

4   related customers we were able to find that worked off

5   those serving terminals.

6   Q.   And is a serving terminal synonymous with a

7   pedestal?

8   A.   (Mr. Harris) Yes.

9   Q.   Because I think sometimes I'm going to

10 accidently slip in the term pedestal, but I wanted to

11 make sure that is synonymous with serving terminal.

12   And then the model also contains information

13 about the current location of a serving area interface

14 that is the link between the feeder plant and the

15 distribution plant, and it's the serving area interface

16 that's currently located to that particular pedestal; is

17 that correct?

18   A.   (Mr. Harris) Well, the SAI is synonymous with

19 a cross connect box, and what it's doing is it, through

20 the information we pull, we locate the cross connect box

21 in a different manner. One comes from a data source

22 called the assignment activation and inventory system,

23 which is where we pull the customer information and the

24 terminal, serving terminal information. But the cross

25 connect box information comes from the plant records.

1 And so we take and we cross reference those based on the

2 terminal ID information. Terminal ID information tells

3 us for the most part which one of the SAI's that that

4 terminal connects to. If we don't have that in some

5 cases, we bring it all the way back to the central

6 office. We consider it to be -- if we can't find the

7 actual serving terminals, we'll bring it all the way

8 back to the central office, do a minimum spanning

9 approach.

10   Q.   So if, for a particular pedestal, if you do

11 not know the cross connect that is associated with the

12 pedestal, you then assume that the cable runs from the

13 pedestal directly to the central office?

14   A.   (Mr. Harris) Well, through the network points

15 that are in the program. See, the program's going to go

16 to -- going to bring it back to the nearest control

17 point which we have converted to a cross connect, so

18 it's basically, you know, coming back in that manner.

19 It's going to follow through the feeder network, it's

20 not going to create a new feeder network, so it's going

21 to go back to the central office. It's not going to be

22 associated with a given SAI.

23   Q.   So you would rely on your minimum spanning

24 tree algorithm to determine which cross connect should

25 be associated with the pedestal where you do not have

1   information in your database?

2   A.   (Mr. Harris) It's going to go back to the

3   nearest one, yes.

4   JUDGE MACE: Again I'm having trouble hearing

5   you.

6   MR. HARRIS: I'm sorry.

7   JUDGE MACE: If you could speak up and make

8   sure you talk into the mike.

9   BY DR. GABEL:

10   Q.   Now in the situation where your database

11   contains information regarding a customer location's

12   serving terminal and cross connect box, the routing of

13   the cable between the pedestal and the cross connect box

14   is done using the minimum spanning tree?

15   A.   (Mr. Harris) That's correct.

16   Q.   And did I understand correctly in response to

17   questioning from Ms. Steele that that minimum spanning

18   tree is using air line connection, an air line direct

19   connection rather than a right angle connection to make

20   the linkages between the cross connect box and the

21   serving terminal?

22   A.   (Mr. Harris) That's correct.

23   Q.   Then is the air route distance converted to a

24   route distance using some factor?

25   A.   (Mr. Harris) There is a factor that is put in

1   the model, and I believe we put a 15%, and I can't

2   remember, maybe Mr. Tucek does, at what point that comes

3   into play.

4   A.   (Mr. Tucek) There are -- there's an input for

5   distribution of feeder. There's actually two inputs for

6   each, and they're set the same in our filing for

7   distribution of feeder. And the effect is that every

8   time a segment is greater than 500 feet, it is one of

9   the inputs. The distance instead of being straight line

10 is increased by 15%, which is the other input. So

11 although we have 500 and 15% per feeder and the same for

12 distribution, you could change, change the mix for that.

13   A.   (Mr. Harris) That's a user variable.

14   Q.   And why did you select the user input value

15 of 15%? Why are you sponsoring that input value?

16   A.   (Mr. Tucek) That was a judgment based on

17 folks who have done modeling before. For example, with

18 buried plant you have to go down and up again, there's

19 what, 5, 10 feet of cable there. Aerial plant you've

20 got sag, sag in the line in the street, cable between

21 poles. And obviously all plant's got curves in the road

22 and has to go around obstacles, and we just felt that,

23 you know, 500 feet, that's pretty much a straight shot,

24 that's modeling purposes. Beyond that we would be

25 underestimating the cost if we didn't make some route

1   adjustment factor.

2   Q.   I may have my witnesses confused, but I

3   believe it was Mr. Turner yesterday who talked about

4   using a conversion factor of 1.4 to convert air line

5   miles to route miles, and he referred to a triangle to

6   get this ratio of 1.4, so your ratio is actually less

7   than what I understood his testimony to be or somebody's

8   testimony, and I'm wondering actually why the 1.15 and

9   not a higher number?

10   A.   (Mr. Tucek) Well, I think the witness was

11   Mr. Spinks, and you probably should ask Mr. Mercer when

12   he gets on, but I don't think they apply a factor. I

13   think they do a calculation based on the legs of the

14   triangles. You know, they've got two points that aren't

15   directly due north and south of each other, rectilinear

16   distance are the two legs of a right triangle. If they

17   were directly due north and south of each other, it

18   would just be a straight line. And I think the 1.4

19   factor is probably, and I have heard Dr. Mercer testify

20   to this, if you do the calculus you can come up with

21   what the average is if you assume every angle is equal

22   and likely.

23   As to why their average number is greater

24   than our number, it's because we have much shorter

25   distances than I think that they are assuming in their

1   model, or perhaps that's just the mathematical

2   derivation of your routing. I think that's probably

3   basically the answer there. We have very short feeder

4   dis -- feeder, no, very short distribution and somewhat

5   longer feeder.

6   Q.   Now in some situations the model assumes that

7   a customer is served by digital line carrier even though

8   today a customer is only served by copper; is that

9   correct?

10   A.   (Mr. Harris) That's correct.

11   Q.   How does the model determine the location of

12   the digital line carrier in that situation?

13   A.   (Mr. Harris) I will answer the first part

14   because the first part is done within the preprocessing,

15   and then I will hand off to Mr. Tucek, who will explain

16   how it finalizes where the determination is.

17   In the preprocessing based on the network

18   components that we have identified, we run a routine

19   within that preprocessing that basically identifies

20   possible sites for future DLC's or additional DLC's.

21   The calculation that we put in varies based on whether

22   it's -- could be 12,000 feet or 18,000 feet, but what

23   the preprocessing is doing is it's placing indicators on

24   those components to say that if the model goes through

25   the three decisions that it can make to place an actual

1   DLC that that's the sites that it would go to to place

2   it. And so indicates that with I believe a T we put in,

3   we call it a T, so the indicator is there. So then at

4   that point, then it's passed into the -- out of the

5   preprocessing into the input file in that manner.

6   And then I will let Mr. Tucek tell you what

7   happens after that.

8   A.   (Mr. Tucek) Okay, we place additional remote

9   terminals, we place remote terminals for several

10 reasons. One, if there's one of these networks that

11 exist today, we place one there. If demand for a

12 particular distribution terminal exceeds a threshold

13 that's a user specified input, in our filing 160, we

14 place a building upon -- a fiber loop to the building

15 terminal. Then we have situations in which we place an

16 additional remote terminal to comply with the copper

17 loop length restriction such that if the terminal wasn't

18 placed at either an SAI location or one of these T

19 locations, loops going through that location would have

20 copper loops, copper loop portion greater than 12

21 kilofeet.

22   We then also try to do a -- place the --

23 through a decision process to go for the first RT on a

24 route. And that is if these were moving out from the

25 office on the route, if there's one that exists, again

1   we place one, and that's the first one. If you have a

2   user specified threshold which is also 12,000 feet, then

3   you place one at the next SAI or serving area interface

4   or the next T. And then if it satisfies the economic

5   crossover copper versus fiber fed DLC criteria, we also

6   -- we place it there as well.

7   Q.   Okay. In the preprocessing stage where

8   you're looking for locations for the new DLC, do you

9   only consider where existing cross connects are located,

10   or does the model allow the DLC to be located elsewhere?

11   A.   (Mr. Harris) It would allow it to be located

12   at any component, any network component that we found,

13   including like a control point which may not have any

14   cross connect at this point in time.

15   Q.   So it's the constraint that you're imposing

16   is that you have to have an existing control point, and

17   could you explain therefore for the record what you mean

18   by an existing control point?

19   A.   (Mr. Harris) A control point is a point that

20   is in the plant records that helps a engineer monitor

21   the network, and they will pick a point in the network

22   in which to do that monitoring like the feeder or

23   anything else with regard -- I mean Mr. Richter could

24   probably explain exactly how they use it, but it's a

25   planning tool, and they use that control point to

1   monitor the network. So we're basically saying that

2   it's already a point in the network that we could

3   possibly place something, so we put that indicator

4   there. So it may not have a cross connect box today, it

5   may not have a DLC today, there may be nothing there,

6   it's just an indicated control point.

7   Q.   Would a splice --

8   A.   (Mr. Harris) There's always a terminal there.

9   Q.   So a splice point would not necessarily be a

10   control point, there would have to be a terminal?

11   A.   (Mr. Harris) There would have to be a

12   terminal.

13   Q.   And then once you have this, you have

14   identified a control point that could be used to house

15   DLC, is there any limit that you impose upon the number

16   of lines that could be served through that control

17   point?

18   A.   (Mr. Tucek) Well, the maximum DLC size is

19   controlled by the record that is put in the input table.

20   So if you wanted to go to a larger or smaller size, you

21   would either add a larger size to it or you would take

22   out the ones --

23   Q.   Now going back to the serving terminal,

24   Ms. Steele also asked you about how you would handle

25   situations where you do not know the serving terminal

1 associated with a particular customer. Or maybe I'm --

2 is that a correct representation of your earlier

3 discussion with her, that it's -- I'm referring to,

4 yeah, to you, Mr. Tucek, I'm referring to where

5 Ms. Steele was asking you about what do you do when you

6 don't have all the information associated with serving a

7 particular customer, and there was a discussion about

8 you assume that the average investment associated with a

9 customer is the same as the average investment

10 associated with customers where you do have all the

11 necessary information.

12   A.   (Mr. Tucek) I recall that discussion.

13   Q.   All right. Well, first, when you make an

14 assumption about what's the average investment of

15 serving a customer when you don't have all the necessary

16 information, are you applying the average investment for

17 all of Verizon Washington or Verizon Washington for the

18 wire center where that customer is located?

19   A.   (Mr. Tucek) It's for the wire center where

20 that customer is located. And we do it, as she pointed

21 out, for business and residence, but for purposes of

22 explanation let's just say we did it one time. And

23 suppose that in the model network we had built a network

24 that had 10,000 lines, okay. Well, we know that, from

25 other records, that there's 11,000 lines in that wire

1   center. What we do is we take the total dollar loop

2   investment for that wire center, increase it by 10%

3   because it's 1,000 divided by the 10,000. And the

4   reason that we do that is because later on in the basic

5   mapping we're going to be dividing by demand that

6   corresponds to the 11,000, so we're just grossing up the

7   numerator to reflect the fact that we're also going to

8   gross up the denominator.

9   Q.   Okay. And when you need to apply this gross

10 up, is it because you're lacking information on the

11 customer location, or did I understand you to state

12 you're lacking information on the serving terminal for

13 the customer location?

14   A.   (Mr. Tucek) I believe technically it's --

15   A.   (Mr. Harris) I mean I can answer that,

16 because it's really in the preprocessing. It's usually

17 both or one or the other. I mean you have serving

18 terminals we find, and they have no customers, so they

19 get no assignment obviously. What usually happens is we

20 have customers that we can't find the serving terminal

21 associated with them and/or we just can't even find the

22 customer information, so I mean other than just the raw

23 customer information as far as they're customers in this

24 area, so we just drop it. If we can't find any way to

25 connect it to the serving terminal, then we don't use

1   it, because we don't geocode customers.

2   Now we do go through a routine that if we

3   don't know what the -- if we can't find the address for

4   the serving terminal, if we can find the associated

5   customer addresses for that terminal, we will assign

6   that to the terminal so that we can place the terminal.

7   In other words, if we know that there's four customers

8   that are assigned to that terminal and we do have one of

9   their addresses, then we have an address we can use to

10   assign because we know it's within a drop length of that

11   terminal. But otherwise we drop it.

12   Q.   And so when you're saying that you drop it, I

13   just want to make sure I understand you, if you have a

14   serving terminal where you don't have any customers

15   associated with that serving terminal, there would be no

16   investment that Mr. Tucek would generate because that

17   location has been dropped from your data?

18   A.   (Mr. Harris) Because there's no demand, it

19   won't calculate anything.

20   CHAIRWOMAN SHOWALTER: Could you just answer

21   yes or no to that question, is he correct?

22   MR. HARRIS: Yes.

23   BY DR. GABEL:

24   Q.   Following up on another area from Ms. Steele,

25   and did I understand correctly, Mr. Tucek, that the fill

1   rate, that the effective fill rate that is generated by

2   your model for distribution is 38%?

3   A.   (Mr. Tucek) That's correct.

4   Q.   Have you reviewed any of the FCC 271 filings

5   regarding this issue of what's an acceptable or

6   unacceptable utilization rate?

7   A.   (Mr. Tucek) No, I haven't, but I would just

8   like to say that you should really go back to see how

9   the cable was sized and see if that's reasonable,

10   because the effective fill or the realized fill is

11   largely due to discreet cable sizes. And, you know,

12   whatever assumptions you made for sizing, you really

13   can't draw a judgment from the fill rate itself.

14   Q.   All right. Mr. Tucek, am I correct that

15   within VzLoop there is one sharing input that applies to

16   all density zones, and there's not separate sharing

17   values depending upon the number of lines per square

18   mile?

19   A.   (Mr. Tucek) Yes, that's correct.

20   Q.   Okay. And were you in the room when I asked

21   Mr. Spinks yesterday that if the Commission concludes

22   that it's necessary to have different sharing values

23   depending upon the density level how the VzLoop might be

24   adjusted to reflect such a Commission finding?

25   A.   (Mr. Tucek) I was in the room when you asked

1   that question, and if you ask the same question of me --

2   Q.   I'm going to ask you, yes, I would like your

3   suggestion if the Commission wants to find that there

4   should be different sharing values depending upon the

5   density, how such a conclusion could be implemented in

6   VzLoop?

7   A.   (Mr. Tucek) Well, we could do it in much the

8   same way we did with ICM. ICM also only had one

9   sharing, set of sharing assumptions that cut across all

10   wire centers. What we did in that compliance filing,

11   which you all accepted or Staff accepted I guess, we

12   mapped each wire center to the density zone, and we --

13   and for us it turned out to be like four operative

14   density zones that we had to worry about. We ran the

15   model four times and extracted the results for the set

16   of wire centers that corresponded to each of the four

17   density zones, then combined those costs to get the

18   compliance cost.

19   We could improve on that process by modifying

20   VzLoop to take the sharing percentages, or sharing

21   assumption inputs, excuse me, out of the master table

22   which kind of cuts across everything and put them in the

23   options table, which is -- no, I've got that backwards,

24   take them out of the options table which cuts across

25   everything and put them in the masters, wire center

1 specific, in which case we could accommodate the

2 Commission with a single run.

3   Q.   Would you please turn to Exhibit 228. This

4 is the rebuttal panel testimony of May 12th, page 21,

5 line 3. You state that the modeled feeder routes will

6 generally follow the routes in Verizon's Northwest

7 existing network. Could you explain why you needed to

8 add this qualifier, what are the exceptional conditions?

9   A.   (Mr. Tucek) Well, we have, as Mr. Harris

10 explained, we've got a minimum spanning tree process to

11 order the distribution terminals, which one's connected

12 to which. For the feeder routes, that ordering already

13 comes with us in the data. And as I alluded to earlier,

14 the arc lengths are much shorter for distribution, but

15 they're somewhat longer for feeder routes. For feeder

16 routes its the average feeder arc length is 2,840 feet,

17 for distribution it's 315 feet. So there is a

18 possibility because the feeder arc lengths are long

19 enough that it won't -- will not pick up a bend in the

20 route, okay, if we try to adjust that with the 1.15

21 factor.

22   A good example is if you look at the clock

23 above my shoulder. If we were trying to approximate the

24 circle formed by the clock and if we just drew four

25 lines connecting 3:00, 6:00, 9:00, and 12:00, we would

1   have more approximation of that circle. If we connected

2   the hours, we would have a better approximation. If we

3   connected the little marks that denote the minutes, we

4   would have a much better approximation. So we have a

5   much better approximation for distribution because the

6   distance between the terminals is much shorter on

7   average, okay. But the feeder are longer, so we may not

8   pick up that bend in the route. So it doesn't always

9   follow the feeder route, but the ordering is the same.

10   Additionally, and not particularly I think

11 the distribution network more than the feeder, it may

12 not be located exactly where it is, so that when you

13 connect them it will, as I indicated in my opening

14 statement, on occasion cross water, maybe cross a small

15 pond or cross a river, doesn't appear to follow the

16 road. But it follows the real world much more closely

17 than any model that you see. That's kind of a longer

18 answer than you wanted for general.

19   Q.   That's generally how it works out, isn't it.

20   A.   (Mr. Harris) If I can add, in the

21 preprocessing, as I had said before I believe to another

22 question, it's how many points you're able to find. The

23 more control points and terminals you can find in the

24 network, the closer you're going to follow the actual

25 route. The less you find, which is partially what

1 Mr. Tucek had alluded to, the more likely it won't

2 follow exactly the route.

3   Q.   I'm not sure then I completely understand how

4 you're modeling your feeder cable costs. When you move

5 from one cross connect point to another in your feeder

6 route, what determines the path of the cable?

7   A.   (Mr. Harris) Well, the path of the cable or

8 the -- first I will answer how the cable actually is

9 laid out in the route, and then Mr. Tucek can talk about

10 how it actually calculates, because I misspoke somewhat

11 with a minimum spanning approach. I mean in the feeder,

12 it does --

13   JUDGE MACE: You need to speak into the mike,

14 I'm not able to hear you.

15   A.   (Mr. Harris) The minimum -- the feeder is

16 connected in a straight line basis between the control

17 points is what you use to find the feeder, but the

18 feeder is at -- actually used as control points that are

19 ordered, so it just doesn't go to the closest one. We

20 go into our plant records again and find the control

21 points and find the order in which the control points

22 are actually in the network, and then the program

23 connects them in a straight line following that order.

24   Q.   And then when the distance is greater than

25 500 feet, you would again apply the 15% distant

1 additive?

2   A.   (Mr. Harris) Yes.

3   Q.   Okay. Turning to page 41 of the same exhibit

4 at lines 3 through 5, you have a number of 10% and 5%.

5 I'm not sure I understand what's different in the

6 denominator that you're getting these two different

7 values. Could you explain how you calculated those two

8 ratios?

9   A.   (Mr. Harris) Okay, yes, I can. We're saying

10 that of the total SAI's that are in the model network,

11 there's 325 of them, but the 149 talks about how many

12 sites those 325 are at, or 323, excuse me. So that's

13 how you get the ratio. There's -- in total there's 323

14 SAI's that are at the same location, roughly 10%.

15   Q.   Okay.

16   A.   (Mr. Harris) But they are distributed or in

17 only 149 sites, and that's where you get the 5%.

18   Does that answer your question?

19   Q.   Yes.

20   And turning to page 51 of this same exhibit,

21 lines 12 to 14, there's an assertion here, and I believe

22 Mr. Tucek made this same assertion this morning, that

23 where you have problems with the geocoding of certain

24 distribution, these terminals would likely be found in

25 less dense and higher cost areas. What is the basis for

1 that assumption?

2   A.   (Mr. Tucek) The basis of that assumption is

3 my understanding of why geocoding fails. I could appeal

4 to an AT&T witness who could tell you, made it quite

5 clear it fails because you might have post office boxes

6 or rural routes. Those types of addresses just are not

7 geocodable. And so my testimony here and my testimony

8 earlier was that given that that is some of the reasons

9 why you can not locate these distribution terminals,

10 particularly the rural route addresses, those routes in

11 the rural part of the wire center, the more high cost

12 loops, the more longer the loops and probably, well,

13 just the longer loops, higher cost loops.

14   DR. GABEL: Turning to page 61 and 62, at

15 page 62 there is a Footnote 112 that refers to the

16 transcript from the Virginia arbitration proceeding. As

17 a request from the Bench, could you provide that portion

18 of the transcript?

19   JUDGE MACE: That's Bench Request Number 11.

20   I notice there's a reference at Footnote 112

21 too, do you want both of those?

22   DR. GABEL: I'm sorry, I meant Footnote 112,

23 which is the Virginia transcript at page 276 to 278.

24   JUDGE MACE: Okay, thank you.

25 BY DR. GABEL:

1   Q.   There's been discussion this week and last

2   week about how right of ways are handled in the

3   different models. Is this a direct cost or indirect

4   cost that's included in VzLoop or VzCost?

5   A.   (Mr. Tucek) I think for the remote terminals

6   it may be included in the EF&I factor but that's

7   really --

8   JUDGE MACE: Mr. Tucek, sometimes you run

9   your words together.

10   MR. TUCEK: I'm sorry.

11   JUDGE MACE: I really am having trouble

12   understanding you.

13   A.   (Mr. Tucek) I think for the remote terminals

14   it may be included in the EF&I factor, but that is

15   really something for the factors witness to testify to.

16   I don't know if we have right of way costs in our

17   inputs. I think the answer is no.

18   BY DR. GABEL:

19   Q.   Okay. Staying within Exhibit 228, I can give

20   you a lot of cross references if you want to here, but

21   let me read you the question, and if you want cross

22   references, I will provide them. Why is it appropriate

23   to reflect the existing location of pedestals and cross

24   connects and control points but not cable sizes? Why do

25   you choose to replicate some but not other parts of your

 1   loop network?

 2   A.   (Mr. Tucek) Well, let's take the distribution

 3   terminals first. It's nice to imagine that we could

 4   rearrange the distribution terminals into more efficient

 5   distribution areas or rearrange the customers into

 6   grids, but the fact is that the homes and businesses are

 7   where they are, and the distribution terminals if you

 8   were going to come back and rebuild a network would

 9   likely end up in that same place. The reason being is

10   you have to account for the easement on the property,

11   you have to account for existing landscaping, you also

12   have to account for where the inside wire say of the

13   house terminates. My house if you're facing it, the

14   power cable, well, if I had cable would be there, and

15   the phone all come in on the right-hand side. If

16   somebody was going to come in and rebuild the phone

17   network, they would put the terminal, their pedestal, on

18   the same side of the house and away they go.

19   For the SAI's and the DLC sites, the remote

20   terminal sites, it's appropriate because at least

21   according to the FCC Congress has directed us to develop

22   economically efficient rates. That's Paragraph 113 of

23   the Local Competition Order, interpretation of the Act.

24   There's at least two components of that.

25   One is that you need to ensure allocative

1   efficiency, which means that the rates you set have to

2   reflect the value of the resources that society

3   sacrifices to provide the service. The remote terminal

4   sites, the SAI sites, have value. We have solved the

5   problems associated with obtaining right of way, not

6   necessarily the right of way you think about as the

7   cable going down the road, but to place equipment say on

8   private property or even public property. It's no cost,

9   but you have to pick that site to meet public safety

10   concerns, safety concerns for employees, you have to

11   have room for their equipment when they set up their

12   work, you have to have room for them to park. All of

13   that work has been done, and it has value. To simply

14   walk away from it and ignore it is wasteful, and it's

15   not economically efficient, and a model that requires

16   you to do that can not produce economically efficient

17   rates. Mr. Richter will be happy to tell you that if

18   you had to acquire new sites today, it would cost you

19   more than simply reusing the sites you have.

20   And now the other part of your question is

21   why not the cable sizes. The reason is it's, I don't

22   know if it's the right thing to do or not, but, well,

23   no, I think it's probably the wrong thing to do, but

24   it's a limitation of the modeling process. All we have

25   is demand says working out from distribution terminals,

1   going back to the office along the minimum spanning tree

2   distribution routes, and then the controlled point and

3   the actual feeder routes of the network. And we

4   accumulate that and we have the size of the cable. We

5   don't have the information that today along the feeder

6   route there's a 300 pair cable and a 100 pair cable, so

7   we size it -- if that's the size cable we need, 400

8   pairs, we need 400 pair cable.

9   I have always maintained that we're really

10   underestimating our costs. We're approaching -- we're

11   estimating the forward looking costs from below, because

12   there could be perfectly good reasons, valid economic

13   reasons, why you would have two cables on that route.

14   If initially the feeder plant required 300 pair cable

15   and you placed that and then three years later, four

16   years later demand materialized, you place the

17   augmenting cable, the 100 pair cable in my example, that

18   is part of the production process of operating a

19   telephone plant. And I'm sure Mr. Fassett would agree

20   that you don't size feeder cable to serve all demand all

21   at once. You design it with the idea it's going to be

22   augmented.

23   So in a real network on a forward looking

24   basis, you are going to have two cables going down the

25   route, but it's a modeling limitation, we don't know how

1 demand materialized through time. We don't know what

2 cable is really out there in terms of our data, and we

3 certainly don't know how demand is going to materialize

4 in the beginning. So we build the network as if it fell

5 from the sky just to satisfy the demand today. Not a

6 requirement of TELRIC, but it's a modeling limitation.

7   Q.   Mr. Tucek, also Ms. Steele asked you a little

8 bit about the different types of placement that can be

9 used when buried cable is placed, for example there can

10 be trenching, plowing, and boring. Do you remember that

11 line of questioning?

12   A.   (Mr. Tucek) Yes.

13   Q.   Okay. For placing buried cable, you have

14 made some assumption about what percentage of the time

15 boring is used as well as hand digging; is that correct?

16   A.   (Mr. Tucek) Yes.

17   Q.   Okay. Could you for the record identify

18 those percentages, which I believe are not proprietary,

19 and then explain why you believe those values are

20 appropriate?

21   A.   (Mr. Tucek) Do you recall the cross exhibit

22 she referred me to, because they're on that cross

23 exhibit?

24   JUDGE MACE: Ms. Steele, do you have that

25 exhibit number to hand?

1345

1   MS. STEELE: I'm sure I can find it.

2   MR. RICHARDSON: I believe that's 256.

3   MS. STEELE: It's 256.

4   A.   (Mr. Tucek) 256. Now that I have the exhibit

5 and you do, do you need the answer?

6 BY DR. GABEL:

7   Q.   All right, some of those numbers are

8 proprietary, so if you would just explain why you think

9 these are the appropriate numbers?

10   A.   (Mr. Tucek) We base the percentage, which you

11 can think of as a likelihood of having to engage in each

12 of these activities based on what we actually did in

13 relative terms over a three year period, in other words

14 what we actually did in operating our real world

15 network. That is reflective of the type of activities

16 that we are going to do on a forward looking basis.

17 It's reflective, again back to the economic efficiency

18 argument, it's reflective of an input that's consistent

19 with trying to ascertain the value of the resources that

20 are sacrificed to provide the service.

21   Other folks may argue that no, you should

22 ignore everything in the wire center, the customer, and

23 not look at the instances of these activities that you

24 do -- incidents of these types of activities that you

25 experience in your current operation, but that view

1   would be wrong. And it's coupled often with the view

2   that you have to build the network as if nothing existed

3   before, the streets, the driveways are there, and if you

4   were going to subscribe to that view, you would probably

5   have a greater instance of boring and hand digging and

6   cutting and restoring concrete and asphalt.

7   Q.   Mr. Tucek, these units of measurement are

8   linear feet?

9   A.   (Mr. Tucek) Well, they're applied, for

10   example, if you were talking about buried plant, yes,

11   they would be the percent of buried plant that requires

12   hand digging, percent of buried plant that requires

13   boring, and the percent of buried plant that would

14   require cutting and restoring concrete and asphalt.

15   JUDGE MACE: But again, that's linear feet

16   and not a dollar amount or some other --

17   MR. TUCEK: No, these are physical

18   quantities, yes, not dollar amounts.

19   CHAIRWOMAN SHOWALTER: I'm confused now, the

20   percentages are just percentages, so are we on Exhibit

21   -- what exhibit are we on?

22   JUDGE MACE: 256.

23   MR. TUCEK: I misunderstood his question. I

24   thought he was talking about the inputs. I think he was

25   talking about the data above the inputs, and those are

1   physical quantities, not dollar amounts.

2   JUDGE MACE: In linear feet?

3   MR. TUCEK: Yes.

4   JUDGE MACE: Thank you.

5   BY DR. GABLE

6   Q.   And if a developer dug a trench and incurred

7   the cost of digging that trench, it would not be

8   included in these numbers; is that correct?

9   A.   (Mr. Tucek) That's correct.

10   Q.   And you feel that's appropriate to exclude

11   that activity because that's a green field effect, and

12   that's not what you believe should be modeled; is that

13   correct?

14   A.   (Mr. Tucek) Yes, I am, and again it goes back

15   to the Congress's requirement to give economically

16   efficient rates.

17   One other aspect of that is that economically

18   efficient rates will signal to potential competitors

19   whether they should lease unbundled network elements or

20   build their own facilities. And if they were going to

21   build their own facilities in the existing network to

22   compete, they would not get a developer to come back in

23   and redig the trench. He will do that one time when the

24   development is -- so excluding those quantities and also

25   the adjustment to cost for developer provided trench is

1   consistent with the requirement of TELRIC to develop

2   economically efficient rates.

3   Q.   I will like to ask you to turn to Exhibit

4   201, which is your June 26th filing, page 51, line or

5   Footnote 27. How do you determine if plowing is

6   possible within a wire center?

7   A.   (Mr. Tucek) Well, it's control of the model

8   by user specified input, and there's 12 wire centers

9   where that no plow flag is set such that plowing is not

10   allowed. Those wire centers were based on the density,

11   and I believe subject to check it's 500 lines per square

12   mile. And the thinking there is that if you have a very

13   dense developed area, you're not going to be bringing

14   cable plows into that wire center, because they're

15   pretty large, noisy machines. The public will not allow

16   it, not in this state, but in other states there are

17   some municipalities have prohibited. Additionally we

18   can not plow if the bedrock is not deep enough, that

19   would restrict plowing.

20   Q.   So, Mr. Tucek, in those wire centers where

21   the density is less than 500 lines per square mile, your

22   model assumes that you would trench in that situation?

23   A.   (Mr. Tucek) Yes.

24   Q.   All right. So just a few minutes ago I asked

25   you about bore cable, boring cable and hand digging the

1   trenches, and those costs would not come into operation,

2   they would not be applied in those density areas because

3   you're assuming trenching?

4   A.   (Mr. Tucek) No, I --

5   Q.   Or I'm sorry, you're assuming plowing, I'm

6   sorry, you're assuming plowing.

7   A.   (Mr. Tucek) I think this is also obviously

8   vary by location, because you could have a wire center

9   where that flag was set so that you could plow, but the

10   bedrock can be very close to the surface so you would

11   not. But, you know, subject to check, if the placement

12   is plowing, I do not believe the hand digging and the

13   boring apply.

14   Q.   But saying that subject to check --

15   A.   (Mr. Tucek) Subject to check, yes.

16   DR. GABEL: So why don't we make that as a

17   Bench request that if plowing applies, does boring and

18   hand digging not apply?

19   MR. TUCEK: And would you like to include

20   cutting and restoring concrete and asphalt in that?

21   DR. GABLE: Sure.

22   JUDGE MACE: That will be Bench Request

23   Number 12.

24   BY DR. GABEL:

25   Q.   Turning back a few pages, and this may be a

1   question for Mr. Richter, at page 40, line 3, there's a

2   cable sizing factor of 1.2 that applies to feeder cable.

3   I saw an explanation below on the sizing factor for

4   distribution, but I didn't see an explanation for why

5   that was the appropriate sizing factor for feeder.

6   Could you explain, please.

7   A.   (Mr. Tucek) That is really just a product of

8   judgment. It appears to be a reasonable number with

9   respect to AT&T because their effective sizing factor

10 for feeder cable in a multiplied form would be 1.25.

11 It's one area where --

12   JUDGE MACE: Mr. Tucek.

13   MR. TUCEK: I'm sorry.

14   JUDGE MACE: If you could just annunciate a

15 little bit, I'm really having trouble understanding you.

16   MR. TUCEK: I'm better in the morning, that's

17 all I can tell you.

18   A.   (Mr. Tucek) That was a value that was a

19 product of judgment. We felt it was a reasonable

20 number, we used it in other states. I noted that it is

21 below the comparable input in the HM 5.3 model, that if

22 their factor was expressed on a multiplicative basis it

23 would be 1.25.

24 BY DR. GABEL:

25   Q.   But when it came to a sizing factor for

1   distribution facilities, you refer to your Verizon

2   standard. Why don't you refer to your Verizon standard

3   here, and what is that standard?

4   A.   (Mr. Tucek) I think Mr. Richter should

5   probably answer the second part of that question first.

6   A.   (Mr. Richter) Well, I will define the

7   standard for now as, you know, what's contained within

8   this draft document, and that's --

9   JUDGE MACE: Are you referring to the pages

10 out of Exhibit 265? That was the engineering and

11 planning support method and procedure?

12   MR. RICHTER: Yes, that's correct. Just give

13 me a moment to find exactly where.

14   A.   (Mr. Richter) Okay, on page 6 of that

15 exhibit, section 1.6, number 3:

16   The trigger for the plan to perform an

17   analysis for possible relief

18   requirements for non-interfaced plant is

19   when that section --

20   JUDGE MACE: Hold on, the reporter has to

21 record this.

22   A.   (Mr. Richter)

23   -- the plant is when that section of the

24   feeder loop will reach 90% fill within

25   the next 12 months.

1   Generally today planners monitor the network

2   on an ongoing basis. We are trying to get better, and I

3   believe it's reflective in the adaptive engineering

4   guidelines that we submitted as part of some data

5   requests, we're trying to get better at identifying --

6   identifying the maximum geo -- how do I say this. We're

7   trying to get better at maximizing the utilization of

8   the feeder cable by not necessarily putting a time frame

9   on when relief is going -- this guide -- this 90% fill

10 is sort of a general guideline for us, to have a bogey

11 for us to shoot at. But we may have for instance feeder

12 loops that are at a 95% fill that don't have any need

13 for additional growth because they haven't been growing.

14 So that's sort of a long way to answer your question,

15 and it's not a direct application to this 1.2 fill

16 factor, but the 1.2 we believe gives a fairly good

17 estimate of what we would have to provide in a feeder

18 route.

19   A.   (Mr. Tucek) I would add to that with respect

20 to the cost input that if you're going to average the

21 fill relief is 90%, 1 over that is 1.111, so that's a 4

22 on this input. This is a discussion that we had back in

23 '97 is what do you do with objective filler, fill with

24 relief.

25   JUDGE MACE: What do you do with objective?

1   A.   (Mr. Tucek) Objective fill or also fill at

2   relief, should you fill --

3   JUDGE MACE: You said fill relief?

4   A.   (Mr. Tucek) Fill at relief, I'm sorry.

5   CHAIRWOMAN SHOWALTER: I'm going to interject

6   here. If you want your words to get into our heads, you

7   have to annunciate each word. I'm not planning to read

8   this transcript. I'm listening as hard as I can, but

9   you are simply mumbling.

10   MR. TUCEK: I'm sorry.

11   CHAIRWOMAN SHOWALTER: And it doesn't help

12 your case.

13   MR. TUCEK: Yes, ma'am.

14   A.   (Mr. Tucek) Anyway, the point of that, I

15 apologize, is that a floor on that factor would be 1.11,

16 because that is the inverse of the 90% fill at relief.

17   (Discussion on the Bench.)

18 BY DR. GABEL:

19   Q.   Could you turn to page 55 of Exhibit 228,

20 lines 3 to 18 and on to page 56 at lines 5 to 7, you

21 have a discussion of how you handle the sharing of

22 conduit within the model. And I read this portion of

23 the testimony, I had trouble following what you are

24 doing. Can you provide me an explanation of how the

25 sharing of conduit is handled by the model? I guess

1 what was -- let me just go -- when I read this, I read

2 you estimated two conduit systems, one with sharing and

3 one without sharing, and then you used those two numbers

4 to figure out your sharing percentage. And why did you

5 find it necessary to estimate two cost estimates, why

6 not just say what's the cost with sharing and then say,

7 well, Verizon has one part cost responsibility, and the

8 other utilities recover the other costs?

9   A.   (Mr. Tucek) Okay, for talking purposes let's

10 assume that 10% of our conduit systems are shared. We

11 estimate -- we also have an input that says if you're

12 going to share conduit systems, how many additional

13 ducts do you need. Let's say that number is just 2. We

14 have a part of the route that we need to put in conduit,

15 and let's say that requires, and this is not a standard

16 size, but it requires 10 ducts for our demand, okay. We

17 would estimate that 10 duct, cost of that 10 duct

18 system, and take 90% of it. That's 1 minus the 10% that

19 I said was shared. And then we would estimate the cost

20 of the 12 duct system, the 10 plus the 2 required for

21 sharing. 10/12 of that would be assigned to us, and

22 then 10% of that would go into our cost. So we estimate

23 a conduit system which satisfies only Verizon demand,

24 and if 10% of the conduit is shared, we'll take 90% of

25 that cost, we estimate a larger system to accommodate

1   sharing, assign a fraction of that based on the ducts

2   that we use, that is the ducts that are not shared, and

3   multiply that times its weight, 10%.

4   Q.   And then why not just apply that percentage

5   to the total cost?

6   A.   (Mr. Tucek) Because if you're going to share

7   a conduit system, you need to size it to accommodate the

8   demand that is going to share it. That was a problem

9   with some of the earlier models. ECPN, for example,

10 they would size the conduit system based on the

11 telephone company's demand, and they would say, well,

12 10% in my example is going to be shared, say share 10%

13 the other way. Well, if you're going to share the

14 conduit system, how do I say this, you have to make it

15 big enough to share. You have to have the additional

16 ducts. The cost of two additional ducts is not very

17 much, but it can be enough that it triggers you to the

18 next discreet standard conduit configuration that you

19 have to dig a deeper trench. So that's why, to

20 accurately reflect what would go on.

21   Q.   In this proceeding there has been discussion

22 about loop lengths and actual loop lengths, and you have

23 provided comparison of modeled loop lengths to actual

24 loop lengths. Do actual loop lengths include the

25 bridged tap loop length, or does it end at the customer?

1   A.   (Mr. Tucek) I don't know the answer to that

2   question.

3   DR. GABEL: So as a request from the Bench,

4   would you determine if your actual loop lengths include

5   the length of the bridged tap where they do exist?

6   MR. TUCEK: And just to clarify, you're

7   speaking of the data that went into the response to the

8   Staff data request that provided the actual loop length,

9   represent the numbers I use as actual in my testimony?

10   DR. GABEL: Yes, the numbers that you use as

11   actual in your testimony.

12   JUDGE MACE: That will be Bench Request

13   Number 13.

14   BY DR. GABEL:

15   Q.   And yesterday Mr. Turner talked about version

16   7a and a correction that was made to -- that he proposed

17   to the way in which the crossover point was connect --

18   was calculated. Do you agree with the correction that

19   Mr. Turner proposed?

20   A.   (Mr. Tucek) No, we do not agree with his

21   correction. His correction was to -- well, the problem

22   occurs because you would have a number that would be

23   negative, and I believe his correction was, well, let's

24   just add a really large positive number to that and that

25   will take care of these negative numbers. Our

1   programmers looked at that, and they said, well, there's

2   a better way to do it, and they have provided AT&T with

3   that proposal. And I read the code, and it was a much

4   -- it was a much more elegant way of doing it, you

5   didn't have to hard code a large number in. So you

6   asked me did I agree with his suggestion on how to fix

7   it, and the answer is no.

8   Q.   And the version 7a that will be made

9   available to the Commission, does it reflect the way

10   your programmer believes this issue should be addressed

11   or the way Mr. Turner proposed?

12   A.   (Mr. Tucek) It would reflect the way that the

13   Verizon programmers had proposed to fix it.

14   Q.   Okay.

15   A.   (Mr. Tucek) And just so you know, I think he

16   gets to the same place, it's just it's sloppy to hard

17   code 999,999 to your code when you can do it and

18   eliminate all possibility of a negative number.

19   Q.   Last question --

20   A.   (Mr. Harris) Just to clarify the record that

21   it's version 7Ra, I know it's a small thing, but that's

22   what you're going to see on the system is version 7Ra.

23   Q.   Last question, and this is again a follow up

24   to a question from Ms. Steele. If the Commission

25   decided that they wanted to use a different way to

1   determine how a customer is connected from their

2   pedestal back to the central office, is that a change

3   which say myself working as the Commission's advisor

4   could do, or is this something where the Commission

5   would have to ask you to implement the change through

6   the preprocessing of the data?

7   A.   (Mr. Harris) I think that depends on the

8   magnitude of the request as far as how much change we

9   would have to make. There is methods we can use to

10 change the location information and the way that the

11 model moves the route back towards the central office,

12 but it has some restrictions based on the number of

13 times you do it. I mean it's not an efficient way to do

14 it if you're going to do a lot of movement with every

15 wire center. So if it's a large change, then I would

16 say that it is much more efficient to be done by asking

17 us to make that change.

18   DR. GABEL: Thank you.

19   JUDGE MACE: We'll take a 15 minute recess at

20 this point.

21   (Recess taken.)

22   JUDGE MACE: Dr. Gabel finished his set of

23 questions from the Bench, and let me turn now to the

24 Chairwoman.

25

        1   E X A M I N A T I O N

        2   BY CHAIRWOMAN SHOWALTER:

        3   Q.   Oh, I think I have very few questions. One

        4   is with regard to version 7Ra, do you agree that it does

        5   produce better, i.e., I believe more accurate results

        6   than the previous version?

        7   A.   (Mr. Tucek) We agree that it eliminates the

        8   possibility of the negative economic crossover. We're

        9   looking at auditing a run of 7Ra, what we filed in

       10   Washington in January version 7, and this run of 7Ra

       11   didn't seem to make a difference, so. But it does

       12   eliminate that possibility that exists in the code.

       13   Q.   Well, conceptually does that make it superior

       14   to the previous version?

       15   A.   (Mr. Tucek) Well, yes, because the negative

       16   economic crossover is a clear error, and it needed to be

       17   fixed, corrected, so 7Ra does correct that error.

       18   Q.   All right.

       19   Mr. Richter, I had one question, there was

       20   discussion about a maximum of 5,400 pairs and that newer

       21   equipment can serve more than that, and I started to get

       22   a little lost, but I think my question is in your model,

       23   how is it determined that a newer piece of equipment

       24   that serves more lines should be used, or is it does

       25   that not happen, it's some -- it's just dollars floating

1 around which then someone might use to buy a bigger,

2 better switch?

3   A.   (Mr. Richter) I'm afraid that that's a model

4 question. I'm not exactly sure what the -- exactly how

5 the model sizes the cabinets.

6   Q.   Okay, but does the model make a choice at a

7 certain point that a bigger, newer switch is going to be

8 installed, or is the model operating at some other level

9 of SAI's or some other unit and it just doesn't reach

10 that question?

11   A.   (Mr. Tucek) Well, VzLoop does not involve the

12 switching cost. That was the switching panel that was

13 here last week. But generically with respect to the

14 loop, the model sizes the equipment based on the demand

15 that needs to be served at that point, and it goes to

16 the next hardest size. So if the demand required 323

17 pairs, that would go to a 400 pair cable. It doesn't

18 try to look at what exists in the past or the dollars

19 that were spent in the past and somehow adjust that

20 upward.

21   Q.   I had the impression from the questioning

22 that there was a criticism of the model that the units

23 that the Verizon model uses are consistently small and

24 therefore never reach this big switch size, now I don't

25 know about switch, but equipment size.

1   A.   (Mr. Tucek) I think the question was on SAI's

2   and remote terminals, and I did answer I think to

3   Dr. Gabel's question is that if the Commission or any

4   party wanted to run VzLoop so that it would install

5   larger SAI's or larger remote terminals, they just need

6   to put that size terminal in the input table, and it

7   would -- and say 1,500 was the maximum size today and it

8   needed to serve 700, 800, we would then place -- today

9   we would place 2. But if you put in 1 that would serve

10 1,800 in that situation, it would just place the 1, the

11 larger one.

12   Q.   And is that something that a non-Verizon user

13 can do?

14   A.   (Mr. Tucek) I believe that they can do that.

15 They would have to develop how much it cost to purchase

16 that larger size equipment, and, you know, I assume they

17 would want it to be consist with the inputs for the

18 smaller size equipment that are there already.

19   CHAIRWOMAN SHOWALTER: Thank you.

20   COMMISSIONER HEMSTAD: I have no questions.

21   COMMISSIONER OSHIE: I have no questions for

22 the panel.

23   JUDGE MACE: Dr. Gabel.

24

25

1   E X A M I N A T I O N

2   BY DR. GABEL:

3   Q.   Mr. Tucek, did I understand you to state in

4   response to the Chair's question that when you made the

5   correction that Mr. Turner proposed, it didn't make any

6   difference?

7   A.   (Mr. Tucek) That is correct.

8   Q.   So it did not have any change?

9   A.   (Mr. Tucek) It's the exact same number of

10   DLC's and the same dollar amount on the investment, and

11   that's subject to further review and will be filed at

12   the 7Ra results that was requested. I expect that's

13   what you will see.

14   Q.   Does that surprise you?

15   A.   (Mr. Tucek) No, it doesn't, because the

16   negative economic crossover only comes into play when

17   you're placing the first DLC in a route, but that's not

18   always the reason that you're placing the first DLC or

19   remote terminal on the route. The other reasons are as

20   I have enumerated. You may hit one -- have one there

21   already, and so that becomes the first one on the route.

22   You may have to place one because of the copper loop

23   length restriction. And you may have to place one

24   because you did not reach economic crossover, but you

25   reached the distance threshold for the first DLC or

1   remote terminal on the route.

2   Also if I understood the correspondence

3   between Verizon and AT&T's lawyers in California, the

4   economic crossover seemed to occur only when you were

5   talking about underground plant, and so extrapolating

6   from that it would be a rare, rare occurrence, or it

7   would be -- it would not be something that would come

8   into play on every route.

9   Q.   And why does it only come into play for the

10   underground?

11   A.   (Mr. Tucek) It had to do with the input

12   values for underground copper and underground fiber. It

13   was that difference turned out to be negative. It did

14   not turn out to be negative for the buried placement or

15   the aerial placement, so it wouldn't apply to every

16   route.

17   DR. GABEL: Thank you.

18   JUDGE MACE: Ms. Steele, did you have

19   anything else?

20   Go ahead.

21   MS. STEELE: Just a couple things.

22

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

24   BY MS. STEELE:

25   Q.   Just following up on Dr. Gabel's line of

1 questioning about the remote terminals and the 7a, is it

2 7Ra revision, do you recall Mr. Turner's testimony about

3 a remote terminal that he found in the model as run here

4 that was located approximately 300 feet from the central

5 office?

6   A.   (Mr. Tucek) I recall the testimony.

7   Q.   And are you telling me that in your new run

8 that that remote terminal was still located in the

9 model?

10   A.   (Mr. Tucek) Mr. Harris can answer that.

11   A.   (Mr. Harris) No. As we stated in our

12 rebuttal testimony, we did an adjustment to take out

13 that opportunity, so when we're comparing it, we're

14 comparing it to that not taking place. It's not in the

15 model.

16   Q.   And then just one other issue. Again,

17 Mr. Tucek, we were looking at the Exhibit 201 and

18 talking about plowing on page 51, that Footnote 27; do

19 you recall that?

20   A.   (Mr. Tucek) Yes.

21   Q.   And I believe that you told us that the

22 plowing would be -- would not happen in any wire center

23 where the density was greater than 500 lines per square

24 mile; is that correct?

25   A.   (Mr. Tucek) Actually, I said that there's a

1   plow -- a variable that's set for each wire center that

2   will either permit or not permit the plowing, and that

3   value was determined based on the density level for the

4   wire center. So the model doesn't go out and calculate

5   the density for the wire center. It just goes out and

6   it looks at what the values for that flag are.

7   Q.   And the value for that flag here in the model

8   as filed is 500 lines per square mile; is that correct?

9   A.   (Mr. Tucek) The value is either 1 or 0, and

10   it's a 1 or 0 depending on whether the wire center

11   density was 500 lines or greater.

12   Q.   So the flag is set to either permit or not

13   permit plowing based on a determination by Verizon that

14   plowing would not occur in a wire center where the

15   density per square mile is greater than 500 lines; is

16   that correct?

17   A.   (Mr. Tucek) Yes.

18   Q.   And that judgment was just based on expert

19   judgment within Verizon; is that correct?

20   A.   (Mr. Tucek) Yes.

21   Q.   Is the expert who made that judgment

22   testifying here today?

23   A.   (Mr. Tucek) I don't believe so.

24   Q.   And do you know the basis for the expert

25   judgment that determined the 500 line per square mile

1 value?

2   A.   (Mr. Tucek) No, I do not. But if the

3 Commission felt a different number was more acceptable,

4 they could change the value of the flag in the input

5 tables, permit plowing everywhere or prohibit it

6 everywhere.

7   MS. STEELE: That's all I have, thank you.

8   JUDGE MACE: Mr. Richardson.

9   MR. RICHARDSON: I just have one

10 clarification.

11   JUDGE MACE: Go ahead, Mr. Richardson.

12

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

14 BY MR. RICHARDSON:

15   Q.   Just one clarifying question for Mr. Tucek.

16 Mr. Tucek, there was a discussion of a change to the

17 underground sharing factor that was reported in your

18 rebuttal, the panel's rebuttal testimony, page 63,

19 Footnote 117, changing the 9.22% underground sharing

20 estimate, which the footnote explains was based on

21 erroneous information. The new number, which is less

22 than 1%, can you clarify whether that less than 1%

23 number is reflected in the cost studies filed in this

24 docket?

25   A.   (Mr. Tucek) It is not, but we would

1 anticipate if asked to file a compliance filing, we

2 would update that input to its correct value.

3   JUDGE MACE: All right, I think we have dealt

4 with all the exhibits related to these witnesses, and it

5 appears there's nothing more in the way of

6 cross-examination, so I thank you very much, you're

7 excused, except for Mr. Richter who I understand is

8 going to be part of the next panel too.

9   Now we have a new panel and a new Verizon

10 attorney. Gentlemen, will you please stand and raise

11 your right hands.

12   (Witnesses Timothy J. Tardiff, Francis J.

13   Murphy, and Christian M. Dippon were sworn.)

14   JUDGE MACE: All right, please be seated.

15   We have a shift change in Verizon counsel,

16 and as soon as you get situated, would you please

17 introduce yourself for the record.

18   MR. HUTHER: Yes, I'm Chris Huther with the

19 firm Preston Gates Ellis & Rouvelas Meeds from

20 Washington, D.C.

21   JUDGE MACE: Thank you.

22   MR. HUTHER: I understand it's been the

23 custom to distribute in advance the pre-filed testimony

24 erratas to the testimony with substitute pages; is that

25 correct?

1   JUDGE MACE: Yes, certainly. We need six

2   copies up here.

3   I have sworn the witnesses in, are you ready

4   to present them?

5   MR. HUTHER: Yes, I am.

6   JUDGE MACE: Go ahead.

7

8   Whereupon,

9   WILLETT G. RICHTER, TIMOTHY J. TARDIFF,

10   FRANCIS J. MURPHY, CHRISTIAN M. DIPPON

11   having been first duly sworn, were called as witnesses

12   herein and were examined and testified as follows:

13

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

15   BY MR. HUTHER:

16   Q.   I'll start with you, Mr. Richter, would you

17   please state your name and address for the record.

18   A.   (Mr. Richter) My name is Willett Richter,

19   Senior Specialist, Verizon Engineering Regulatory

20   Support, and my work address is 85 High Street,

21   Pawtucket, Rhode Island.

22   Q.   And did you cause to be filed certain

23   exhibits that have been pre-marked as 451T through 463

24   inclusive?

25   A.   (Mr. Richter) Yes, I did.

1   Q.   And do those exhibits consist of pre-filed

2   testimony and the exhibits appended thereto?

3   A.   (Mr. Richter) Yes.

4   Q.   And was the pre-filed testimony prepared by

5   you or under your direction and control?

6   A.   (Mr. Richter) Yes, it was.

7   Q.   And are the exhibits true and correct to the

8   best of your knowledge?

9   A.   (Mr. Richter) Yes, they are.

10   Q.   Do you have any changes that you would like

11   to make to your pre-filed testimony or exhibits?

12   A.   (Mr. Richter) No, I do not.

13   Q.   And if I were to ask you the questions

14   contained in your pre-filed testimony today, would your

15   answers be the same?

16   A.   (Mr. Richter) Yes, they would.

17   Q.   Thank you.

18   Let's go to you, Dr. Tardiff. Could you

19   please state your name and address for the record.

20   A.   (Dr. Tardiff) Yes, my name is Timothy J.

21   Tardiff. My address is National Economic Research

22   Associates, 200 Clarendon Street, that's

23   C-L-A-R-E-N-D-O-N, Boston, Massachusetts 02116.

24   Q.   And did you cause to be filed exhibits which

25   have been pre-marked 501T through 504 inclusive?

1   A.   (Dr. Tardiff) Yes, I did.

2   Q.   And do these exhibits consist of pre-filed

3   testimony and the exhibits appended thereto?

4   A.   (Dr. Tardiff) Yes, they do.

5   Q.   And was the testimony prepared by you or

6   under your direction and control?

7   A.   (Dr. Tardiff) Yes, it was.

8   Q.   And are the exhibits true and accurate to the

9   best of your knowledge?

10   A.   (Dr. Tardiff) With the errata, yes.

11   Q.   And do you have changes that you would like

12   to make to your pre-filed testimony?

13   A.   (Dr. Tardiff) Well, as listed in the errata.

14   Q.   That errata has been distributed to the

15   Commission and to the parties, and with the changes

16   contained in your --

17   JUDGE MACE: Just a moment. Let me just

18   indicate for the record that the changes that

19   Dr. Tardiff has made appear to be changes, well, let me

20   make sure that they are changes to his testimony which

21   is 501T. Are they also changes to the exhibits as well?

22   DR. TARDIFF: No.

23   MR. HUTHER: Only to the testimony.

24   JUDGE MACE: Which of your testimonies, or

25   both of your testimonies are at issue in these

1   revisions; is that right?

2   DR. TARDIFF: Right, all but one of them are

3   to the testimony that was filed in April. Then the very

4   last page is the revision to the main testimony.

5   JUDGE MACE: I see, it's page 23 of Exhibit

6   503, that's the very last page of this set of

7   corrections. All the other corrections pertain to 501T.

8   DR. TARDIFF: Yes, ma'am.

9   JUDGE MACE: Thank you.

10   BY MR. HUTHER:

11   Q.   And with those changes in mind, Dr. Tardiff,

12   if I were to ask you the questions contained in your

13   pre-filed testimony today, would your answers be the

14   same?

15   A.   (Dr. Tardiff) Yes.

16   Q.   Mr. Murphy, would you please state your name

17   and address for the record.

18   A.   (Mr. Murphy) Yes, my name is Francis J.

19   Murphy. My address is 5 Cabot, C-A-B-O-T, Place, Suite

20   3, Stoughton, S-T-O-U-G-H-T-O-N, Massachusetts 02072.

21   Q.   And did you cause to be filed exhibits which

22   have been pre-marked 551TC through 553 inclusive?

23   A.   (Mr. Murphy) Yes, I did.

24   Q.   And did those exhibits consist of pre-filed

25   testimony and the exhibits appended thereto?

1   A.   (Mr. Murphy) Yes, they did.

2   Q.   And was the testimony prepared by you or

3   under your direction and control?

4   A.   (Mr. Murphy) Yes, it was.

5   Q.   And were the exhibits that were appended to

6   your testimony true and accurate to the best of your

7   knowledge?

8   A.   (Mr. Murphy) Yes, they are.

9   Q.   Are there any changes you would like to make

10   to your pre-filed testimony?

11   A.   (Mr. Murphy) Yes, they're listed on the

12   errata sheet.

13   Q.   That is an errata sheet that we circulated

14   just moments ago to the Commission and to the parties.

15   JUDGE MACE: It appears to me from reviewing

16   the errata sheet and the corrected pages that all of the

17   corrections pertain to Mr. Murphy's Exhibit 551TC; is

18   that correct?

19   MR. MURPHY: Yes, it is.

20   JUDGE MACE: Thank you.

21   BY MR. HUTHER:

22   Q.   And with those changes in mind, Mr. Murphy,

23   if I were to ask you the questions contained in your

24   pre-filed testimony today, would your answers be the

25   same?

1   A.   (Mr. Murphy) Yes, they would.

2   MR. HUTHER: Am I correct that parties are

3 moving the admission of exhibits at this time or

4 following the conclusion of the testimony?

5   JUDGE MACE: The parties are moving at this

6 time.

7   MR. HUTHER: I would then move the admission

8 -- oh, I can't do that.

9   JUDGE MACE: You forgot Mr. Dippon I think.

10   MR. HUTHER: I forgot about Mr. Dippon.

11 BY MR. HUTHER:

12   Q.   Mr. Dippon, could you please state your name

13 and address for the record.

14   A.   (Mr. Dippon) Certainly. My name is Christian

15 Dippon, that's D-I-P-P-O-N. I'm an economist at

16 National Economic Research Associates, business address

17 is 1 Front, F-R-O-N-T, Street, Suite 2600, San

18 Francisco, California.

19   Q.   And did you cause to be filed exhibits which

20 have been pre-marked 601T through 607 inclusive?

21   A.   (Mr. Dippon) Yes, I did.

22   Q.   And do those exhibits consist of pre-filed

23 testimony and the exhibits appended thereto?

24   A.   (Mr. Dippon) Yes, it did.

25   Q.   And was the testimony prepared by you or

1   under your direction and control?

2   A.   (Mr. Dippon) Yes, it was.

3   Q.   And are the exhibits to your testimony true

4   and accurate to the best of your knowledge?

5   A.   (Mr. Dippon) Yes, they are.

6   Q.   Are there any changes you would like to make

7   to your pre-filed testimony?

8   A.   (Mr. Dippon) No, there are not.

9   Q.   If I were to ask you the questions contained

10   in your pre-filed testimony today, would your answers be

11   the same?

12   A.   (Mr. Dippon) Yes, they would.

13   MR. HUTHER: Now I think I'm ready to move

14   the admission of Exhibits 451T through 463, 501T through

15   504, 551TC through 553, and 601T through 607.

16   JUDGE MACE: Is there any objection to the

17   admission of those proposed exhibits?

18   Hearing no objection, I will admit those

19   exhibits.

20   COMMISSIONER HEMSTAD: Could we go off the

21   record for a moment.

22   JUDGE MACE: Let's be off the record.

23   (Discussion off the record.)

24   JUDGE MACE: Are the witnesses going to

25   present three minute summaries?

1   MR. HUTHER: Yes, I wasn't sure if there was

2   a ruling admitting their testimony.

3   JUDGE MACE: Yes, I admitted the testimony,

4   thank you.

5   MR. HUTHER: Yes, with the Commission's

6   permission, I believe several of the panel members, but

7   not all of them, would like to present a three minute

8   summary of their testimony.

9   JUDGE MACE: As I have before, I will provide

10 you with a 30 second warning. Go ahead.

11 BY MR. HUTHER:

12   Q.   Dr. Tardiff, why don't you begin.

13   A.   (Dr. Tardiff) Thank you and good afternoon.

14 The purpose of this proceeding is to establish

15 economically correct rates for unbundled elements.

16   JUDGE MACE: I need to have you slow down,

17 and please speak directly into the mike.

18   A.   (Dr. Tardiff) The objective is not only what

19 TELRIC is intended to accomplish, but properly

20 implemented, it also facilitates the larger goal of

21 bringing the benefits of competition to Washington's

22 consumers. The Commission's choice of a model will be

23 the means of meeting these objectives.

24   HM 5.3 presents a particularly aggressive and

25 ultimately misguided interpretation not only of what

1   TELRIC requires, but more importantly the costs that a

2   competitive firm that offered wholesale network elements

3   would incur. Not only does HM 5.3 produce a completely

4   redesigned network that bears little resemblance to what

5   Verizon has in the ground, but it also introduces new

6   theories on how to design that network. The

7   consequences of this new and untested theory often boils

8   down to the proposition that bigger equipment is better.

9   In contrast consistent with reasonable

10   interpretations of TELRIC by the FCC and numerous state

11   commissions, Verizon starts with fundamental features of

12   its network which are the results of implementing real

13   engineering decisions rather than untested theories,

14   information on what it really pays for the forward

15   looking equipment for that network, in contrast to the

16   extensive reliance on engineering judgment in HM 5.3,

17   and it makes appropriate forward looking adjustments.

18   While validation of the input measures in

19   model results is always necessary to ensure a model

20   produces reliable cost estimates, it is absolutely

21   essential when the model requires so starkly from

22   today's reality. This Commission has established one

23   such test that a model comes close to matching the real

24   loop lengths, and HM 5.3 performed poorly on this test

25   across Verizon's 99 wire centers. The average deviation

1   between real loops and the model's loops is 57%, which

2   is much less precise than the average deviation of 15%

3   for Verizon's model.

4   But even if HM has somehow gotten the

5   distance right, it still must produce reliable costs

6   along the routes it represents. Here the model is

7   equally flawed. The Richmond Beach wire center provides

8   a good visual and quantitative example. Relative to

9   Verizon's model, HM 5.3's distribution distance falls

10 short by over 50%, and it depicts cables that are 50%

11 larger.

12   Finally, it simply defies common sense and

13 sound economics that a carrier could serve all of

14 Verizon's customers for only a fraction of Verizon's

15 current costs, let alone for less than 40% of the cost

16 upon which this Commission's current rates are based.

17   Thank you.

18   Q.   Mr. Murphy.

19   A.   (Mr. Murphy) Good afternoon. My testimony

20 focuses on an engineering and general model analysis of

21 HM 5.3. In my mind there is a very key difference

22 between the two models that are at issue in this

23 proceeding relating to engineering assumptions, and that

24 is the difference between the two models in the relative

25 lengths of feeder plant that are deployed. There's a

1   distinct difference between distribution and feeder.

2   Distribution plant is put in with the intention of never

3   augmenting it. To do so would have the phone company

4   digging up lawns and driveways continually if it were to

5   be augmented regularly over the lifespan of the plant.

6   Feeder on the other hand is monitored regularly by

7   planners, and it is intended to be augmented during the

8   life of that plant. There is an order of magnitude

9   difference in the two models in terms of just how much

10   feeder plant is modeled. It is my observation that

11   within HM 5.3 there seems to be an intentional

12   understatement of feeder distance and feeder cost, and I

13   can relate that to eight major causes.

14   First, one third of HM 5.3's feeder is

15   modeled within the distribution module using

16   distribution plant mix, sharing, and cost inputs.

17   Second, the oversized clusters that are contained in HM

18   5.3 reduce the amount of feeder route distance while

19   simultaneously overloading the distribution routes.

20   Third, the model fails to model virtually all indoor

21   SAI's, which are typically placed in the basements of

22   commercial and large buildings at the end of a feeder

23   route. The distribution in that case is the riser cable

24   within the building which is privately owned. Fourth,

25   the model overstates feeder fiber strands, thereby

1   overallocating feeder structure for services allegedly

2   not at issue in this proceeding. The vast majority of

3   the services allegedly not at issue are DS1's, which

4   clearly are at issue in this proceeding. Fifth, the

5   model misallocates DLC common equipment costs, thereby

6   causing POTS services to subsidize DS1's along the model

7   feeder routes. Six, the model's excessively long copper

8   loops thereby minimizing feeder lengths and violating

9   standard transmission designs. Seventh, the model

10 substitutes block cable in the dense urban areas, which

11 is a distribution cable absent any structure at all for

12 what should be underground feeder cable. And finally,

13 the model applies overly aggressive structure sharing

14 assumptions in complete disregard of the Commission's

15 and the FCC's previous findings relative to structure

16 sharing.

17   Q.   Mr. Dippon.

18   A.   (Mr. Dippon) Good afternoon. I have been

19 asked by Verizon to review HM 5.3's extensive

20 preprocessing that yields to cluster input database. I

21 have not been able to review the entirety of this

22 preprocessing as AT&T, MCI, and its subcontractor, TNS,

23 have refused to open all aspects of this process. In

24 particular, I was not granted access to one of the most

25 crucial components of HM 5.3, that is the source code of

1   the clustering algorithm. This source code determines

2   among other things the number, type, and other

3   characteristics of HM 5.3's distribution areas. AT&T,

4   MCI, and TNS's refusal to grant access to the clustering

5   source code in this case is curious in light of the fact

6   that the clustering source code has been released in a

7   concurrent UNE proceeding in California.

8   Notwithstanding this fact, I was able to

9   review parts of the preprocessing and test the output of

10 parts that were not made available. My review of HM

11 5.3's preprocessing has revealed a series of flaws and

12 plain errors that rendered a cluster input database on

13 HM 5.3 highly unreliable. In particular I discovered

14 that although starting out with geocoded and surrogated

15 customer locations, HM 5.3 does not model plant to any

16 Verizon Northwest customer. Instead the model builds to

17 a highly simplistic and unrealistic representation of

18 the world, a world where people are uniformly

19 distributed within rectangular shaped distribution

20 areas, a world where people live on adjacent lots that

21 are twice as deep as wide. I have created maps for each

22 wire center of exactly what HM 5.3 models. These maps

23 leave no doubt that HM 5.3's modeled network is entirely

24 inaccurate and thus yields similarly inaccurate results.

25   Recognizing that this Commission is faced

1   with a choice, I have performed a similar analysis on

2   VzLoop, that is VzCost's loop investment calculator.

3   Specifically, as I have done with HM 5.3, I have mapped

4   the outside plant network as modeled by VzLoop. These

5   maps clearly demonstrate that VzLoop is far superior in

6   terms of outside plant modeling. Unlike HM 5.3, VzLoop

7   modeled network routes both for feeder and distribution

8   cable that generally follow roads, avoid physical

9   obstacles, and reflect rights of way.

10   Based on these findings and my eight years of

11 experience with HAI, I recommend this Commission not to

12 rely an HM 5.3 in determining the cost of unbundled

13 network elements for Verizon Northwest. Thank you.

14   MR. HUTHER: Mr. Richter will not be

15 presenting a summary, so we will now tender the

16 witnesses for cross-examination.

17   JUDGE MACE: Well, I just want to have you

18 mention for the record something related to the

19 discussion we had off the record about the change that

20 AT&T will be making to HM 5.3 and the impact on the

21 testimony these witnesses are providing today.

22   MR. HUTHER: Thank you, Your Honor. Yes, as

23 I understand from counsel for AT&T, AT&T's witnesses to

24 which this panel of witnesses are actually responding

25 will appear tomorrow morning, and upon doing so will

1   make available a change to the cost model that they are

2   sponsoring. It's not clear to me whether the actual

3   model will be presented at that time, but I'm told that

4   the net effect of the modeling change is to increase the

5   loop cost estimated by the model by approximately 80

6   cents.

7   If, in fact, a new version of the cost model

8   is sponsored and this change is indeed proffered, it

9   will affect almost all of the calculations or at least

10   many of the calculations contained in the pre-filed

11   testimony of Dr. Tardiff, potentially Mr. Murphy, and

12   will certainly affect all the mapping that Mr. Dippon

13   did that is appended in Exhibit CMD-6 to his pre-filed

14   testimony. And thus the testimony that the witnesses

15   are standing cross-examination for today and that has

16   been now admitted into the record will not reflect or

17   relate to the version of the model that I understand may

18   be filed tomorrow.

19   And for that reason we have expressed

20   concern, which I believe has been largely addressed off

21   the record, that we have the opportunity to respond to

22   that testimony, to make the appropriate changes to the

23   pre-filed testimony that has now been admitted into

24   evidence, and that I am able to reserve my right to

25   cross-examine the AT&T witnesses in the event that

1   appears necessary.

2   JUDGE MACE: Yes, thank you, that reflects

3   our off the record discussions. And we can finalize the

4   dates, any dates that we need to in terms of scheduling

5   for this process as we go further into the proceeding

6   and perhaps after the panel is finished being

7   cross-examined.

8   MR. HUTHER: And I may have neglected to

9   include, but just so we have a complete record, I don't

10   want to leave the impression that the changes that I am

11   told are going to be made will only result in purely

12   numerical adjustments to the testimony or to the maps,

13   that in fact Verizon would want to reserve the right to

14   evaluate the change and any other potential changes or

15   impacts it may cause within the version of the model

16   that they sponsored. It's just an unknown at this time

17   whether that change would have such an impact, but we

18   would want to reserve the right to provide testimony and

19   to cross-examine in the event that it does.

20   JUDGE MACE: I think we can discuss that at

21   the time it becomes an issue.

22   Do you tender the witnesses for

23   cross-examination?

24   MR. HUTHER: Yes, I do, Your Honor.

25   JUDGE MACE: Ms. Steele.

1   MS. STEELE: Thank you.

2

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

4   BY MS. STEELE:

5   Q.   Mr. Richter, you may be happy to know that I

6   have finished with the cross-examination that I have for

7   you, so I do not have any questions. Others might.

8   I would like to start with Mr. Dippon.

9   A.   (Mr. Dippon) Certainly.

10   Q.   And ask you a number of questions. But,

11   Mr. Dippon, it's fair to say that you have provided

12   testimony about the HAI model a number of times over the

13   past several years; is that correct?

14   A.   (Mr. Dippon) On various different versions,

15   yes, I have.

16   Q.   And you have been in fact retained by or you

17   are providing testimony on behalf of both SBC and

18   Verizon in the ongoing California UNE proceedings; is

19   that correct?

20   A.   (Mr. Dippon) That is correct.

21   Q.   And you received information from TNS about

22   the clustering algorithms in that proceeding; is that

23   correct?

24   MR. HUTHER: Objection, which proceeding are

25   we talking about?

1   MS. STEELE: In the California preceding.

2   MR. HUTHER: Which one, the Verizon

3   California --

4   MS. STEEL: I'm sorry, well, the SBC

5   California proceeding and the Verizon proceeding.

6   A.   (Mr. Dippon) The access sort of files that I

7   have received from TNS has been different for both the

8   SBC and the Verizon proceeding. In the SBC proceeding,

9   first of all, TNS was starting off with a different

10   nature of customer location data. I have been provided

11   completely different access in the SBC proceeding. And

12   again, in the Verizon proceeding even though the general

13   access has been more similar to this proceeding here in

14   Washington, there are significant differences between

15   the California proceeding, the Verizon California

16   proceeding, and the Washington Verizon proceeding.

17   BY MS. STEELE:

18   Q.   Now you have complained here that you were

19   not able to see the source code from TNS; is that

20   correct?

21   A.   (Mr. Dippon) I stated a fact, yeah.

22   Q.   Now you filed testimony in the SBC California

23   proceeding making the same complaint; is that correct?

24   A.   (Mr. Dippon) Again yes, in the SBC proceeding

25   I stated that I did not have access to the clustering

1   source code.

2   Q.   Now in that proceeding as well as here you

3   have been able to run your own clustering scenarios; is

4   that correct?

5   MR. HUTHER: Objection, I just want to be

6   clear --

7   JUDGE MACE: I would like to have you address

8   your objection to the Bench, if you would.

9   MR. HUTHER: My objection is what proceeding

10   are we talking about. She said that proceeding.

11   MS. STEELE: I can ask a better question.

12   BY MS. STEELE:

13   Q.   Both in the California SBC proceeding and in

14   this proceeding here that we're involved in today, you

15   have been able to run your own clustering scenarios

16   changing the number and the size of the distribution

17   areas that are modeled by the HAI model; is that

18   correct?

19   A.   (Mr. Dippon) That is correct, but I point out

20   that it is entirely -- there is a significant difference

21   of whether you take a software that has an interface

22   with limited variables and you make a number of changes

23   and you hope that it functions the way it is described,

24   make a number of sensitivity runs, and actually looking

25   at the source code. The source code would enable me to

1   (a) understand what TNS had done, (b) it would allow me

2   to make changes to hard coded values.

3   For instance, one aspect that I could not

4   change with the sensitivity runs is the Hatfield model

5   or the HM 5.3 assumes highrise situations occur whenever

6   536 lines are found in one location. We wanted to

7   change that number, but that is not possible, because

8   that's not a number that can be changed through the

9   interface.

10   So in a long response to your question, there

11 are two different things of what I have been stating

12 that I did not have access to and what I have been able

13 to do in those two proceedings.

14   Q.   Now here you did model 30 different

15 clustering scenarios; is that correct?

16   A.   (Mr. Dippon) Again, what I have done is I

17 have, with the access that has been granted, under those

18 constraints I have changed what I could change. And

19 yes, I have reran the clustering algorithm, which is

20 just one part of the very extensive preprocessing that

21 is taking place. I have made 30 such runs, and I took a

22 very long time to complete them.

23   Q.   Have you made any attempt to change the

24 distribution areas in the Verizon model that's been

25 filed here?

1   A.   (Mr. Dippon) No, I have not.

2   Q.   Do you even know if it can be done?

3   A.   (Mr. Dippon) No, I don't know.

4   Q.   Now looking at your testimony that has been

5   filed as Exhibit 601, and I'm looking at Paragraph 16,

6   I'm sorry, page 16 of that testimony.

7   A.   (Mr. Dippon) Okay, I'm there.

8   Q.   Now it's your position, is it not, that the

9   Verizon model is superior; is that correct?

10   A.   (Mr. Dippon) It is my position that the

11   Verizon model is superior in the modeling of outside

12   plant, yes. That's what I -- that's what my testimony

13   says.

14   Q.   Now you have criticized here on page 16 the

15   HAI model and listed a number of cost drivers that you

16   state are determined in the preprocessing module; is

17   that correct?

18   A.   (Mr. Dippon) Could you please repeat that.

19   Q.   One of the criticisms that you make of the

20   HAI model is that there are a number of cost drivers

21   that are -- and let me quote from that. There are no

22   line numbers on your testimony, but I'm looking at the

23   quoted paragraph that's single spaced, and underneath

24   that you say:

25   There are few, if any, values in the

1   modeling of outside plant that are not

2   either directly determined by the

3   preprocessing or at least significantly

4   impacted by it.

5   And that's one of your criticisms of HAI; is

6   that correct?

7   A.   (Mr. Dippon) That is correct.

8   Q.   Now if I look at these cost drivers, do you

9   know the extent to which the Verizon model filed in this

10   proceeding has these same cost drivers determined by its

11   preprocessing process?

12   A.   (Mr. Dippon) I do not know that. As my

13   testimony states, my -- the objective of my testimony

14   was to review HM 5.3's preprocessing. There was a panel

15   up here shortly before, and I'm sure the panel there

16   could have answered those questions.

17   Q.   But it's your testimony here that the Verizon

18   model is superior though; is that correct?

19   A.   (Mr. Dippon) In terms of routing, modeling of

20   outside plant, yes, absolutely.

21   Q.   Okay. Now one of the things that you have

22   testified, and you compared the Verizon cost model that

23   you claim is superior on page 23 of your testimony, you

24   compare that to the BellSouth loop cost model; do you

25   recall that testimony?

1   A.   (Mr. Dippon) Yes, I do.

2   Q.   Now one of the differences between the

3   Verizon cost model and the BellSouth model is that the

4   Verizon model uses existing distribution areas, while

5   the BellSouth model determines optimal distribution

6   areas; isn't that correct?

7   A.   (Mr. Dippon) That might well be correct. The

8   objective or the statement here was is to respond to

9   what I believe was a comment made by Dr. Mercer saying

10   that today's technology does not allow one to model

11   along potential network route.

12   One of the big differences between VzCost and

13   the HM 5.3 can be seen in the maps that I have, and HM

14   5.3 presents a very simplistic grill consisting of

15   backbone and branch cable and claims that this grill

16   looking distribution area will be able to serve the

17   customer in Verizon Northwest territory. Now if you

18   look at the maps for VzCost --

19   MS. STEELE: Excuse me, I think we're

20   going --

21   JUDGE MACE: I think I need to interject.

22   I'm not certain that you have -- I think you have gone

23   beyond the answer to the question.

24   MR. DIPPON: I apologize, I wanted to set

25   this into the right context.

 1   JUDGE MACE: Right, and again we do give

 2 witnesses some leeway but, and being mindful of the

 3 time, it's helpful if you can focus more on the answer

 4 to the question.

 5   MR. DIPPON: I absolutely will.

 6   Could you please repeat the question.

 7   MS. STEELE: Well, I think you have answered

 8 my question.

 9 BY MS. STEELE:

10   Q.   I would like to move to page 47 of your

11 testimony, and again there are no line numbers, but I'm

12 looking at the full paragraph that's in the middle, and

13 I'm looking at the last sentence where it states:

14   The model's task should be to balance --

15   JUDGE MACE: Well, can you --

16   MS. STEELE: I'm sorry.

17   JUDGE MACE: You're at page 47?

18   MS. STEELE: Page 47, the full paragraph

19 that's in the middle between the two smaller partial

20 paragraphs.

21   JUDGE MACE: I see, thank you.

22 BY MS. STEELE:

23   Q.   And the very last sentence of that paragraph

24 where it states:

25   The model's task should be to balance

1   distribution cable costs and feeder

2   interface efficiency to form optimally

3   sized distribution serving areas.

4   And my question for you is, do you know the

5   extent to which the Verizon model does this task?

6   A.   (Mr. Dippon) I personally don't. As you can

7   see, I'm referencing there to Mr. Murphy. Maybe

8   Mr. Murphy could add to that.

9   A.   (Mr. Murphy) The Verizon model is modeling

10   the existing distribution areas and the existing feeder

11   routes. Those feeder routes and distribution areas are

12   the result of engineers over the course of a number of

13   years having applied the standard engineering guidelines

14   to develop the appropriate balance between feeder and

15   distribution. It's important to obtain that balance,

16   because as I mentioned in my opening statement,

17   distribution is intended to never be augmented, while

18   feeder is intended to be monitored and augmented as

19   necessary. If you don't strike the right balance, what

20   you potentially end up with and what we have wound up

21   with in the HM model, overloaded distribution routes.

22   Q.   Now looking at page 63, Mr. Dippon, of your

23   testimony, and you indicate here that it is true when

24   you add up all the cable that's placed to connect

25   customers that the HM model actually places more cable

1 than the Verizon model; is that correct?

2   A.   (Mr. Dippon) Yes, that's correct, and I just

3 want to add that I have a quite lengthy explanation of

4 why that is only -- that that doesn't mean that HM has

5 too much cable. It's just a statement of fact, yes.

6   Q.   Now have you made an effort, have you -- let

7 me ask you if you have done this analysis. Have you

8 tried to run both the Verizon model and the HAI model

9 using the same inputs, for example the same placement

10 costs, the same sharing assumptions, to determine which

11 model produces more investment under that scenario?

12   A.   (Mr. Dippon) I have not, and I have to say

13 that would probably be a difficult exercise to do,

14 because the models view -- same inputs, treat them

15 slightly different. So if you make that comparison, you

16 run the risk of still making apples to orange

17 comparison.

18   Q.   Well, isn't it true that because the HAI

19 model places more cable that if you did that process

20 that you would find that the HAI model actually produces

21 more investment than the Verizon model?

22   A.   (Mr. Dippon) I don't think that's right.

23 First of all, as I point out here, HAI produces less

24 feeder overall. And overall also means it's on the

25 total level, it will have different impacts on different

1   wire centers. Also as I stated in my testimony, length

2   is really not the only measure here. There are other

3   issues which is cable size, cable type, electronics that

4   are being placed. There's a whole bunch of other stuff

5   that goes into the calculations that I could not make

6   that statement.

7   Q.   And you haven't done the analysis; is that

8   correct?

9   A.   (Mr. Dippon) No, I have not.

10   Q.   I wanted to -- the last area of questioning I

11 have for you is focused on page 27 of your testimony,

12 and this is one of the maps that you have created; is

13 that correct?

14   A.   (Mr. Dippon) That is correct, that's Richmond

15 Beach.

16   Q.   Okay. And I want to refer you to Exhibit 611

17 and ask you to look at the last page of that exhibit.

18   A.   (Mr. Dippon) Could you please remind me again

19 which --

20   MR. HUTHER: I'm not sure if Mr. Dippon has

21 the exhibits designated by --

22   JUDGE MACE: Let's make sure the witness has

23 a copy of the exhibit. This is an AT&T cross exhibit.

24   MR. HUTHER: May I approach Mr. Dippon.

25   JUDGE MACE: Yes.

1   COMMISSIONER OSHIE: Counsel did say the last

2   page?

3   MS. STEELE: Yes, I do want you to look at

4   all of it eventually, but let's start with the last

5   page.

6   CHAIRWOMAN SHOWALTER: They're numbered, it's

7   page 7.

8   MS. STEELE: Yes, thank you.

9   A.   (Mr. Dippon) I am there.

10 BY MS. STEELE:

11   Q.   Now it would be fair to characterize this as

12 a recreation of the map that you have on page 27 of your

13 testimony; isn't that correct?

14   A.   (Mr. Dippon) Excuse me, which map are you

15 referring to? I have eight maps for this one

16 particular, seven maps, excuse me, of this particular

17 exhibit.

18   Q.   The very last page, the very last map on page

19 7.

20   A.   (Mr. Dippon) If I may, I would like to look

21 at the same maps that I have in my attachment CMD-6.

22 They're in color and a little bit bigger, so it would be

23 easier for me to look at that.

24   CHAIRWOMAN SHOWALTER: Let's just make sure

25 we're all on the same page. Our exhibits are in color.

1   MR. HUTHER: I think Mr. Dippon was referring

2   to the exhibits listed in his testimony, page 27, is

3   what he was trying to compare them to.

4   JUDGE MACE: My page 27 is in color.

5   CHAIRWOMAN SHOWALTER: So is mine.

6   But does the witness have large -- is Exhibit

7   611 that the witness has seven pages of large color

8   prints?

9   MR. DIPPON: Yes, I do.

10   JUDGE MACE: It's just that his page 27 is

11   not in color.

12   MR. DIPPON: Right.

13   JUDGE MACE: You can borrow this if you would

14   like to.

15   MR. DIPPON: Thank you.

16   A.   (Mr. Dippon) Well, to answer your question,

17   there are a number of differences on these two maps.

18   I'm assuming you want me to compare map 7 of this

19   exhibit to page 27 to the left-hand side of map 1, which

20   is the HAI network; is that correct? Is that what you

21   would like me to look at?

22   BY MS. STEELE:

23   Q.   Well, let me ask you this question.

24   A.   (Mr. Dippon) Okay.

25   Q.   Your map on page 27 is of the strand adjusted

1   backbone and branch cables; is that correct?

2   JUDGE MACE: And are you referring to the map

3   on the left-hand side?

4   MS. STEELE: Yes, of the HAI network.

5   A.   (Mr. Dippon) It is a number of things. What

6   it shows, it shows the strand adjusted distribution

7   areas. It also shows the location of the SAI. It shows

8   the subfeeder, the feeder, and the wire center with the

9   little star in the middle.

10   BY MS. STEELE:

11   Q.   Now when you perform the strand adjust --

12   well, let me back up.

13   Have you made an effort to take the --

14   measure the road distance in any of the clusters that

15   are indicated here and compared them to the strand

16   distance that you have?

17   A.   (Mr. Dippon) I believe I have, yes.

18   Q.   Is that anywhere in your testimony?

19   A.   (Mr. Dippon) No, they're not. Actually I

20   looked at this a few days ago, and if you bear with me

21   just one second, I will pull them up, and I can tell you

22   what those numbers were.

23   I have them right here. What I have found is

24   that for cluster 1 in the Richmond Beach wire center

25   there are 26 miles of roads in there. So if you -- if

1   you took the area that HM 5.3 considers as cluster

2   number 1 for Richmond Beach and you added up all the

3   road length, you come up to 26 miles. For that the --

4   JUDGE MACE: I just want to interrupt, which

5   one is cluster 1?

6   MR. DIPPON: Excuse me, that is really

7   difficult to see, and now that I have your page 27, it

8   is the larger cluster in the upper right-hand corner of

9   my map on page 27.

10   JUDGE MACE: Thank you.

11   CHAIRWOMAN SHOWALTER: Would you just explain

12   while you're at it why there are five clusters and

13   cluster number 5 seems to be missing. There seems to be

14   1, 2, 3, 4, and 6.

15   MR. DIPPON: Again, it's probably just an

16   issue of size. Here on page 27 the lower left looks

17   like a 6. If I look at the larger map that I have in

18   CMD-6 it actually says 5.

19   CHAIRWOMAN SHOWALTER: Thank you.

20   A.   (Mr. Dippon) So if I can go back to these

21   numbers, in cluster 1, which is the upper right-hand

22   cluster, there are 26 miles of roads in that cluster.

23   Hatfield puts distribution route distance of 10.5 miles

24   at 10.8 miles in it, so less than half. For cluster 2,

25   cluster 2 is right to the left of cluster 1, there are

1 32.9 miles of roads in this cluster. HM 5.3 has 10.7

2 miles of cable in there. Again -- and this time it's

3 about a third. In cluster 3 there are 19.1 miles of

4 roads, and HM 5.3 models 4.5 miles of distribution route

5 distance. Cluster 4, there are 18 miles of roads in

6 this cluster, HM 5.3 models 7.1 miles of distribution

7 route distance. And finally cluster 5, there are 18.7

8 miles of roads, and HM models merely 6.7 miles of

9 distribution route. Overall I measured that there are

10 114.7 miles of roads in this wire center, and of which

11 there -- and HM 5.3 models 39.9 miles of distribution

12 route distance.

13   JUDGE MACE: I just want to point out to you

14 that I don't know what your map shows, but our cluster 5

15 is really cluster -- shows the number 6. So we can

16 address that later off the record if you want to, but

17 our number is different.

18   MR. DIPPON: Okay.

19 BY MS. STEELE:

20   Q.   And have you done the same comparison for the

21 Verizon model?

22   A.   (Mr. Dippon) I have not, no.

23   Q.   I want to --

24   A.   (Dr. Tardiff) Can I follow up on that. The

25 Verizon model does not have clusters but -- so you can't

1   do the same comparison.

2   JUDGE MACE: Dr. Tardiff, you must speak into

3   your microphone.

4   DR. TARDIFF: Yes, ma'am.

5   JUDGE MACE: Thank you.

6   A.   (Dr. Tardiff) Verizon's model does not have

7   clusters. That is an HM concept. But you can come up

8   with the total for the wire center, and for that wire

9   center the Verizon model produces 90.4 miles of

10 distribution cable.

11 BY MS. STEELE:

12   Q.   I want to look at these maps that I have

13 given you in Exhibit 611 and ask you based on your

14 understanding of the way the HM model works whether

15 these maps provide a fair representation of the way the

16 model works, and I want to walk you through those, okay?

17   A.   (Mr. Dippon) Okay.

18   Q.   Okay. And the first one shows --

19   CHAIRWOMAN SHOWALTER: Can you please refer

20 to pages, and identify the exhibit.

21   Q.   I'm sorry, the exhibit is Exhibit 611 and the

22 very first page of Exhibit 611. It's your understanding

23 that the first thing done in the preprocessing is to

24 identify the customers; is that correct, identify the

25 customer locations?

1   A.   (Mr. Dippon) Yeah, they're either geocoded or

2   surrogated.

3   Q.   And that's represented on this first page; is

4   that correct?

5   A.   (Mr. Dippon) That I can't -- I can't tell.

6   That might be possible, but I can't tell. There seems

7   to be two different colors of points, I can't see any

8   roads on at least the copy that I have, so I can't say

9   for certain.

10   Q.   You can't see roads on the copy? Can I see

11   the copy that you have?

12   A.   (Mr. Dippon) Absolutely.

13   Q.   You're looking at the wrong exhibit.

14   A.   (Mr. Dippon) Oh, are you on Anacortes right

15   now?

16   Q.   No, I'm still talking about Richmond Beach.

17   A.   (Mr. Dippon) All right, sorry about that.

18   Okay, here again I don't know whether these

19   are the points. There seem to be two different colors

20   of points. Even though I see some streets, others I

21   don't. It's a possibility, I just can't tell you for

22   certain.

23   Q.   It is true that the first step though in the

24   preprocessing would be to establish the customer

25   locations; is that correct?

1   A.   (Mr. Dippon) That is correct.

2   Q.   And looking at page 2, the next step in the

3   process is to cluster the customers; is that correct?

4   A.   (Mr. Dippon) Yes, I believe that's correct.

5   Q.   And the next step in looking at page 3 is to

6   essentially draw convex holes around the clusters; is

7   that correct?

8   A.   (Mr. Dippon) I'm sorry, I did not know that

9   you were previously referring to map 2 or page 2 of

10   these maps, and again I just would want to say that

11   while I agree in theory that the points again cluster,

12   there's no way for me to verify that these are the

13   clusters that are presented here.

14   Q.   Okay, and I understand that, I'm just trying

15   to use this for illustration to indicate how the process

16   works. Is that acceptable to you?

17   A.   (Mr. Dippon) Well, the process -- that is

18   acceptable. I just want to point out this is the

19   preprocessing, and none of this makes it actually into

20   HM 5.3.

21   Q.   Okay. Now on the fourth page, the next step

22   would be to place minimum bounding rectangles around the

23   convex holes; is that correct?

24   MR. HUTHER: Let me object right now. I

25   apologize to interrupt, but I noticed on these maps, and

1   in particular on the ones associated with Anacortes,

2   that there seems to be a designation at the bottom of

3   some of the maps, and it exists on page 3 of the set of

4   maps that we're looking at now, that says something like

5   all rights reserved, and it seems to be some kind of

6   reservation of rights, so I just want to make sure that

7   we're not doing something with these maps that we ought

8   not to be. And as background for that, oftentimes when

9   you develop maps off of software from say MapInfo or

10 something, they have reserved rights on what you may do

11 with the data that you can download, so I just want to

12 make sure that we're okay.

13   JUDGE MACE: Ms. Steele.

14   MS. STEELE: Well, I have to say that I'm not

15 sure exactly what the basis of that statement is on the

16 document other than, you know, that's what it says.

17 That's all I know. I don't -- since we're just using

18 these for illustrative purposes, I don't think there's a

19 problem.

20   CHAIRWOMAN SHOWALTER: It's AT&T's risk if

21 they failed to file this as confidential if they should

22 have, or not even as confidential, it's not a matter of

23 confidentiality, it's a matter of somebody else's

24 rights, so it's not really --

25   COMMISSIONER HEMSTAD: Well, I don't see how

1   it is a matter for us. I mean we have an exhibit filed

2   in front of us and not filed as confidential, so it's

3   public record.

4   MR. HUTHER: I didn't mean to interrupt the

5   questioning, I just wanted to raise the red flag because

6   I have seen these issues in the past, and I just didn't

7   want to trespass into areas we or they may not intend to

8   go, but certainly I have no objection to --

9   CHAIRWOMAN SHOWALTER: Nobody's using this

10   for commercial or financial purposes. We're not making

11   money off this proceeding.

12   BY MS. STEELE:

13   Q.   And again, we're just trying to look at the

14   process here, but the next step would be these minimum

15   bounding rectangles; is that correct, around the convex

16   holes.

17   A.   (Mr. Dippon) That is correct, and certainly

18   with respect to something that you asked before is that

19   all the clusters, the convex hole, the minimum bounding

20   rectangle, the algorithm that determines it can really

21   not be reviewed. Some of these intermediate results can

22   not even be reviewed. So yes, that's what I have read,

23   that's what I understand is happening, but there's no

24   way for me to confirm it.

25   Q.   I think you have told us that, Mr. Dippon,

1   but I'm looking now at page 5, and then the next step

2   would be to adjust the rectangles to match the areas of

3   the convex holes; is that correct?

4   A.   (Mr. Dippon) That is my understanding, yes.

5   Q.   And then the next step would be to place

6   backbone and branch cables throughout those minimum

7   bounding rectangles; is that correct?

8   A.   (Mr. Dippon) That is correct, yes.

9   Q.   And then the final step is what you showed in

10 your view, in your testimony, and that is once these

11 backbone and branch cables are adjusted to match the

12 strand distance between the customers; is that correct?

13   A.   (Mr. Dippon) Well, I'm sorry, you're just

14 moving just a little bit too fast here. I was just

15 still looking at map 6. Could you please tell me again

16 what the -- there seems to be a center -- there seems to

17 be two center points, one's a red one and one's a blue

18 one. Could you please give me the distinction of these

19 before I confirm something that I'm not even sure of.

20   Q.   Why don't we for the last -- instead of

21 dealing with that issue, let's just look at your last

22 page, I mean, I'm sorry, your map on page 27. Your map

23 on page 27 represents the last step in the process, and

24 that is the strand adjusted backbone and branch cables;

25 isn't that correct?

1   A.   (Mr. Dippon) What my maps represent is the

2   what HM 5.3 coughs up, that's correct.

3   MS. STEELE: That's all I have for you,

4   Mr. Dippon, thank you.

5   MR. DIPPON: Thank you.

6   MS. STEELE: We would at this point like to

7   ask that a records request be made for the workpapers

8   for this mileage calculation that Mr. Dippon has

9   testified to since it was not included within his

10   testimony until today.

11   (Discussion on the Bench.)

12   JUDGE MACE: We'll make it a Bench request,

13   and it will be Bench Request Number 14.

14   Oh, can you say again what it was you were

15   asking for.

16   MS. STEELE: Mr. Dippon has testified

17   regarding calculations of the strand distance as

18   compared to the road miles within the Richmond Beach

19   clusters that we have been discussing. We would like

20   the workpapers for that calculation.

21   JUDGE MACE: Thank you.

22   BY MS. STEELE:

23   Q.   Moving right along, I would like to speak

24   with Dr. Tardiff. Good afternoon, Dr. Tardiff.

25   A.   (Dr. Tardiff) Good afternoon, Ms. Steele.

1   Q.   I wish we could say we have met before, but

2   this is the first time.

3   A.   (Dr. Tardiff) This is my home town.

4   Q.   Yeah.

5   Now you also have spent a number of years

6   analyzing the HAI model; is that correct?

7   A.   (Dr. Tardiff) Yes, ma'am.

8   Q.   And you have provided criticisms of that

9   model in a number of proceedings; is that correct?

10   A.   (Dr. Tardiff) Yes, ma'am.

11   Q.   Now at times it's true, is it not, that the

12 model developers have actually taken your suggestions

13 and incorporated them into the model; is that correct?

14   A.   (Dr. Tardiff) Well, I think -- whether they

15 took my exact suggestion exactly I don't know, number

16 one. And number -- they have incorporated some things

17 based on some of my commentary, but it's probably a very

18 small majority of -- small minority of points I have

19 raised over the years.

20   Q.   Now it's true, is it not, that you have

21 learned more about how the HAI model works over time;

22 isn't that correct?

23   A.   (Dr. Tardiff) I believe that's a fair

24 statement.

25   Q.   And you have discovered additional criticisms

1   as you have moved through the years; isn't that right?

2   A.   (Dr. Tardiff) Well, the model has changed, so

3   I mean there -- that generates new criticisms.

4   Q.   And now you wouldn't expect that the first

5   time that you review a complex cost model that you would

6   necessarily be able to identify all of the issues that

7   are raised by that model; isn't that correct?

8   A.   (Dr. Tardiff) I think you learn more as time

9   goes on is a fair statement.

10   Q.   Now you testified in your reply testimony,

11 which is Exhibit 501, and I'm talking about pages -- I'm

12 looking at pages 37 to 38, that begins at the bottom of

13 37, and you talk about various validation tests that you

14 have applied to the HAI model as filed here; is that

15 correct?

16   A.   (Dr. Tardiff) Yes, ma'am.

17   Q.   And your concern here is that the investment

18 and expense levels produced by the model are less than

19 the investment and expenses that Verizon has reported in

20 ARMIS; is that correct?

21   A.   (Dr. Tardiff) Not only that they're less,

22 they are substantially less, and that's the concern.

23   Q.   And, in fact, it's your position that the

24 Verizon model is better because it comes much closer to

25 the expenses and investments that are reported in ARMIS;

1   is that correct?

2   A.   (Dr. Tardiff) Yes, and that's based on the

3   expectation that there's nothing that I have heard that

4   explains why loop costs say should be only one third of

5   what the Commission adopted as a price just a few years

6   ago.

7   Q.   Now have you made any effort to run the HAI

8   model using the same input assumptions that Verizon uses

9   to determine the effect on investment?

10   A.   (Dr. Tardiff) Not in this proceeding, no. I

11 mean I have done that in other proceedings.

12   Q.   Now you're involved in the ongoing SBC

13 proceeding in California; is that correct?

14   A.   (Dr. Tardiff) Yes, ma'am.

15   Q.   And in that case the models that were

16 presented there, the HAI model and the model presented

17 by SBC, in fact tended to converge when the inputs were

18 aligned; isn't that correct?

19   A.   (Dr. Tardiff) Well, that was the conclusion

20 of one of the AT&T witnesses. I looked at his work,

21 there was no round of testimony, but I was asked by the

22 staff to do some simulations. And when I did it, I

23 actually concluded that the set of inputs that this

24 witness used or used properly produced HM results that

25 were lower than SBC's model.

1   Q.   Now if you here in this proceeding were able

2   to undertake an analysis where you did use the same

3   inputs and you decided that the model, the HAI model,

4   produced investments that were close to Verizon's ARMIS

5   reported expenses and investments, in your view would

6   that validate the model?

7   A.   (Dr. Tardiff) Not necessarily, because there

8   was -- I mean that would be a first step, but the model

9   not only produces a total amount but -- which is all you

10   can get from ARMIS, but for purposes of this proceeding,

11   it also matters where that investment takes place. That

12   is by where I mean whether it's in urban areas or rural

13   areas. And as I reported in my testimony, my analysis

14   of HM as compared to Verizon's model seems to indicate

15   that the HM model puts a lot of distance in the less

16   dense areas relative to Verizon's model. And if that's

17   the case, then you might not get the right pattern of

18   prices even though the overall levels could be okay.

19   Q.   That's all I have for you, thank you.

20   Mr. Murphy.

21   A.   (Mr. Murphy) Good afternoon.

22   Q.   Good afternoon. Now, Mr. Murphy, you're

23   providing testimony on certain engineering assumptions;

24   is that correct?

25   A.   (Mr. Murphy) Yes, it is.

1   Q.   And you are not an engineer; is that right?

2   A.   (Mr. Murphy) My background is described in my

3   testimony. I'm a network operations manager. Earlier

4   in my career I have done cost modeling. More recently I

5   currently am the president of an engineering firm with a

6   number of engineers who report to me and assist me in

7   these analyses.

8   Q.   I want to focus on one of the issues that you

9   raised, and that is your comparison of the number of

10   indoor SAI's produced by the Verizon model to those used

11   in the HAI model. And I want to make sure that we

12   understand what we're talking about when we talk about

13   these things. When you talk about an indoor SAI, what

14   you're talking about is the terminal in the building

15   where the telephone company's cable comes in and

16   connects to the inside wire; is that correct?

17   A.   (Mr. Murphy) Yes, it is.

18   Q.   And some people might call that a building

19   terminal; is that right?

20   A.   (Mr. Murphy) Yes.

21   Q.   Now the HAI model in fact does have building

22   terminals for every building that's modeled; isn't that

23   correct?

24   A.   (Mr. Murphy) No, I don't believe it is.

25   Q.   They have what we have sometimes called a

1 network interface device for every building; isn't that

2 right?

3   A.   (Mr. Murphy) Yes, that's quite different from

4 an indoor terminal though. A network interface device

5 is typically mounted on the side of a building such as a

6 private residence. Typically will terminate two pair.

7 It has a protector in it to drop wire terminates there.

8 Whereas an indoor terminal is an actual terminal

9 consisting of 25 or more terminations, and it's

10 generally located in the basement of a building.

11   Q.   Have you done an analysis to compare the

12 investment created by the Verizon model for what you

13 have called indoor SAI's or building terminals to the

14 investment in the HAI model for network interface

15 devices?

16   A.   (Mr. Murphy) I have not, but that's not the

17 relevant point. The relevant point is that it is feeder

18 plant that's terminating in the basement of these

19 buildings, whereas with a NID, for example, it's

20 distribution plant.

21   MS. STEELE: That's all I have for you, thank

22 you.

23   That's all I have for this panel.

24   JUDGE MACE: Okay, you caught me unawares. I

25 want to make sure there isn't another -- my

1413

1 understanding is you're the only cross-examiner for

2 these witnesses, but I want to make sure of that.

3   MS. SMITH: I thought we had asked for just

4 a little bit.

5   JUDGE MACE: Yes, you did, I'm sorry, I'm

6 seeing it now, you did ask for -- I have you down for 15

7 minutes.

8   MS. STEELE: I'm sorry, I do have one further

9 issue. We had identified certain exhibits for this

10 panel that I have not discussed, but these are responses

11 by Verizon to discovery, and I would like to move for

12 the admission of those at this time, not all of them,

13 but I want to identify those that I would like to be

14 admitted.

15   JUDGE MACE: If you would.

16   MS. STEELE: The first 609 is actually not a

17 discovery response, but it is Mr. Dippon's signature on

18 the third party disclosure that was required in this

19 proceeding.

20   JUDGE MACE: You're not offering that as an

21 exhibit then?

22   MS. STEELE: I am offering that one, yes.

23   611, the remainder are all data request

24 responses, and those are 617, 619, 621, and 622.

25   JUDGE MACE: Is there any objection to the

 1   admission of those proposed exhibits?

 2   MR. HUTHER: There may very well be, I'm just

 3   trying to catch up with the exhibit number to the actual

 4   data request.

 5   It's going to take me a moment to review

 6   these, Your Honor, only because we had imposed

 7   objections in answering the requests, so I'm going to

 8   need to review these just to make sure that we're not

 9   waiving an objection that we have already imposed or

10   offered.

11   JUDGE MACE: Well, in the interest of saving

12   time right now, I'm going to reserve ruling on the

13   admission of these, and we'll go to Staff's cross.

14   MS. STEELE: There's actually one, only one

15   other issue, and that is we would also like to move for

16   the admission of Exhibit 611 for illustrative purposes.

17   Those are the maps that we reviewed with Mr. Dippon.

18   JUDGE MACE: All right, so let me be sure I'm

19   clear. You're offering what's been marked 609, 611,

20   617, 619, 621, and 622?

21   MS. STEELE: Right.

22   JUDGE MACE: All right.

23   Go ahead, Ms. Smith.

24   MS. SMITH: Thank you, Your Honor.

25

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

2   BY MS. SMITH:

3   Q.   I have one question, and it's for

4   Dr. Tardiff. Good afternoon, I'm Shannon Smith, I'm

5   representing the Commission Staff in this proceeding.

6   A.   (Dr. Tardiff) Good afternoon, Ms. Smith.

7   Q.   And in Exhibit 501T, that is your reply

8   testimony.

9   A.   (Dr. Tardiff) Okay.

10   Q.   And on page 21 in lines 12 through 14, you

11   say there that there is no reason to believe that

12   distribution terminal locations could be more

13   efficiently placed. Do you see that testimony?

14   A.   (Dr. Tardiff) Yes.

15   Q.   So is there any reason to believe then that

16   the current locations of distribution terminals are

17   efficiently placed to start with?

18   A.   (Dr. Tardiff) Is there any reason to believe

19   that?

20   Q.   Yes.

21   A.   (Dr. Tardiff) Well, I mean they're the point

22   of the network closest to the customers, and the

23   customers are where they are. So as long as engineering

24   rules were followed in placing them, which I understand

25   they were, then I don't see any reason why the terminals

1 themselves should be placed any differently.

2   MS. SMITH: That's all, thank you.

3   JUDGE MACE: All right, Dr. Gabel.

4

5   E X A M I N A T I O N

6 BY DR. GABEL:

7   Q.   Mr. Richter.

8   JUDGE MACE: Mr. Richter, you thought you

9 were off the hook.

10   Q.   In your Exhibit 451, which is your April 20th

11 filing at pages 22 through 32, you have a discussion

12 about what are the proper structure sharing inputs.

13   A.   (Mr. Richter) Yes.

14   Q.   Am I -- would a correct characterization of

15 this testimony be that the proper structure sharing

16 input to a cost model is what you observe rather than

17 what could theoretically take place?

18   A.   (Mr. Richter) I don't think so. I can't see

19 any reason why it would change. Are you alluding to

20 designing within a competitive environment versus

21 designing --

22   Q.   Right, right, this is the same question that

23 I proposed -- that I asked Dr. Vander Weide when he was

24 the cost of capital witness. And as the cost of capital

25 witness, he said that you should assume a competitive

1   environment when establishing a cost of capital

2   regardless -- and it was -- and his recommendation was

3   independent of what level of competition already exists

4   in Washington. Now do I understand your testimony to be

5   that when we turn to structure sharing, the structure

6   sharing should be based upon what companies are actually

7   operating in the market today rather than what could --

8   what firms may conceivably operate in the future?

9   A.   (Mr. Richter) Well, I already design within a

10 competitive environment in terms of wireless, you know.

11 The reasons that I outline in my testimony or the point

12 that I was trying to make is that the determinate for

13 the amount of sharing that can occur is really based on

14 the amount of -- the difficulties that one encounters

15 when trying to engage in sharing.

16   For instance, we have today sharing

17 arrangements with power companies on poles. Joint use

18 agreements exist today. They exist because they try to

19 build -- put some structure around how to go about

20 sharing. I believe, you know, if I were to build this

21 network in any environment, those difficulties would not

22 -- the difficulties I would engage or that would be in

23 place would be the same as they are today. The

24 difficulties in coordination, for instance, with other

25 utilities or with other CLECs for that matter.

1   Coordination in terms of, you know, resource

2   availability, human resources, equipment, scheduling,

3   other priorities in some cases. In terms of the

4   electric company for instance, if I think about today's

5   environment, they have schedules, and they have

6   obligations in some cases to the public utilities

7   commissions for service improvement and so forth that

8   rarely align with, in terms of from a physical

9   standpoint, you know, of where the network is, rarely

10 align with mine as a telco.

11   In a competitive environment, you know,

12 marketing really drives design work as well, and I find

13 it hard to believe the marketing from the competition

14 would give me clues as to where they might design their

15 plant or may require plant. Half the time I can't

16 figure out where my own company is marketing to in their

17 marketing strategy. So we design, you know, based on

18 the practical issues that are put before us, often

19 driven by a marketing department.

20   Q.   Mr. Richter, you wrote this testimony on the

21 topic of structure sharing in Washington. What effort

22 did you make to contact people within Washington to find

23 out actually what was taking place in terms of structure

24 sharing; did you contact engineers, and is your --

25   A.   (Mr. Richter) Yeah. Not only that I

1   contacted them, I actually spent a week -- a week out

2   here last -- I think it was a year ago now and met the

3   people that I was interfacing with, you know, to gather

4   the information and respond to the data requests. So I

5   spent a week by myself just talking to engineers, not

6   only to engineering managers but to engineers directly.

7   And basically they operate the same way I do.

8   Q.   And those engineers were the Verizon

9   engineers who are involved in installing outside plant

10   facilities?

11   A.   (Mr. Richter) Yeah, that's correct.

12   Q.   I will just go down the order of the table.

13   Mr. Dippon, I would like to begin by referring to your

14   opening remark. You discussed the simplifications that

15   you believe exist within the Hatfield model and modeling

16   facilities out to customer locations. Am I correct that

17   the Hatfield model estimates loop lengths that are

18   greater than the current actual loop lengths?

19   A.   (Mr. Dippon) I have not made that comparison

20   to current actual loop lengths. The comparison that I

21   have made goes to compare the total loop length versus

22   VzCost, and that's what my testimony states, but not to

23   actual --

24   Q.   Well, Dr. Tardiff, did you, I'm sorry to

25   interrupt, Dr. Tardiff, did you make such a comparison?

1   A.   (Dr. Tardiff) Yes, I did, it was in my --

2 also in my opening remarks and my testimony. What I did

3 is look at the wire center by wire center, two measures.

4 One was the measurement of the actual average loop

5 length in each of the 99 wire centers. And secondly --

6 I looked at actually three measures. The second measure

7 would be the average loop length by wire center produced

8 by HM. And the third was the average wire -- average

9 wire loop -- average loop length by wire center as

10 produced by VzLoop. And what happened is two things.

11 One is that the VzLoop much more precisely matched the

12 actual loop length data over the wire centers. And

13 secondly, the HM loop lengths in fact tended to be a bit

14 higher than the -- both the actual loop lengths and the

15 VzLoop loop lengths.

16   Q.   I'm sorry, that last, what was your last

17 statement?

18   A.   (Dr. Tardiff) That the HM loop lengths in

19 fact were higher or longer than both the actual loop

20 lengths and the VzLoop loop lengths.

21   Q.   Okay.

22   A.   (Dr. Tardiff) Which on average matched the

23 actuals.

24   Q.   All right. So now I'm back to Mr. Dippon.

25 Given Dr. Tardiff's analysis, I look at your page 27

1421

1   that we have just been looking at, and it seems to be

2   that the visual representation is that there isn't a

3   sufficient amount of facilities. In response to a

4   question from Ms. Steele, you said that you did some

5   measurement and the road length was much greater than

6   the strand length that was produced by the Hatfield

7   model. How do we reconcile what appears to me to be

8   somewhat of an inconsistency in the data is that we have

9   average loop length that are longer but road miles

10 exceeding strand length?

11   A.   (Mr. Dippon) I think the difference comes in

12 that if you look at it on an overall basis for Verizon

13 Northwest, the statement that Dr. Tardiff did or the

14 analysis that Dr. Tardiff did is correct. For this

15 particular wire center, Richmond Beach, actually if I

16 recall correctly HAI modeled less distribution plant and

17 less feeder plant than VzCost. So it's probably just an

18 issue of at what level do we look at these numbers.

19   Q.   Okay. We have been -- could it be also the

20 difference between, and I'm just asking if you have

21 analyzed this, it could be that loop lengths is one way

22 of measuring accuracy, but it might not reflect the

23 concentration of the customers? Have you analyzed? Do

24 you understand the distinction? Let me just some --

25 make sure my concern is correctly responded to, and I

1   want to know if you have looked at this. You could have

2   a star where every customer, well, not a star, you could

3   have a rectangle where every customer is within -- say

4   there's three customers, and every customer is within

5   one mile of the central office, but everyone needs their

6   own route mile. Or you could have all three customers

7   at the same place, you need only one route mile rather

8   than three route miles. So in both cases the loop

9   length could be the same, one mile, but the route miles

10 that you need is different.

11   A.   (Mr. Dippon) Yeah, and I think if I

12 understand you correctly, all that boils down to is that

13 the distance is not the only issue that we ought to be

14 looking at. We ought to be also looking at the cable

15 type, size. There might be some other issues that an

16 engineer would look at. But certainly there are other

17 metrics that one ought to look at, else I think these

18 cost models would be quite simplified if we just said

19 let's just get the right distance and we're done with

20 it.

21   Q.   Mr. Murphy, you wanted to --

22   A.   (Mr. Murphy) I just wanted to add that I'm

23 aware of at least two contributing factors to the

24 overstatement overall in the HM loop length.

25   The first is relatively minor, and that is

1   that HM is modeling riser cable in those few highrise

2   buildings that it does model. There are eight such

3   instances in Verizon's footprint. That -- I could

4   quantify that, I don't have the number off the top of my

5   head, but it's obviously going to be relatively minor

6   since it's only eight buildings.

7   The second one is the so called campus cable.

8   The model description describes that as privately owned

9   cable that you might find within say a college campus or

10 a military reservation, a situation where Verizon would

11 drop off or interface I should say with privately owned

12 cable say inside of the gate of the college, and from

13 there the cables would be privately owned. HM is

14 modeling such cable, but there -- neither I nor the

15 sponsors are able to identify specifically how much of

16 that cable is being modeled.

17   Q.   Thank you.

18   A.   (Dr. Tardiff) Dr. Gabel, can I add something?

19 I think one of the things that might may be going on is

20 illustrated in Footnote 50, which appears on pages 30

21 and 31 of my reply testimony, and that footnote lists a

22 table that breaks down or actually compares the --

23   Q.   I'm sorry, Dr. Tardiff, could you -- so we're

24 Exhibit 501, your reply testimony?

25   A.   (Dr. Tardiff) Yes, sir.

1   Q.   And again the page and the footnote?

2   A.   (Dr. Tardiff) 30 and 31, Footnote 50.

3   Q.   Thank you.

4   A.   (Dr. Tardiff) And Footnote 50 presents a

5   table that breaks down into the existing rate zones the

6   amount of distribution cable distance produced by the

7   two models. The HM distances are on the left-hand side,

8   the Vz distance is on the right-hand side. And what I

9   see going on there is that, well, HM produces noticeably

10   more distance in the least dense rate zone. The pattern

11   is different in the other rate zone. So what that says

12   is that it's not necessarily just the total distance or

13   the total average, but it matters where that distance is

14   being placed.

15   Now, for example, if you, you know, if you

16   have this same total distance but one model placed more

17   in the lower density areas, you would have a lot of, you

18   know, fairly low cost on a per foot basis or per mile

19   basis structure as opposed to placing it in higher

20   density situations.

21   Q.   Dr. Tardiff, I want to stay with Exhibit 501,

22   I'm now going to turn to you.

23   A.   (Dr. Tardiff) Be careful what you ask for.

24   Q.   Page 35.

25   A.   (Dr. Tardiff) Yes.

1   Q.   Line 15.

2   A.   (Dr. Tardiff) Line 15.

3   Q.   Here you're citing an order by the

4   Massachusetts Department of Energy?

5   A.   (Dr. Tardiff) Transportation Energy I

6   believe.

7   Q.   Okay.

8   A.   (Dr. Tardiff) Or Telecommunications Energy.

9   Q.   Thank you, yes, Telecommunications and

10   Energy. And at line 15 there's a reference to the LCAM

11   model. What is the relationship between LCAM and VzLoop

12   and VzCost?

13   A.   (Dr. Tardiff) LCAM I believe was the

14   predecessor model that Verizon used I think primarily in

15   the eastern states.

16   Q.   And does it work then essentially the same

17   way as the model that we have before us?

18   A.   (Dr. Tardiff) I don't believe so. My

19   recollection was that it was, you know, like a lot of

20   models in that time frame was based on taking samples of

21   loops and then designing networks based on loop samples.

22   Q.   Turning to page 82 of that same exhibit.

23   A.   (Dr. Tardiff) Yes.

24   Q.   Here you refer to -- here you provide a

25   sensitivity analysis for expanding demand on interoffice

1 facilities; is that correct?

2   A.   (Dr. Tardiff) Yes.

3   Q.   And you report that when you change the

4 demand, there isn't much in the way of a change in the

5 investment level; is that correct?

6   A.   (Dr. Tardiff) When you go -- well, it's

7 fairly insensitive. And by the way, this is a feature

8 that it was entered as new to this particular version of

9 the model, so I mean the previous models, they

10 essentially assumed that 100% of the high capacity

11 demand would end up on the interoffice rings. In this

12 model they're only -- they're assuming only 50%. I was

13 just testing the sensitivity of that change here, among

14 other things.

15   Q.   And is it your understanding then in the

16 interoffice network the Hatfield model assumes only

17 fiber is used to carry the traffic?

18   A.   (Dr. Tardiff) In the interoffice network, I

19 believe that's true, you know, both in terms of this

20 model and most models that are out there.

21   Q.   And is it your understanding in the loop

22 network, both copper and fiber are used to reach end

23 users?

24   A.   (Dr. Tardiff) It's my understanding of the

25 reality. Are you asking of that or --

1   JUDGE MACE: You know, I'm not understanding

2   you. If you could make sure you speak clearly.

3   DR. TARDIFF: Yes, ma'am.

4   A.   (Dr. Tardiff) That's certainly true in

5   reality, and most models represent that loops,

6   especially ordinary or POTS loops, can be a combination

7   of fiber and copper or all copper.

8   BY DR. GABEL:

9   Q.   And as a cost expert, would you expect the

10   cost elasticity on a fiber network to be the same as the

11   cost elasticity on a copper and fiber network?

12   A.   (Dr. Tardiff) Could you --

13   Q.   Well, let me restate the question.

14   Isn't it true that on an all fiber network,

15   if you expand capacity, generally it means that you

16   change out the multiplexer as opposed to expand the size

17   of the cable which you would need to do in a copper

18   environment?

19   A.   (Dr. Tardiff) Yes, I think it's the largest

20   cost driver is the electronics.

21   Q.   All right. Turning to your rebuttal

22   testimony, which is Exhibit 503 at page 3.

23   A.   (Dr. Tardiff) Yes.

24   Q.   Lines 12 to 14, you state that the FCC:

25   Has never prohibited the use of an

1   ILEC's actual cost when developing

2   forward UNE costs.

3   Would you explain what you mean by actual

4   costs?

5   A.   (Dr. Tardiff) Well, there are certain

6   features of the network of I would say of very recent

7   events that can inform what certain costs are. Like say

8   in the price of a switch, what you pay for cable, things

9   like that, you know, or even features of the network.

10   As I understand it, the FCC's rulings in the 271 cases

11   and most recently in their TELRIC NPRM both have

12   approved cost based on certain measurements of existing

13   networks and are looking to the proposition that, you

14   know, maybe more credence should be placed on existing

15   networks going forward under its TELRIC rule. So by

16   actual cost, I mean a combination of a recent experience

17   that's indicative of forward looking behavior, and but I

18   also mean forward looking costs based on the costs --

19   the forward looking costs that that provider will

20   experience.

21   Q.   Thank you.

22   Finally, Mr. Murphy, I would like to ask you

23   to turn to your exhibit, which is 551. My question

24   pertains to material around page 44. Do I correctly

25   understand your view that you believe that too much

1   distribution is included in the Hatfield model relative

2   to feeder plant?

3   A.   (Mr. Murphy) Well, certainly the Hatfield

4   model is modeling excessive distribution cable. That

5   being said, there is no distance tradeoff between the

6   two. Distribution cable by its nature must pass by

7   every customer location that has service, so a good

8   proxy for the total distribution route distance would be

9   the road distance, excluding things like limited access

10   highways. The feeder plant on the other hand is

11   intended to collect the traffic and aggregate it back

12   toward the central office. And as I view what's going

13   on in the model, the excessively large clusters are

14   having a direct impact on the length of the feeder

15   cables. Were they shorter, obviously you would need to

16   get out into those distribution areas with a little bit

17   more feeder going out that way.

18   So hopefully I have answered your question,

19   that the distribution isn't going to change regardless

20   in my opinion, not significantly anyways, regardless of

21   the size of the distribution areas.

22   Q.   Just from a bottom line of a cost model and

23   what kind of cost numbers are produced given the

24   tradeoff between distribution and feeder, if you had

25   longer feeder and less distribution, that would raise

1   your -- which costs? You know, what's the tradeoff

2   that's taking place here if you have -- if the Hatfield

3   model has less feeder than you think is appropriate,

4   then you believe that understates which type of cost,

5   for example, the electronics cost, the fiber cost?

6   A.   (Mr. Murphy) Well, it would understate I

7   believe electronics cost, because you would have more

8   but smaller DLC locations. Fiber, it would understate

9   fiber cost to some degree as well. As you and

10   Dr. Tardiff just discussed, electronics is the key

11   driver. It would potentially understate copper cable

12   costs as well. In fact, it definitely would understate

13   copper cable costs.

14   The other thing that occurs is the support

15   structure winds up, as I said in my opening statement,

16   getting overloaded. It's not unusual as you examine the

17   various clusters within the HM model to find

18   distribution routes that have 4,200 pair cables on

19   aerial plant for example. The reality of the situation

20   is that aerial cables are not manufactured in sizes

21   larger than 2,700 to 3,000 pairs. I say that because

22   different manufacturers have different cutoff limits.

23   The further reality is that the pole

24   structure simply isn't capable of handling cables of

25   that size. I know Mr. Richter can speak in more detail

1   to that than I can, but again it's not unusual to look

2   at this model and find several 4,200 pair cables being

3   strung along aerial poles. What really should happen is

4   that a cable that size would need to be in the ground.

5   And the question comes up is, well, do you bury it or do

6   you put it in a conduit system.

7   When you have large volumes of traffic, you

8   want to be able to operate those facilities at higher

9   fill rates, and you want to be able to monitor them so

10 that if you get peaks in demand you can readily augment

11 them. So, you know, to apply distribution type

12 assumptions to plant of that size puts you in danger of

13 being unable to provide service to meet peaks in demand

14 and so forth. And the further you get into the network,

15 for example when you get into the IOF part of the

16 network, it's fairly easy to predict demand and to meet

17 demand. But as you get out closer to the home, it

18 becomes much more difficult.

19   A.   (Mr. Richter) Can I add just a comment. In

20 terms of the advantages of smaller DA's, smaller

21 distribution areas, there are also operational

22 advantages going forward in terms of maintenance.

23 Obviously the more -- cables generally or repairs will

24 generally fail at splice points, and the distribution is

25 filled with splice points. One of the ways we fix them

1   is to do a divide and conquer when a pair goes bad. One

2   of the testing procedures is, you know, to go out

3   halfway, test the pair going one way, test the pair

4   going another way, and by doing that you can quickly

5   eliminate or narrow down where the defect is in the

6   cable. So the shorter those loops are, the quicker you

7   can do those types of testing. As well as, you know,

8   the installation procedures in terms of wiring up a line

9   when it goes into service are much easier when you have

10 discreet sets of distribution cables versus very large

11 ones.

12   Q.   Okay.

13   My memory may be wrong here, Mr. Murphy, but

14 I don't remember seeing an input for 4,200 pair aerial

15 cable in the Hatfield model. So just as a Bench request

16 can you point to me where within the model runs we see

17 that, or maybe it looks like Dr. Tardiff is reaching for

18 his papers, maybe he can tell me where it exists.

19   A.   (Dr. Tardiff) I mean would it help if I did

20 it in real time?

21   Q.   Yes, but let me ask Mr. Murphy my last

22 question while you're looking for that.

23   At page 61 of your testimony, this is again

24 Exhibit 551, you're referring to expanding the capacity

25 of the feeder plant?

1   A.   (Mr. Murphy) Yes.

2   Q.   Is fiber used in the buried portion -- let me

3   restate that.

4   Is buried cable used in the fiber portion of

5   the network? I'm sorry, I may be tired, let me say it

6   one more time.

7   Is buried fiber used in the feeder portion of

8   the network?

9   A.   (Mr. Murphy) are you asking in reality or

10   within the model?

11   Q.   In reality.

12   A.   (Mr. Murphy) I wouldn't be surprised to find

13   that to be the case.

14   Q.   Okay.

15   And, Dr. Tardiff, thank you, Dr. Tardiff, do

16   you --

17   A.   (Dr. Tardiff) Oh, yes, Dr. Gabel, the place

18   to look is Exhibit R --

19   JUDGE MACE: Is your microphone on?

20   A.   (Dr. Tardiff) Sorry. The place to look is

21   Exhibit RAM-5, page 11.

22   JUDGE MACE: Is that one of Dr. Mercer's

23   exhibits?

24   DR. TARDIFF: Yes, it is, ma'am,

25   CHAIRWOMAN SHOWALTER: Why don't you wait

1   until we find the exhibit.

2   JUDGE MACE: What was the number?

3   DR. TARDIFF: Exhibit RAM-5.

4   JUDGE MACE: That should be Exhibit 856.

5   And what page in RAM-5?

6   DR. TARDIFF: This would be at page 11.

7   A.   (Dr. Tardiff) And, you know, just to kind of

8   follow up, I believe you will see this same information

9   when you open one of the user menus to change inputs.

10   DR. GABEL: Okay, thank you, I have no

11   further --

12   JUDGE MACE: Does that satisfy your --

13   DR. GABEL: Yes.

14

15   E X A M I N A T I O N

16   BY CHAIRWOMAN SHOWALTER:

17   Q.   Dr. Tardiff, first of all, did I hear you say

18   this is your home town?

19   A.   (Dr. Tardiff) Yes, ma'am.

20   Q.   So you reported that you went to Cal Tech for

21   college, and UC Irvine for a Ph.D., so where did you go

22   to high school?

23   A.   (Dr. Tardiff) Well, it doesn't exist any

24   more, it was Saint Martin's High School, which was at

25   the time affiliated with the college.

1   Q.   I see. My question for you is on your

2   exhibit, your testimony Exhibit 501T, page 21.

3   Ms. Smith asked you this question about you said there's

4   no reason to believe distribution locations could be

5   more efficiently placed. And she asked you the

6   question, well, were they placed efficiently to begin

7   with. And I started to think about this issue of

8   efficient and what it means. And TELRIC assumes long

9   run incremental cost, but given what I think is one

10   issue, given what? Both models assume that the earth is

11   round, but then you very quickly get into differences in

12   assumptions of what are the givens. And as I understand

13   it, the Vz model accepts as a given to a much greater

14   degree than HM 5.3 the current configuration of customer

15   locations, meaning that they are connected or they are

16   positioned with respect to each other in the same way

17   that roads connect current customers to each other. Is

18   that correct?

19   A.   (Dr. Tardiff) That's my understanding that --

20   and I think that's born out by the maps that Mr. Dippon

21   attached to his testimony.

22   Q.   So isn't one of the issues that we have to

23   decide is what are the appropriate givens. And I could

24   march up from the shape of the earth to the distances

25   that are between customers currently to the equipment

1   that is needed to connect those distance, to connect

2   those locations, or I can kind of skip up to a different

3   level, which I take to be the HM level, in which

4   customer location in a sense and then central office are

5   paramount.

6   A.   (Dr. Tardiff) Right.

7   Q.   But the intricacies between those two

8   locations is abstracted in some way, whereas Vz is a

9   little bit abstracted but much closer to actual physical

10   configuration. Is that right?

11   A.   (Dr. Tardiff) That's my understanding, and,

12   you know, you have kind of brought back the last eight

13   years where we have been arguing about this issue. I

14   mean just what kind of competition do you envision as

15   being the underpinnings of these models. I mean

16   Dr. Gabel alluded to competition regarding the sharing

17   assumptions. And I think the what I refer to as the

18   extreme aggressive view of TELRIC might be a view of a

19   competitive world where there were no cost to entry or

20   exit, and you can just kind of plop down a network

21   immediately on the ground.

22   I don't believe that that's what a

23   competitive network world would look like. Networks

24   would evolve over time. The equipment is durable, so

25   you can't replace it. So even if it were competitive, I

1   would suspect that competitive firms would over time be

2   constrained by the locations of their existing

3   facilities. And if you want to kind of approximate a

4   competitive outcome, you have to have the right model of

5   competition to do so, and I think the VzCost model is

6   getting closer to what that might look like than the

7   model that basically says the sky's the limit.

8   Q.   Well, I guess I was trying to start with

9   things that are extrinsic to the telecommunications

10   system, that is both models are trying to model some

11   kind of -- well, a cost of a line that ultimately goes

12   from a central office to a house.

13   A.   (Dr. Tardiff) Correct.

14   Q.   But where a house is is not going to change.

15   A.   (Dr. Tardiff) Absolutely.

16   Q.   Now actually I think neither model assumes

17   the house is changing, but there are differences in how

18   one assumes one can get from a house ultimately to the

19   central office, by what route but also by what

20   equipment.

21   A.   (Dr. Tardiff) Exactly, I mean what equipment

22   is available, what you pay for it. And I guess it

23   ultimately comes down to, you know, how much equipment

24   you need and where you need it and how much you pay for

25   it. And a model that provides the most accurate

1   rendition of what a competitive world might look like

2   with regard to those two facets, that is the amount of

3   equipment placed where it's needed and the price you pay

4   for it, is going to give you the best prices.

5   Q.   And with regard to the structure sharing, an

6   extrinsic element I think to the telecommunications

7   system per se is the electricity system. Now it may or

8   may not prove over time to be competitive in some way, I

9   don't know, but for our purposes I would think we would

10   assume the electricity system is not going to bend to

11   how the telecommunications system is or isn't

12   competitive, at least for poles. Now maybe it will, but

13   perhaps it -- perhaps what it really gets right back to

14   is this basic configuration of where people are already

15   located. They're not going to move.

16   A.   (Dr. Tardiff) Right.

17   Q.   And their electricity systems are not going

18   to move.

19   A.   (Dr. Tardiff) Right. And competitors that

20   come in and may or may not want to share are going to

21   locate where they are over time and not all at once.

22   And as Mr. Richter indicated, there are transaction

23   costs involved in, you know, working together, sharing

24   poles or what have you. I bet you he could probably

25   speak to that much better than I could.

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       1   Q.   Well, actually my next question, let's see if

       2   I have any more -- well, I do have one more question for

       3   you on page 31 at the bottom. This was the continuation

       4   of the footnote. And I take it what you're trying to

       5   show here is that the HM model seems to produce more, I

       6   don't know if that's lines, dollars, or what, the 47

       7   million 58 --

       8   A.   (Dr. Tardiff) Right, this is a -- it's

       9   labeled on the previous page. Unfortunately the table

      10   got broken up.

      11   Q.   Feet.

      12   A.   (Dr. Tardiff) It's called sheath feet.

      13   Q.   Right.

      14   A.   (Dr. Tardiff) Which is just a measure of -- a

      15   sheath is a cable of a certain size, and you just kind

      16   of add up the total lengths of those cables. And what

      17   this shows is that in the lowest density zone, which is

      18   zone 5, HM puts in a lot more feet than does Vz. But as

      19   you move up the ladder, so to speak, the pattern turns

      20   around.

      21   Q.   Okay. And so the question for us is which is

      22   more accurate. If HM is less accurate, then the

      23   consequence is that it's projecting more lines, more

      24   feet needed in the rural areas. And I heard you make

      25   two different points. One is that doesn't cost as much

1   in those areas, but also that that's not really, if it's

2   inaccurate, that's not where people will go or not where

3   the lines -- the feet would go, and therefore it's, I

4   don't know if it's an underestimate or overestimate, you

5   would -- but assuming it's projecting too much in the

6   rural areas, the consequence is what?

7   A.   (Dr. Tardiff) Well, I mean one of the

8   consequences is that for whatever reason I think you see

9   more competition in the denser areas. So, you know,

10   basically if you underestimate your costs in the urban

11   areas but overestimate them in the rural areas, it's

12   going to have a bigger impact on competition just

13   because of the way it's unfolding.

14   Q.   But how, I mean connect the dots, why?

15   A.   (Dr. Tardiff) Well, I mean the -- well, let's

16   say that you have a model that's underestimating the

17   cost of unbundled elements in the most competitive

18   areas. One of the consequences of that would be that

19   firms would find buying loops from Verizon such a good

20   deal that they will do that rather than build their own

21   facilities.

22   Q.   Okay. So that in other words it doesn't

23   produce an efficient set of responses?

24   A.   (Dr. Tardiff) Correct.

25   Q.   Now if it's the other way, if Vz is less

1   accurate in this table, what is the consequence?

2   A.   (Dr. Tardiff) So you're asking me to assume

3   hypothetically that HM is the norm?

4   Q.   Not the norm, that it's more accurate.

5   A.   (Dr. Tardiff) Okay. Well, the consequence

6   there would be if that were the assumption that the

7   prices would be -- if HM was the norm but you picked Vz,

8   then the consequence in the dense area, the zone 1 if

9   you will, would be that the estimate of UNE loops would

10   be too high under that hypothetical situation. You

11   know, assuming hypothetically that Vz has put too much

12   mileage in the high density areas, and that would have

13   the effect of making UNE loops more expensive, again

14   hypothetically. I don't -- this is all a hypothetical

15   exercise, but that could have -- I mean that could have

16   the effect of inducing probably more facilities based

17   competition than you see otherwise because --

18   Q.   If it was affordable to do that --

19   A.   (Dr. Tardiff) Right.

20   Q.   -- it would also have the effect, wouldn't

21   it, of discouraging CLEC's from obtaining UNE's at

22   prices that were, in fact, efficient, because the prices

23   would be too high?

24   A.   (Dr. Tardiff) Right, if prices were too high

25   that has that effect. I mean the real trick here is to

1   be just right.

2   Q.   Yeah.

3   A.   (Dr. Tardiff) That's what you're about here

4   I'm sure.

5   Q.   Dr. Dippon, I have a question for you on

6   Exhibit 611.

7   A.   (Mr. Dippon) I'm taking it that's my reply?

8   Q.   No, that is the set of seven -- the seven

9   page exhibit that was a cross exhibit that AT&T showed

10   you for illustrative purposes.

11   A.   (Mr. Dippon) Understood. And that is

12   Richmond Beach, right?

13   Q.   Right. Now when you were on page 1 and I

14   think 2, you said you want to emphasize that all of this

15   occurs preprocessing, that is it's not in the model.

16   And I didn't know whether your statement pertained just

17   to the page you were on or all the way through to page 7

18   or page 6. Is this illustrating something that occurs

19   prior to what you see in the model every bit of it, or

20   what ends up in the model?

21   A.   (Mr. Dippon) What ends up in the model is

22   really only the part of the representation in map page

23   7, which is the distribution layout. And as you -- as

24   you can see here in map 1, the customer locations are

25   sort of uniformly distributed along the roads. And in

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1 all that it's really not maintained, it's sort of a

2 pitty that this exercise was done, but the model is --

3 the HM 5.3 doesn't route their model out to the plant to

4 these customers. Instead the only thing that really

5 matters in terms of cost is those distributions. I

6 refer to them as grill, that's not an official name, but

7 it's the part of the backbone and the branch cables that

8 are shown in map 7, and that's the only thing that --

9 that's the only information that really forms the basis

10 of HM 5.3's cost estimates.

11   Q.   All right. I want to go into some of these

12 pages, but before I do, if you wanted to -- strike that,

13 I will just start with these pages.

14   I'm interested in page, going from page 5 to

15 6 to 7. If you look at page 5, that seems to be the

16 beginning of the exercise of taking some optimal or

17 minimum bounding rectangles and fitting them to the

18 holes that were drawn on page 3. I'm not sure that's

19 what's happening.

20   A.   (Mr. Dippon) What's happening there is once

21 the model determines what the clusters are, it fits a

22 convex hole around the members of a cluster, and then it

23 builds a -- seems to build a minimum fitting rectangle.

24 And then again it seems to shrink that, the area of that

25 minimum fitting rectangle, to coincide with the area of

1   the convex hole. But what also then happens is, and you

2   can't really see it well on this map, but I have seen it

3   much better, much clearer on other maps, it recenters

4   that new cluster, that rectangle over where HM 5.3

5   assumes the SAI is going to be. So effectively it

6   shifts the customer demand from A to B. And sometimes,

7   as I have seen and as you can see in some of the maps,

8   it shifts them out entirely over bodies of water.

9   Q.   Is that what's represented by those little

10 blue and red squares in the center?

11   A.   (Mr. Dippon) I believe that's it, that's why

12 I had to circle back and ask what those were, but I

13 believe that is what's happening there.

14   Q.   All right. Now if you turn to page 6, this

15 is where these black horizontal lines and a vertical

16 line get drawn in. Now is that an even distribution of

17 branch cable drawn over the boxes?

18   A.   (Mr. Dippon) Yes, and the -- well, what

19 they're doing originally is assuming now, and that's

20 where in my opinion the flaw comes in, at this point

21 when the clusters are being determined, the model

22 ignores whatever map 1 told them. And map 1 tells them

23 where each customer is, so more or less assuming that

24 was an inaccurate exercise. And then assumes, well, now

25 everybody is uniformly distributed within this cluster,

1   and then it starts to overlay this grill looking

2   distribution area which consists of backbone and branch

3   cables.

4   Q.   Are those black lines the very same lines

5   that you added up when you compared actual road length

6   to I think it was cable strand length?

7   A.   (Mr. Dippon) What I did before is I added up

8   the distribution route distance as modeled by HM 5.3 and

9   compared them to the road miles, all of that within a

10 cluster. These are, the ones on map 6, those are the

11 unadjusted backbone and branch cable, so those were not

12 the one. The ones that I have used for the analysis is

13 whatever was in the model. It will tell you in the

14 model how long the backbone is and the branch cable, and

15 those are the adjusted ones.

16   Q.   All right, but are those black lines

17 representations of what you added up?

18   A.   (Mr. Dippon) I think if you looked at map 7

19 and those black lines are representations of what I

20 added up.

21   Q.   That's why I -- well, what is the difference

22 between page 7 and page 6? You know, it looks as if

23 page 6's black lines were shrunk to a much smaller size

24 on the map, and if you were adding up -- if I were to

25 take a little ruler right now and add the lengths on

1 page 7, they would be a lot smaller than if I added the

2 lengths with my same ruler on page 6, but the underlying

3 map of Richmond Beach is the same map. So what am I --

4 I'm not sure if I'm looking at the same thing. That's

5 what it looks as if I'm looking at the same thing, but

6 what is the -- I want to make sure that when you

7 measured what you did measure that you measured, well,

8 that you measured something that looks more like page 6

9 than page 7 if what you measured is what is intended to

10 get from the central office to a house.

11   A.   (Mr. Dippon) Well, map 7 is really what forms

12 the basis for HM 5.3 UNE cost estimates, and that's what

13 I added up. Now in 6, the difference between 6 and 7

14 and given the disclaimer I stated before, map 6, I have

15 some minor problems with map 6, but I seem to understand

16 what it shows. It's the distribution area before the

17 strand distance adjustment is put into place. And what

18 the strand distance adjustment does, it grosses up or it

19 increases or decreases what you see in map 6 according

20 to a measure that AT&T and MCI deemed more reasonable as

21 a measure, as a distance measure for distribution plant.

22   Q.   Okay. But then to say on -- so HM take -- HM

23 transforms the lines on page 6 to the lines on page 7

24 based on a factor; is that correct?

25   A.   (Mr. Dippon) That is correct.

1   Q.   And are the lines on page 7 supposed to be

2   representative of getting to the houses, the customers?

3   A.   (Mr. Dippon) That is my understanding. I

4   think that is my understanding of what AT&T and MCI

5   argued, yes.

6   Q.   All right. So in this particular case on

7   page 7, as you added up it has significantly

8   underestimated what is needed to get to the houses if

9   you assume that you go along roadways?

10   A.   (Mr. Dippon) Yes, and I just want to make

11   sure, there are two sides of the story, is you will find

12   some maps where it's very -- it's very -- it seems very

13   short and other ones that are very long. In this

14   particular example it's very short. I also have a

15   problem when it's very long because there are other

16   examples where it's just where these grills overlap with

17   each other, they go into bodies of water, they're on top

18   of mountains. I have no way to say that these are

19   accurate representation of where a distribution route

20   would go, not even in the forward looking world.

21   And I think that's what you mentioned before,

22   it's a very hypothetical world that we're in with this

23   model. And if so, then I, as the analyst, I need some

24   assurance that this is the right plant that's being

25   modeled. And as we all here on the table have found

1   several times, it is not, even if it's too long, too

2   short, it's simply the wrong array of cables, it's the

3   wrong cable size, it's the wrong splicing points, it

4   omits so many facts it just becomes very unreliable.

5   Q.   Okay. And I was going to -- I was assuming

6   that you pointed out Richmond Beach because it was

7   probably at one end of the spectrum in this case,

8   underestimating?

9   A.   (Mr. Dippon) In fact, I did not. I had a

10   list of at least ten that I wanted to put in. I mean

11   all of them are in in my testimony in CMD-6, but I had

12   many more such examples. I think the two Everett wire

13   center, Manor Way, I recall that I had maybe a half a

14   dozen to a dozen of similar looking maps that I could

15   have put in there.

16   Q.   Okay. But now assuming that there are some

17   that underestimate and some that overestimate, is this

18   the collection of estimates that corresponds to the

19   footnote that I was talking to Dr. Tardiff about? In

20   other words, Dr. Tardiff was saying that in his view HM

21   overestimates the amount of footage that's needed in

22   rural areas, underestimates the amount of footage that's

23   needed in zone 1, Richmond Beach is probably zone 1 or

24   2, I'm not sure. Are we now talking about the same

25   thing? Is Exhibit 611 an example of what is in the

1   footnote that Dr. Tardiff was talking about? And I will

2   let Dr. Tardiff answer.

3   A.   (Dr. Tardiff) Sure. Yes. I mean basically

4   the footnote could be viewed as adding up the distances

5   in map 7, you know, for each cluster in the wire center,

6   then adding them up, putting them -- and tallying them

7   for that wire center, then doing it for all 99 wire

8   centers, and then putting each wire center in the

9   appropriate rate zone. So subject to -- the one slight

10   difference might be that I'm measuring cable distances,

11   so it's possible that some of these grill structures

12   might have more than one cable going along there, along

13   the distance because of -- usually because there's a

14   need for a thick cable. But subject to that

15   qualification, it's really the same thing.

16   CHAIRWOMAN SHOWALTER: Thank you, I have no

17   further questions.

18   JUDGE MACE: Commissioner Hemstad?

19   COMMISSIONER HEMSTAD: No.

20   JUDGE MACE: Commissioner Oshie?

21   COMMISSIONER OSHIE: I have no questions of

22   the panel.

23   JUDGE MACE: Ms. Steele?

24

25

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

2   BY MS. STEELE:

3   Q.   I do want to follow up on the line of

4   questions that the Chairwoman was asking regarding the

5   strand distance and how you get from map 6 to map 7,

6   because I think we need to add a little further

7   information there if we could. Now the way the -- let's

8   first look at map 1, and one of the things that's done

9   in the preprocessing phase, I'm looking at Exhibit 611,

10   is that when we have the customer locations, the model

11   measures the distance between those customer locations

12   and connects those customer locations using what we

13   refer to as a rectilinear routing system; isn't that

14   correct?

15   A.   (Mr. Dippon) That is correct, and as

16   Dr. Gabel and I previously discussed, that is only one

17   measure of accuracy.

18   Q.   So the first thing that happens is we measure

19   how far apart these customers are, and we have a strand

20   distance that comes out of that calculation; isn't that

21   correct?

22   A.   (Mr. Dippon) It's not the first thing that

23   you're doing, but yes, you're doing it.

24   Q.   And when we look at the difference between

25   map 6 and map 7, what is happening there is that we are

1 adjusting the cable distances to match the strand

2 distance that's measured as we're trying to connect the

3 customers with the actual customer locations; isn't that

4 correct?

5   A.   (Mr. Dippon) No, I don't think that is

6 correct. It's -- as I looked at Richmond Beach is the

7 distance to connect the customers was much longer than

8 the distance that was reflected in the distribution

9 areas for the various different clusters.

10   Q.   Well, your understanding of the way the model

11 is intended to work, however, is that the strand

12 adjustment is supposed to represent the distance

13 measured between the customer locations; isn't that

14 correct?

15   A.   (Mr. Dippon) That is correct.

16   MS. STEELE: Okay, that's all I have, thank

17 you.

18   JUDGE MACE: Ms. Smith?

19   MS. SMITH: Nothing.

20   JUDGE MACE: Mr. Huther.

21   MR. HUTHER: Thank you, I will have probably

22 a half hour of follow up.

23   (Recess taken.)

24   JUDGE MACE: Mr. Huther.

25   MR. HUTHER: Yes, thank you.

1

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

3   BY MR. HUTHER:

4   Q.   Mr. Dippon, you were asked a question by

5   Ms. Steele with respect to page 16 of your pre-filed

6   testimony. That's been marked Exhibit 601T. Do you

7   have that in front of you?

8   A.   (Mr. Dippon) Yes, I do.

9   Q.   And the question pertained to the aspects or

10   the cost drivers that are determined by the

11   preprocessing module in HM 5.3 that are bullet pointed

12   on that page 16; do you see that there?

13   A.   (Mr. Dippon) Yes, I do.

14   Q.   Was it your concern that the fact that these

15   cost drivers were directly determined by the

16   preprocessing model of HM 5.3 was in and of itself a

17   problem?

18   A.   (Mr. Dippon) No, it doesn't really matter

19   whether it's part of the preprocessing or the model

20   itself. What really matters is that it's made available

21   to all parties for review and that it's fully

22   documented.

23   For instance, Dr. Mercer has testified on a

24   number of occasions how many pages he has of model

25   descriptions, and I believe, I don't want to misstate

1   his testimony, says there are 2,100 user adjustable

2   inputs. My concern is that the issues here that I have

3   listed here are outside that scope. They are barely

4   documented. They are not user friendly at all. They're

5   not even submitted along with the Hatfield model. In

6   this particular case we had to get them through their

7   requests, mostions to compel, along back and forth.

8   Now if you view on the other side VzCost,

9   VzCost everything is made available whether it's done in

10 preprocessing or the model itself, it's available, the

11 source code is here, you even have witnesses that have

12 spoke to what's happening in the preprocessing and it's

13 also documented. So that's really what my point there

14 is.

15   Q.   Thank you.

16   Dr. Tardiff, just before we broke, in

17 response to a question I think you agreed affirmatively

18 to a question from Chairwoman Showalter that neither

19 model, that is VzCost or HM 5.3, assumes that houses

20 change. Do you recall that question?

21   A.   (Dr. Tardiff) Yeah, I recall a question. I

22 think I heard it as the Verizon model or the neither

23 model. So yeah, I either -- either late in the day,

24 it's hearing, or I misheard the question. But clearly

25 my absolutely response was based on my understanding

1   that the question was about the Verizon model.

2   With regard to the HM model, as Mr. Dippon's

3   math and analysis indicate, what you get when you

4   actually open up the model and run it is not -- you

5   don't have the location of houses. What you have are

6   abstract rectangles that represent where houses may be,

7   but they certainly are not the locations of houses out

8   there in the real world.

9   Q.   Dr. Tardiff, you also recall fielding a

10   question or two with respect to the placement of 4,200

11   pair cables?

12   A.   (Dr. Tardiff) Yes, Dr. Gabel asked about

13   whether there was 4,200 pair aerial cable in HM.

14   Q.   Yes. And have you been able to identify or

15   is the model capable of establishing the instances in

16   which such cables, 4,200 pair cables, are assumed to be

17   placed?

18   A.   (Dr. Tardiff) It's not a standard output, but

19   it is possible to do some side calculations to figure

20   out where they are.

21   MR. HUTHER: I distributed a document that I

22   believe should be marked Verizon Northwest Exhibit 111;

23   is that correct, Your Honor?

24   JUDGE MACE: Well, what I have, I have an

25   Exhibit 111 that's a Verizon response to an AT&T

1   discovery request number 10-002.

2   MR. HUTHER: I'm sorry, I think it should be

3   1110.

4   JUDGE MACE: Oh, that certainly will make a

5   difference.

6   CHAIRWOMAN SHOWALTER: Are you saying this is

7   a page from that exhibit?

8   MR. HUTHER: No, this is a redirect exhibit

9   that has not yet been identified.

10   CHAIRWOMAN SHOWALTER: Where does the other

11   exhibit come from, 1110?

12   JUDGE MACE: I'm not sure I understand.

13   MR. HUTHER: I'm sorry. The piece of paper I

14   just distributed I would like to have marked as Exhibit

15   1110 if that is our numbering convention.

16   JUDGE MACE: Just hold on for a moment if you

17   would.

18   We'll mark this Exhibit 267.

19   MR. HUTHER: I was way off.

20   MS. STEELE: I would ask that before there be

21   any questions on this exhibit that its admission be

22   moved so that I can object to it.

23   MR. HUTHER: Well, let me see if I can't

24   authenticate it first, and I will be happy to not ask

25   any substantive questions until you have an opportunity

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1   to object.

2   BY MR. HUTHER:

3   Q.   Dr. Tardiff, do you have in front of you what

4   has been marked Verizon Northwest Exhibit Number 267?

5   A.   (Dr. Tardiff) Yes, I do.

6   Q.   Are you familiar with this document?

7   A.   (Dr. Tardiff) Yes.

8   Q.   Could you describe it, what it purports to

9   represent and where you received it?

10   A.   (Dr. Tardiff) Yes. Verizon asked AT&T in an

11   interrogatory to describe the backbone cable produced by

12   HM, and I believe this was -- this exhibit was an

13   extract from an Excel spreadsheet that was attached to I

14   believe Data Request Response Number 9-21.

15   MS. STEELE: And my objection is that this is

16   beyond the scope of the examination, that all that

17   Dr. Gabel asked was whether the model placed 4,200 pair

18   cable. Now we have an attempt to introduce additional

19   what should have been direct testimony, or reply

20   testimony in any event, through redirect examination.

21   And on that basis, I object to the admission of Exhibit

22   267.

23   JUDGE MACE: Mr. Huther.

24   MR. HUTHER: May I respond? Yes, Dr. Gabel's

25   question as I recall was twofold. One, he was unaware

1   that the model did place such cables and asked first for

2   a reference to where in the model that could be

3   identified. And then there was some discussion

4   following Dr. Gabel's questions about the extent to

5   which the model did place such large cables. Both I

6   believe Dr. Tardiff and Mr. Murphy offered testimony on

7   that point.

8   And I'm offering this exhibit, which I should

9   note has already been identified as part of Exhibit

10   Number 890, that is where Verizon identified the entire

11   ninth set, I'm sorry, portions of the ninth set of data

12   request responses as a potential cross-examination

13   exhibit for the AT&T witnesses. But in light of the

14   discussion earlier about whether and the extent to which

15   the model places such cables, I think it's perfectly

16   appropriate for me to use this exhibit to redirect the

17   witnesses in response to those questions that they were

18   asked.

19   JUDGE MACE: So let me make sure I'm clear.

20   You say this was part of an exhibit that was previously

21   marked as a Verizon cross exhibit?

22   MR. HUTHER: Yes, this is, just so the record

23   is clear, this is one page of many that was produced by

24   AT&T in response to Data Request 9-21 propounded by

25   Verizon. And rather than producing that entire

1   voluminous document, my only purpose in raising -- in

2   doing this redirect today was to establish the extent to

3   which and where in the model these, or the model's

4   output, these instances can be identified. And as I

5   said earlier, given that the witnesses have already been

6   addressing this, I think it's perfectly appropriate for

7   me to ask the one or two follow-up questions I have with

8   respect to this exhibit.

9   (Discussion on the Bench.)

10   JUDGE MACE: We're going to overrule the

11 objection. This area of inquiry does pertain to -- is

12 within the scope of what Dr. Gabel was asking the

13 witnesses about, so go ahead.

14   MR. HUTHER: Thank you.

15 BY MR. HUTHER:

16   Q.   Dr. Tardiff, do you have Exhibit 267 in front

17 of you?

18   A.   (Dr. Tardiff) Yes, I do.

19   Q.   I believe you already described what the

20 document is and where you received it. Could you

21 identify for the Commission the instances on this one

22 page of that data request, that document produced in

23 response to Verizon's data request, you can see the

24 instances in which 4,200 pair cable has been placed?

25   A.   (Dr. Tardiff) Right. You can identify this

1   in two ways. That is this being where a 4,200 pair

2   cable has been placed. The first way is if you see in

3   the column C a 4,200, you can look -- what 42 -- what

4   column C is measuring is the size of at least one cable

5   that's being placed in the what HM calls the backbone

6   section. The other instance where it happens is if you

7   see a 1 in column H. What that tells you is that the

8   model has placed at least one 4,200 pair cable and one

9   other cable. If you saw a 2 in that column, it means

10 that it placed two 4,200 pair cables and one other cable

11 and so forth. The other information on this exhibit is

12 the distances of cable by type. By type I mean buried

13 versus aerial versus underground cable.

14   Q.   And am I correct, Dr. Tardiff, that this

15 document identifies four separate wire centers as

16 indicated by CLLI code?

17   A.   (Dr. Tardiff) It identifies four separate

18 wire centers. It may not identify every cluster in the

19 last one. I -- this thing looks like it was cut off to

20 conveniently fit in one place. Just as a matter of

21 background, I believe there would be an 800, a total of

22 829 rows if you printed out the whole file, so row 2 up

23 there would be the first, and you would end up row 830 I

24 believe.

25   Q.   And you have reviewed the document, this

1460

1   document, in its entirety as produced in response to

2   Data Request 9-21?

3   A.   (Dr. Tardiff) Yes, I have opened it up and

4   looked at the various wire centers. I can't say I

5   studied every row, but I have honed in on some of them.

6   Q.   And do you recall in reviewing that document

7   whether there were more instances of the placement of

8   the 4,200 pair cable than are reflected on this single

9   page?

10   A.   (Dr. Tardiff) Yes. In fact, one place I do

11   remember it was in the Richmond Beach wire center. I

12   believe at least in four out of the five clusters there

13   were 4,200 pair aerial cables represented.

14   Q.   Thank you.

15   Mr. Murphy, a question or two for you. Do

16   you recall answering questions regarding the HM 5.3's

17   deployment of indoor SAI's?

18   A.   (Mr. Murphy) Yes, I do.

19   Q.   And you also recall fielding some questions,

20   perhaps it was the panel, but the panel certainly

21   fielded questions about the differences or similarities

22   between versions of HM 5.3 as filed in the SBC

23   California proceeding, the Verizon California

24   proceeding, and this proceeding here?

25   A.   (Mr. Murphy) Yes, that's right.

1461

1   Q.   Do you know whether the model's placement or

2   deployment of indoor SAI's has changed between any of

3   those three versions of the model?

4   A.   (Mr. Murphy) To the best of my knowledge it

5   has not. That particular routine is contained within

6   the clustering source code, which has been unavailable

7   to us in this proceeding. I understand that it recently

8   was produced to Mr. Dippon in the Verizon California

9   proceeding. But in terms of descriptions for changes

10   and interrogatories relative to that, no such change has

11   been offered up.

12   Q.   And did you think such a change was to be

13   forthcoming?

14   A.   (Mr. Murphy) I did. In the SBC California

15   case, in his rebuttal testimony Dr. Mercer acknowledged

16   that I had placed statistical evidence on the record

17   that suggested that the HM 5.3 model might be

18   understating the number of highrise situations and

19   consequently the number of indoor SAI's that were being

20   modeled, and he suggested that the criteria for

21   identifying highrise buildings might be relaxed. I'm

22   not sure which statistical data he was referring to,

23   because I actually placed two sets of statistical data

24   on the record in that case.

25   One set of such data was a comparison of the

1   actual number of indoor SAI's that SBC California had in

2   service within the city of San Francisco. And while

3   those numbers are proprietary and I'm not able to

4   discuss them, the actual numbers here, I can say that

5   they were on the same order of differentiation between

6   the number of indoor SAI's that are being modeled in

7   VzCost, which is some 8,000, and the number that are

8   being modeled in this case from HM 5.3, which is 8 out

9   of the 8,000.

10   The other set of statistical data that I put

11 on the record in that case was an examination of

12 publicly available data as to the actual number of

13 highrise buildings that exist within the city of San

14 Francisco, highrises in this case being defined as

15 buildings that consist of more than 12 stories. The

16 publicly available data suggested that there were

17 approximately 270 such highrise buildings within the

18 city, whereas HM 5.3 in that case was identifying just

19 70 of them. It's noteworthy to point out that indoor

20 SAI's are not placed strictly in highrise buildings.

21 They are placed generally in commercial buildings that

22 contain medium and large businesses.

23   MR. HUTHER: Thank you, I have no further

24 redirect.

25   JUDGE MACE: Ms. Steele?

1   MS. STEELE: I have nothing further.

2   JUDGE MACE: Do you offer Exhibit 267?

3   MR. HUTHER: Yes, I would move its admission.

4   JUDGE MACE: I'm going to ask if there's an

5   objection, we have already ruled.

6   MS. STEELE: I would maintain my objection,

7   however I understand the ruling.

8   JUDGE MACE: We will admit the exhibit.

9   And I would like, well, Ms. Smith, did you

10 have anything further?

11   I wanted to deal with the cross exhibits that

12 AT&T had requested to be admitted, and let me turn to

13 those. Those were Exhibits 611, 617, 619, 621, and 622.

14 Is there any objection to the admission of those

15 proposed exhibits?

16   MS. STEELE: There was also 609.

17   JUDGE MACE: 609, sorry if I omitted it.

18   MR. HUTHER: Yes, I would object to the

19 admission of all exhibits other than 611 on the grounds

20 that they have not been authenticated.

21   MS. STEELE: I will take the time to

22 authenticate them with the witnesses if this is -- if we

23 really want to maintain this objection. We have asked

24 in this proceeding -- both parties have used this

25 procedure to admit documents that are actually produced

1 by the other party. These are responses by Verizon to

2 data requests. I can certainly authenticate them, I

3 just thought it was a waste of time.

4   MR. HUTHER: I actually have no -- I mean the

5 objection is the objection, and if that's the practice

6 and procedure, I'm perfectly willing to allow the

7 admission or to not object to the admission of the data

8 requests. However, I do think that Exhibit 609, which

9 is a signed certification, should be properly

10 authenticated.

11   JUDGE MACE: 609, the agreement regarding

12 disclosure and use of third party documents signed by

13 Mr. Dippon. Why don't you go ahead and do that.

14   MS. STEELE: Thank you, Your Honor.

15

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

17 BY MS. STEELE:

18   Q.   Mr. Dippon, if you could take a look at

19 Exhibit 609.

20   A.   (Mr. Dippon) I have it in front of me.

21   Q.   And is that your signature on the document,

22 sir?

23   A.   (Mr. Dippon) Yes, it is.

24   Q.   And this is a document you signed which is a

25 certification that you had read the proprietary

1 agreement in this case; isn't that correct?

2   A.   (Mr. Dippon) That is correct. I do note,

3 however, that the date on this exhibit is incorrect. I

4 have signed this exhibit right after hearing that

5 counsel for AT&T was willing to make the preprocessing

6 data available to the parties, and that was not on March

7 4, 2003, that was on March 3, 2004.

8   Q.   Is this document in the form that it was when

9 you signed it with the date March 4th?

10   A.   (Mr. Dippon) Excuse me?

11   Q.   Is this document in the form that it was when

12 you signed it with the date of March 4th?

13   A.   (Mr. Dippon) That is correct.

14   MS. STEELE: I move for the admission of

15 Exhibit 609.

16   MR. HUTHER: No objection.

17   JUDGE MACE: I will admit 609 and the other

18 exhibits that I referred to earlier.

19   Thank you, you're excused.

20   And we'll begin tomorrow at 9:30 in the

21 morning with the one remaining panel.

22   MR. HUTHER: Judge Mace, I may have --

23 obviously did neglect to do something that I had hoped

24 to do earlier. Appended to Mr. Richter's testimony are

25 a number of photographs, and I believe the copies that

1 were made available to the parties and to the Commission

2 were in black and white. We do have much clearer to

3 view color copies.

4   JUDGE MACE: Why don't you supply those to me

5 now, and I will make sure that the Commissioners' books

6 reflect the different exhibits.

7   MR. HUTHER: Thank you very much.

8   (Hearing adjourned at 6:55 p.m.)

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