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

A. My name is Thomas L. Spinks. I am employed by the Washington Utilities and Transportation Commission. My business address is P.O. Box 47250, Olympia, Washington, 98504.

Q. **IN WHAT CAPACITY ARE YOU EMPLOYED?**

A. I am employed as a Telecommunications Industry Expert.

Q. **HAVE YOU PREVIOUSLY SUBMITTED TESTIMONY IN THIS PHASE OF THE PROCEEDING?**

A. Yes. I submitted testimony on deaveraging in December, 1999 and January, 2000.

Q. **WHAT IS THE PURPOSE OF YOUR TESTIMONY AT THIS TIME?**

A. The purpose of my testimony is to respond to other parties' concerns and criticisms of my initial proposals and to comment on the proposals filed by other parties in January.

Q. **WHAT CONCERNS DO OTHER PARTIES HAVE WITH THE STAFF PROPOSALS?**

A. The major concerns appear to be with the use of a distance-sensitive rate structure for loops and the proposal to deaverage switching cost.

Q. **WHAT CONCERNS WERE EXPRESSED WITH THE DISTANCE-SENSITIVE RATE PROPOSAL?**

A. The primary concern raised by parties is with the large number of individual rate elements used in the distance-sensitive rate structure shown in my direct testimony and the cost of identifying individual loop lengths. In addition, a number of conceptual and methodological issues are raised regarding the estimates of distance-sensitive costs.

Q. **WHAT IS THE CONCERN WITH THE LARGE NUMBER OF RATE ELEMENTS?**

A. While the CLECs conceptually support the idea of a distance-sensitive rate structure, and the ILECs are conceptually opposed to the idea, the parties mostly appear to agree that the number of individual rate elements in the staff proposal (sixty-three for USWC and eighty for GTE-NW) is unworkable or unwieldy. The solution proposed by the ILECs is to simply reject the use of distance-sensitive rate structures. (See Response Testimony of Terry Dye at 2.) The CLECs, on the other hand, proposed a greatly simplified two-zone distance-sensitive rate structure that requires twelve rate elements. (See Response Testimony of W. Page Montgomery, Exhibit WPM-1.)

The perception that the number of rates is excessive depends on how one looks at the question. The FCC deaveraging rule appears to contemplate three deaveraged zones and, accordingly, three rates. So, relative to a minimum requirement of three rates, eighty rates may seem excessive. However, if one considers the thousands and thousands of individual existing rates already contained in the ILEC tariffs, adding sixty or eighty more

rates to this amount is not excessive. In fact, U S WEST already has distance-sensitive rate schedules containing similar numbers of rate elements in its tariff. For example, see WN U-33, Section 5, Sheet 9, for a sixty rate element schedule. Staff rejects the criticism that the number of rate elements in the staff proposal creates an administrative nightmare or is totally unworkable. However, since customer identification issues can be considerably eased by reducing the number of zones, a simplified distance-sensitive structure is introduced later in this testimony.

Q. **WHAT IS THE CONCERN WITH THE COST OF IMPLEMENTING A DISTANCE-SENSITIVE PROPOSAL?**

A. U S WEST witness Barbara Brohl states that "The total systems development and conversion costs to implement the staff proposal range from $7.5 to $12.5 million for those costs that are known."[1] (Responsive Testimony of Barbara J. Brohl, page 8, lines 19-20.) The cost estimate is premised on the "absolute requirement to maintain very precise loop lengths to each service address." (Responsive Testimony of Barbara J. Brohl, page 4, lines 6-7.) GTE-NW witness Rodney Langley did not provide a specific cost estimate but states that "GTE will be required to modify its facility inventory system to accommodate the loop length for each existing or changed end user service arrangement." (Responsive Testimony of Rodney Langley, page 4, lines 13-15.) The

[1]In response to Staff Data Request 10, the company states that it has no workpapers to support the estimate but states the bulk of the cost of $5-10 million is based on an estimated $2.00-4.00 per line to manually convert each of the company's 2.5 million lines.

concerns with cost appear to be largely based on the perceived need to identify individual loop lengths and incorporate the data into various operational data bases used for ordering and provisioning loops. Staff opposes the use of individual loop distance measurements for establishing the customer location. The actual loop distance does not measure the distance between the wire center and the customer, it measures the length of the historic route chosen by the company to provision the loop. Hence, a customer located three kilometers from the wire center may be served by a loop that is five kilometers in length. Distance-sensitive rate structures should use the forward-looking "as the crow flies" distance measurement, not the embedded historic actual distance. The industry already uses vertical and horizontal coordinates for distance-sensitive measurements when rating toll calls, foreign exchange mileage, and for other purposes. Staff has already provided the parties with information on how locations can be readily identified with relative ease and at low cost. If the Commission determines that distance-based loop rates should be adopted, parties can resolve loop distance identification issues through a workshop.

Q. **WHAT CONCEPTUAL OR METHODOLOGICAL ISSUES ARE RAISED BY THE PARTIES?**

A. U S WEST witness Michael Carnall raises the following concerns:

1. Density and distance are not the only determinants of loop cost.
2. Average loop length is not a good measure of distance.
3. Average cost and distance do not contain information to accurately establish a cost and distance relationship.

4. The statistical tests used to determine significant cost differences are not appropriate for that purpose.

GTE-NW witness David Tucek raises the following concerns:

1. The distance-sensitive cost estimates are based only upon U S WEST data.
2. The cost estimates were produced by HAI 5.0a rather than HM 3.1.
3. Deaveraging is proposed at the exchange level rather than the wire center level.
4. There is no information to validate loop length assumptions exceeding thirty kilofeet in each density zone.
5. The cost estimates are continuous as loop length increases.
6. Several key variables were likely omitted from the model which would bias the estimated coefficients.

Q. **DO YOU AGREE WITH THE CONCERNS RAISED BY U S WEST WITNESS MICHAEL CARNALL?**

A. No. Mr. Carnall quibbles excessively with theoretical and methodological nuances but overlooks several very important facts. First, while there may be determinants of loop cost other than density and loop length, and average loop length may not be the best measure to estimate distance-sensitive costs, the fact remains that over ninety percent of the variation in cost between wire centers is explained by the loop density and average loop length of the wire centers. No party has presented any evidence that the regression coefficients used to estimate the distance-sensitive costs are biased or statistically

unsound. Finally, the resulting distance-sensitive costs are reconciled back to the statewide unbundled loop rate that was earlier set by the Commission. Hence, even though ideal variables are not available and a perfectly accurate distance relationship is not possible to estimate, the resulting equation can be used as a reasonable proxy to estimate costs for a distance-sensitive loop rate design.

Q. **DOES STAFF SHARE MR. TUCEK'S CONCERN REGARDING THE USE OF THE U S WEST REGRESSION RESULTS FOR DEVELOPING DISTANCE-SENSITIVE RATES FOR GTE-NW?**

A. No. The regression results correctly capture the inverse relationship between density and loop cost and the positive relationship between loop length and loop cost. The Commission is not required to use costs or data specific to each company to implement a distance-sensitive rate structure so long as the rates in the structure are reconciled back to the company-specific statewide average loop cost using company-specific loop distributions. However, in response to Mr. Tucek's concern, staff estimated a distance-sensitive equation using GTE-NW HM 3.1 cost data for wire centers that has statistically significant density and distance coefficients. A comparison of this equation with the HAI 5.0a estimates is shown in Exhibit TLS-9.

Q. **MR. TUCEK STATES THAT THERE IS NO INFORMATION TO VALIDATE THE USE OF LOOP LENGTHS EXCEEDING 30 KILOFEET IN THE DISTANCE-SENSITIVE RATE CALCULATIONS. PLEASE COMMENT.**

A. The loop distribution information provided by GTE-NW provided in response to Staff Data Request No. 6 did not provide any information on loop distributions beyond thirty kilofeet. That is, all loops beyond thirty kilofeet in length were lumped together into a single category. U S WEST, however, provided disaggregated loop distribution data for loops up to one hundred kilofeet in length. In examining the U S WEST data, a pattern was observed in the relationship between wire center density and loop distribution. The pattern is for smaller wire centers to have longer loop lengths overall and a higher proportion of loops at greater distances for the wire center. The loop length data provided by GTE-NW also show a higher proportion of loops farther from the wire center for smaller wire centers. Hence, knowing that such a relationship exists, longer loop lengths were used for lower density groups to reflect the relationship between density and loop length. It would have been inappropriate to treat all loops beyond thirty kilofeet as being only thirty kilofeet in length just because GTE-NW did not provide more disaggregated data. If the company were to provide disaggregated data for loop lengths beyond thirty kilofeet, the distance-sensitive loop rate calculation could be revised accordingly.

Q. **MR. TUCEK IS CRITICAL OF USING HM 3.1 COSTS TO DEVELOP DEAVERAGED LOOP COSTS, PLEASE COMMENT.**

A. Mr. Tucek's responsive testimony claims that the use of census block group data in the

HM 3.1 wire center cost estimates increases the variance in cost estimates as the density of the wire center decreases, creating inaccuracies which incorrectly skew the results of the deaveraging process. (Responsive Testimony of David G. Tucek, pages 12-13.) Staff disagrees with this analysis. First, one would expect that smaller wire centers would exhibit greater variation in cost than larger wire centers simply based on the relative size of the density groups. That is, the 2500-5000 line density group[2] has a much smaller change in density over its range (5000/2500 = 2) than the 5- 100 line density group which exhibits a much larger change in line density over its range (100/5 = 20). When you add the fact that smaller wire centers, which are often located in rural areas, represent more geographically diverse situations than urban areas, one cannot expect any other result than greater variation in cost estimates between smaller wire centers. Finally, the HAI 5.0a cost estimates show the same increase in cost variation[3] even though the model does not use the census block groups that Mr. Tucek claims is the cause of the variation. HM 3.1 does not produce perfectly accurate wire center cost estimates, but they are more accurate estimates than the proprietary company cost model estimates, which do not even produce wire center cost estimates.

[2]Density groups are measured in lines per square mile.

[3]See the t-test data provided in the staff workpapers filed with direct testimony.

Q. **MR. TUCEK STATES HE HAS NOW DEVELOPED LOOP COSTS AT THE WIRE CENTER LEVEL. PLEASE COMMENT.**

A. Mr. Tucek has disaggregated the GTE CostMod output to the wire center level using the wire center loop distribution data. This exercise is the opposite of, and should not be confused with, first estimating wire center cost and then aggregating the wire center cost estimates to the density zone level. Staff's criticism of the company proprietary models is that the models do not estimate specific wire center costs that can be aggregated to the density zone level. Mr. Tucek does not address that criticism in his disaggregation exercise. Mr. Tucek's subsequent analysis of the disaggregated data show much lower variation in wire center level costs than the HM 3.1 cost estimates. From this observation he concludes that his disaggregated cost estimates are superior to the HM 3.1 and HAI 5.0a cost estimates. (See Responsive Testimony of David G. Tucek, page 30, lines 12-15.) Unfortunately, Mr. Tucek appears to be comparing apples and oranges. Since the wire center cost estimates are derived from the aggregate GTE CostMod estimates, the only variation in the wire center cost estimates is the variation between the wire center loop distributions which were used to spread the aggregated costs between wire centers within density zones and the variation between the density zone estimates themselves. Showing that the resulting variation in the GTE-NW wire center cost estimates is smaller than the variation between HM cost estimates for the wire centers does not somehow prove the disaggregated cost estimates are superior. Since the loop distributions and density zones cost estimates contained little variation to begin with, there is no wonder that the resulting wire center level estimates also showed little variation. Comparing the

variation in aggregated cost estimates to the variation in cost that occurs in estimating wire center specific costs is an apples and oranges comparison.

Q. **MR. TUCEK STATES THAT "THE HM 3.1 COSTS EXHIBIT AN INFERIOR RELATIONSHIP TO KNOWN COST DRIVERS SUCH AS LINES, SERVING AREA SIZE AND THE PROPORTION OF LONG LOOPS." (RESPONSIVE TESTIMONY OF DAVID G. TUCEK, PAGE 26, LINES 9-11.) PLEASE COMMENT.**

A. Rather than demonstrating that HM 3.1 cost estimates are inferior, Mr. Tucek's analysis validates staff's earlier analysis regarding the importance of distance in determining loop cost. A review of Mr. Tucek's analysis shows that he has discovered the same statistically significant relationship between density and distance as staff found and reported in direct testimony. In staff's analysis, the first "cost driver" is density which is measured as the number of lines per square mile of serving area. In Mr. Tucek's analysis, the number of lines and square miles of serving areas are also used but expressed separately. In staff's analysis, the second driver, distance, is measured as the average loop length in each wire center. In Mr. Tucek's analysis, distance is measured as the proportion of loops greater than twelve kilofeet.[4] While both measures of distance are imperfect, the results of both analyses are the same. That is, distance is a significant determinant of loop cost.

[4]The correlation between loop length and the percent of loops exceeding 12 kilofeet is 68 percent.

Q. **GTE-NW WITNESS TERRY DYE STATES THAT THE STAFF DISTANCE-SENSITIVE PROPOSAL WOULD NOT PROMOTE EFFICIENT COMPETITION WHILE PRESERVING UNIVERSAL SERVICE, WOULD INCREASE ARBITRAGE AND REDLINING, AND THAT RETAIL RATES AND USF WOULD HAVE TO BE DEAVERAGED AT THE SAME LEVEL. PLEASE COMMENT. (RESPONSIVE TESTIMONY OF TERRY DYE, PAGES 13-14.)**

A. Page 6 of staff's direct testimony contains an explanation of the economic rationale and benefits of a distance-sensitive loop rate structure. Neither Mr. Dye or other critics of the staff distance-sensitive proposal have denied or refuted that rationale. The discussion regarding redlining and arbitrage appear to be more related to inflammatory rhetoric than substantive discussion of the issues and, in any event, is addressed in the Responsive Testimony of Mr. Montgomery. Neither company has demonstrated that the conditions for economic arbitrage to exist have been met. Even if such a demonstration were made, arbitrage by definition is a temporal condition. U S WEST and GTE-NW both have Universal Service Fund (USF) mechanisms in place today via the terminating access charge USF element. Neither company has explained why the Commission should wait until a permanent mechanism is in place before proceeding with deaveraging. Staff believes that the question of whether retail rates need mirror the wholesale loop rate structure can be addressed after the wholesale structure is decided. As discussed in the testimony of NextLink witness Mr. Knowles, the unbundled loop is only one of the costs

a CLEC will incur in providing local exchange service to a customer. To suggest that a ILEC retail rate structure must mirror the CLEC loop rate structure ignores all of the other costs CLECs will incur to provide service as well as how the parties may choose to position themselves strategically in a competitive local exchange market.

Q. **WHAT IS STAFF'S POSITION REGARDING DEAVERAGED SWITCHING RATES?**

A. All parties oppose staff's proposal for deaveraging switching rates. The CLECs see only limited value in the proposal given the relatively small differences in rates between zones. (Responsive Testimony of W. Page Montgomery, page 17.) U S WEST and GTE-NW are opposed to the switching proposal based on HAI cost model issues, in particular, the regression used to develop wire center switch costs. (See Responsive Testimony of Jerrold Thompson, page 7; Responsive Testimony of David G. Tucek, page 24.) Staff notes that the equation was modified in its HAI 5.0a switching cost estimates to produce the $150 per line average cost which the Commission ordered in its Eighth Supplemental Order in this proceeding. Hence, we don't agree that the estimates are unusable. However, given the position of the parties overall, staff recommends that the Commission not adopt deaveraged switching rates in this proceeding.

Q. **HAS STAFF PREPARED AN ALTERNATIVE DISTANCE-SENSITIVE PROPOSAL?**

A. Yes. In response to issues raised by other parties regarding the number of rate elements

in staff's initial testimony, the use of non-company specific data and considering Mr. Montgomery's two-zone proposal, staff is presenting a revised distance-sensitive proposal. The revised proposal includes three density zones with three distance bands for a total of nine rate elements for GTE-NW and four density zones with three distance bands for a total of twelve rate elements for U S WEST. Distance-sensitive loop rates are calculated using both HAI 5.0a and HM 3.1 costs. The revised rates are shown in Exhibit TLS-9.

Q. **CLEC WITNESS W. PAGE MONTGOMERY DISCUSSES GUIDELINES FOR USING ZONE AVERAGE RATES AND DISTANCE-SENSITIVE RATES. (SEE RESPONSIVE TESTIMONY OF W. PAGE MONTGOMERY, PAGE 11.) PLEASE COMMENT.**

A. Mr. Montgomery proposes an "all or nothing" rule where CLECs would elect to use either the distance-sensitive rate schedule or an average zone rate schedule noting the approach is necessary to prevent adverse selection. (Responsive Testimony of W. Page Montgomery, page 11.) By "adverse selection," staff assumes Mr. Montgomery is referring to a CLEC leasing loops from the distance-sensitive schedule if the loop cost is less than the zone-average rate, and leasing loops from the zone-average schedule whenever the distance-sensitive rate is higher than the zone-average rate. Staff agrees that the proposed restrictions are a step in the right direction but we note that it still would be possible for adverse selection to occur, for instance, in cases where a parent company owns two or more CLECs. In such a case, one CLEC could use the average zone

schedule while the other CLEC used the distance-sensitive rate schedule. Hence the existence of the two rate schemes at the same time appears to be problematic. Staff recommends that the Commission adopt either a zone-average rate scheme or a distance-sensitive rate scheme, but not both.

Q. **PLEASE SUMMARIZE STAFF'S TESTIMONY AND RECOMMENDATIONS REGARDING THE DEAVERAGING OF UNBUNDLED NETWORK ELEMENTS.**

A. FCC rules require that states "shall establish different rates for elements in at least three defined geographic areas within the state to reflect geographic cost differences." (CFR § 51.507(f).) In direct testimony, staff identified two elements for deaveraging, loops and switching. Staff used existing HAI cost model density zone ranges to provide deaveraged loop cost estimates for U S WEST (four zones) and GTE-NW (five zones) as well as proposing a distance-sensitive rate structure within each of the zones containing a total of sixthy-three and eighty rate elements, respectively. In addition, staff provided a proposal to deaverage switching rates into three zones for U S WEST and four zones for GTE-NW. In responsive testimony, staff provided comparisons of its earlier zone average proposals for deaveraged loops using HM 3.1 cost estimates and provided three zone deaveraging proposals for loops using both HM 3.1 and HAI 5.0a cost estimates. In addition, staff recommended that the Commission reject the use of company proprietary cost models for establishing deaveraged rates, the use of zones which were not based on geographic cost differences and the use of a single statewide rate applicable to both

U S WEST and GTE-NW. In this testimony, staff has provided distance-sensitive deaveraged loop proposals containing nine rate elements for GTE-NW and twelve rate elements for U S WEST using both HM 3.1 and HAI 5.0a cost estimates. In addition, staff has responded to the issues and concerns raised by the other parties, indicated it would not recommend deaveraged switching rates, and recommends that either zone-average or distance-sensitive rates be adopted, but not both.

Q. **STAFF HAS MADE FOUR DEAVERAGED LOOP PROPOSALS FOR U S WEST AND GTE-NW. DOES STAFF RECOMMEND THAT A PARTICULAR PROPOSAL BE ADOPTED BY THE COMMISSION FOR DEAVERAGING LOOPS?**

A. Yes. Staff believes that the revised distance-sensitive proposals developed using the HAI 5.0a cost estimates is the best choice for deaveraging loop rates in Washington. If the objections to the use of HAI 5.0a cost estimates are upheld, staff recommends that revised distance-sensitive proposals that use the HM 3.1 cost estimates be adopted. Staff recommends the above proposal for the following reasons:

1. The density zones are determined objectively by reference to loop density zones, between which costs are significantly different.
2. The distance-sensitive rates are developed from a regression analysis that allows the effects of both density and distance to be reflected in the loop rates. When prices reflect the underlying cost characteristics of the

element, buyers receive rational price signals, promoting competition, and efficient choices of technology.

3. The revised loop proposals use only nine and twelve rate elements for GTE-NW and U S WEST respectively, which strikes a fair balance between administrative ease, customer identification issues, and implementation costs.

Q. **DOES THIS COMPLETE YOUR TESTIMONY?**

A. Yes.