

ISSUE DATE: June 2, 1999

DOCKET NO. P-999/M-97-909

ORDER VARYING RULE AND DENYING
RECONSIDERATION

STATE OF MINNESOTA PUBLIC UTILITIES COMMISSION

Edward A. Garvey	Chair
Joel Jacobs	Commissioner
Marshall Johnson	Commissioner
LeRoy Koppendrayner	Commissioner
Gregory Scott	Commissioner

In the Matter of the State of Minnesota's
Possible Election to Conduct Its Own
Forward-Looking Economic Cost Study to
Determine the Appropriate Level of Universal
Service Support

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PROCEDURAL HISTORY

On August 8, 1997, the Commission issued its ORDER ELECTING TO CONDUCT MINNESOTA-SPECIFIC COST STUDY in the current docket, the USF Generic Cost Docket.¹ On September 19 the Commission referred the matter to an administrative law judge (ALJ). The two principal cost studies in this docket are the Benchmark Cost Proxy Model (BCPM) and the HAI Model.

On December 17, 1997, AT&T Communications of the Midwest, Inc. (AT&T) and MCI metro Access Transmission Services, Inc. (MCI) filed HAI Model 5.0. The model used preprocessed geocoded data and clustering information from PNR and Associates of Jenkintown, Pennsylvania (PNR).

On January 7, 1998, Contel of Minnesota, Inc., d/b/a GTE Minnesota (GTE) filed its motion with the ALJ to compel discovery.

On January 16, 1998, GTE asked AT&T to produce the PNR data.

On January 28, 1998, AT&T/MCI filed HAI Model 5.0a.

¹In the Matter of the State of Minnesota's Possible Election to Conduct Its Own Forward-Looking Economic Cost Study to Determine the Appropriate Level of Universal Service Support (USF Generic Cost Docket).

On January 30, 1998, U S WEST Communications, Inc. (U S WEST) moved to exclude HAI 5.0a from the Universal Service Generic Cost Docket because AT&T had failed to provide access to the PNR data, rendering the model unverifiable. GTE joined the motion. On February 4, the ALJ denied the motion.

On February 25, 1998, AT&T/MCI filed a new HAI Model 5.0a. According to AT&T and the Department of Public Service (the Department), the new version corrected three errors that appeared in the prior version. On March 5, U S WEST asked the ALJ to exclude this filing on the grounds that the procedural schedule left U S WEST with insufficient opportunity to analyze it. GTE joined the motion.

On April 2, 1998, the ALJ issued the Report of the Administrative Law Judge on Selection of Cost Study (Report of the ALJ), recommending adoption of the HAI with modifications. The ALJ Report also granted the motion to exclude the February 25 version of the HAI.

On April 23, 1998, for the first time U S WEST sought to compel discovery of the PNR data, in the context of the U S WEST Generic Cost Docket.²

On April 28 and 29, 1998, the ALJ in the U S WEST Generic Cost Docket issued orders directing AT&T and MCI to authorize PNR to reveal certain data to U S WEST and the Department at PNR's premises.

On May 4, 1998, U S WEST announced its intentions to review PNR data in Pennsylvania on May 13-15, and filed a motion in the present docket for the Commission to defer selecting a cost proxy model until after the Commission had considered new information from PNR. On May 5, 1998, the Commission denied U S WEST's motion to defer consideration pending further discovery, citing the FCC-imposed May 26 deadline.

On May 12, 1998, the matter of selecting a cost proxy model came before the Commission. At this hearing, U S WEST dropped its objection to consideration of February 25 version of the HAI Model. The Commission adopted the February 25 HAI Model 5.0a with modifications.

At the same hearing, for the first time GTE moved for Commission authorization to review PNR data. The Commission granted GTE's motion and issued its order the same day.

On May 13-15, the Department, GTE and U S WEST reviewed PNR data in Jenkintown, Pennsylvania.

On June 4, 1998, the Commission issued its ORDER ADOPTING COST STUDY,

²In the Matter of a Generic Investigation of U S West Communications, Inc.'s Cost of Providing Interconnection and Unbundled Network Elements, Docket No. P-442, 5231, 3167, 466, 421/C1-96-1540 (U S WEST Generic Cost Docket).

memorializing its May 12 decision. On the same day the Commission issued its Order denying U S WEST's May 4 motion to defer decision until after the Commission considered new information from PNR.

On June 24, 1998, GTE and the Office of Attorney General's Residential and Small Business Utilities Division (OAG-RUD) moved for reconsideration of the June 4 Order. On June 25, 1998, U S WEST did likewise.

On June 15, 1998, AT&T/MCI, DPS, GTE and OAG-RUD filed replies.

The matter came before the Commission on May 4, 1999.

FINDINGS AND CONCLUSIONS

I. INTRODUCTION

As noted above, OAG-RUD, GTE and U S WEST each filed motions for reconsideration. The issues raised by OAG-RUD do not relate to the issues raised by GTE and U S WEST; therefore, the Commission will address the OAG-RUD issues separately, and address the GTE/U S WEST issues jointly.

II. OAG-RUD MOTION

OAG-RUD seeks reconsideration of a number of issues, including the merits of —

- using an average of the outputs from the adjusted HAI Model and adjusted BCPM rather than using the outputs of the adjusted HAI Model alone,
- reducing the projected cost of capital in the model(s),
- adjusting the ratio of aerial to buried and underground cable,
- adjusting the network operations expense and overhead factors, and
- allocating income tax expense on the basis of access lines rather than on the basis of plant investment.

The Commission addressed OAG-RUD's "blending" proposal in its Order Adopting Cost Study at 6. That order also adopted the Report of the ALJ. The Report addressed the "blending" proposal at ¶¶ 187-89 and Recommendation ¶ 1, the cost of capital at ¶¶ 144-46 and Recommendation ¶ 1(a), the aerial/underground/buried plant mix at ¶¶ 83-88 and Recommendation ¶ 1(e), the network operations expense and overhead factor at ¶¶ 158-62 and Recommendation ¶ 1(i), and the allocation of "non-facilities expenses" such as taxes *other than* income taxes, at ¶¶ 140-41, and in Recommendation ¶ 1(k). The ALJ did not address the allocation of income taxes specifically; rather, the choice to allocate income taxes in proportion to plant investment was made as part of the choice to adopt the HAI Model, because the HAI Model automatically allocates income taxes in this manner.

OAG-RUD placed special emphasis on its request to reconsider the allocation of income taxes. OAG-RUD argues that income taxes are not closely related to level of investment, and that the

Commission allocated “other taxes” in proportion to the number of access lines.

There is good reason for allocating income taxes in proportion to amount of investment. A local phone company must spend different amounts of money to provide different access lines. The company raises the money by borrowing (with a promise of repayment) and selling equity (with a promise of return on investment). Income tax codes treat debt repayment as an operating expense, so a company needn’t pay income taxes on revenues used for that purpose. But revenues that a company uses to pay return on investment generally are considered taxable income. In this sense, a company’s income tax costs are more closely related to the amount of its investment than to the number of its access lines.

On these points, the Commission finds no new issues warranting further development, no new and relevant evidence, and no errors or ambiguities in the original Order. The Commission concludes that the original decision is the one most consistent with the facts, the law, and the public interest. The Commission will decline to grant the OAG-RUD’s motion.

III. GTE AND U S WEST MOTIONS

Both GTE and U S WEST ask the Commission to grant their motions for reconsideration and remand the case to the ALJ, or at least to receive additional comments, before again approving the cost model’s method for estimating the amount of outside plant. The Commission will address these motions together.

A. Preliminary Matters

Before addressing the merits of the arguments, the Commission will discuss whether to consider U S WEST’s late-filed motion, and whether to take administrative notice of the Report of the ALJ in the U S WEST Generic Cost Docket.

1. Late-Filed Motion

The Commission notes that U S WEST filed its Motion for Remand and Reconsideration twenty-one days after the Commission’s Order Adopting Cost Study. Commission rules provide 20 days for filing a motion for rehearing or reconsideration.³ Therefore, U S WEST’s motion was untimely. But the rules also permit the Commission to vary time periods.⁴ No party has objected to the Commission receiving U S WEST’s motion. Finding no prejudice to any party or hardship to the Commission, the Commission will vary its rule and accept U S WEST’s filing.

2. Report of the ALJ in the U S WEST Generic Cost Docket

Many of the arguments raised by GTE and U S WEST were addressed by the Report of the

³Minn. Rules, part 7829.3000.

⁴Minn. Rules, part 7829.3100.

ALJ in the U S WEST Generic Cost Docket.⁵ In that docket, parties had opportunity to review the PNR data, file testimony, and participate in a workshop session with the ALJ before he issued his report.⁶

In oral argument, U S WEST emphasized the differences between the current docket, which involves selecting a cost model for universal service purposes, and the U S WEST Generic Cost Docket, which involved selecting a cost model for establishing the price of unbundled network elements. Regarding HAI's modeling of distribution plant, however, the similarities outweigh the differences. In both dockets, the Commission adopted the HAI Model. In both dockets, U S WEST filed the same testimony regarding PNR data. And the issues in both dockets are sufficiently similar for U S WEST to conclude that "it would be appropriate for the ALJ to also consider the new PNR data and HAI model deficiencies for the USF docket in the July 22, 1998 [U S WEST Generic Cost hearing] proceeding."⁷ Therefore, the Commission will take administrative notice of the ALJ's remarks regarding the PNR data in the Generic Cost Docket, and attach them as an appendix to this order.

B. Alleged Procedural Irregularities Warranting Reconsideration

GTE asks for reconsideration of all items in this docket, on the grounds that the Commission's Order Adopting Cost Study violated the Due Process Clause of the United States Constitution, and the FCC's Universal Service Order,⁸ ¶ 250(8), which provides that "[t]he cost study or model and all underlying data, formulae, computations, and software associated with the model must be available to all interested parties for review and comment." GTE's arguments are set forth below.

⁵Report of the ALJ (November 17, 1998).

⁶*Id.* at ¶ 58.

⁷U S WEST Motion for Remand and Reconsideration, ¶ 9.

⁸In the Matter of Federal-State Joint Board on Universal Service, CC Docket No. 96-45, Report and Order, FCC 97-157, 12 FCC Rcd 8776 (May 8, 1997), corrected by Errata, FCC 97-157 (June 4, 1997) (Universal Service Order).

1. GTE was prejudiced by being denied timely access to the PNR data.

GTE argues that “the ALJ ... denied [access to the PNR data] to GTE in this docket.”⁹ It is unclear to the Commission which action of the ALJ denied GTE access to the PNR data. According to the record of the case, GTE filed only one motion to compel discovery with the ALJ, and that occurred on January 7, 1998, before GTE ever asked to see the PNR customer location information. The ALJ cannot be faulted for failing to grant relief that GTE did not request.

GTE waited until May 12, 1998, to seek authorization from the Commission to view PNR data on the premises of PNR and Associates. The Commission cannot be faulted for being unresponsive to GTE’s concerns; it granted that motion and issued the order within hours.

Finally, even if GTE were deprived of timely access to the PNR data, the Commission is not persuaded that GTE was prejudiced thereby. The affidavit of GTE witness Christian Dippon tells the Commission what it could expect from granting a rehearing. The Commission will address factual claims below. Here, the Commission merely observes that Mr. Dippon does not make any substantive claims that were not also made by U S WEST in this docket and in the U S WEST Generic Cost Docket. The ALJ in that docket concluded that the parties’ review of the PNR data had had very little consequence. The resulting arguments and testimony were “based on information previously available ... or on information previously obtainable.... Nothing of substance was gained at PNR....”¹⁰ If the PNR data contributed nothing of substance to U S WEST’s arguments and GTE is making the same arguments, the Commission is left to doubt the relevance of that data to GTE, and doubt claims of prejudice resulting from the delay.

2. GTE was prejudiced by the admission of the January 28 version of the Hatfield Model.

The record demonstrates that proponents of the HAI Model have filed multiple updates in this docket. GTE argues that this fact caused it hardship, especially regarding the January 28 version. The record shows that the proponents of the BCPM, however, filed multiple updates as well. U S WEST filed BCPM 2.0 on October 24, 1997; BCPM 2.5 on November 24, 1997; BCPM 3.0 (without essential Local Exchange Routing Guide (LERG) data) on December 15, 1997; BCPM 3.0 (with LERG data) on January 7, 1998, and BCPM 3.1 on January 20, 1998. The time constraints of the case and the complexity of the facts made multiple filings inevitable.

⁹GTE Motion for Reconsideration at 5.

¹⁰U S WEST Generic Cost Proceeding, Report of the ALJ at ¶ 62.

Arguably the parties could have benefitted from having additional time in which to analyze the models. As noted in the Commission's June 4 Order Denying U S WEST's Motion to Defer, however, the FCC-imposed deadline limited the relief that the Commission could offer the parties. In turn, the resulting Commission-imposed deadline limited the relief that the ALJ could offer the parties.

The ALJ heard GTE's and U S WEST's motion to exclude the January 28 HAI Model from consideration. The ALJ balanced the competing demands and concluded that the parties had had sufficient time for preparation. The ALJ was in the best position to evaluate GTE's and U S WEST's arguments; the Commission will decline to second-guess his conclusions.

3. GTE was prejudiced by the Commission's adoption of the February 25 HAI Model after the ALJ had excluded it from consideration.

GTE contests the Commission's decision on May 12, 1998, to accept the February 25 HAI Model.¹¹ On May 12, the Commission faced a dilemma. The Commission had voted to adopt the HAI Model. But AT&T and the Department alleged that the January 28 version of the model contained certain errors, and no party disputed this assertion. Given the choice between adopting a version of the model with known errors, or a version which corrected those errors, the Commission selected the latter. The Commission is not persuaded that it acted inappropriately.

GTE argues that the ALJ's decision to exclude the February 25 HAI Model from consideration should have precluded the Commission from adopting the model on May 12, 1998.¹² Context provides the basis for understanding how the ALJ and the Commission reached different decisions. By February 25, 1998, the parties had no time to review the new HAI Model before arguing the merits before the ALJ; indeed, the procedural schedule provided no opportunity to argue the merits before the ALJ at all. In contrast, by the time the Commission rendered its decision adopting the February 25 HAI Model, the parties had had the model for more than ten weeks, and had just completed a hearing before the Commission on the relative merits of the various models. The Commission finds that the parties had had adequate time to prepare and opportunity to present argument.

The Commission is not persuaded that any procedural irregularities warrant reconsideration.

¹¹GTE Motion at 7.

¹²*Id.*

C. Alleged New Information Warranting Reconsideration

GTE and U S WEST each ask the Commission to remand this case to the ALJ for consideration of whether the new PNR information and HAI model deficiencies in calculating the amount of distribution facilities placed in the least dense, high cost areas justifies a modification of the HAI Model in this docket. Specifically, they argue that certain flaws in the HAI Model tend to underestimate the amount of distribution plant needed, that comparisons between the HAI outputs and the Minimum Spanning Tree (MST) calculation confirm this tendency, and that the FCC's recent decision precludes adoption of the HAI Model in any event.

1. Flaws in the HAI Model systematically underestimate the amount of distribution plant required.

The HAI Model, including the PNR preprocessing, identifies a cluster of customers, creates a polygon by drawing lines connecting the outermost customers in the cluster, and then converts the polygon into a rectangle of the same size for ease of further analysis. U S WEST argues that this process understates the amount of distribution plant required to serve those customers. Also, the HAI Model does not assume the need to deploy distribution plant out to the boundary of the rectangles; instead, it assumes the need to deploy distribution plant out to the innermost boundary of each lot within the rectangle. U S WEST argues that this practice also understates the amount of distribution plant required.

The ALJ found the HAI practices reasonable.¹³ The Commission agrees. In particular, the Commission finds no fault with the HAI modeling distribution plant to the innermost boundary of each lot. The model also provides for a length of cable, called a "drop," connecting the customer to the rest of the network.¹⁴ The length of this drop was vigorously litigated, and warrants no further exploration.

The fact that the HAI Model differs from the phenomenon it emulates is not surprising. The Commission does not expect cost models to measure the exact amount of cable needed to serve every specific customer. Rather, the purpose of the model is to ascertain the cost of serving customers generally. Of course, people are not interchangeable; a customer, upon learning that the phone cable was 100 feet too short to reach his house, would probably not be placated by learning that the cable to his neighbor was 100 feet too long. But dollars are interchangeable; if the model's estimate of the cost of serving the neighborhood is accurate in the main, then the model has done its job. The fact that a model variously underestimates and overestimates the amount of plant required in specific situations is not fatal; it is inevitable.

Moreover, the HAI Model's process for generating cluster rectangles, and for designing plant

¹³Report of the ALJ at ¶¶ 56-72.

¹⁴Report of the ALJ at ¶¶ 103-107.

within the rectangles, were set forth in the model's documentation.¹⁵ Specific reference to the model's rectangle methodology appears in the Report of the ALJ at ¶ 58. As the Report of the ALJ in the U S WEST Generic Cost Docket notes, the PNR data provides no new evidence to undercut the HAI Model's validity.¹⁶ The Commission is not persuaded that these arguments warrant reconsideration.

2. The HAI Model's estimates of the amount of distribution cable needed to connect various locations sometimes falls below the Minimum Spanning Tree calculation for connecting those locations.

GTE and U S WEST each note that the amount of outside plant modeled by the HAI Model is sometimes less than the amount predicted by a MST calculation. The MST measures dispersion. Contrary to its name, however, the MST does not calculate the minimum cable needed to serve a given array of locations. With this deficiency, the fact that the MST may occasionally produce a higher number than the PNR algorithm seems unremarkable. It is unclear to the Commission what benefit could be derived from a further exploration of the MST/HAI comparison.

Whatever the HAI Model's shortcomings, it projects the need for more cable in U S WEST's service area than the MST calculation does, and estimates longer loop lengths than does the BCPM. According to the Report of the ALJ in the U S WEST Generic Cost Docket, the chief consequence of reviewing the PNR data was to lend further support to the proposition that the HAI methodologies are reasonably accurate and meet all relevant requirements. *Id.* at ¶ 66. The Commission is not persuaded that allegations about comparisons between the HAI's output and the MST's output warrant reconsideration of the Commission's decision.

3. FCC's Fifth Report & Order precluded adoption of the HAI Model.

On October 28, 1998, the FCC issued its Fifth Report & Order,¹⁷ evaluating the HAI, BCPM and Hybrid Cost Proxy Model (HCPM). The FCC approved a cost model that differs from the model approved by the Commission. U S WEST urges the Commission to reconsider its choice of the HAI Model, at least insofar as it differs from the FCC's choice.

¹⁵See, for example, U S WEST Generic Cost Proceeding, Report of the ALJ at ¶¶ 61, 63-64.

¹⁶Report of the ALJ at ¶¶ 61-67.

¹⁷In the Matter of Federal-State Joint Board on Universal Service, CC Docket No. 96-45, Fifth Report & Order, FCC 98-279.

Although it set forth various requirements that cost models must meet, the FCC contemplated that states would develop different cost models.¹⁸ At the cost of considerable time and effort, this Commission undertook to develop a Minnesota-specific model. In its ORDER ELECTING TO CONDUCT MINNESOTA-SPECIFIC COST STUDY, the Commission identified three reasons for undertaking this task:

- The Commission wanted a cost study tailored to the needs of Minnesota.
- The Commission valued the opportunity to reconcile its choices in the current docket and in dockets to set prices for unbundled network elements.¹⁹
- The Commission was unable to evaluate the merit of the FCC's model for estimating the cost of service in Minnesota, because the FCC had not selected a model yet.

All of these reasons still apply. If the Commission were to reconsider and adopt the FCC's model, the Commission would 1) lose the opportunity to have a Minnesota-specific model, 2) lose the opportunity to consider the differences between its U S WEST Generic Cost Docket model and the Universal Service Generic Cost Docket model, and 3) still lack the ability to evaluate the FCC's model, because that model is still in development.

In recommending the adoption of the HAI Model, the ALJ concluded that it complied with the FCC's requirements. In its ORDER ADOPTING COST MODEL, the Commission affirmed that conclusion. The Commission has not yet been persuaded otherwise.

IV. Conclusion

The Commission has reviewed the record and heard the arguments of all parties.

The ALJ in the U S WEST Generic Cost Docket recommended that "the Commission deny U S WEST's request for reconsideration in the Universal Service proceeding because there is no new evidence supporting U S WEST's position on these issues."²⁰ The Commission concludes that the motions for reconsideration do not raise new issues warranting development, do not point to new and relevant evidence, do not expose errors or ambiguities in the original Order, and do not otherwise persuade the Commission that it should rethink its original decision. The Commission concludes that the original decision is the one most consistent with the facts, the law, and the public interest.

The Commission will vary its rule and receive U S WEST's late-filed motion for

¹⁸Universal Service Order at ¶ 248.

¹⁹Universal Service Order at ¶ 251 (encouraging states to reconcile the choice of a USF cost model with the cost model for pricing unbundled network elements).

²⁰U S WEST Generic Cost Docket, Report of the ALJ at ¶ 67.

reconsideration, and deny GTE's, OAG-RUD's and U S WEST's motions for reconsideration.

ORDER

1. The Commission varies Minn. Rules, part 7829.3000, to accept U S WEST's Motion for Remand and Reconsideration.
2. The motions for reconsideration by GTE, OAG-RUD and U S WEST are denied.
3. This Order shall become effective immediately.

BY ORDER OF THE COMMISSION

Burl W. Haar
Executive Secretary

(S E A L)

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APPENDIX

Excerpt from In the Matter of a Generic Investigation of U S West Communications, Inc.'s Cost of Providing Interconnection and Unbundled Network Elements, Docket No. P-442, 5231, 3167, 466, 421/C1-96-1540 (U S WEST Generic Cost Docket), Report of the Administrative Law Judge (received November 18, 1998) (footnotes omitted).

PNR Issues

58. U S West introduced several *ex parte* filings Sprint made with the FCC raising the issue of whether the HAI model estimated sufficient distribution plant to serve telephone subscribers in Nevada, particularly in the low density areas of the state. The ALJ then issued orders permitting U S West and the Department to obtain certain customer location data from PNR to investigate whether Sprint's allegations applied to the HAI model's estimation of costs in Minnesota. Following preliminary analysis by U S WEST and the Department on the information obtained from PNR, the ALJ permitted the parties to file supplemental direct testimony and replies and further ordered a workshop session to explore the matter.

59. The information US WEST obtained during the visit to PNR included the minimum spanning tree (MST) distances connecting customer locations for each HAI cluster in Minnesota, the length of the diagonal of the minimum bounding rectangle for each cluster, and information identifying each cluster and its associated wire center.

60. The MST distances were computed by a program developed by Stopwatch Maps. The MST is not the absolute minimum length of lines necessary to connect all customer locations within a cluster. It is actually a gauge of dispersion and is close to the minimum length of the lines necessary to connect all locations within an area without using additional connecting points. Because wireline telephone service must connect each customer to the telephone network, the MST distances could be a measure of the adequacy of the telephone cable lengths generated by the cost proxy models submitted in the case. However, the MST has never been used in that manner by telephone network engineers. Nevertheless, the FCC has chosen to use an MST technique as an optional method of designing distribution in its Universal Service platform.

61. U S WEST expert witnesses Dr. Emmerson and Dr. Duffy-Deno testified that their study of the PNR data and MST distances revealed two "flaws" in the HAI model. The first involves "[t]he conversion of PNR's irregular polygons into equivalent area rectangles [that] effectively compresses the size of the serving area so that HAI 5.0a underestimates the required amount of distribution distance." (Emphasis in original). The second has to do with the division of the equivalent area rectangle into rectangular lots that are served with branch and backbone cable that does not extend to the rectangle's boundary but instead stops one lot's distance from the boundary. *Id.* For low density clusters, this second "flaw" results in telephone facilities being concentrated in the centers of the equivalent area rectangles.

62. Both of these criticisms of HAI distribution plant design methodology were based on information previously available to U S WEST or on information previously obtainable by U S WEST. Nothing of substance was gained at PNR by the US WEST witnesses.

63. The process of locating the vertices of the irregular polygons that are then converted into equivalent area rectangles, is discussed in the HAI documentation. U S WEST could have requested more information about this process at any time.

64. The second "flaw" U S WEST "discovered" as a result of its visit to PNR was that the HAI model does not deploy distribution cable that touches the boundary of the equivalent area rectangle but instead stops one lot width from the boundary. This is exactly what the HAI documentation says the model does. When U S WEST witness Mr. Copeland criticized the HAI model for deploying too little distribution plant in his March 23, 1998, prefiled testimony and his April 23, 1998, live testimony, he revealed a full understanding of that aspect of the model. Neither U S WEST nor the Department learned anything new from their visit to PNR about how equivalent area rectangles were developed for use in the HAI model.

65. The additional evidence U S WEST produced could have been produced earlier had the company acted with reasonable diligence to obtain it. U S WEST claims the visit to PNR was necessary "to review the PNR clustering information." However, U S WEST did not produce any new information about the clustering process as a result of its visit. U S WEST only made measurements they could have made previously had they asked to do so. Dr. Fitzsimmons' testimony on special access, in so far as it went beyond discussing the methodology for implementing Mr. Legursky's recommendation for counting special access lines differently in the feeder plant than the distribution plant, was also not new evidence. None of the evidence offered by U S WEST changed its advocacy before the ALJ and the Company made no new recommendations as a result of the evidence.

66. It was the occurrence of long, narrow, diagonal clusters in Nevada that caused the alleged HAI clustering distortions of which Sprint complained to the FCC and that formed the basis for U S WEST's request and the Administrative Law Judge's order allowing the parties to visit PNR to check for similar problems here. But, as Dr. Emmerson testified, the U S WEST experts found no "Nevada-type" clusters in Minnesota. What he found was that there was some difference in the dispersion between the PNR locations and the HAI cluster-assumed locations. But, as Mr. Legursky testified, the additional evidence produce by the PNR visit is not "new" and certainly does nothing to discredit the HAI clustering and distribution design methodologies. On the contrary, the evidence from PNR and other evidence presented at the workshop following the PNR visit lend even further support to the conclusion that those methodologies are reasonably accurate and meet all relevant requirements. Mr. Legursky noted the apparent accuracy of the PNR methodologies. As discussed next, MCI and AT&T witnesses showed that HAI designs more than sufficient distribution when measured against any reasonable standard.

67. Because the evidence presented from the PNR visit weighs in favor of the HAI

proponents, the ALJ finds no reason to exclude it in this proceeding. However, the ALJ recommends that the Commission deny US WEST's request for reconsideration in the Universal Service proceeding because there is no new evidence supporting US WEST's position on these issues.

68. US WEST argues that in all main clusters where the HAI model's distribution plus drop lengths fall below minimum spanning tree distances, the distribution cable plus drop lengths should be adjusted upward to at least equal the minimum spanning tree distances. They estimate that the incremental increase to the HAI estimate of the average monthly unbundled loop cost for U S WEST's entire serving area in Minnesota that would be caused by changing the distribution lengths to equal the minimum spanning trees would result in a \$.79 upward adjustment to the cost of the unbundled loop generated by the HAI model, using the DPS proposed adjustments.

69. Alternatively, and in response to questions raised by the ALJ at the July 22, 1998 workshop, U S WEST proposed modifying the HAI model so that the distribution area lot depth is set at a maximum of two times the drop lengths used by the HAI model to place distribution facilities. In Dr. Fitzsimmons' view, such an adjustment would correct the HAI model's unrealistic compression of distribution facilities on the interior of the serving area rectangle and will result in the branch and distribution cable being placed closer to the outside boundary of rectangular serving area created by the HAI model. In other words, branch and backbone cable would be moved out closer to the locations where the HAI model assumes the customers are located. As a result of this adjustment, in each of the HAI density zones, the maximum distance from the termination of the branch and backbone cable to the perimeter of the serving area rectangle would be significantly reduced. Dr. Fitzsimmons has quantified the dollar value of this modification to be \$1.15.

70. ATT and MCI witnesses Mr. Denney and Mr. Pitkin demonstrated that, in fact, the HAI Model appropriately estimates the necessary cable to serve customers. Mr. Denney pointed out that the HAI Model estimates longer average loop lengths than both the BCPM and RLCAP. The HAI Model estimates a longer loop length for U S WEST as a whole and for the majority of density zones, including the first two density zones where U S WEST claims HAI's estimates are poor. BCPM's distribution cable lengths tend to be shorter than those estimated in the HAI Model, and its feeder lengths tends to be longer. The best comparison between the two models is average total loop length. A comparison of these numbers shows that HAI models a longer loop length than does BCPM.

71. Mr. Denney also compared the average loop lengths of RLCAP with those of HAI. RLCAP summarizes loop lengths by office size (very small, small, medium and large) and reports shorter average loop lengths than HAI for every office type. According to US WEST, RLCAP cost estimates are based on a sample of actual loop lengths.

72. In adopting its Universal Service platform, the FCC decided that its model should make the best use of the customer location information by designing outside plant to those locations, rather than to evenly dispersed locations in each cluster. In its analysis, the FCC found that HAI,

and BCPM to some extent, were likely to underestimate distribution in low density areas. It chose to use the HCPM methodology, which designs outside plant to within a few hundred feet of every actual or surrogate customer location. Until the HCPM was proposed, no model had the ability to do such detailed design.

73. The ALJ concludes that the evidence in this record demonstrates that the HAI designs adequate outside plant and makes a reasonably accurate determination of loop costs on a wire center basis. The fact that some clusters may be low and some high provides additional argument that deaveraging below the wire center level should not be attempted. It does not mean that there should be one-sided adjustments to bring the low clusters up as U S WEST proposes. Therefore, the ALJ does not recommend either of U S WEST's proposed fixes. The Commission may wish to track the development of the FCC's distribution design methodology for future modifications of the Minnesota model, but it is necessary to proceed now with the available models to establish prices for UNEs so that competition can proceed.