IN THE MATTER OF INVESTIGATION INTO U.S. WEST COMMUNICATION, INC.'S COMPLIANCE WITH CERTAIN WHOLESALE PRICING REQUIREMENTS FOR UNBUNDLED NETWORK ELEMENTS AND RESALE DISCOUNTS.

DOCKET NO. T-00000A-00-0194

NOTICE OF FILING STAFF'S PHASE II-A SWITCHING REBUTTAL TESTIMONY

Arizona Corporation Commission Staff ("Staff") hereby files the redacted rebuttal testimony of William Dunkel; in the above-referenced matter. Unredacted versions are being provided to the Hearing Division and those parties who are signatories to the Protective Agreement herein.

RESPECTFULLY SUBMITTED this 27th day of September, 2001.

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The Original and ten (10) copies of the foregoing filed this 27th day of September, 2001 with:

Docket Control
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Public Version

...
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By: Assistant to Maureen A. Scott
BEFORE THE
ARIZONA CORPORATION COMMISSION

IN THE MATTER OF INVESTIGATION
INTO QWEST CORPORATIONS’
COMPLIANCE WITH CERTAIN WHOLESALE
PRICING REQUIREMENTS FOR
UNBUNDLED NETWORK ELEMENTS
AND RESALE DISCOUNTS

DOCKET NO. T-00000A-00-0194
PHASE II-A

DIRECT TESTIMONY AND SCHEDULES
OF
WILLIAM DUNKEL

ON BEHALF OF
THE STAFF OF THE ARIZONA CORPORATION COMMISSION

SEPTEMBER, 2001

PUBLIC COPY
I. STATEMENT OF QUALIFICATIONS AND INTRODUCTION

Q. PLEASE STATE YOUR NAME AND YOUR BUSINESS ADDRESS.
A. My name is William Dunkel. My business address is 8625 Farmington Cemetery Road, Pleasant Plains, Illinois 62677.

Q. WHAT IS YOUR PRESENT OCCUPATION?
A. I am a consultant providing services in telephone rate proceedings. I am the principal of William Dunkel and Associates, which was established in 1980. Since that time, I have regularly provided consulting services in telephone regulatory proceedings throughout the country. I have participated in over 130 state regulatory telephone proceedings before over one-half of the state commissions in the United States, as shown on Appendix A attached hereto. I have participated in telephone regulatory proceedings for over 20 years.

I currently provide, or in the past have provided, services in telecommunications proceedings to the following clients:

The Public Utility Commission or the Staffs in the States of:

Arkansas
Arizona
Delaware
Georgia
Guam
Illinois
Maryland
Mississippi
Missouri
New Mexico
U.S. Virgin Islands
Utah
Virginia
Washington
Kansas

The Office of the Public Advocate, or its equivalent, in the States of:
Q. ON WHOSE BEHALF ARE YOU TESTIFYING?
A. I am testifying on behalf of the Staff of the Arizona Corporation Commission (ACC).

Q. HAVE YOU PREVIOUSLY PARTICIPATED IN ANY PROCEEDINGS IN ARIZONA?
A. Yes. Most recently, I filed testimony on behalf of the ACC Staff in Phase II of this proceeding, Docket No. T-00000A-00-0194. In addition, I filed testimony on behalf of the ACC Staff in the general rate case, Docket No. T-01051B-99-0105. I also filed rebuttal testimony in Docket No. T-01051B-97-0689 on behalf of the ACC Staff regarding depreciation. In addition, I conducted a Cost of Service Study on behalf of the Staff of the Arizona Corporation Commission in an undocketed matter preparing a cost study pertaining to Qwest Corporation (formerly US West Communications (USWC)). I was a rate design witness in general rate case, Docket No. E-1051-93-183, involving USWC on behalf of the ACC Staff.
1. Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?
2. A. By agreement among several of the parties, certain issues in Phase II were deferred to this phase (Phase II-A) of this proceeding. The purpose of my testimony is to present Staff's recommendation pertaining to the issues that are being addressed in this phase of this proceeding. In addition, I will respond to the Direct testimony filed by Qwest in this phase of this proceeding.

II. STAFF RECOMMENDATION

9. Q. WHAT RATES DOES STAFF RECOMMEND FOR THE SERVICES BEING ADDRESSED IN PHASE II-A OF THIS PROCEEDING?
10. A. The rates that Staff recommends are shown on Schedule WD-1 attached hereto.

III. MODEL USED AND INPUTS

14. Q. WHAT MODEL DID STAFF USE IN ARRIVING AT THE STAFF RECOMMENDED RATES?
15. A. Staff used the same model it used in Phase II of this proceeding, which is the HAI 5.2a model (Hatfield).

19. Q. PRIOR TO THIS PROCEEDING, THE ACC HAD ESTABLISHED UNE RATES IN DECISION NO. 60635 DATED JANUARY 30, 1998. WHAT MODEL DID THE ACC RELY ON IN THAT DECISION?
20. A. Throughout that Decision, the ACC repeatedly relied on the Hatfield model. In addition, the usage portion of the FCC Synthesis Model relies heavily on the HAI model.

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1 Docket No. U-3021-96-448 et. al.
Q. WHAT INPUTS TO THE MODEL DID STAFF UTILIZE?

A. Staff used the inputs that the ACC had chosen in its Decision No. 60635. In that Decision, the ACC adopted a number of input values. For example, the ACC adopted 50% support facilities sharing with other utilities. In this proceeding, I used those same input values as determined by the ACC. For those inputs that were not addressed by the ACC in Decision No. 60635, I used the inputs as determined by the FCC. The FCC held extensive proceedings to determine the appropriate input values. As a result of that extensive analysis, the FCC in its 10th Order specified the values to be used for model inputs. (Order FCC 99-304) The FCC used those input values in the FCC Model that was used to determine the amount of federal universal service support for non-rural carriers. There are hundreds of inputs to these models. The inputs Staff utilized are the inputs that have been determined to be appropriate by the regulators. In Phase II, Staff also utilized the HAI 5.2a model, used the ACC approved inputs, and used the FCC inputs for those items that the ACC had not addressed. The costs that result from using the ACC and FCC inputs in the HAI 5.2a model are shown on Schedule WD-2.

IV. OVERHEAD COSTS

Q. WHAT TREATMENT OF OVERHEAD COST DOES STAFF PROPOSE?

A. Staff recommends the same treatment of overhead cost that it recommended in Phase II of this proceeding. As Staff discussed in Phase II of this proceeding, there are a number of problems with the expenses as proposed by Qwest. In Decision No. 60635, the ACC selected a 15% overhead factor. This 15% factor included the attributed, joint and
common overhead costs. The Arizona Court in the Jennings order did not remand that 15% factor.\(^3\)

I recommend that the 15% overhead factor adopted by the Commission in Decision No. 60635 be used in this proceeding. This factor is applied to the “direct” cost. This 15% factor specifically includes what Qwest calls the “attributed,” and “common” costs.

In the prior Phase II of this proceeding, Qwest tried to claim that the 15% factor includes only “common” overhead, and did not include the “attributed” costs. However, this Qwest position misstates the Commission Order. The Commission Order specifically stated:

\[
\text{Therefore, we will adopt an overhead cost factor, including attributed, joint and common costs, of 15 percent.}^4
\]

In addition to the clear wording of the ACC’s Order, it was also apparent from the discussion in the Order that this Commission’s selected factor did include the attributed cost. For example,

\[
\text{In its Reply Brief, U S WEST claimed that only the 5 percent factor was overhead, while the 22 percent is attributed costs.}^5
\]

This makes it very clear that the 15% factor does not include just the “common” costs, because Qwest itself stated that the “common” cost was only 5%. Clearly, the 15% factor includes more than just the “common” costs.

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\(^2\) Page 20, ACC Decision No. 60635.
\(^3\) Jennings, 46 F. Supp. 2d 1004, 6, May 4, 1999 hereinafter referred to as the “Jennings Order.”
\(^4\) Page 13, Decision No. 60635.
\(^5\) Page 12, Decision No. 60635.
The factors that Qwest used in its cost studies in this proceeding generally result in a ** ** overhead increase over the direct costs. This difference in overhead by itself would result in a Staff recommended rate that is ** ** below the Qwest recommended rate, in addition to any other differences other than overhead that may exist.  

Q. WHAT COST OF MONEY DID STAFF UTILIZE?

A. Staff used the 9.61% overall cost of money and associated capital structure from the ACC’s March 30, 2001 decision in the general rate proceeding, Decision No. 63487. Qwest’s testimony in this phase of this proceeding states they also utilized the 9.61% overall cost of money from that Commission Decision.  

Q. WHAT DEPRECIATION RATES DID STAFF UTILIZE?

A. Staff utilized the depreciation rates that are calculated using the lives, net salvage, and other parameters as determined by the ACC in the most recent depreciation case, Docket No. T-01051B-97-0689.

V. FILL FACTOR

Q. WHAT FILL FACTOR DID QWEST USE IN ITS COST STUDIES?

A. The fill factors that Qwest used varied. Qwest used fill factors as low as ** **.  

\[
(100 \text{ direct} + 15 \text{ overhead (ACC Staff)})/(100 \text{ direct} + ** ** \text{ overhead (Qwest)}) = 115/** ** = ** ** of Qwest rate. 
\]

7 Brigham Direct, Phase II-A, page 7, line 14.

8 Page 7, Qwest Cost Study 5635 Collocation: Remote Terminal, “Space Utilization Factor.”
In Decision No. 60635, the ACC did not address all fill factors, but for the fill factors that it did address, the ACC selected fill factors that were significantly higher than what Qwest has proposed. In that prior case, Qwest had claimed that for cable “approximately 35% of its plant is currently in use.” The Commission adopted the fill factors that were used in the Hatfield model, which were 71.5% for feeder, and approximately 51% for distribution cable, after sizing for standard cables was considered. For similar reasons, Staff believes Qwest’s use of the fill factor in the current study is inappropriate. Staff has replaced it with a 61.25% fill factor to be more consistent with the prior ACC Order.

VI. OTHER QWEST ERRORS

Q. WERE THERE OTHER ERRORS IN QWEST’S STUDIES?

A. Yes. In the cost studies Staff reviewed in detail, there were other obvious errors that improperly increased the cost. For example, the “Collocation: Remote Terminal” cost study includes a calculation of the cost of a “cabinet” that would be installed outdoors. That cabinet would house certain equipment. That “cabinet” is in effect the “building” for the equipment that it houses. However, the Company increased that cabinet investment by a “building” factor. Such “building” factors are the way that the cost of the buildings that house equipment are added onto the cost of the equipment. Therefore, Qwest calculated the cost of the cabinet, which is a form of a “building”, and then

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9 Page 16, Decision No. 60635.  
10 Page 16, Decision No. 60635.  
11 This is the average of the 71.5% and 51% fill factors that the Commission found to be appropriate.
increased that as if that outdoor cabinet was inside a building. It is not. Qwest is
effectively double charging for the building/cabinet.

Q. HAVE YOU CORRECTED THE COLLOCATION: REMOTE TERMINAL STUDY
FOR THE ABOVE-REFERENCED PROBLEMS?

A. My revised calculation:

1. Changes the space utilization factor from Qwest's ** ** factor to 61.25%;
2. Utilizes the 15% overhead factor. The Qwest factors had the effect of increasing
the costs by approximately ** ** for overheads.
3. Eliminates the building factors, since that cost was already directly included as
the cost of the cabinet (which is effectively the building).
4. Uses the cost of money and income tax factors that are based upon a 9.61% cost
of money, and used the depreciation expense that is determined using the Commission
prescribed depreciation parameters. In some cases, the factors that Qwest used were
slightly different than the figures that are properly calculated using these inputs.

The result of this analysis is a Staff proposed non-recurring charge of $406.50 for remote
collocation “space” (per standard mounting unit) as compared to Qwest’s proposed rate
of $868.13.12 The corrected recurring rate for this item is 63 cents, as compared to
Qwest’s proposal of $1.35, as is shown on Schedule WD-3.

12 Qwest Exhibit RHB-1, page 1, Item 8.8, attached to Mr. Brigham’s Direct testimony in Phase II-A.
Q. WHAT HAS QWEST PROPOSED FOR NON-RECURRING RATES?

A. As shown on Qwest Exhibit RHB-1, Qwest has proposed numerous non-recurring rates. For example, for the first Analog Port\textsuperscript{13}, Qwest proposes a non-recurring charge of $145.57. Qwest’s non-recurring cost studies generally consist of presenting estimates of the time that each function would be required, multiplied by the loaded labor rate. Qwest weights the cost by Qwest’s estimate of the “probability” that function would occur. For example, the Qwest non-recurring cost study for the “Analog Port” is attached as Schedule WD-4.

Because some of the key inputs are based upon one’s best judgement, the resulting cost results may vary greatly. For example, for the “Analog Port” Qwest alleges a non-recurring cost of ** **, whereas AT&T/Worldcom/XO (Joint Intervenors) determined the non-recurring installation cost for the same item is $1.68.\textsuperscript{14} Qwest cost studies generally assume a relatively large amount of manual order activities by Qwest personnel, whereas the Joint Intervenors assume automated data transfer from the CLECs to Qwest.

It certainly appears that some of the time estimates and probabilities that Qwest has assumed are on the high side. For example, as shown on page 2 of Schedule WD-4,

\textsuperscript{13} Analog Line Side Port, first port. Qwest Exhibit RHB-1, page 1.
\textsuperscript{14} Exhibit RL-2, line 36, attached to Mr. Lathrop’s Direct testimony in Phase II of this proceeding. Also see page 20 of Exhibit MH-1R attached to the Summary Testimony of Michael Hydock in Phase II of this proceeding. AT&T calculates the disconnect separately, as being $1.57 non-recurring. Even if the installation and disconnect are considered together, as Qwest does, the non-recurring cost for the installation and disconnection of an Analog Port is either $3.25 using AT&T’s cost analysis, or ** ** using Qwest’s cost analysis.
Qwest assumed that it would require an average of ** of manual effort to
“obtain telephone numbers”, with a probability of “one.” (The probability of “one”
means this function would always occur.) It certainly is logical that obtaining a
telephone number is a procedure that could be computerized.

On the other hand, the Joint Interveners non-recurring numbers are very likely on the low
side. They assume the computerized interface between the CLECs and Qwest operates
with virtually no fallout that requires manual processing. Certainly an automated
interface is the goal, but I do not believe it is reasonable to assume virtually 100%
successful automated interface. In my opinion, the correct number is between the Joint
Interveners’ and Qwest numbers. Since the goal is to have a computer interface between
the CLECs and Qwest, I believe the appropriate non-recurring costs are closer to the Joint
Interveners’ numbers than to Qwest’s numbers. The reasonable assumption is an
automated interface with some minor percent falling out, (and therefore requiring manual
intervention). The Joint Interveners’ study is closer to this than is Qwest’s study.

Qwest’s study assumes significant manual effort required on all orders, and includes very
large time estimates for those manual functions, such as the previously referenced **
"to ‘obtain telephone numbers.” The current non-recurring charge for the
analog line port is $42.58. This is clearly within the range the above analysis produces.
Therefore, I recommend the current non-recurring rate of $42.58 for the analog port be
continued, as is shown on Schedule WD-5.15
The current rate is approximately 30% of the rate that Qwest has proposed. It is also several times the rate that the Joint Interveners propose.

It should be noted that the all rates (including non-recurring) should be at least ** below the Qwest proposal, as a result of replacing the overhead factors that Qwest used with the ACC ordered 15% overhead factor, as previously discussed.

VIII. FEATURES

Q. PLEASE COMMENT ON THE CURRENT FEATURE RATES.

A. Currently, the interconnection rates in effect for Qwest in Arizona include the cost of features in the “port” recurring cost, and include no additional recurring charge for features. There is also generally no separate non-recurring charge for features. In Phase II of this proceeding, certain intervenors proposed the continuation of this practice. In Phase II, the sponsors of the HAI (Hatfield) model stated that the feature cost was already incorporated in the “port” cost in the HAI model, and therefore they believed no additional charge for features was appropriate.16

In its past filings in Phase II, Qwest proposed recurring rates for features, but in its filing in this Phase II-A, Qwest has proposed no non-recurring charges for features, but instead proposes to include the feature costs in the port rate.17

15 If there is a concern that some CLECs might fax in orders instead of using the more efficient electronic interface, a lower rate could be established for those orders that are presented through the electronic interface, with a higher rate for those orders that are sent to Qwest from the CLECs by fax.

16 Page 43, Hydock Direct; Page 31, Denney Direct; Phase II.
Staff proposes to continue the current practice of incorporating the feature cost into the port charge, thereby requiring no separate recurring charge for features.

Therefore, the key question becomes how much additional cost, if any, should be added into the port cost that is calculated using the HAI model. The HAI port cost includes the cost of at least the initial programming for features, according to the parties presenting the HAI model. The switching inputs that the FCC adopted include the costs incurred at installation, and within three years of installation, but do not include later upgrades. The FCC expenses are based on actual expenses.

Qwest's Exhibit RHB-3 shows the summary of the additional costs that Qwest proposes to include in the recurring port charge for features. Exhibit RHB-3 shows Qwest includes significant costs for "Centrex 21" features. However, the list of services that are being offered to the CLECs, as shown on Exhibit RHB-1, does not show "Centrex 21" as being one of the services being offered. Therefore, "Centrex 21" costs should not be included in any additional features cost. In addition, Qwest calculates the feature cost per line from the one study as 65 cents per line. Qwest also calculates a 51 cent feature cost from a different study. The cost studies that Qwest provided do not provide any explanation as to why the sum of these two calculations of features should be added to the port costs that are derived from the Hatfield model, which already includes some feature costs. Another problem is that in its "Capital Lease" study, the Company uses a

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17 Qwest Exhibit RHB-1 attached to Mr. Brigham's Direct testimony in Phase II-A.
18 Page 31, Denney Direct, Phase II.
20 See Qwest Exhibit RHB-3.
factor which marks up direct costs by approximately ** ** for overheads. I believe a
15% markup for attributed, joint, and common costs, which the Commission ordered in
Decision No. 60635, is appropriate, as discussed elsewhere.

Q. WHAT ADDITIONAL COSTS DO YOU RECOMMEND BE ADDED FOR
FEATURES TO THE “PORT” COSTS AS DETERMINED FROM THE HAI MODEL?

A. As the above discussion demonstrates, I believe the appropriate number is below Qwest’s
proposed addition, but greater than the Joint Intervenors’ proposal, which in Phase II was
no addition. The current recurring charge for the Analog Line Side Port is $1.61. The
recurring port cost as calculated from the Hatfield model utilizing the ACC and FCC
inputs is $1.10 per month per line, as shown on Schedule WD-2 attached hereto. If the
current rate was continued, this would effectively include a 51 cent per line per month
allowance for the cost of providing features, above the feature cost that is already
included in the HAI port cost. This is a reasonable figure that is well within the range
established by the other parties in this proceeding. There is no valid reason from the
evidence in the record to modify this rate. Staff recommends the current recurring rate of
$1.61 for line port be continued. This rate includes feature costs. Therefore, no
additional recurring charge for features should be imposed.

IX. CONCLUSION

Q. WHAT DO YOU RECOMMEND?

A. I recommend that the ACC adopt the rates shown on Schedule WD-1 for the reasons set
forth above.
Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes.

21 Schedule WD-17 attached to Rebuttal testimony of William Dunkel in Phase II.
William Dunkel, Consultant
8625 Farmington Cemetery Road
Pleasant Plains, Illinois 62677

Qualifications

The Consultant is a consulting engineer specializing in telecommunication regulatory proceedings. He has participated in over 140 state regulatory proceedings as listed on Appendix A attached hereto.

The Consultant has provided cost analysis, rate design, jurisdictional separations, depreciation, expert testimony and other related services to state agencies throughout the country in numerous telecommunication state proceedings. The Consultant has also provided depreciation testimony to state agencies throughout the country in several electric utility proceedings.

The Consultant made a presentation pertaining to Video Dial Tone at the NASUCA 1993 Mid-Year Meeting held in St. Louis.

In addition, the Consultant also made a presentation to the NARUC Subcommittee on Economics and Finance at the NARUC Summer Meetings held in July, 1992. That presentation was entitled "The Reason the Industry Wants to Eliminate Cost Based Regulation--Telecommunications is a Declining Cost Industry."

The Consultant provides services almost exclusively to public agencies, including the Public Utilities Commission, the Public Counsel, or the State Department of Administration in various states.

William Dunkel currently provides, or in the past has provided, services in telecommunications proceedings to the following clients:

The Public Utility Commission or the Staffs in the States of:

- Arkansas
- Arizona
- Delaware
- Georgia
- Guam
- Illinois
- Maryland
- Mississippi
- Missouri
- New Mexico
- Utah
- Virginia
- Washington
- U.S. Virgin Islands
Appendix A

The Office of the Public Advocate, or its equivalent, in the States of:

- Colorado
- District of Columbia
- Georgia
- Hawaii
- Illinois
- Indiana
- Iowa
- Maine
- Maryland
- Missouri
- New Jersey
- New Mexico
- Ohio
- Pennsylvania
- Utah
- Washington

The Department of Administration in the States of:

- Illinois
- Minnesota
- South Dakota
- Wisconsin

In April, 1974, the Consultant was employed by the Illinois Commerce Commission in the Electric Section as a Utility Engineer. In November of 1975, he transferred to the Telephone Section of the Illinois Commerce Commission and from that time until July, 1980, he participated in essentially all telephone rate cases and other telephone rate matters that were set for hearing in the State of Illinois. During that period, he testified as an expert witness in numerous rate design cases and tariff filings in the areas of rate design, cost studies and separations. During the period 1975-1980, he was the Separations and Settlements expert for the Staff of the Illinois Commerce Commission.

From July, 1977 until July, 1980, he was a Staff member of the FCC-State Joint Board on Separations, concerning the "Impact of Customer Provision of Terminal Equipment on Jurisdictional Separations" in FCC Docket No. 20981 on behalf of the Illinois Commerce Commission. The FCC-State Joint Board is the national board which specifies the rules for separations in the telephone industry.

The Consultant has taken the AT&T separations school which is normally provided to the AT&T personnel.

The Consultant has taken the General Telephone separations school which is normally provided for training of the General Telephone Company personnel in separations.

Since July, 1980 he has been regularly employed as an independent consultant in telephone rate proceedings across the nation.

He has testified before the Illinois House of Representatives Subcommittee on Communications, as well as participating in numerous other schools and conferences pertaining to the utility industry.
Prior to employment at the Illinois Commerce Commission, the Consultant was a design engineer for Sangamo Electric Company designing electric watt-hour meters used in the electric utility industry. The Consultant was granted patent No. 3822400 for a solid state meter pulse initiator.

The Consultant graduated from the University of Illinois in February, 1970 with a Bachelor's of Science Degree in Engineering Physics with emphasis on economics and other business-related subjects. The Consultant has taken several post-graduate courses since graduation.
RELEVANT WORK EXPERIENCE OF
WILLIAM DUNKEL

ARIZONA
- U.S. West Communications
  Wholesale cost/UNE case
  General rate case
  Depreciation case
  General rate case
  Cost of Service Study
  Docket No. T-0000A-00-0194
  Docket No. E-1051-93-183
  Docket No. T-01051B-97-0689
  Docket No. T-01051B-99-0105

ARKANSAS
- Southwestern Bell Telephone Company
  Docket No. 83-045-U

CALIFORNIA (on behalf of the California Cable Television Association)
- General Telephone of California
  I.87-11-033
- Pacific Bell
  Fiber Beyond the Feeder Pre-Approval Requirement

COLORADO
- Mountain Bell Telephone Company
  General Rate Case
  Call Trace Case
  Caller ID Case
  General Rate Case
  Local Calling Area Case
  General Rate Case
  General Rate Case
  General Rate Case
  General Rate Case
  Measured Services Case
  Docket No. 96A-218T et al.
  Docket No. 92S-040T
  Docket No. 91A-462T
  Docket No. 90S-544T
  Docket No. 1766
  Docket No. 1720
  Docket No. 1700
  Docket No. 1655
  Docket No. 1575
  Docket No. 1620
- Independent Telephone Companies
  Cost Allocation Methods Case
  Docket No. 89R-608T

DELAWARE
- Diamond State Telephone Company
  General Rate Case
  General Rate Case
  Report on Small Centrex
  General Rate Case
  Centrex Cost Proceeding
  PSC Docket No. 82-32
  PSC Docket No. 84-33
  PSC Docket No. 85-32T
  PSC Docket No. 86-20
  PSC Docket No. 86-34
DISTRICT OF COLUMBIA
- C&P Telephone Company of D.C.
  Depreciation issues
  Formal Case No. 926

FCC
- Review of jurisdictional separations
  FCC Docket No. 96-45

FLORIDA
- BellSouth, GTE, and Sprint
  Fair and reasonable rates
  Undocketed Special Project

GEORGIA
- Southern Bell Telephone & Telegraph Co.
  General Rate Proceeding
  Docket No. 3231-U
  General Rate Proceeding
  Docket No. 3465-U
  General Rate Proceeding
  Docket No. 3286-U
  General Rate Proceeding
  Docket No. 3393-U

HAWAII
- GTE Hawaiian Telephone Company
  Depreciation/separations issues
  Docket No. 94-0298
  Resale case
  Docket No. 7702

ILLINOIS
- Genesee Telephone Company
  EAS case
  Docket No. 99-0412
- Central Telephone Company
  (Staunton merger)
  Docket No. 78-0595
- General Telephone & Electronics Co.
  Usage sensitive service case
  Docket Nos. 98-0200/98-0537
  General rate case (on behalf of CUB)
  Docket No. 93-0301
  (Usage sensitive rates)
  Docket No. 79-0141
  (Data Service)
  Docket No. 79-0310
  (Certificate)
  Docket No. 79-0499
  (Certificate)
  Docket No. 79-0500
- General Telephone Co.
  Docket No. 80-0389
- Ameritech (Illinois Bell Telephone Company)
  Alternative Regulation Review
  Docket No. 98-0252
  Area code split case
  Docket No. 94-0315
  General Rate Case
  Docket No. 83-0005
  (Centrex filing)
  Docket No. 84-0111
  General Rate Proceeding
  Docket No. 81-0478
  (Call Lamp Indicator)
  Docket No. 77-0755
  (Com Key 1434)
  Docket No. 77-0756
  (Card dialers)
  Docket No. 77-0757
  (Concentration Identifier)
  Docket No. 78-0005
ILLINOIS (CONT.)

(Voice of the People) Docket No. 78-0028
(General rate increase) Docket No. 78-0034
(Dimension) Docket No. 78-0086
(Customer controlled Centrex) Docket No. 78-0243
(TAS) Docket No. 78-0031
(Ill. Consolidated Lease) Docket No. 78-0473
(EAS Inquiry) Docket No. 78-0531
(Dispute with GTE) Docket No. 78-0576
(WUI vs. Continental Tel.) Docket No. 79-0041
(Carle Clinic) Docket No. 79-0132
(Private line rates) Docket No. 79-0143
(Toll data) Docket No. 79-0234
(Dataphone) Docket No. 79-0237
(Com Key 718) Docket No. 79-0365
(Complaint - switchboard) Docket No. 79-0380
(Porta printer) Docket No. 79-0381
(General rate case) Docket No. 79-0438
(Certificate) Docket No. 79-0501
(General rate case) Docket No. 80-0010
(Other minor proceedings) Docket No. various
- Home Telephone Company Docket No. 80-0220
- Northwestern Telephone Company Docket No. 79-0142
Local and EAS rates Docket No. 79-0519
EAS

INDIANA

- Public Service of Indiana (PSI) Cause No. 39584
  Depreciation issues
- Indianapolis Power and Light Company Cause No. 39938
  Depreciation issues

IOWA

- U S West Communications, Inc. Docket No. RMU-95-5
  Local Exchange Competition Docket No. RPU-95-10
  Local Network Interconnection Docket No. RPU-95-11
  General Rate Case
KANSAS
- Southwestern Bell Telephone Company
  Commission Investigation of the KUSF Docket No. 98-SWBT-677-GIT
- Rural Telephone Service Company
  Audit and General rate proceeding Docket No. 00-RRLT-083-AUD
  Request for supplemental KUSF Docket No. 00-RRLT-518-KSF
- Southern Kansas Telephone Company
  Audit and General rate Proceeding Docket No. 01-SNKT-544-AUD

MAINE
- New England Telephone Company
  General rate proceeding Docket No. 92-130

MARYLAND
- Chesapeake and Potomac Telephone Company
  General rate proceeding Docket No. 7851
  Cost Allocation Manual Case Case No. 8333
  Cost Allocation Issues Case Case No. 8462
- Verizon Maryland
  PICC rate case Case No. 8862
  USF case Case No. 8745

MINNESOTA
- Access charge (all companies) Docket No. P-321/CI-83-203
- U. S. West Communications, Inc. (Northwestern Bell Telephone Co.)
  Centrex/Centron proceeding Docket No. P-421/91-EM-1002
  General rate proceeding Docket No. P-321/M-80-306
  Centrex Dockets MPUC No. P-421/M-83-466
                      MPUC No. P-421/M-84-24
                      MPUC No. P-421/M-84-25
                      MPUC No. P-421/M-84-26
  General rate proceeding MPUC No. P-421/GR-80-911
  General rate proceeding MPUC No. P-421/GR-82-203
  General rate case MPUC No. P-421/GR-83-600
  WATS investigation MPUC No. P-421/CI-84-454
  Access charge case MPUC No. P-421/CI-85-352
  Access charge case MPUC No. P-421/M-86-53
  Toll Compensation case MPUC No. P-999/CI-85-582
  Private Line proceeding Docket No. P-421/M-86-508
- AT&T
  Intrastate Interexchange Docket No. P-442/M-87-54

MISSISSIPPI
- South Central Bell
  General rate filing Docket No. U-4415
MISSOURI
- Southwestern Bell
  General rate proceeding TR-79-213
  General rate proceeding TR-80-256
  General rate proceeding TR-82-199
  General rate proceeding TR-86-84
  General rate proceeding TC-89-14, et al.
  Alternative Regulation TC-93-224.TO-93-192
- United Telephone Company
  Depreciation proceeding TR-93-181
- All companies
  Extended Area Service TO-86-8
  EMS investigation TO-87-131

NEW JERSEY
- New Jersey Bell Telephone Company
  General rate proceeding Docket No. 802-135
  General rate proceeding BPU No. 815-458
  General rate proceeding OAL No. 3073-81
  Phase I - General rate case BPU No. 8211-1030
  General rate case OAL No. PUC10506-82
  General rate case BPU No. 848-856
  General rate case OAL No. PUC06250-84
  Division of regulated BPU No. TO87050398
  from competitive services OAL No. PUC 08557-87
  Customer Request Interrupt Docket No. TT 90060604

NEW MEXICO
- U.S. West Communications, Inc.
  E-911 proceeding Docket No. 92-79-TC
  General rate proceeding Docket No. 92-227-TC
  General rate proceeding Case No. 3008
  General rate/depreciation proceeding Case No. 3325
  Subsidy Case
  Subsidy Case

OHIO
- Ohio Bell Telephone Company
  General rate proceeding Docket No. 79-1184-TP-AIR
  General rate increase Docket No. 81-1433-TP-AIR
  General rate increase Docket No. 83-300-TP-AIR
  Access charges Docket No. 83-464-TP-AIR
- General Telephone of Ohio
  General rate proceeding Docket No. 81-383-TP-AIR
- United Telephone Company
  General rate proceeding Docket No. 81-627-TP-AIR
<table>
<thead>
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<th>Appendix A</th>
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**OKLAHOMA**
- Public Service of Oklahoma
  Depreciation case
  Cause No. 96-0000214

**PENNSYLVANIA**
- GTE North, Inc.
  Interconnection proceeding
  Docket No. A-310125F002
- Bell Telephone Company of Pennsylvania
  Alternative Regulation proceeding
  Automatic Savings
  Rate Rebalance
  Docket No. P-00930715
  Docket No. R-953409
  Docket No. R-00963550
- Enterprise Telephone Company
  General rate proceeding
  Docket No. R-922317
- All companies
  InterLATA Toll Service Invest.
  Docket No. I-910010
- GTE North and United Telephone Company
  Local Calling Area Case
  Docket No. C-902815

**SOUTH DAKOTA**
- Northwestern Bell Telephone Company
  General rate proceeding
  Docket No. F-3375

**TENNESSEE**
(on behalf of Time Warner Communications)
- BellSouth Telephone Company
  Avoidable costs case
  Docket No. 96-00067

**UTAH**
- U.S. West Communications (Mountain Bell Telephone Company)
  General rate case
  Docket No. 84-049-01
  General rate case
  Docket No. 88-049-07
  800 Services case
  Docket No. 90-049-05
  General rate case/
  incentive regulation
  Docket No. 90-049-06/90-049-03
  General rate case
  Docket No. 92-049-07
  General rate case
  Docket No. 95-049-05
  General rate case
  Docket No. 97-049-08

**VIRGIN ISLANDS, U.S.**
- Virgin Islands Telephone Company
  General rate case
  Docket No. 264
  General rate case
  Docket No. 277
  General rate case
  Docket No. 314
  General rate case
  Docket No. 316
Appendix A

VIRGINIA
- General Telephone Company of the South
  Jurisdictional allocations
  Separations
  Case No. PUC870029
  Case No. PUC950019

WASHINGTON
- US West Communications, Inc.
  Interconnection case
  General rate case
  Docket No. UT-960369
  Docket No. UT-950200
  Analyzed the local calling areas in the State

WISCONSIN
- Wisconsin Bell Telephone Company
  Private line rate proceeding
  General rate proceeding
  Docket No. 6720-TR-21
  Docket No. 6720-TR-34
<table>
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<tr>
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**STAFF RECOMMENDED RATES**
Cost results from the HAI 5.2a Model using the ACC inputs from ACC Decision No. 60635, and for those inputs not addressed by the ACC, using the inputs the FCC adopted in its 10th Order (FCC Order 99-304).
<table>
<thead>
<tr>
<th></th>
<th>Annual Cost</th>
<th>Units</th>
<th>Unit Cost</th>
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<tbody>
<tr>
<td><strong>End office switching</strong></td>
<td>$130,175.079</td>
<td>2,059,751 switched lines</td>
<td>$0.0010 per line/month</td>
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<tr>
<td>Line Port</td>
<td>35,062.524</td>
<td>62,141,833,320 actual minutes</td>
<td>$0.00147 per actual minute (for rate per DEM, see &quot;Cost detail sheet&quot;)</td>
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<tr>
<td>Non-Line Port</td>
<td>91,122,555</td>
<td>511 links</td>
<td>$26.08 per link/month</td>
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<td><strong>Signaling network elements</strong></td>
<td>$5,012,332</td>
<td>172,224 STP</td>
<td>$0.0006 per signaling message</td>
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<tr>
<td>Links</td>
<td>2,537,787</td>
<td>1,094,682,605 TCAP+ISUP msgs</td>
<td>$0.0006 per query</td>
</tr>
<tr>
<td>SCP</td>
<td>2,302,521</td>
<td>2,115,213,400 TCAP queries</td>
<td>$0.00109 per query</td>
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<tr>
<td><strong>Transport network elements</strong></td>
<td></td>
<td></td>
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<tr>
<td>Dedicated</td>
<td>$8,749,095</td>
<td>365,789 trunks</td>
<td>$2.07 per DS-0 equivalent per month</td>
</tr>
<tr>
<td>Sw/Sp Transport</td>
<td>3,443,840</td>
<td>138,464 trunks</td>
<td>$0.0021 per minute</td>
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<tr>
<td>Switched</td>
<td>5,305,455</td>
<td>213,325 trunks</td>
<td>$0.0045 per minute</td>
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<tr>
<td>Special</td>
<td>19,263,003</td>
<td>351,789 trunks</td>
<td>$0.0065 total per minute</td>
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<tr>
<td>Transmission Terminal</td>
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<tr>
<td>Common</td>
<td>$1,319,573</td>
<td>3,703,400,627 minutes</td>
<td>$0.00034 per minute per leg (orig or term)</td>
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<tr>
<td>Direct</td>
<td>$4,563,127</td>
<td>16,120,464,725 minutes</td>
<td>$0.00031 per minute</td>
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<tr>
<td>Tandem switch</td>
<td>$1,963,948</td>
<td>3,322,868,975 minutes</td>
<td>$0.00053 per minute</td>
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<tr>
<td>Operator systems</td>
<td>$6,414,122</td>
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<tr>
<td>Public Telephones</td>
<td>$4,919,883</td>
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<tr>
<td>Total (w/ Public)</td>
<td>$7,52,434,212</td>
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<tr>
<td>Total cost of switched network elements (w/o Public)</td>
<td>$19.51 per line/month</td>
<td></td>
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</table>
SCHEDULE WD-3 CONTAINS INFORMATION CLAIMED TO BE PROPRIETARY BY QWEST. THEREFORE, IT HAS BEEN DELETED FROM THIS TESTIMONY
SCHEDULE WD-4 CONTAINS INFORMATION CLAIMED TO BE
PROPRIETARY BY QWEST. THEREFORE, IT HAS BEEN DELETED
FROM THIS TESTIMONY