BEFORE THE SOUTH DAKOTA PUBLIC UTILITIES COMMISSION

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| IN THE MATTER OF DETERMINING PRICES FOR UNBUNDLED NETWORK ELEMENTS (UNEs) IN QWEST CORPORATION'S STATEMENT OF GENERALLY AVAILABLE TERMS (SGAT) | ) | DOCKET NO. TC01-098 |

QWEST CORPORATION

REBUTTAL TESTIMONY

OF

D. M. (MARTI) GUDE

July 28, 2003

# TESTIMONY INDEX

# EXECUTIVE SUMMARY

D. M. (Marti) Gude is employed by Qwest as a Director - Cost Accounting. In this position, she is responsible for various regulatory and management accounting functions. Her responsibilities include the development of TELRIC-based cost study factors and preparing and analyzing other studies that Qwest uses for cost accounting, regulatory filings, and issues relating to deregulation.

Ms. Gude responds to the testimony of Mr. Peter J. Gose, presented on behalf of the Staff of the Public Utilities Commission of South Dakota. She rebuts Mr. Gose on issues relating to:

- the use of Product Management and Sales costs in Qwest's cost studies;
- the use of direct and common cost factors from other states;
- the use of a "current cost to booked cost" ("CC/BC") ratio to develop cost factors;
- the appropriate productivity factor for use in TELRIC studies; and
- the Cost of Capital.

## I. IDENTIFICATION OF WITNESS

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

**A.** My name is D. M. (Marti) Gude. My business address is 1314 Douglas-on-the-Mall, 13th Floor, Omaha, Nebraska.

**Q. HAVE YOU PREVIOUSLY PROVIDED TESTIMONY IN THIS PROCEEDING?**

**A.** Yes. I filed direct testimony in this proceeding on October 15, 2002.

## II. PURPOSE OF TESTIMONY

**Q. WHAT IS THE PURPOSE OF YOUR REBUTTAL TESTIMONY IN THIS PROCEEDING?**

**A.** My testimony responds to several points made in the testimony of Mr. Peter J. Gose, presented on behalf of the Staff. I will address incorrect theories, assumptions, and factual errors in his analysis relating to the treatment of costs for product management and sales functions, his reliance on other state commission-ordered direct and common cost factors, the use of a "current cost to book cost" (CC/BC) approach in determining

cost factors, issues relating to the appropriate productivity factor to include in a TELRIC study and his recommendation for changing the cost of capital used in the ICM study filed by Qwest.

## III. ISSUES REGARDING THE TESTIMONY OF PETER J. GOSE

### • General Observations

**Q. WHAT SPECIFIC RECOMMENDATIONS DOES MR. GOSE MAKE RELATING TO THE EXPENSE FACTORS USED IN QWEST'S ICM MODEL?**

A. Mr. Gose specifically recommends only three changes to the expense factors used in the Qwest ICM model. First, he recommends that expense factors be recalculated using CC/BC restated investment values. Second, he recommends the use of a 6.5 percent productivity factor instead of the 5.0 percent factor that Qwest uses. Third, he recommends lowering the debt portion of Qwest's cost of capital component in processing ICM.

**Q. DID MR. GOSE DISCUSS ANY OTHER ISSUES RELATING TO QWEST'S ICM COST FACTORS?**

A. Yes. Mr. Gose discussed the applicability of marketing and business fees factors. However, after discussing Qwest's ICM methodology and factors associated with such

costs, he did not recommend any specific changes in the handling of these costs. Nevertheless, because his testimony on this point is filled with errors, I respond in order to set the record straight.

**Q. WILL YOU BE ADDRESSING ALL OF THESE ISSUES IN YOUR TESTIMONY?**

A. Yes. I will first address Mr. Gose's testimony and issues relating to marketing and business fees costs assigned to UNE services. I will then address the CC/BC and productivity adjustments proposed by Mr. Gose. I will conclude with a discussion of Mr. Gose's debt cost issue. For each issue, I will point out the errors in Mr. Gose's analyses and recommendations and discuss why his proposed adjustments violate TELRIC principles.

**Q. BEFORE WE GET INTO THE SPECIFIC ISSUES OF YOUR TESTIMONY, BRIEFLY DESCRIBE WHAT COST FACTORS ARE AND WHY THEY ARE USED IN TELRIC COST STUDIES.**

A. The purpose of a TELRIC cost model is to quantify a company's forward-looking cost of operations, including both investment and operating expense components. The quantification of these costs can then be used to determine the costs applicable to the provision of individual Interconnection/Unbundled Network Elements (UNE) services

provided in a wholesale environment under the provisions of the 1996 Telecommunications Act (the Federal Act). To properly quantify these costs, TELRIC cost models, including Qwest's ICM filed in this proceeding, typically rely on forward-looking direct investment estimates and current cost relationships, adjusted for expected future variables such as productivity (cost savings) and inflation. Although cost study approaches often vary, TELRIC models typically develop forward-looking operating expenses using investment and expense-based factors through the use of relational formulas, such as expense-to-investment, expense-to total-cost, or expense-per- access line ratios (these relational formulas are commonly referred to as "factors"). These factors – based on their developmental methodology, or a prescribed sequential order – are then applied to forward-looking investments, direct cost forecasts or the number of modeled access lines to obtain the total TELRIC costs for individual products / services. In the case of Qwest's ICM cost study, the development of cost factors is described in some detail in the Expense Factors Module - TELRIC User Manual filed with Qwest's ICM cost study results.

- **Marketing and Business Fees**

**Q. MR. GOSE EXPRESSES CONCERN OVER CERTAIN COST COMPONENTS CONTAINED IN QWEST'S RECURRING AND NON-RECURRING COST STUDIES. ARE HIS CONCERNS VALID?**

A. No. Although he makes no specific recommendation, Mr. Gose questions Qwest's inclusion of marketing (*i.e.*, product management and sales) and business fees costs in determining directly assigned costs for wholesale services. His argument is devoid of facts. In fact, all he really does is to repeat an argument he made as a WorldCom witness in Part D of Washington's cost docket proceeding.[1] As he did in that proceeding, Mr. Gose contends here that "aside from minimal occasions for answering CLEC questions, Qwest should not have to provide for much, if any, product management or sales expense for recurring or non-recurring charges for certain UNEs."[2] He fails to disclose however, that the Washington Commission rejected his argument in that case.

Mr. Gose provides no facts of any kind to support his conclusion. Further, his testimony demonstrates a lack of understanding of the many activities that Qwest's wholesale organization performs for CLECs – activities that are far more than an occasional response to a question. There are distinct and necessary product management and sales costs that any efficient carrier must incur to provide wholesale services to CLECs and these costs must be recognized in a properly prepared TELRIC cost study. The Washington Commission reached that same conclusion when it ruled that such costs are *properly included* in the cost factors that are used in recurring and

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1 See *In the Matter of the Continued Costing and Pricing of Unbundled Network Elements, Transport, and Termination,* Docket No. UT-003013 Part D, Direct Testimony of Peter J. Gose on behalf of WorldCom, Inc. dated December 21, 2001, at 2 – 3.

2 See Peter J. Gose Direct Testimony of June 16, 2003 in this proceeding at 4.

non-recurring TELRIC cost studies.[3] This Commission should likewise recognize the need to include these costs in its TELRIC analysis.

**Q. DOES QWEST'S ICM COST STUDY FILED IN THIS PROCEEDING LIMIT PRODUCT MANAGEMENT AND SALES COSTS TO THOSE COSTS THAT ARE WHOLESALE-RELATED?**

A. Yes it does. Although FCC 47 CFR 32 rules require that all (retail-related, as well as wholesale-related) Product Management and Sales costs be recorded in either Account 6611 – Product Management or Account 6612 – Sales, Qwest's ICM cost study employs organizational structure and/or work function identifier methodologies to isolate the wholesale-related costs recorded in each of these accounts, which are then used in the ICM product management and sales cost factor creation process (the isolation of wholesale-related product management and sales costs is also described in Qwest's Expense Factors Module – TELRIC User Manual filed in support of its cost studies).

**Q. TO GIVE THIS ISSUE PROPER PERSPECTIVE, PLEASE QUANTIFY THE AMOUNT OF WHOLESALE PRODUCT MANAGEMENT AND SALES**

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3 See In the Matter of the Pricing Proceeding for Interconnection, Unbundled Element, Transport and Termination, and Resale, Docket No. UT – 960369, et al. *TWENTY-FIFTH SUPPLEMENTAL ORDER*, dated May 19, 2000, page 22, ¶ 126, and In the Matter of the Continued Costing and Pricing Proceeding for Interconnection, Unbundled Element, Transport and Termination, Docket No. UT –

**COSTS THAT QWEST INCLUDES IN ITS RECURRING AND NON-RECURRING COST STUDIES.**

**A.** The amount of wholesale product management and sales costs included in each recurring or non-recurring cost study is actually quite small. In real dollars, these costs only add approximately $.03 per dollar of direct cost.

**Q. BRIEFLY EXPLAIN WHY WHOLESALE PRODUCT MANAGEMENT COSTS ARE TREATED AS DIRECTLY ASSIGNED COSTS AND WHY THEY ARE APPROPRIATELY INCLUDED IN QWEST'S TELRIC COST STUDIES.**

**A.** Product management costs are discussed in Qwest's Expense Factors Module – TELRIC User Manual filed in support of its cost studies. This documentation explains why specific product management expenses are necessary for the delivery of wholesale products and services. The documentation also demonstrates that a variety of Account 6611 - Product Management functions are "wholesale" in nature and would be required even if Qwest had no retail operations. For example, Qwest's wholesale Carrier Market Unit is dedicated to serving the needs of interexchange

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003013, *THIRTEENTH SUPPLEMENTAL ORDER*; Part A, dated January 31, 2001 at page 6, ¶ 7 and pages 85 – 86, ¶ 260 - 261.

carriers and CLECs in order to provide these customers with wholesale switched and dedicated access, as well as unbundled and resale products.

CLECs are typically sophisticated users of complex and evolving telecommunications products and services. As a result, Qwest's wholesale product teams are required to expend substantial resources in meeting the various needs of these increasingly sophisticated customers. Qwest's Carrier Market Unit is dedicated solely to providing wholesale service to these customers. In so doing, it incurs wholesale costs that are separately identified and recorded as "Marketing - Product Management" costs under Part 32 accounting rules. These are actual recorded costs associated with wholesale UNE-P, resale and unbundled services, and are the specific costs Qwest uses to determine the appropriate cost factors to identify wholesale product management costs. And, since recurring and non-recurring activities typically go hand-in-hand, it is appropriate to include these costs in the pricing of both recurring and non-recurring cost elements.

Wholesale market unit personnel are dedicated solely to meeting the needs of Qwest's "wholesale" customers. While Mr. Gose characterizes these functions as "retail-like" in nature, they are clearly separate from retail functions conducted to support Qwest's end-users needs. Qwest's wholesale and retail customers are two separate and unique groups of customers with vastly different needs regarding the products and services Qwest provides. The fact is that the product management costs included in these

studies are incurred by employees who only service wholesale customers and whose entire work efforts are directed to interacting with those wholesale customers. None of these costs are "retail" in nature.

**Q. WHAT ARE THE SPECIFIC FUNCTIONS PERFORMED BY QWEST'S WHOLSALE PRODUCT MANAGERS?**

A. Qwest's wholesale product managers are exclusively involved in assisting sales managers with activities such as the initiation of a CLEC's wholesale service, trouble resolution, billing reconciliation, rate and cost implementation, changes to operating support systems and product performance issues. They also perform product development work that support only "wholesale" services. For example, they are heavily involved with developing and implementing product methods and procedures for wholesale products and developing rate list filings for wholesale services. Other wholesale costs include investigating the market to determine product and service potential, market demand, and product and service demand reaction to multiple variables, including services sold to CLECs. Wholesale product managers often participate in direct meetings with wholesale customers, affirmatively explaining various product-related issues and answering the customers' questions. They conduct impromptu customer training related to wholesale products—and they likewise explain the applications of the variety of wholesale products. Whenever CLEC customers have questions about the terms and

conditions of their interconnection agreements with Qwest, company personnel are available to do the necessary research and make the required explanations. In addition, Qwest employees perform wholesale product management functions when they establish new interconnection contracts, negotiate prices, provide rate sheet documentation, and provide the host of other services needed by their CLEC clients.[4]

These CLEC-related wholesale activities occur on a daily basis. Thus, Qwest's wholesale product managers perform a variety of "*wholesale*" duties every day to serve CLEC customers. In fact, because wholesale product management functions are performed for a smaller number of customers, the amount of cost incurred in delivering wholesale services can, on a per unit basis, exceed the cost incurred in delivering large customer base retail services like basic exchange residential. Given the significance of the role that Qwest's product mangers play in a CLEC's wholesale service delivery, such costs are appropriately categorized as being wholesale-related costs. Only the retail-related costs that Qwest has identified through its organizational reporting structure are properly excludable from UNE, interconnection, and non-recurring rates. By suggesting the exclusion of *all* product management costs, Mr. Gose's proposal fails to meet TELRIC principles. TELRIC

4 Mr. Craig Morris provides expanded testimony in this proceeding wherein he describes the wholesale-related product management functions performed by Qwest in serving and delivering UNE-related services to CLECs.

clearly requires the inclusion of legitimate and necessary costs of doing business -- costs that any efficient carrier providing wholesale services would incur.

Thus, contrary to Mr. Gose's speculative conclusion, Qwest's current cost levels clearly demonstrate that Qwest incurs wholesale-related product management costs and that product management costs *are not* 100 percent retail in nature. The wholesale portion of these costs is appropriately included in TELRIC costing. Like the Washington Commission, this Commission should rule that it is appropriate to include "wholesale-related" product management costs in the cost factors used in Qwest's TELRIC recurring and non-recurring studies.

**Q. BRIEFLY DESCRIBE THE SALES COSTS THAT QWEST INCURS IN SELLING WHOLESALE PRODUCTS AND EXPLAIN WHY THESE COSTS SHOULD ALSO BE USED IN DEVELOPING RECURRING AND NON-RECURRING COSTS IN QWEST'S COST STUDIES.**

A. Like product management costs, the "wholesale" nature of certain sales costs is explained in Qwest's Expense Factors User Manual. In the wholesale environment, end-user customer-related sales costs are merely replaced by sales costs that Qwest incurs for the sole purpose of daily interactions with CLECs -- interactions that are *required* to provide wholesale, unbundled services to CLECs. Qwest utilizes separate and distinct wholesale and retail sales teams to ensure a proper focus on the specific

needs of its end-user and wholesale customers, and to avoid CLEC criticism relating to "access to information" issues, or allegations over their concerns regarding potentially unfair competitive advantages in the retail marketplace.

Qwest must perform many of the same sales functions it performs for its retail end-users in connection with servicing CLECs. However, Qwest's ICM cost study factor for sales expense only reflects the sales-related tasks that are specifically needed to provide "wholesale" products. For example, Qwest wholesale sales agents are the first line of contact with its wholesale customers and they must generate sales proposals and negotiate contracts with the CLECs, assist with order handling, respond to their service-related inquiries and requests, answer questions pertaining to the account and/or access to information, handle pricing inquiries, establish and monitor implementation of interconnection agreements, assist with special requests, and respond to CLEC complaints (a more complete listing of Qwest's wholesale sales-related activities can be found on Qwest's web site[5]).

5 See the Account Team/Sales Executive and Service Managers – V5.0 History Log Description at Qwest.com, which describes the Qwest Account Team and the services provided to wholesale customers. (See http://qwest.com, select Wholesale, then Customer Service, then CLEC & Reseller Customer Service, then Wholesale Customer Contact Web Page, then Sales Executive and Service Manager, then Account Manager or access directly by typing URL:http://www.qwest.com/wholesale/clecs/accountmanagers.html).

These are but a few of the many and varied sales functions performed by Qwest's Account Team and Sales Executives/Managers.[6] As I mentioned regarding product management costs, recurring and non-recurring activities go hand-in-hand, and thus, contrary to the beliefs of Mr. Gose, it is entirely appropriate to include such costs in a TELRIC cost study and to recover these costs from the pricing of both recurring and non-recurring cost elements.

**Q. WHAT ARE BUSINESS FEES, AND WHY IS IT PROPER TO INCLUDE THESE COSTS IN A TELRIC STUDY?**

A. Business Fees consist of the Operating – Other Taxes that are recorded in Account 7240. Although they are recorded in this account, property taxes are not included in the development of Qwest's Business Fees factor since these taxes are treated in ICM as an investment-related expense. In the 2000-based expense factors study employed in ICM filed in this proceeding, the only business fees included were approximately $226,000 for South Dakota PUC and FCC fees. Business fees like these are legitimate costs of either a wholesale or retail business and, as such, it is proper to include them in determining Qwest's wholesale and retail rates.

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6 Mr. Craig Morris provides expanded testimony in this proceeding wherein he describes the wholesale-related sales functions performed by Qwest in serving and delivering UNE-related services to CLECs.

**Q. DOES MR. GOSE EXPLAIN WHY BUSINESS FEES SHOULD BE EXCLUDED FROM THE EXPENSE FACTORS USED IN A TELRIC STUDY?**

A. No, Mr. Gose only mentions business fees twice in his testimony (at pages 4 and 6), and then only to suggest they not be included. He merely defines Qwest's cost category of "Marketing Costs" as including business fees. With no factual support, he suggests that cost factor development and the application of factors associated with certain marketing costs may be "out of place". His position on business fees is unclear and he has provided no factual evidence to support excluding them from recovery. There is no basis for any kind of exclusion of business fees from the TELRIC studies at issue in this case.

**Q. MR. GOSE REFERS TO WORLDCOM'S POSITION BEFORE THE WASHINGTON COMMISSION REGARDING MARKETING AND BUSINESS FEE COSTS. HOW DID THE WASHINGTON COMMISSION RULE THAT THESE COSTS ARE TO BE HANDLED?**

A. The Washington Commission ruled against Mr. Gose and the WorldCom position. In 2000, the Washington Commission's order stated:

> Therefore, ***we approve the use*** of the administrative, product management, and business fee expense loaders in U S WEST's

TELRIC studies.[7] (Emphasis added)

This position was subsequently reaffirmed in 2002 by the ALJ in his initial order in Washington's most recent cost docket. In that order, the ALJ reaffirmed, for a second time, the proper *"inclusion"* of such costs. In December 2002, the Washington Commission approved the ALJ's decision, and the inclusion and continued use of these costs in determining wholesale pricing.[8]

**Q. MR. GOSE ALSO STATES THAT THE APPLICATION OF FACTORS FOR THESE DIRECTLY ASSIGNED PRODUCT MANAGEMENT, SALES AND BUSINESS FEES COSTS FOR NON-RECURRING COST STUDIES DO NOT COMPORT WITH TELRIC PRINCIPLES SET FORTH IN FCC RULE § 51.505. IS HIS INTERPRETATION OF THIS RULE CORRECT?**

A. No. Rule 51.505 allows for the inclusion of a reasonable portion of shared (attributable) and common costs in TELRIC pricing. Mr. Gose appears to suggest that

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7 See *In the Matter of the Pricing Proceeding for Interconnection, Unbundled Element, Transport and Termination, and Resale*, Docket No. UT – 960369, et al. *TWENTY-FIFTH SUPPLEMENTAL ORDER*, dated May 19, 2000, page 22, ¶ 126.

8 See the ALJ's initial Order *In the Matter of the Continued Costing and Pricing of Unbundled Network Elements, Transport, and Termination,* Docket No. UT-003013, Forty-First Supplemental Order; Part D Initial Order; Establishing Nonrecurring And Recurring Rates For UNEs, dated October 11, 2002, at 23 - 26. See also the Commission's approval and Order *In the Matter of the Continued Costing and Pricing of Unbundled Network Elements, Transport, and Termination,* Docket No. UT-003013 Forty-Fourth Supplemental Order; Part D Final Order Establishing Nonrecurring And Recurring Rates For Unbundled Network Elements dated December 20, 2002 at 14.

TELRIC studies should include only direct investment and expense-based costs and should exclude directly assigned costs. He seems to believe that these direct investment and expense-based costs should be the only costs loaded with an allocation of forward-looking support asset and expense, and common costs. However, directly assigned costs (*e.g.*, the marketing and business fee costs he questions) are very much a part of the TELRIC elements to which support asset and expense, and common costs apply. Qwest's ICM costing methodologies employ an approach that directly identifies wholesale product management and sales costs incurred; these costs, along with investment-based costs, must be loaded with support asset and expense, and common costs. This treatment of attributable and common costs is consistent with the FCC's pronouncement in its *Local Competition* First Report and Order, which states:

> Directly attributable forward-looking costs also include the incremental costs of shared facilities and operations. ..... More broadly, certain shared costs that have conventionally been treated as common costs (or overheads) shall be attributed directly to the individual elements to the greatest extent possible. The forward-looking costs directly attributable to local loops, for example, shall include not only the cost of the installed copper wire and telephone poles but also the cost of payroll and other back office operations relating to the line technicians, in addition to other attributable costs.[9]

Mr. Gose's attempt to exclude support and common costs related to directly assigned costs -- such as product management and sales costs -- violates this clear FCC

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9 See FCC 96-325, the First Report & Order *In The Matter of Implementation of the Local Competition Provisions in the Telecommunications Act of 1996*, Section VII. Pricing Of Interconnection And Unbundled Elements, at ¶ 682.

directive.

**Q. IF IT WERE DETERMINED THAT PRODUCT MANAGEMENT, SALES AND BUSINESS FEE COSTS WERE NOT TO BE RECOVERED FROM NON-RECURRING COST ELEMENTS IN THIS PROCEEDING, HOW WOULD QWEST'S ICM COST STUDIES BE AFFECTED?**

A. If Qwest's ICM costing methodology were modified to recover these costs only from recurring cost element, the factors and cost recovery from recurring elements would necessarily increase to offset the amount of costs that ICM currently assigns to recovery from the non-recurring cost elements. Changing the mode of recovery would not cause the portion of costs ICM currently assigns to non-recurring charge recovery to go away, it would merely shift recovery to other elements (in this case, it would shift recovery to recurring elements) Any attempt to simply eliminate these costs would directly violate TELRIC, which mandates cost recovery.

- **Reliance on Direct and Common Factors From Other States**

**Q. AT PAGES 6-7 OF HIS DIRECT TESTIMONY, MR. GOSE SUGGESTS THAT THE SOUTH DAKOTA COMMISSION ADOPT DIRECTLY ATTRIBUTED (OTHER DIRECT EXPENSES) AND COMMON COST FACTORS NO HIGHER THAN THOSE BEING UTILIZED IN QWEST'S WASHINGTON COST PROCEEDING. DOES THIS RECOMMENDATION HAVE ANY**

**MERIT IN THIS PROCEEDING?**

**A.** No. Mr. Gose is asking the South Dakota Commission to abdicate its responsibility to make its decision in this case on the basis of the evidence provided in this case. The cost factors employed to establish the costs of providing wholesale products and services in South Dakota should reflect costs specific to South Dakota, not costs specific to Washington or any other state. In making his recommendation to adopt the factors used in Washington, Mr. Gose fails to disclose that the Washington Commission—in order to maintain consistency among the many different phases of its lengthy cost docket proceeding (it spanned many years)—relied on cost factor data that was more than five years old.[10] Here, the consistency concern that caused the Washington Commission to continue to use clearly outdated information does not exist. Qwest has properly used recent cost data to develop its cost factors.

Mr. Gose also fails to disclose another important fact about Washington. In an order issued in October, 2002, the Washington Commission ordered that the cost factor values used in setting UNE prices in Qwest's previous cost dockets be revisited in the Qwest's newest cost case, Docket UT-023003 – a case that is just now coming before

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10 See *In the Matter of the Pricing Proceeding for Interconnection, Unbundled Elements, Transport and Termination, and Resale*, Docket Nos. UT – 960369, et al., *EIGHTH SUPPLEMENTAL ORDER*, dated May 11, 1998, at page 5; See *In the Matter of the Pricing Proceeding for Interconnection, Unbundled Element, Transport and Termination, and Resale*, Docket Nos. UT – 960369, et al., *17TH SUPPLEMENTAL ORDER*, dated September 23, 1999, at page 56, ¶ 206, and page 106, ¶ 435; See *In the Matter of the Continued Costing and Pricing Proceeding for Interconnection, Unbundled Element, Transport and Termination*, Docket No. UT – 003013, *THIRTEENTH SUPPLEMENTAL ORDER*; Part A, dated January 31, 2001 at page 6, ¶ 7 and pages 85 – 86, ¶ 260 - 261.

that Commission.[11] Thus, even the Washington Commission recognized the need to revisit those cost factors in the light of current information. In any event, it is clear that outdated Washington-specific results should not dictate the results in South Dakota. Current South Dakota-specific data should form the basis for the cost factors used in this case. Mr. Gose's suggestion to the contrary violates TELRIC and basic costing principles that emphasize the importance of developing state-specific costs.

- **CC/BC Approach to Cost Factors**

**Q. WHAT DOES MR. GOSE PROPOSE REGARDING THE DEVELOPMENT OF THE MAINTENANCE FACTORS USED IN THE QWEST ICM STUDY?**

A. Mr. Gose recommends that Qwest recalculate its maintenance expense and other factors using CC/BC ("current cost to book cost") restated investment values in the denominator of the factor equation and that the recalculated factors be used in Qwest's cost studies. His Exhibit PJG-3 purports to show the values of the recalculated factors.[12] These factor changes should be rejected by the Commission. They are premised on flawed logic and faulty CC/BC assumptions. But even more importantly, they are completely inconsistent with TELRIC and therefore should not be employed

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11 See Docket No. UT-003013, *In the Matter of the Continued Costing and Pricing of Unbundled Network Elements, Transport and Termination*, Forty-First Supplemental Order; Part D Initial Order; Establishing Nonrecurring and Recurring Rates For UNEs, dated October 11, 2002 at ¶¶ 76 and 79.

12 Mr. Gose's Exhibit PJG-3 restates Qwest's South Dakota based factors using New Mexico data. See Peter J. Gose Direct Testimony of June 16, 2003 in this proceeding at 14.

as an input into the ICM study in this case.

**Q. PLEASE EXPLAIN WHAT A CC/BC RATIO IS AND WHAT IT IS INTENDED TO REPRESENT?**

A. A CC/BC ratio is an effort to define the relationship between current costs (CC) and booked or actual costs (BC) for various types of investments (i.e., copper, fiber, switching, etc.). The current cost, or CC amount, is the amount a company would spend to replace the existing technology with identical technology at current prices and placement costs for that technology. These are commonly referred to as "*reproduction* costs," and are calculated by applying Telephone Plant Index ("TPI") factors to existing investment levels. For example, a CC/BC ratio of 1.4 means that one would multiply the booked investment (BC) amount by 1.4 to obtain the current cost (CC) amount. Qwest currently uses an economic consulting firm, Joel Popkin and Company, that specializes in the measurement, analysis, and forecasting of prices to provide the TPI factors used in the development of its CC/BC ratios.

CC/BC ratios were originally devised for the purpose of recognizing that increases / decreases in the cost of purchasing or placing plant or equipment should not translate to automatic increases / decreases in the cost of maintaining that plant or equipment solely through the cost factors application process. Within Qwest, these TPI factors are used primarily for insurance evaluation purposes. While CC/BC ratios have some

value in certain business context, they should not be blindly employed in the preparation of a TELRIC analysis.

**Q. DID QWEST, OR ANY OTHER PARTY TO THIS PROCEEDING, USE CC/BC RATIOS TO CALCULATE FORWARD LOOKING, TELRIC-BASED DIRECT INVESTMENT INPUTS?**

A. No, and there is a compelling reason for not using them. The FCC has made is clear that forward-looking TELRIC investment models, such as Qwest's ICM, are designed to measure "***replacement*** costs," not "reproduction" costs. Replacement costs assume that all the plant is replaced using technology that is forward-looking and currently available, and reflect practices consistent with those of an efficient carrier. In the *Local Competition* First Report and Order, the FCC could not have made this more clear:

> We, therefore, conclude that the forward-looking pricing methodology for interconnection and unbundled network elements should be based on costs that assume that wire centers will be placed at the incumbent LEC's current wire center locations, but that the *reconstructed local network* will employ the most efficient technology for reasonably foreseeable capacity requirements.[13]

In its brief to the United States Supreme Court in the *Verizon v. FCC* case, the FCC was even more explicit on this point:

> The essential objective of any forward-looking methodology is to determine what it would cost, in today's market, *to replace the functions of an asset that*

13 *First Report and Order*, ¶ 685 (emphasis added).

> *make it useful.* That is the asset's 'forward-looking cost (also known as its '*replacement*' or 'economic' **cost**), as distinguished from the cost of duplicating the asset in every physical particular (sometimes called an item's 'reproduction' or 'replication' cost.[14]

For example, if Qwest had an analog switch in place in a central office, a "replacement cost" model would determine the investment needed to replace that switch with a currently available digital switch. By contrast, a "reproduction (CC/BC) approach" would determine the cost of replacing that analog switch with another analog switch at the cost of such a switch today. Since TELRIC is a "replacement cost" methodology, it is not appropriate to use the CC/BC reproduction cost approach to determine direct investments.

**Q. DID QWEST USE CC/BC-ADJUSTED DIRECT INVESTMENT AMOUNTS TO CALCULATE THE MAINTENANCE FACTORS USED IN ITS ICM MODEL?**

A. No. In developing forward-looking maintenance factors, the objective is to match the total investment amounts used in the denominator of the factors with the total investment amounts to which those factors will then be applied to eliminate the automatic increase / decrease in maintenance costs associated with investment cost increases / decreases. In an attempt to attain that objective, various forward-looking cost models have proposed the use of CC/BC ratios to adjust current investments to a

14 Brief of the FCC, *Verizon Communications v. FCC,* at 6-7.

forward-looking level, since the factors will be applied to forward-looking investment amounts. Although this may sound like a theoretically proper approach, CC/BC ratios, as they are employed in most TELRIC models today, actually increase the mismatch between the projected and historic investment levels and thus cause, even create, unwarranted distortions in the calculation of the maintenance factors.

**Q. WHAT CAUSES THAT TO OCCUR?**

**A.** The "forward-looking" total investment results obtained from the use of CC/BC ratios are vastly different (usually much higher) than the total investment results obtained from TELRIC "replacement" models. The difference occurs not necessarily because one of the two cost determination processes is incorrect, but rather, because the purpose of a "reproduction cost" estimate is different than that of a "replacement cost" estimate.

**Q. IS THIS DISTINCTION IMPORTANT IN THE CALCULATION OF MAINTENANCE FACTORS?**

**A.** Yes. As Mr. Gose explains in his testimony, maintenance factors can be *overstated* if the investment denominator is *understated.* But conversely, maintenance factors can be *understated* if the investment denominator is *over*stated. The latter is precisely what happens if CC/BC ratios are used in a TELRIC model. The CC/BC-based

"reproduction" investment level, which would be used as the investment denominator, is typically significantly higher than the historic (actual) level of investment. Thus, the resulting maintenance factor is less than if actual investment amounts were used in the denominator. This might be acceptable if the forward-looking "replacement" investment level (*i.e.*, the TELRIC amount) to which the factor is applied had been calculated using the CC/BC-based "reproduction" approach. In a TELRIC study, however, the amount of investment does not reflect CC/BC investment and, in fact, is usually significantly less than the CC/BC investment. Thus, applying a maintenance factor based on CC/BC to TELRIC investment more significantly understates the maintenance expense amount than does using the actual booked investment.

In simple terms, the problem with Mr. Gose's approach is that for all other purposes, he accepts the idea that TELRIC is a replacement cost approach. Thus, he is happy to accept the lower investment costs that result from that theory. But for reasons that are completely unclear (except that it lowers all expenses), he departs from that consistent theory on this issue. Consistency would require that, if Mr. Gose believes that a "reproduction" cost approach is appropriate for purposes of developing a maintenance expense factor, then it should likewise be an appropriate means for estimating overall investment levels. But the result of consistency would be higher investment levels and thus higher UNE costs in South Dakota. Because that result was unacceptable to him, Mr. Gose's approach was to apply internally inconsistent theories designed to produce, at least from his perspective, the best of all worlds: lower investment costs and an

unrealistically low maintenance factor. This results-oriented mixing and matching of different theories should be rejected by the Commission.

**Q. DO YOU HAVE AN ILLUSTRATION THAT DEPICTS HOW THE INDISCRIMINATE USE OF CC/BC RATIOS CAN LEAD TO INCORRECT TELRIC RESULTS?**

A. Yes. I have prepared Exhibit DMG REB – 1 to explain and illustrate the erroneous results that occur as a result of using CC/BC investment levels to determine cost factors in a TELRIC cost model. As my exhibit and illustration show, the use of actual investment levels is a better representation of the "replacement" costs derived from TELRIC models than are CC/BC "reproduction" investment levels. Thus, it is appropriate and internally consistent to use the actual investment amounts in the denominator of the maintenance expense factors developed for TELRIC costing.

**Q. DOESN'T MR. GOSE ASSERT IN HIS TESTIMONY THAT QWEST'S EXAMPLES USED TO DISPROVE THE USE OF CC/BC RATIOS FAILED TO ACCOUNT FOR CHANGES IN TECHNOLOGY?**

A. Yes. Mr. Gose bases his argument for the use of CC/BC ratios on a partial recreation of a hypothetical FCC example (see Gose Exhibit PJG-2), which he obtained from the FCC's Universal Service Fund (USF) *Inputs Order*, the purpose of which was

intended to analyze the impact of the change of copper vs. fiber technology on historical costs, reproduction costs, and replacement costs. In Mr. Gose's Exhibit PJG-2, he limited his analysis to only copper technology as a means to attempt to prove that CC/BC ratios are necessary to account for changes in technology. (I would note that when he testified in New Mexico, Mr. Gose attempted to analyze the impact of changing the mix of copper vs. fiber technology on historical costs, reproduction costs, and replacement costs as a means to prove that CC/BC ratios are necessary to account for changes in technology). Regardless of his approach, there are significant flaws in his use of this example that result in the contrived outputs depicted in his Exhibit PJG – 2 illustration, as well as in the replacement factors listed in his Exhibit PJG-3.

**Q. PLEASE EXPLAIN YOUR CONCERNS?**

**A.** **First**, the example shown in Mr. Gose's Exhibit PJG-2 only portrays "a portion" of an FCC illustrative example discussed in its *USF Inputs Order.*[15] It also contains omissions and several erroneous key input assumptions that, when corrected, lead one to vastly different conclusions than those asserted by Mr. Gose. In fact, when complete information and more proper and accurate assumptions are used in Mr. Gose's exhibit, it actually disproves his theory and demonstrates a contrary result.

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15 See *In the Matter of Federal-State Joint Board on Universal Service, Forward-Looking Mechanism for High Cost Support for Non-Rural LECs*, FCC 99-304, Tenth Report and Order, Released November 2, 1999, ¶ 365. ("*USF Inputs Order*")

Correcting the inputs demonstrates that using CC/BC ratios, in conjunction with the TELRIC investment models used for UNE pricing, actually increases the mismatch between projected and historic investment levels, rather than eliminating the unintentional distortions in the expense calculations, as the CC/BC approach is intended to do.

**Second**, although the FCC may have had a reason for using CC/BC-adjusted investments in the calculation of maintenance factors employed in the Universal Service Inputs Order, the FCC also made it very clear that its assumptions in that Order should not be considered to be valid in the development of TELRIC pricing models. On several occasions, the FCC has stated that its universal service cost model should not be used to set rates for UNEs.[16]

**Third**, even though Mr. Gose only discusses the applicability of CC/BC-adjusted investments for use in calculating Qwest's maintenance factors, he actually utilizes CC/BC adjusted investment amounts throughout the factor model. Consequently, most cost factors, not just maintenance factors, were impacted by his unwarranted and erroneous CC/BC maintenance adjustment. In fact, Mr. Gose's misuse of CC/BC adjusted investments causes him to make an unwarranted, but automatic, 24% reduction in of *all* the expense-related factors he sponsors.

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16 See Tenth Report and Order, CC Docket Nos. 96-45 and 97-160, Released November, 2, 1999, ¶32; and Memorandum Opinion and Order, *In the Matter of Application by Verizon New England Inc., Bell Atlantic Communications, Inc. (d/b/a Verizon Long Distance), NYNEX Long Distance Company (d/b/a Verizon Enterprise Solutions), Verizon Global Networks Inc., and Verizon Select Services Inc.,*

For these reasons, his cost factor recalculations and recommendations must be disregarded.

**Q. EARLIER YOU INDICATED THAT MR. GOSE'S EXHIBIT PJG-2 WAS ERRONEOUSLY PREPARED. HAVE YOU PREPARED A CORRECTED VERSION OF THAT EXHIBIT?**

A. Yes. My Exhibit DMG REB - 2 shows: (1) Mr. Gose's original "hypothetical" copper-only results, (2) the FCC's full illustrative plant mix example, which was intended to analyze the impact of the change of copper vs. fiber technology on historical costs, reproduction costs, and replacement costs, and (3) the three basic corrections required to fix these "hypothetical" results. It's important to note at the outset that Mr. Gose's illustration is pure fiction, while the corrected results I prepared reflect input assumptions that are in line with, and utilize, the plant mix and cost relationships reflected in the ICM investment models filed in this proceeding by Qwest and the consultants for the Staff.

**Q. HOW DO YOUR CORRECTED RESULTS COMPARE TO THOSE DEPICTED IN MR. GOSE'S EXHIBIT?**

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*for Authorization to Provide In-Region, InterLata Services in Vermont,* CC Docket. 02-7, April 17, 2002, ¶ 36.

**A.** In the first set of numbers on Exhibit DMG REB – 2, Column (a) is a duplication of Mr. Gose's Exhibit PJG-2, while Columns (b) and (c) reflect the missing portions of the FCC's example, which Mr. Gose included when he testified in New Mexico (but which he has now omitted).[17] For unexplained, but perhaps obvious reasons, Mr. Gose chose in South Dakota to produce an incomplete replica of the FCC illustrative example – perhaps one he felt was better suited to camouflaging the hypothetical nature of the FCC example than the one he attempted to employ in defending his position in New Mexico.

In the corrected exhibit, the key investment amounts are shown on **Line 3** (Historic Cost of Current Network - **$1,010**), **Line 6** (Reproduction Cost of Current Network - **$1,508**), and **Line 12** (Forward-Looking Investment at Replacement Cost - **$940**). By incorporating the full example (i.e., where Line 1 equals Line 10), one can readily see the impact of the change in plant mix between the historic network and the forward-looking network, which this illustration was intended to depict. This is difficult, if not impossible, to visualize from Mr. Gose's excised illustration. At first glance, his total numbers appear to be in line with the cost trends that one might see in a TELRIC model – that is, "reproduction" costs are significantly higher than "replacement" costs due to increases in the cost of materials and labor, and "replacement" costs are slightly lower than historic costs because of the use of greater quantities of fiber versus copper

17 See New Mexico Utility Case No. 3495, Direct Testimony and Exhibit PJG-2 filed by Mr. Peter J. Gose, dated September 16, 2002. I have attached a copy of this Exhibit as DMG REB – 3.

facilities. However, upon further investigation, I determined that there were several significant errors in the assumptions used to create the investment results – assumptions that were out of line with investment assumptions used for the TELRIC costs filed in this proceeding. After correcting for those erroneous assumptions, the key investment results from the analysis reflect the following:

| | Original NM Gose Exhibit PJG-2 | Corrected Gude Exhibit DMG REB -2 |
|---|---|---|
| Line 3 – Historic Cost of Current Network | $1,010 | $1,090 |
| Line 6 – "Reproduction" Cost of Current Network | $1,508 | $1,608 |
| Line 12 – Forward-Looking Investment at "Replacement" Cost | $ 940 | $1,503 |

The key to understanding Mr. Gose's faulty analysis is the Forward-Looking Investment at Replacement Costs shown on Line 12. Employing Mr. Gose's recommended CC/BC approach, with TELRIC model assumptions, would result in a forward-looking "replacement" cost investment amount of $1,503, not $940, an amount that is significantly greater than the historic cost. Such a result would be totally out of step with any of the TELRIC models filed in this proceeding. Therefore, either the TELRIC models filed in this proceeding yield severely understated investment results, or Mr. Gose's recommended use of a CC/BC approach to factor development is not compatible with TELRIC cost modeling. Clearly it is Mr. Gose's recommendation that is flawed.

**Q. PLEASE EXPLAIN THE CORRECTIONS THAT MUST BE MADE TO MR. GOSE'S EXHIBIT PJG-2.**

A. Mr. Gose's Exhibit requires three basic corrections. My Exhibit DMG REB - 2 sets forth the three required corrections in a cumulative manner, starting with the original numbers filed by Mr. Gose on his Exhibit PJG-2, as adjusted to reflect his exhibit format filed in New Mexico. The first correction identified as "Correction 1 – Correct Forward-Looking Plant Design" is reflected in Columns (d), (e), and (f). The copper plant assumptions used in Mr. Gose's South Dakota Exhibit PJG-2 (as consolidated with the fiber data from his Exhibit PJG-2 as filed in New Mexico[18]) reflected a historic (actual) plant design consisting of 110 miles -- 100 miles being copper and 10 being fiber. This split is relatively close to Qwest's current copper/fiber sheath mileage relationship of 90 percent copper and 10 percent fiber. However, Mr. Gose's Exhibit then assumed a forward-looking plant design of 60 miles of copper and 50 miles of fiber. A review of investment-related model filed by Qwest and Staff's consultant's model sponsored in this, and other proceedings, confirms that Mr. Gose's assumption of 55 percent copper and 45 percent fiber bears no reality to the forward-looking investment models filed in this or any other state proceeding to which Qwest has been a party.

18 See Exhibit DMG – RB - 3. As explained earlier, this is a copy of Mr. Gose's Exhibit PJG –2 filed in New Mexico Utility Case No. 3495.

For example, the ICM investment models filed by Qwest in South Dakota, as well as by the Staff's consultants, both assume a forward-looking design of 67 percent copper and 33 percent fiber. Thus, to correct and add some realism to Mr. Gose's illustration and analysis, I substituted a more realistic 75 miles (68 percent) of copper / 35 miles (32 percent) of fiber assumption on Line 10 in Columns (d) and (e). This resulted in an increase in the forward-looking investment amount from the $940 shown in my adjusted-Gose base illustration to $1,153 -- a number that is about 14 percent greater than the historical investment amount of $1,010. This correction alone indicates that the CC/BC approach is out of sync with currently filed TELRIC models.

**Q. WHAT OTHER CHANGES DID YOU MAKE TO MR. GOSE'S ORIGINAL EXHIBIT?**

A. Next, I reviewed the historic cost relationships between the copper and fiber investments as used in the Exhibit. Mr. Gose's original assumption was $10 for copper and $1 for fiber (shown on Line 2). The actual relationship is closer to $10 for copper and $9 for fiber—a 10/9 ratio is dramatically different than his assumed 10/1 ratio. I also reviewed the Current Cost to Book Cost Ratio for copper (1.50), and fiber (.80), as shown on Line 5. The factor for copper was reasonably accurate, so I did not change it. However, the fiber factor in South Dakota should reflect a value of 1.20 rather than .80; so I corrected that factor. The changes made in the actual copper/fiber cost relationship and the fiber CC/BC ratio are identified as "Correction 2 – Correct

Historic Cost Amounts," and this is reflected in Columns (g), (h), and (i) of my Exhibit DMG REB - 2. After making these changes, the Forward-Looking Investment at Replacement Cost amount (Line 12) increased from $1,153 to $1,503 -- a 38 percent increase over the historical (Line 3) investment amount of $1,090.

The last correction I made was to reflect the actual copper and fiber maintenance cost relationship, shown on Line 8. Historic maintenance expenses for copper plant are approximately $.06 per dollar of investment, while the fiber maintenance expenses are approximately $.02 per dollar of investment. The correction of these assumptions are shown in Columns (j), (k), and (l) of my Exhibit, which is identified as "Correction 3 – Correct Mtce. Expense Factors". In addition to identifying the third set of corrections, in Columns (j,) (k), and (l), I also included a new line (Line 12a), which depicts a representative amount and the typical relationship between a Forward-Looking TELRIC investment and the historic cost of current investment as shown on Line 3.

**Q. WHAT CONCLUSIONS DID YOU REACH AFTER CORRECTING MR. GOSE'S ILLUSTRATION TO PROPERLY REFLECT THE ASSUMPTIONS USED IN THE TELRIC COST MODELS FILED IN THIS PROCEEDING?**

A. I concluded that completing and correcting Mr. Gose's illustrative exhibit actually validates the point I made earlier. The use of CC/BC-adjusted investment amounts in the calculation of maintenance expense factors in a TELRIC model results in severely

understated and erroneous maintenance factors – this includes the factors reflected in Mr. Gose's Exhibit PJG -3. This conclusion becomes readily apparent when comparing the results shown in Column (l), Lines 14, 15, and 16 of my Exhibit DMG REB - 2.

**Q. PLEASE EXPLAIN YOUR FINDINGS IN MORE DETAIL.**

A. Line 14 of my Exhibit DMG REB - 2 represents the "Forward-Looking Expenses Using Expense Factor Based Upon Investment at Current Cost" -- the number which should represent the total maintenance costs of forward-looking investment associated with the appropriate forward-looking mix of copper/fiber plant. In other words, as explained by Mr. Gose, this is the total maintenance expense amount a TELRIC model should produce, if the proper input assumptions are used in the example. The corrected result, $51.30 (shown on Line 14), represents a 17 percent reduction from the actual current maintenance expense amount of $61.80 (shown on Line 7). However, when CC/BC-adjusted maintenance factors are applied to the actual TELRIC model investment amount (the $1000, as shown on Line 12a), the result is not the expected $51.30, but is only $32.30 (as shown on Line 15).

In contrast, when a *non*-CC/BC-adjusted maintenance factor is applied to the TELRIC model investment amount, the result is $46.80 shown on Line 16). Although this is still below the expected $51.30 result, it is certainly much more representative than the

$32.30 amount produced when CC/BC-ratioed investments are used in the factor calculation process.

**Q. IF COST MODELS EMPLOYED SOMETHING OTHER THAN THE $1000 INVESTMENT AMOUNT USED IN YOUR CORRECTED TELRIC EXAMPLE, WOULDN'T THAT CHANGE YOUR CONCLUSION?**

A. No. The actual expense numbers used in the comparison would vary of course, but the conclusion would be exactly the same.

**Q. MR. GOSE ALSO ASSERTS, ON PAGE 15 OF HIS DIRECT TESTIMONY, THAT QWEST IS INCONSISTENTLY EMPLOYING CC/BC FACTORS SINCE IT DOES EMPLOY CC/BC RATIOS TO RESTATE SECONDARY INVESTMENT AMOUNTS. DOES QWEST EMPLOY CC/BC FACTORS IN ITS SECONDARY INVESTMENT CALCULATIONS?**

A. Yes. Qwest has used CC/BC ratios in calculating its ICM secondary investments, such as Land, Buildings, Office Equipment, etc. However, Qwest does so in lieu of conducting an independent analysis of forward-looking secondary investment values.

**Q. WHY IS QWEST'S APPLICATION OF CC/BC FACTORS FOR SECONDARY INVESTMENTS APPROPRIATE?**

A. Qwest's approach to secondary investments is appropriate since the CC/BC-adjusted secondary investment values used in the calculation of the secondary investment maintenance factors are the same investment values to which the maintenance factors are applied; thus, there is no mismatch between the investment amount used in the development of the factors and the application of the factors.

**Q. ALTHOUGH QWEST USES CC/BC RATIOS FOR DETERMINING SECONDARY INVESTMENT-RELATED FACTORS, EXPLAIN WHY QWEST DEEMS IT TO BE INAPPROPRIATE TO USE THE CC/BC RATIOS IN THE CALCULATION OF MAINTENANCE FACTORS FOR TELRIC-BASED PRIMARY INVESTMENTS?**

A. It is inconsistent and illogical to assume forward-looking investment amounts are significantly greater than actuals when creating expense factors, and to then turn around and apply those factors to investment amounts that are in fact less (substantially less in some TELRIC models) than actuals for the purpose of developing maintenance expenses.

**Q. EARLIER, YOU INDICATED A CONCERN REGARDING MR. GOSE'S EXHIBIT PJG-2 AND HIS JUSTIFICATION FOR USING IT, WHICH WAS BASED ON THE FCC'S ENDORSEMENT OF THE CC/BC RATIO**

**CALCULATION FOR USE IN THE UNIVERSAL SERVICE FUND (USF) INPUTS ORDER. IF THE FCC HAS ENDORSED THE PROCESS FOR USF PURPOSES, WHY DO YOU CONTEND IT SHOULD NOT BE USED IN THIS TELRIC PRICING PROCEEDING?**

**A.** The FCC made it very clear in their USF Inputs Order that methodologies endorsed for use in the USF proceeding may not be appropriate for use in TELRIC cost/pricing dockets.[19] The primary purpose of the USF Inputs Order was to create state relational costs for telecommunications companies, which would then be used for the determination of high cost versus low cost areas for the purpose of the USF contribution distribution. In relational models, in which all parties use the same set of basic assumptions, there typically will be no material problem created if some of the assumptions are not truly grounded in reality, since the objective of the exercise is to compare results *between* various states, and not necessarily to come up with an absolute amount for each individual state. In its order granting Section 271 approval to SBC for long distance in Kansas and Oklahoma, the FCC could not have been more clear on this point, stating that the "USF cost model provides a reasonable basis for comparing cost differences between states," but that the USF cost model that was

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19 See Tenth Report and Order, CC Docket Nos. 96-45 and 97-160, Released November, 2, 1999, ¶32; and Memorandum Opinion and Order, *In the Matter of Application by Verizon New England Inc., Bell Atlantic Communications, Inc. (d/b/a Verizon Long Distance), NYNEX Long Distance Company (d/b/a Verizon Enterprise Solutions), Verizon Global Networks Inc., and Verizon Select Services Inc., for Authorization to Provide In-Region, InterLata Services in Vermont,* CC Docket. 02-7, April 17, 2002, ¶ 36.

approved in the *Inputs Order* "*should not be relied upon to set rates for UNEs.*"[20]

In a TELRIC cost proceeding, where the objective is to determine an absolute, state-specific, cost-based price for each service, invalid assumptions in cost development can lead to invalid price results. Thus, in the *USF Inputs Order*, where the objective was to establish a meaningful comparison of state-by-state results, the use of CC/BC-adjusted maintenance factors would not necessarily cause disparate results *between* companies, as long as all companies were using the CC/BC adjustment process. On the other hand, if the objective is to determine a specific company number, as is the case in this proceeding, then the use of an erroneous calculation assumption can lead to misstated results.

**Q. PLEASE EXPLAIN YOUR THIRD CONCERN REGARDING THE USE OF CC/BC-ADJUSTED INVESTMENTS FOR DEVELOPING FACTORS FOR COSTS OTHER THAN MAINTENANCE.**

**A.** It is clearly inconsistent and illogical to build other cost factors using erroneously inflated values in the denominator of the cost factor calculation. As Mr. Gose explains on page 14 of his testimony in the context of developing maintenance factors: "An understated denominator in the expense-to-investment equation produces an overstated

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20 See Memorandum Opinion and Order, *In the Matter of Joint Application by SBC Communications Inc., for Provision of In-Region, InterLATA Services in Kansas and Oklahoma*, CC Docket No. 00-217, FCC 01-29, ¶ 84 (rel. Jan. 22, 2001) (emphasis added).

factor, which overstates UNE costs." Obviously, the converse would also be correct: an overstated denominator in the cost equation produces an understated factor, which understates UNE costs. The use of CC/BC-adjusted investment amounts produces an overstated denominator in the cost factor calculation.

**Q. PLEASE EXPLAIN HOW THIS WOULD HAPPEN?**

**A.** In Qwest's ICM model, direct investment amounts are converted to an investment based cost amount, which then becomes a key component in the denominator used for all the other expense-based cost factors. If a CC/BC-adjusted investment amount, which is much greater than the TELRIC-based investment amount actually used in the study, is used for the calculation of all the other cost factors you obviously have the situation I described above -- an overstated denominator in the cost equation that produces an understated factor, which understates UNE costs. In fact, as I stated earlier in my testimony, Mr. Gose's misuse of CC/BC adjusted investments throughout the factors calculation process, causes an automatic and erroneous 24% reduction of *all* expense-related factors. Again, for this reason, Mr. Gose's suggested use of CC/BC factors and his adjusted cost factors depicted in his Exhibit PJG –3 must be rejected.

- **Productivity Factor**

**Q. MR. GOSE SUGGESTS THAT THE PRODUCTIVITY FACTOR USED BY QWEST IN CALCULATING THE EXPENSE FACTORS USED IN ITS ICM**

**MODEL SHOULD BE CHANGED FROM 10.25 PERCENT TO 13.42 PERCENT BASED ON FCC PRODUCTIVITY ASSUMPTIONS. DO YOU AGREE WITH MR. GOSE'S ADJUSTMENT?**

A. No. In initially estimating the average efficiency gain of a Regional Bell Operating Company ("RBOC") and setting an efficiency percentage in FCC Docket No. 97-159, the FCC relied on its own methodology and data from 1991- 1995 and on data for the same periods submitted by AT&T. The FCC data produced efficiency gains that ranged from 5.2 percent – 5.8 percent annually, and the annual efficiency gains estimated by AT&T ranged from 6.3 percent to 7.1 percent. In making its decision in Docket 97-159, the FCC chose to ignore data that had been submitted by the United States Telephone Association ("USTA") on behalf of the RBOCs. In the USTA submission, the average productivity gains estimated by the RBOCs for the 1989 to 1995 timeframe ranged between 2.7 percent and 2.9 percent annually.[21] Since its input was ignored by the FCC, USTA appealed the FCC's decision and filed petitions for review of the FCC's order in Docket FCC 97-159 with the United States Court of Appeals for the District of Columbia Circuit. That court reversed and remanded the FCC's decision.[22] When Qwest developed the productivity gain used in its ICM model, it believed that an efficiency gain of 10.25 percent for two years (or 5 percent

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21 See FCC 97-159, *In the Matter of Price Cap Performance Review for Local Exchange Carriers Access Charge Reform,* CC Docket No. 94-1, 96-262, Fourth Report and Order in CC Docket No. 94-1 and Second Report and Order in CC Docket No. 96-262, released May 21, 1997.

22 USTA *v.* FCC, 188 F.3d 521 (D.C. Cir. 1999).

per year compounded, based on the weighted average of the estimates from USTA, the FCC and AT&T) was an aggressive estimate given the USTA values that were filed in FCC 97-159.

Mr. Gose now seeks to further increase Qwest's already aggressive estimate, which was based on striking a reasonable balance between the aforementioned competing proposals, by using a 6.5 percent annual (two-year compounded total of 13.42 percent) productivity factor for Qwest. He suggests this increase is warranted as a result of the FCC's decision in Docket FCC 99-345. In that proceeding, however, the FCC again failed to give due consideration to RBOC estimates of their productivity gains and, as a result, produced overstated efficiency gains ranging from 6.02 percent, using a data range from 1986 through 1998, to 6.33 percent, using a data range from 1991 through 1998. These values no more reflect the estimates of the RBOC industry than did the earlier values that were part of the decision reversed and remanded by the D.C. Circuit.

**Q. MR. GOSE ATTEMPTS TO FURTHER SUPPORT HIS PRODUCTIVITY RECOMMENDATION BY REFERENCING REPORTED CAPITAL SPENDING CUTS AND HIS ASSESSMENT OF QWEST'S ACCESS LINE GROWTH IN SOUTH DAKOTA. DO CUTS IN CAPITAL SPENDING CONSTITUTE EVIDENCE THAT SUPPORTS AN INCREASE IN THE PRODUCTIVITY VALUE USED IN THE STAFF'S TELRIC MODEL?**

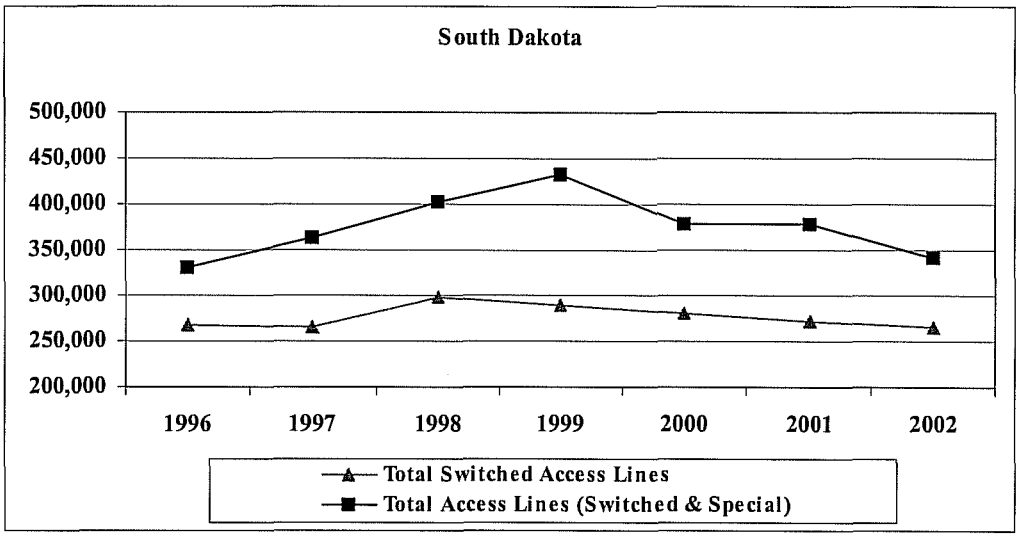
**A.** No. Mr. Gose has confused Qwest's lower capital spending volume and the potential investment savings associated with market-related pricing, with potential productivity gains in Qwest's employee-related expenses. The latter is largely dependent on the number of employees and is a salary-based, not an investment-based, cost. A cut in the price of a vendor's switch does not mean there will be a productivity gain at Qwest. It just means that Qwest's investment cost went down because the Company got a cheaper switch. Thus, his focus on the reduced volume of purchases and/or the changes in the demand and purchase price of equipment (investment) is a misplaced attempt to support his recommended increase in the productivity factor employed in TELRIC cost modeling in this proceeding. Therefore, it must be ignored.

**Q. DO YOU AGREE WITH MR. GOSE'S ASSESSEMENT OF QWEST'S ACCESS LINE GROWTH IN SOUTH DAKOTA?**

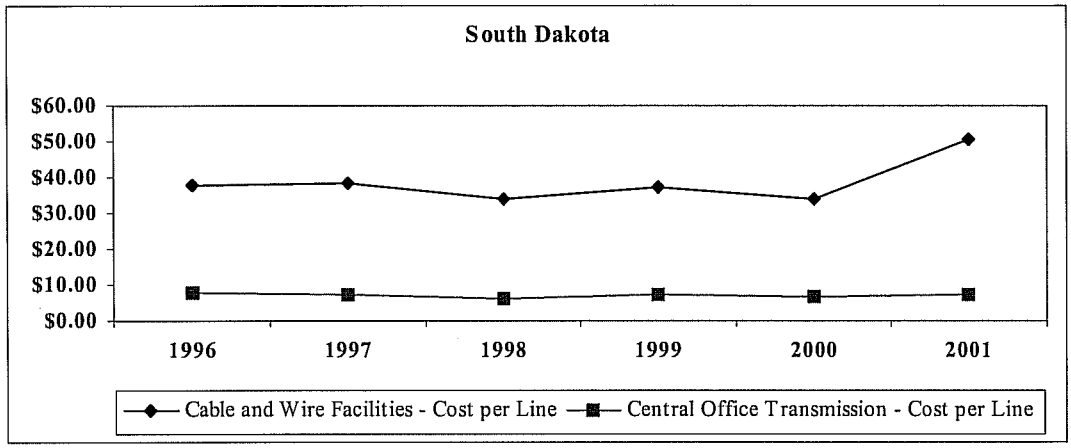
**A.** No, I do not. Mr. Gose states that Qwest has sustained a steady growth in access lines in the state of South Dakota since 1992. He implies that, when coupled with expense trend changes, this line growth (as rounded and plotted on his Attachment PJG-5) lends support to his productivity value recommendation. However, properly viewed, the South Dakota access line count evidence does not support his theory or recommendation. The number of Qwest's access lines in South Dakota have been declining, not increasing, due to the development of competition fostered by the

Federal Act.

As the chart below indicates, although access lines in South Dakota did initially increase post-Act, once competition took root, the number of Qwest's access lines began to fall.




This current post-Act trend – that is, a decline in the number of Qwest's access lines –increases cost-per-line calculations, where expenses are flat or increasing. For Qwest's cable and wire, and central office transmission facilities-related costs, which Mr. Gose focused on in his testimony, the trend in cost-per-access line values are as follows:




As the preceding chart depicts, Qwest's cable and wire, and central office transmission costs-per-switched access line have been flat to increasing since the passage of the Act. Thus, Mr. Gose's productivity theory and conclusions regarding these expenses and Qwest's access line growth are flawed. His misrepresented conclusions do not support his recommendation to increase the already-aggressive productivity value employed by Qwest in its ICM-model and thus, his recommended productivity value change must be disregarded.

- **Capital Costs**

**Q. MR. GOSE INDICATES IN HIS TESTIMONY THAT QWEST'S ICM MODEL SHOULD BE PROCESSED WITH A LOWER COST OF DEBT CAPITAL. DID HE SPECIFY WHAT CHANGES HE WAS RECOMMENDING REGARDING THE COST OF DEBT OR OVERALL COST OF MONEY TO BE USED IN PROCESSING THE STAFF'S RUN OF**

**ICM?**

**A.** No. Although he indicates at pages 23 - 24 of his testimony that he discussed the cost of debt topic with Mr. Gates and that the "consultants for the Staff will be supporting a different cost of money", neither he, nor Mr. Gates, – who are the modeling consultants for the Staff in this South Dakota proceeding – make a specific recommendation in their testimony for changing the cost of debt or overall cost of capital employed by Qwest in processing its cost studies filed in this proceeding.

I would note that the Staff's consultants did not file their version of Qwest's ICM cost model with their testimony in this case. And, although Qwest has requested a copy of the Staff's cost model runs in order to ascertain whether the Staff's consultants had actually made a change to the cost of debt component or overall cost of capital in their rerun of Qwest's ICM cost model, at the time I filed this testimony Qwest had not yet been provided with the requested data. As a result, it is unclear what action, if any, may have been taken by the Staff's consultants in producing their version of ICM results. Thus, I must reserve the right to supplement my testimony once the Staff consultant's modeling data has been provided to, and reviewed, by Qwest.[23]

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23 Qwest also reserves the right to supplement this testimony for issues other than the cost of debt or cost of capital which involve undisclosed, and / or unsupported changes to Qwest's filed ICM model,

**Q. WHAT COST OF MONEY DID QWEST UTILIZE IN PREPARING THE TELRIC STUDIES FILED IN THIS PROCEEDING?**

**A.** The TELRIC studies filed by Qwest in this proceeding reflect a 10.14% overall cost of money, which was utilized in establishing Qwest's existing rates in South Dakota.[24]

**Q. IS THIS THE APPROPRIATE COST OF MONEY TO USE IN THE PREPARATION OF TELRIC DATA?**

**A.** No. TELRIC studies should utilize a forward-looking, economic cost of money, which should represent the weighted average cost of debt and equity, calculated with consideration of the appropriate measure of competitive risk. Since the risk of a competitive firm is much greater than the risk of a monopolist, this significantly higher risk should be appropriately reflected in its cost of capital.

The Federal Act has greatly expanded competition and the number of competitors that Qwest faces. As a result, Qwest's risks have increased. TELRIC studies are intended to capture this risk in the cost of money inputs used in processing the costing model. The FCC has acknowledged this point in the development of its costing and pricing

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and / or for any errors that may discovered from a review of the Staff's consultants version of ICM results.

24 The overall cost of money employed in Qwest's cost studies filed in this proceeding utilize an equity/debt split of 60/40, a cost of equity of 11.9% and a cost of debt of 7.50%, as was utilized in establishing existing rates ordered by the South Dakota Commission. See also Commission Order in Docket No. TC96-184 dated 3/20/97, at ¶¶ 111-112.

rules, which require the use of a forward-looking cost of capital (See 47 C.F.R. Section 51.505(b)(2)). In its attachment to its Triennial Review press release, the FCC noted that it would be addressing this issue in its Triennial Review order, noting that the order would clarify "that the risk-adjusted cost of capital used in calculating UNE prices *should reflect the risk associated with a competitive market.*"[25] Thus, Qwest believes that the development and reliance on a higher forward-looking cost of capital in the TELRIC models used for setting prices in this proceeding would be more appropriate than utilizing the cost of money previously employed in setting South Dakota rates. Nonetheless, Qwest is aware that the Commission has traditionally expressed a preference for using a previously ordered cost of money in the preparation of incremental cost studies. For this reason, Qwest has used the Commission's prescribed 10.14% cost of money in the TELRIC studies filed in this proceeding. However, Qwest does not advocate, nor intend to suggest, that this is the most appropriate cost of money for Qwest in its current environment, nor does it believe that this cost of money is necessarily appropriate for use in cost studies beyond the scope of this case.

Thus, since the Staff's consultant's testimony did not disclose, or support, a specific change in the cost of capital from that which was employed by Qwest in the cost studies Qwest filed in this proceeding, the Commission should ignore the non-specific

25 Attachment to Press Release of FCC in Triennial Review Docket (February 20, 2003) at 4 (emphasis added).

and unsupported cost of debt, and change in cost of money, statements made by Mr. Gose in his testimony on this issue.

## V. FINAL CONCLUSIONS AND RECOMMENDATIONS

**Q. PLEASE SUMMARIZE YOUR CONCLUSIONS AND RECOMMENDATIONS REGARDING COST MODEL INPUTS AND FACTORS BEING SUPPORTED BY MR. GOSE IN THIS PROCEEDING.**

A. My final conclusions and recommendations regarding Mr. Gose's testimony, for dealing with the proper cost factor inputs to Qwest's ICM model, are as follows:

1. Mr. Gose's concerns regarding the development and application of Marketing (i.e. product management and sales) and Business Fees cost factors in Qwest's cost studies are without merit and the South Dakota Commission should rule that it is entirely appropriate to employ such costs in determining cost factors employed in Qwest's TELRIC recurring and non-recurring studies.
2. The Commission should find that cost factors employed to cost South Dakota services should reflect South Dakota, not Washington, or any other State's cost data, and that Qwest has employed and presented current South Dakota cost information in the development of its cost factors and cost studies. Therefore, the South Dakota Commission should reject Mr. Gose's recommendation and find that the use Washington's, or any other state's, data as unwarranted and ill advised.

3. The Commission should find that Mr. Gose's recommendation regarding the use of CC/BC ratios in conjunction with the TELRIC investment models used for UNE pricing, actually increases the mismatch between projected and historic investment levels, rather than eliminating the unintentional distortions in the expense calculations. Therefore, it should reject the CC/BC adjustments Mr. Gose would use in calculating and revising Qwest's maintenance factors, as well as all other cost factors impacted by his unwarranted and erroneous CC/BC investment adjustment.
4. The Commission should find that an efficiency gain of 10.25 percent for two years, as employed in Qwest's filed ICM model, is an aggressive estimate and that Mr. Gose's recommended increase to this ICM productivity value is unwarranted.
5. The Commission should ignore the non-specific and unsupported cost of debt, and change in cost of money, statements made by Mr. Gose, since the Staff's consultant's testimony did not disclose, or support, a specific change to the cost of capital that was employed by Qwest in the cost studies it filed in this proceeding.

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

**A.** Yes.

**BEFORE THE SOUTH DAKOTA PUBLIC UTILITIES COMMISSION**

| | | |
|---|---|---|
| **IN THE MATTER OF DETERMINING PRICES FOR UNBUNDLED NETWORK ELEMENTS (UNEs) IN QWEST CORPORATION'S STATEMENT OF GENERALLY AVAILABLE TERMS (SGAT)** | ) | **DOCKET NO. TC01-098** |

**QWEST CORPORATION**

**REBUTTAL EXHIBITS**

**OF**

**D. M. (MARTI) GUDE**

**July 28, 2003**

# INDEX OF REBUTTAL EXHIBITS

**GUDE Rebuttal Exhibit No.**

**DMG REB – 1** CC/BC RATIO NARRATIVE EXAMPLE

**DMG REB – 2** CORRECTED HYPOTHETICAL CC/BC MAINTENANCE FACTOR EXAMPLE

**DMG REB – 3** EXHIBIT PJG – 2 AS FILED IN NEW MEXICO UTILITY CASE NO. 3495

# CC/BC Ratio Narrative Example

Various forward looking cost models have proposed the use of a current cost to book cost (CC-to-BC) adjustment ratio in calculating operating expense factors. On the surface this approach appears to have some appeal. However, in practice it has yet to universally achieve the theoretical improvements for which it was designed. As a result, the Qwest cost models do not use CC-to-BC ratios for the development of maintenance expense factors associated with direct (i.e. Central Office Equipment and Cable and Wire Facilities) investments.

## Purpose of CC-to-BC Ratio Development

Expense factors are traditionally developed by dividing historic (actual booked) expense amounts by historic (actual booked) investment amounts. The resulting factors are then applied against projected investment levels to determine projected costs or expenses. The denominator in the factor calculation is historic investment, yet the factor is applied to future investments to determine future expense levels. Following is a hypothetical example of this calculation:

($40 / $1,000) x $900 = $36

where: $40 is the historic (actual) maintenance expense
$1,000 is the historic (actual) investment level
$900 is the projected investment level (TELRIC amount)
$36 is the estimated future expense level

As illustrated by the above calculation, the projected expense level is lower than the historic level based solely on the fact that in this example projected plant costs are less than historic plant costs. In other words a projected decrease in the cost of purchasing or placing a piece of equipment would lead to an automatic reduction in the estimated cost of maintaining that equipment. Clearly there is no direct relationship between the cost of purchasing a piece of equipment and the cost of maintaining that equipment as implied by this calculation. For this reason the CC-to-BC ratio was devised to correct for this mismatch.

Theoretically, the CC-to-BC ratio would adjust the factor to eliminate the unintentional consequences of using an investment level to develop a factor that does not correspond to the investment level to which that factor will be applied. Following is an example of how in theory a CC-to-BC factor should work using the above example:

$ 1,000 / $900 = 1.1111

where: 1.1111 is the book cost to current cost ratio

This CC-to-BC ratio would then be used to revise the above projected cost calculation as follows:

[($40 / $1,000) x 1.1111] x $900 = $40

As illustrated, the CC-to-BC ratio eliminates any unintentional impacts caused by the differences between historic and projected investment costs. By eliminating this mismatch between the denominator in the investment factor and the investment to which that factor is applied, the CC-to-BC ratio theoretically eliminates unsupportable secondary expense adjustments. In other words the CC-to-BC ratio would insure that all adjustments to expense factors are based on some defensible explicit basis as opposed to being a secondary impact of changes in investment levels that in many instances have no correlation to maintenance costs.

**Practical Problems with CC-to-BC Ratio Application**

Although theoretically sound, the actual implementation of the CC-to-BC ratio as it exists in most models today actually increases the mismatch between projected and historic investment levels. As opposed to eliminating unintentional distortions in the expense calculation, current applications of the CC-to-BC ratio magnify these distortions.

As illustrated above, the objective of the CC-to-BC ratio is to match the investment used to calculate the factor with the investment to which that factor would be applied. This would create symmetry in the calculation, which would increase its accuracy by eliminating unintentional and unsupportable implicit adjustments to expenses. However, using the CC-to-BC ratios predominately available, as inputs to most models would actually increase this distortion. This result is attributable to the fact that the projected or current cost calculations used in the development of factors are not even remotely related to the current costs developed by the models to which the factors are applied. The current costs for the denominator in the CC-to-BC ratio are generally developed using a ***Reproduction Cost New*** approach. Reproduction costs are the amount the company would spend to replace the existing technology with identical technology at current prices and placement costs for that technology. They are calculated by applying Telephone Plant Index (TPI) factors to existing investment levels.

The resulting expense factors are then applied to current replacement costs. ***Replacement Costs*** assume that all the plant is replaced using the most modern placement techniques and the most current available technology (the TELRIC approach). Thus again, there is a mismatch between the investments used to develop the factors and the investments to which those factors are applied. Following is an example of the new calculation:

$$\frac{\text{Historic Expense}}{\text{Historic Investments}} \times \frac{\text{Historic Investments}}{\text{Reproduction Cost New}} \times \text{Replacement Cost} = \text{Projected Expense}$$

Simplified, the new calculation is:

$$\frac{\text{Historic Expense}}{\text{Reproduction Cost New}} \times \text{Replacement Cost} = \text{Projected Expense}$$

From the above equation, it is easy to see the mismatch between the investment used in the denominator (i.e. reproduction cost) and the investment to which the factor is applied (i.e. replacement cost). In essence CC-to-BC approach simply replaces the historic investments used in the original calculation with a reproduction cost new investment derived using the telephone plant index.

The question then becomes, is the reproduction cost new used in developing the CC-to-BC factors a better representation of the replacement costs derived from the models than the historic investments used in the original calculation? No one can argue that both don't represent a mismatch. The issue becomes which mismatch more appropriately reflects the replacement costs derived by the model. It is Qwest's experience that reproduction costs derived using a telephone plant index increase this distortion. This is especially true regarding outside plant costs. The reproduction cost new for outside plant investment using the TPI is less representative of the replacement costs derived by the models than historic costs. For instance the TPI would suggest that outside plant costs would be approximately 140% higher if the plant was replaced today using the same technology. The Qwest models generally show that the cost of replacing these facilities would be slightly less if new technologies were employed.

Returning to the above example, the Maintenance Factor based on the historic investment level is .0400 ($40/$1,000). However, the amount of maintenance expense used in the Model is arbitrarily reduced from $40 to $36 by the mismatch between the historic investment used in the denominator (i.e. $1,000) and the replacement cost to which it was applied (i.e. $900) -- $900 x .0400 = $36. Now, assuming that the reproduction cost is $1,400, based

on the outside plant reproduction cost factor of 140% that was derived using the telephone plant index, the new maintenance expense factor would be .0286 ($40/$1,400) and the resulting maintenance expense used in the Model would be $25.74 ($900 x .0286).

As illustrated above, the current reproduction cost (i.e. $1,400) used in the CC-to-BC ratio is less representative of the replacement cost (i.e. $900) than the historic investment of $1,000. The $4 distortion that occurred when historic costs were used in the denominator increases to more than $14 when the reproduction cost new is substituted into the equation. The mismatch has been increased as opposed to decreased. The size of the distortion or unjustified reduction in maintenance expense has also been exacerbated. For this reason, Qwest does not use any CC-to-BC ratios in its TELRIC cost models for the calculation of maintenance costs associated with plant investment amounts determined using replacement cost methodologies.

## CORRECTED HYPOTHETICAL MAINTENANCE FACTOR EXAMPLE

| Line # | Description | Gose PJG-2 Base Hypothetical Example | Missing Columns in Gose's South Dakota Exhibit | | Correction 1 Correct Forward-Looking Plant Design | | | Correction 2 Correct Historic Cost Amounts | | | Correction 3 Correct Mtce. Expense Factors | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Copper | Fiber | Total | Copper | Fiber | Total | Copper | Fiber | Total | Copper | Fiber | Total |
| | | (a) | (b) | (c) | (d) | (e) | (f) | (g) | (h) | (i) | (j) | (k) | (l) |
| | STEP 1: DETERMINATION OF CURRENT COST TO BOOK COST RATIO & REPRODUCTION COST | | | | | | | | | | | | |
| Line 1 | Miles | 100 | 10 | 110 | 100 | 10 | 110 | 100 | 10 | 110 | 100 | 10 | 110 |
| Line 2 | Historic Cost of Investment per Mile | $10.00 | $1.00 | | $10.00 | $1.00 | | $10.00 | $9.00 | | $10.00 | $9.00 | |
| Line 3 (Line 1 x Line 2) | **Historic Cost of Current Network** | $1,000 | $10 | $1,010 | $1,000 | $10 | $1,010 | $1,000 | $90 | $1,090 | $1,000 | $90 | $1,090 |
| Line 4 | Current Cost of Investment per Mile | $15.00 | $0.80 | | $15.00 | $0.80 | | $15.00 | $10.80 | | $15.00 | $10.80 | |
| Line 5 (Line 4 / Line 2) | Current Cost to Book Cost Ratio | 1.50 | 0.80 | | 1.50 | 0.80 | | 1.50 | 1.20 | | 1.50 | 1.20 | |
| Line 6 (Line 3 x Line 5) | **Reproduction Cost of Current Network** | $1,500 | $8 | $1,508 | $1,500 | $8 | $1,508 | $1,500 | $108 | $1,608 | $1,500 | $108 | $1,608 |
| | *STEP 2: DETERMINATION OF MAINTENANCE EXPENSE FACTORS* | | | | | | | | | | | | |
| Line 7 | Current Maintenance Expenses | $10.00 | $0.10 | $10.10 | $10.00 | $0.10 | $10.10 | $10.00 | $0.10 | $10.10 | $60.00 | $1.80 | $61.80 |
| Line 8 (Line 7 / Line 3) | Maintenance Expense Factor Based Upon Investment at Historic Cost | 0.010000 | 0.010000 | | 0.010000 | 0.010000 | | 0.010000 | 0.001111 | | 0.060000 | 0.020000 | |
| Line 9 (Line 7 / Line 6) | Maintenance Expense Factor Based Upon Investment at Current Cost | 0.006667 | 0.012500 | | 0.006667 | 0.012500 | | 0.006667 | 0.000926 | | 0.040000 | 0.016667 | |
| | STEP 3: DETERMINATION OF FORWARD-LOOKING NETWORK INVESTMENT | | | | | | | | | | | | |
| Line 10 | Miles in Forward-Looking Plant Design | 60 | 50 | 110 | 75 | 35 | 110 | 75 | 35 | 110 | 75 | 35 | 110 |
| Line 11 (Line 4) | Current Cost of Investment per Mile | $15.00 | $0.80 | | $15.00 | $0.80 | | $15.00 | $10.80 | | $15.00 | $10.80 | |
| Line 12 (Line 10 x Line 11) | **Forward-Looking Investment at Replacement Cost** | $900 | $40 | $940 | $1,125 | $28 | $1,153 | $1,125 | $378 | $1,503 | $1,125 | $378 | $1,503 * |
| Line 12a | **Forward-Looking TELRIC Investment** | | | | | | | | | | $670 | $330 | $1,000 |
| | STEP 4: COMPARISON OF FORWARD-LOOKING MAINTENANCE EXPENSE DETERMINATION OPTIONS | | | | | | | | | | | | |
| Line 13 (Line 12 x Line 8) | Forward-Looking Expenses Using Expense Factor Based Upon Investment at Historic Cost | $9.00 | $0.40 | $9.40 | $11.25 | $0.28 | $11.53 | $11.25 | $0.42 | $11.67 | $67.50 | $7.56 | $75.06 |
| Line 14 (Line 12 x Line 9) | Forward-Looking Expenses Using Expense Factor Based Upon Investment at Current Cost | $6.00 | $0.50 | $6.50 | $7.50 | $0.35 | $7.85 | $7.50 | $0.35 | $7.85 | $45.00 | $6.30 | $51.30 |
| Line 15 (Line 12a x Line 8) | Expenses Using CC/BC Expense Factor Applied To TELRIC Investment | | | | | | | | | | $26.80 | $5.50 | $32.30 * |
| Line 16 (Line 12a x Line 8) | **Expense Using Non-CC/BC Adjusted Expense Factor Applied To TELRIC Investment** | | | | | | | | | | $40.20 | $6.60 | $46.80 = |

Note: Column (a) is a replication of Gose Exhibit PJG-2 filed in South Dakota, and Columns (b) and (c) are replications from the Gose Direct Testimony Exhibit PJG-2 filed in New Mexico on behalf of the Public Regulation Commission Staff, in New Mexico Utility Case No. 3495.

UTILITY CASE NO. 3495
DIRECT TESTIMONY OF PETER J. GOSE
EXHIBIT PJG - 2

**HYPOTHETICAL MAINTENANCE FACTOR EXAMPLE**
**BASED UPON FCC METHODOLOGY FROM USF INPUTS ORDER**

| | | COPPER | FIBER | TOTAL |
|---|---|---|---|---|
| **STEP 1: DETERMINATION OF CURRENT COST TO BOOK COST RATIO & REPRODUCTION COST** | | | | |
| Line 1 | Miles | 100 | 10 | 110 |
| Line 2 | Historic Cost of Investment per Mile | $ 10.00 | $ 1.00 | N/A |
| Line 3 = Line 1 * Line 2 | Historic Cost of Current Network | $ 1,000 | $ 10 | $ 1,010 |
| Line 4 | Current Cost of Investment per Mile | $ 15.00 | $ 0.80 | N/A |
| Line 5 = Line 4 / Line 2 | Current Cost to Book Cost Ratio | 1.50 | 0.80 | N/A |
| Line 6 = Line 3 * Line 5 | Reproduction Cost of Current Network | $ 1,500 | $ 8 | $ 1,508 |
| **STEP 2: DETERMINATION OF MAINTENANCE EXPENSE FACTORS** | | | | |
| Line 7 | Current Maintenance Expenses | $ 10.00 | $ 0.10 | $ 10.10 |
| Line 8 = Line 7 / Line 3 | Maintenance Expense Factor Based Upon Investment at Historic Cost | 0.010000 | 0.010000 | N/A |
| Line 9 = Line 7 / Line 6 | Maintenance Expense Factor Based Upon Investment at Current Cost | 0.006667 | 0.012500 | N/A |
| **STEP 3: DETERMINATION OF FORWARD-LOOKING NETWORK INVESTMENT** | | | | |
| Line 10 | Miles in Forward-Looking Plant Design | 60 | 50 | 110 |
| Line 11 = Line 4 | Current Cost of Investment per Mile | $ 15.00 | $ 0.80 | N/A |
| Line 12 = Line 10 * Line 11 | Forward-Looking Investment at Replacement Cost | $ 900 | $ 40 | $ 940 |
| **STEP 4: COMPARISON OF FORWARD-LOOKING MAINTENANCE EXPENSE DETERMINATION OPTIONS** | | | | |
| Line 13 = Line 12 * Line 8 | Forward-Looking Expenses Using Expense Factor Based Upon Investment at Historic Cost | $ 9.00 | $ 0.40 | $ 9.40 |
| Line 14 = Line 12 * Line 9 | Forward-Looking Expenses Using Expense Factor Based Upon Investment at Current Cost | $ 6.00 | $ 0.50 | $ 6.50 |