INTRODUCTION

Q. PLEASE STATE YOUR NAME, BUSINESS ADDRESS, EMPLOYER AND PRESENT POSITION.

A. My name is Roy Lathrop, and my business address is 1133 19th Street, NW, Washington, DC 20036. I am an economist in the Regulatory Analysis group of WorldCom Inc.'s ("WorldCom") Law and Public Policy section.

Q. PLEASE DESCRIBE YOUR QUALIFICATIONS AND BACKGROUND.

A. I am responsible for developing and promoting WorldCom's public policy positions before state and federal regulators. These policy positions generally involve encouraging competition by ensuring that ILECs are required to provision collocation and unbundled network elements in a non-discriminatory manner at prices based on Total Element Long Run Incremental Costs ("TELRIC"). In my seven years at MCI/WorldCom, I have had a variety of responsibilities, including testifying as an expert witness in a variety of state regulatory proceedings addressing collocation costing, pricing and terms and conditions, explaining the need for and defining the basic requirements for line splitting over the UNE-platform, and other public policy issues, as well as participating in panels at the National Association of Regulatory Utility Commissions ("NARUC").

Prior to joining WorldCom, I was employed in the Telecommunications section of the Washington Utilities and Transportation Commission ("WUTC"), where I analyzed economic and policy issues involved in developing an alternative form of regulation for US West, and costing and pricing issues related to network unbundling proposals. Prior to working at the WUTC, I was employed by the

California Public Utilities Commission ("CPUC"). My assignments at the CPUC included three years in the Telecommunications Rate Design Branch of the Division of Ratepayer Advocates, where I provided analysis and expert testimony on various rate design, cost and tariffing issues, including cases implementing incentive regulation for California local exchange carriers. Subsequently, I served as a Commission Advisor responsible for economic and policy analysis for the electricity, natural gas and water industries. Prior to working at the CPUC, I was employed as a Research Economist at the Community and Organization Research Institute, where I conducted econometric and policy analysis related to water demand. I received a Bachelor of Arts degree in Economics and Environmental Studies, and a Master of Arts degree in Economics from the University of California at Santa Barbara.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. The purpose of my testimony is to analyze certain cost studies filed November 7, 2001 by Qwest Corporation ("Qwest"). Specifically, I address CLEC to CLEC Interconnection, Channel Regeneration, Space Inquiry, Space Optioning, Remote Terminal Collocation and Bona Fide Request. By addressing issues in these studies, I do not mean to imply that there are no other problems with Qwest's or Verizon Northwest Inc.'s ("Verizon") various proposals in this docket. To the extent other issues are not covered in this testimony, does not imply WorldCom agrees with Qwest's or Verizon's positions.

TOTAL ELEMENT LONG RUN INCREMENTAL COST ("TELRIC") METHOD

Q. WHAT IS TELRIC?

A. TELRIC is the costing method defined by the FCC in its First Report and Order in the Local Competition proceeding opened to establish national rules to implement the Telecommunications Act of 1996. Generally, TELRIC is

> the forward-looking cost over the long run of the total quantity of the facilities and functions that are directly attributable to. Or reasonable identifiable as incremental to, such element, calculated taking as a given the incumbent LEC's provision of other element.[1]

The TELRIC cost of an element should be measured based on the use of the most efficient technology currently available and the lowest cost network configuration, given the existing location of the incumbent LEC's wire centers.[2]

Q. **HAS QWEST ADHERED TO TELRIC PRINCIPLES IN DEVELOPING NONRECURRING COSTS FOR THE SERVICES YOU HAVE ANALYZED?**

A. No. First, Qwest did not apply a forward-looking analysis. Such an analysis requires Qwest to assume that all inputs are variable (the "long run" part of TELRIC) – in particular, its Operations Support Systems ("OSS").[3] Rather, Qwest relied on its current experience with its existing OSS. Qwest states that its Enhanced Nonrecurring Cost ("ENRC") model "contains inputs based on Qwest's current experience in processing orders and provisioning network plant."[4] Qwest's approach fails to recognize that a forward-looking, long run

[1] See 47 CFR 51.505 (b).
[2] See 47 CFR 51.505 (b).
[3] WorldCom witness Mr. Sidney Morrison discusses the implications of forward-looking OSS in more detail in his testimony.
[4] Direct Testimony of Teresa K. Million on Behalf of Qwest Corporation, November 7, 2001 at page 16 (emphasis added).

economic cost construct for NRCs develops costs based on using forward-looking OSS efficiently, forward-looking technologies and efficient labor costs.

Second, Qwest assumes inefficient operations in developing its cost model inputs. Adhering to TELRIC principles requires activities to be performed in an efficient manner, and Qwest assumed excessive time to perform functions, thereby violating TELRIC principles. For example, in the nonrecurring cost studies that I examined, Qwest included unnecessary or inappropriate activities. In addition, Qwest treats separately activities that could be performed in parallel or in combination. In addressing the various cost studies below, I identify these errors and recommend alternative inputs to recalculate costs. I note that my recommended changes address the cost model inputs prior to the application of cost factors.

CLEC TO CLEC INTERCONNECTION: DIRECT CONNECTION

Q. WHAT IS QWEST'S CLEC TO CLEC INTERCONNECTION SERVICE?

A. Qwest's CLEC-to-CLEC interconnection service is used to connect together different CLECs' collocation arrangements or multiple collocation arrangements of the same CLEC in the same central office ("CO"). Qwest offers two types of CLEC-to-CLEC interconnection service: "Direct Connection," in which cables (provided and placed by the CLEC) connect together different collocation arrangements, and "Cross Connections," available when the collocation arrangements have available capacity on termination cables at a Qwest

intermediate distribution frame and the collocation arrangements are connected by running a "jumper" (cable) between the existing CLEC cables.[5]

For its Direct Connections service, Qwest assesses a nonrecurring "flat charge" which includes two components, engineering and cable racking (material and installation). Qwest also assesses recurring charges for cable racking on a per foot basis. Qwest assesses separate nonrecurring charges for virtual collocation connections (if one or both collocation arrangements to be connected is a virtual collocation). In addition, Qwest assesses a nonrecurring charge for opening and closing a cable hole, if applicable. For Cross Connections service, Qwest assesses separate nonrecurring charges for installation and disconnection.

Q. DO YOU AGREE WITH QWEST'S DERIVATION OF THE NONRECURING "FLAT" CHARGE FOR DIRECT CONNECTION SERVICE?

A. No. I will discuss the component parts of the engineering portion of Qwest's "flat" charge before turning to the cable racking portion. (The engineering and cable racking costs are not separately identified charges, but are separately developed in Qwest's cost study.) Before doing so, it is useful to keep in mind that the Direct Connection service simply connects two collocation arrangements identified by the CLEC, and Qwest does not provide or install the cable itself. Although Qwest's cost study description implies that cost development assumes cable racking is rarely installed, the cost study includes additional assumptions

[5] Qwest's proposed charges for Direct Connection and Cross Connections appears in sections 8.8.1-8.8.5 and 8.8.6 which appear on page 1 of Exhibit TKM-28, attached to the Direct Testimony of Teresa K.

related to cable racking that are derived from Qwest's Collocation Cost Model and act to increase the "flat" charge (discussed below).

The engineering portion of Qwest's nonrecurring "flat" charge is inflated. Qwest lists **ten hours** of engineering time, divided into three parts: (1) **two hours** allotted for functions performed by the Collocation Project Management Center; (2) **five and one-half hours** allotted for functions performed by the Common Systems Planing and Engineering Center ("CSPEC"); and (3) **two and one-half hours** allotted for functions listed under the title of "Forms/Follow-up."

Qwest's list of engineering activities does not specifically identify whether any activities only need to be performed when and if cable racking is installed. While Qwest nominally assumes that cable racking installation is needed in a small percentage of cases, Qwest's engineering functions are included in every case, possibly misstating engineering costs. To be consistent, Qwest should have assigned the same probabilities used in its cable racking estimates to any engineering tasks that are only required when cable racking must be installed.

Qwest lists the Collocation Project Management Center functions as "application verification, date set, project management." Qwest provides no explanation of what information is verified; if anything, it would be that the collocation arrangements exist in the CO for which an application is submitted, information

Qwest should have readily available. Setting a date (such as identifying a standard interval for completion) requires very little time. CLECs should not pay for Qwest to ensure its internal organizations communicate with one another, since that is assumed in an efficient operation. I recommend the Commission require Qwest to use one hour to develop the costs for Qwest's Collocation Project Management Center functions.

Regarding the Common Systems Planning and Engineering Center, Qwest lists activities including: Initialize Billing Authorization Number (which should be a standardized computer-generated task), Obtain Funding Authorization (which may only be necessary if Qwest installs cable racking), and Prepare Engineering Package (which should also be a standardized procedure for this service). Qwest also lists tasks such as: Field Engineering Walk Through; Structure Verification; Complete Walk Through Report; Update Design Work Package; Update Engineering Prints. As mentioned above, most of the time Qwest need do little more than identify a cable route, update engineering diagrams (if necessary and specifically associated with this service) and communicate with the CLEC applicant. Qwest does not necessarily conduct an "in-person" walk-through and instead would rely generally on its engineering diagrams to determine whether available structure (such as overhead cable racking) exists. If Qwest's engineering diagrams are not up to date, CLECs should not be forced to pay for Qwest to bring them up to date. These activities should take no more than five hours.

Qwest's "Forms/Follow Up" functions are "quality check" and "SICM/ATR cable route walk through." CLECs should not be forced to pay for Qwest to ascertain whether the work for which CLECs are paying is of acceptable quality. Collocators should pay for no more than two hours of the activities included Forms/Follow-up.

In summary, I recommend the Commission require that Qwest use eight hours to develop its flat charge for direct connection service, one hour for the Collocation Project Management Center, five hours for CSPEC, and two hours for activities included Forms/Follow-up.

Q. **DO YOU AGREE WITH THE UNDERLYING ASSUMPTIONS QWEST USED TO DEVELOP THE COSTS RELATED TO THE CABLE RACKING PORTION OF QWEST'S DIRECT CONNECTIONS FLAT CHARGE?**

A. No. The cable racking portion of Qwest's nonrecurring "flat" charge assumes that **five** percent of the time collocators will require **twenty** feet of new cable racking (for DS0, DS1 and DS3 cabling), and that **ninety** percent of the time collocators will require **ten** feet of new cable racking for fiber cabling. (The greater frequency Qwest assumes is necessary for fiber cable racking explains why Qwest's flat charge for fiber is several hundred dollars more than the flat charge for DS0, DS1 and DS3 Direct Connection.) Furthermore, the cable racking cost is developed assuming the capacity of the cable racking is only **three** cables.

The assumptions regarding cable racking seems to be incomplete with respect to Qwest's cost model. While Qwest's cost model description indicates the assumed average amount of cable racking to be installed is small, as mentioned above, Qwest also assumes that **50%** of its COs require "Major Aerial Support" to develop per unit costs for aerial support and cable racking. Changing the "% of Offices that Require Major Aerial Support" to zero deletes the portion of the nonrecurring cost associated with cable racking. (This input generates the per-foot cost of cable racking to multiply by the percentage and lengths identified above.)[6] To the extent that these costs are appropriate for establishing a collocation arrangement, such collocation(s) are established prior to a CLEC ordering Cross Connections service and it is inappropriate to include such costs again here.

Q. IS IT CONSISTENT WITH TELRIC PRINCIPLES TO INCLUDE COSTS FOR CABLE RACKING FOR CLEC TO CLEC INTERCONNECTION?

A. No, not in the manner implemented by Qwest. A TELRIC approach to collocation costs for cable racking would include the cost (based on total demand and developed on a capacity basis) in the cost of the collocation arrangement, for example a cage.[7] Qwest has already assumed sufficient cable racking installation costs as part of its collocation Space Construction charge for physical collocation. Indeed, Qwest's collocation cost model includes cable racking costs that comprise between 15% and 20% of Qwest's "space construction" charge of

[6] Compare the "Description of Service" section of Qwest's Direct CLEC to CLEC Interconnection Cost Study #5928 with inputs identified in the Inputs tab as "% of Offices that Require Major Aerial Support" for

over $56,000. In other words, a 100 square foot physical collocation arrangement already includes on the order of $8400 to $11,200 for cable racking and overhead support!

If indeed Qwest must add overhead cable racking to provide a CLEC to CLEC connection, it is likely because the collocation arrangements are located in remote parts of the CO, were placed in an inefficient manner, or direct cable routes within Qwest's CO are congested, requiring new cable racking for a new (inefficient) route (or some combination). In any event, if any additional cable racking is required, the requirement arises from Qwest's absolute control over placement of CLECs' equipment in the CO, an issue over which the CLEC has no control and for which CLECs should not be required to pay. If Qwest had placed collocators in an efficient manner, no additional cable racking would be necessary. Consequently, no cable racking should be used to develop the costs of Qwest's "flat" charge.

Q. WHY IS NO ADDITIONAL CABLE RACKING NECESSARY IF QWEST HAD PLACED COLLOCATORS IN AN EFFICENT MANNER?

A. There are three possible permutations of Direct Connection: physical to physical, physical to virtual and virtual to virtual. In each permutation, cable racking would already exist if Qwest engineered collocation arrangements in an efficient manner. If Qwest has not done so, CLECs should not be forced to pay for

Aerial Support and Cable Racking.

[7] Cable racking costs may also be included in the rental charge for space in a central office.

Qwest's inefficient placement practices over which they have no control. This would be inconsistent with TELRIC principles.

Regarding physical to physical Direct Connection, an efficient collocation area layout would place collocation arrangements close together. For example, Qwest should not first install four cages in the extreme corners of a collocation area. Rather, collocation arrangements should be placed adjacent to one another to the extent possible. Deploying cages in this manner reduces engineering costs (especially if one-at-a-time deployment is avoided), as well as the need for cage walls. (Verizon has accounted for this latter factor in some jurisdictions, though, to my knowledge, Qwest has not.) A collocation area deployed efficiently would include cable racking between (likely adjacent) collocation arrangements.

With a physical to virtual Direct Connection, the cable route would run from Qwest's physical collocation area (described above) to Qwest's virtual collocation area. Since virtual collocation equipment is placed in Qwest's own equipment lineups, and for reasons explained above regarding physical collocation, sufficient cable racking should already exist. If cable racking does not exist between Qwest's equipment (and hence the virtually collocated equipment) and Qwest's physical collocation area, it is because Qwest chose to place the CLEC collocation area in a remote location from its own equipment.

Finally, with a virtual to virtual Direct Connection, since the equipment is within Qwest's own equipment lineups, cable racking should already exist.

Again, I recommend that Qwest be required to use no cable racking to develop the costs of Qwest's "flat" charge. In the alternative, if the Commission does not accept this recommendation, Qwest should be required to exclude cable racking costs from the nonrecurring portion of the flat charge and include cable racking costs only in the recurring charge based on capacity (described below). A recurring charge structure is appropriate because cable racking, once installed, becomes part of the central office building, available to be used by Qwest and other CLECs.

Q. IF CABLE RACKING ALREADY EXISTS, SHOULD DIRECT CONNECTION INCLUDE NO COST FOR USING CABLE RACKING?

A. No, for that would violate TELRIC principles. The correct approach is to assess a cost for the capacity of cable racking space consumed by the cables.

Note that cables are typically routed within COs on overhead cable racks supported from the ceiling. The bulk of cabling in a CO is copper, which is typically placed on wider cable racks (15" to 30"), while fiber and power cables are often placed on narrower (12" or 15") cable racks. The "pile-up" or height of cables on the racking can be over a foot and a half in some areas of a CO.

Q. DID QWEST CORRECTLY DEVELOP ITS CABLE RACKING COSTS ON A CAPACITY BASIS?

A. No. For the cable racking Qwest assumes will be installed (based on the percentages and lengths identified above), Qwest understates cable racking capacity and thereby overstates cable racking costs. Qwest spreads the cost of the cable racking over **three** cables, despite the fact that cable racking capacity is many times (orders of magnitude) greater. Indeed, in its cost study, Qwest lists more realistic cable rack capacities, identified as "existing cable racking" and capacities associated with Qwest's Collocation Cost Model. If the Commission permits Qwest to assume cable racking will be installed to develop costs for its Direct Connections service flat charge, I recommend that Qwest be required to use cable racking capacities that are no less than what it identifies as its existing cable racking capacities.

Qwest's Cable Racking Capacity Assumptions
(number of cables per rack)

Source	DS0	DS1	DS3	Fiber
CLEC-CLEC cost study input	**3**	**3**	**3**	
Existing Cable Racking	**219**	**161**	**417**	**42**
Qwest's Collo. Model Inputs	**219**	**322**	**833**	

Q. DO YOU AGREE WITH THE "USWI LABOR PERCENTAGE" QWEST ASSUMES IN ITS DIRECT CONNECTION COST STUDY?

A. Not necessarily. The percentage of Qwest (versus contract) labor listed in Qwest's cost study inputs is not linked to any calculation.[8] It is not clear whether Qwest's collocation model (from which it appears cable racking costs are derived) relies on the same percentage of Qwest labor. In a proceeding in Arizona, Qwest's collocation cost model relied more heavily on more costly contract labor. An Administrative Law Judge Recommendation in that proceeding (in which the Arizona Commission has yet to issue an order) stated:

> …we find Staff's calculation using 80 percent labor provided by QTI (Qwest) and 20 percent provided by contract labor is consistent with Qwest's experiences in Arizona, and with a forward-looking network, and should be adopted in this case.[9]

I recommend the Commission require Qwest to use 80% as the USWI labor percentage to develop its Direct Connection costs.

CLEC TO CLEC INTERCONNECTION: CROSS CONNECTIONS

Q. HAVE YOU EXAMINED QWEST'S CLEC-TO-CLEC CROSS CONNECTIONS COST STUDY?

A. Yes. As described above, Qwest's Cross Connection service requires installing (or disconnecting) a jumper cable between CLEC termination cables at a Qwest

[8] Qwest's cost study lists "USWI percent," which I have assumed to be the percentage of labor comprised by Qwest's installation technicians rather than outside vendors. The input may be used in cable racking installation and virtual collocation installation figures, which appear to be hard-coded rather than developed in the model.

[9] Recommendation by the Administrative Law Judges in Docket No. T-00000A-00-0194, In the Matter of the Investigation into Qwest's Compliance with Certain Wholesale Pricing Requirement for Unbundled

intermediate distribution frame. The costs for CLEC-to-CLEC Cross Connection installation and disconnection appear in Qwest's nonrecurring cost study, Exhibit TKM-29 and relies on Exhibit TKM-C30 for backup information. The nonrecurring cost study lists a variety of functions, the time required to perform the functions, the probability the functions will need to be performed and applicable labor rates.[10] The functions are grouped into four categories: Service Delivery Coordinator, Design, Central Office Frames and Service Delivery Implementor.

Q. DO YOU AGREE WITH QWEST'S DERIVATION OF THE CLEC-TO-CLEC CROSS CONNECTION COST?

A. No. Qwest's CLEC-to-CLEC Cross Connection costs, both installation and disconnection, are inflated. In fact, Qwest lists only a few minutes to actually complete the cross connect, but its "applied time," the total time charged to CLECs, is almost 3 hours! This is absurd and clearly inconsistent with the TELRIC requirement of a forward-looking OSS that pass information between systems. Qwest made several errors developing these nonrecurring costs: including costs for unnecessary and inappropriate activities, and overstating costs by treating separately activities that could be performed in parallel or in combination. I have restated Qwest's cost studies to correct for these errors, which is attached as (confidential) Exhibit 1 to this testimony.

Network Elements and Resale Discounts, dated November 8, 2001 at page 37.

[10] Qwest's proposed cost is the product of the time, probability and labor rate, which is then multiplied by Qwest's proposed cost factors.

Q. CAN YOU PROVIDE AN EXAMPLE OF WHY YOU BELIEVE THE CROSS CONNECTION COSTS ARE INFLATED?

A. Yes. One particular example involves a task identified as "circuit design" in the Design category for installation. Qwest's backup documentation supporting the ***BEGIN CONFIDENTIAL DISCUSSION*** ***END CONFIDENTIAL DISCUSSION*** than for a CLEC to CLEC Cross Connect, a service for which the CLEC applicant is responsible for providing the "Design Layout Record" (according to Qwest's SGAT section 8.2.1.23.1.4). Thus, it would seem that Qwest would need to spend very little time on circuit design for this service.

The notation mentioned above would seem to indicate that Qwest did not intend to change the times and probabilities for the other functions supported by this workpaper. The fact that times and manual handling probabilities have not been changed for a document that states these figures are * **BEGIN CONFIDENTIAL DISCUSSION*** ***END CONFIDENTIAL DISCUSSION*** calls into question the veracity of the statement, given the change in Qwest's OSS systems since then.

Q. **WHAT ARE SOME OF THE UNNECESSARY AND INAPPROPRIATE ACTIVITIES QWEST INCLUDED IN ITS CROSS CONNECTION INSTALLATION COST?**

A. Qwest listed activities required for access service requests ("ASRs") that will be submitted manually, which are unnecessary and inappropriate for carriers that submit ASRs electronically. (These activities appear in the Service Delivery

Coordinator group for installation.) Qwest should be required to develop separate costs for electronic and manually submitted ASRs. Qwest has done exactly this for a variety of other cost elements, such as UNE-P Conversion costs and UNE-P New Connection costs.[11] Service requests that are submitted manually typically cost more to process than electronic orders, and carriers that have invested in equipment and facilities to submit orders electronically should not be penalized by paying for costs exclusive to manual orders. I recommend that the Commission require Qwest to develop costs separately for electronic and manually-submitted orders and I have eliminated time related to manual order submission in Exhibit 1.

Qwest also includes time to verify that information contained in its different databases agrees and to resolve errors. (These activities appear most frequently in the Service Delivery Coordinator and Design groups – those groups with the most activities and the most detailed description of activities.) The problem of contaminated and nonsynchronized databases arises as a result of past inefficiencies, and it would be anticompetitive to impose costs on CLECs for Qwest to resolve this situation. With a competitive local service market, Qwest should face pressure to have efficient OSS' with clean databases, which reduce the cost and improve the quality of services provided.[12] Making CLECs pay to improve Qwest's databases would force CLECs to improve Qwest's ability to compete and should not be permitted. Furthermore, Qwest's time allotted to

[11] See, for example, costs that appear in section 9.23 of Qwest's Exhibit TKM-28 at page 7.

functions listed as "verify," "check" and "validate" are inconsistent with a forward-looking OSS, which should screen orders using "front end edits" (thereby rejecting any incomplete orders) and pass information between various systems. I recommend that the Commission require Qwest to develop costs by removing any costs associated with verifying, checking and validating database information, agreement and contamination resolution. I have made these adjustments in Exhibit 1.[13]

Q. PLEASE PROVIDE AN EXAMPLE OF HOW QWEST OVERSTATED COSTS BY TREATING SEPARATELY ACTIVITIES THAT COULD BE PERFORMED IN PARALLEL OR IN COMBINATION IN ITS CROSS CONNECTION INSTALLATION COST?

A. Qwest's subject matter experts appear to have provided time estimates for very small activities that were considered to be mutually exclusive, rather than providing time estimates to complete overall functions. This approach fails to recognize that some activities can be conducted in conjunction with others. For example, Qwest lists the function "check contract on FOC" and separately lists the function "check contract or SIG (Service Interval Guide) on intervals." Another example is that Qwest lists the function "check billing checklist for Contract Number and effective date" and separately lists the function "check billing check list for billing of nonrecurring and recurring rates." Regardless of whether these activities are appropriately included in the cost study, (and they are not since, as explained above, they are inconsistent with forward-looking

[12] The issue of efficient OSS' is described in the testimony of WorldCom witness Mr. Sidney Morrison.

OSS), Qwest errs in using a method that treats separately these activities that could be performed together in less time. That is, if there were a need to check a contract, it would be more efficient -- and consistent with TELRIC principles -- to check the contract once rather than multiple times for different pieces of information. I recommend that the Commission require Qwest to develop costs by reducing the time Qwest allots for separate activities that can be performed in parallel or in combination, and I have made these adjustments in Exhibit 1.

Q. PLEASE SUMMARIZE YOUR RECOMMENDATION FOR CLEC TO CLEC CROSS CONNECTION COST STUDY.

A. I recommend the Commission adopt costs based on the WorldCom times and probabilities shown in Exhibit 1, specifically requiring that Qwest develop costs separately for electronic and manually-submitted orders, remove any costs associated with verifying, checking and validating database information, agreement and contamination resolution, reduce Design group time for lack of evidence that the proper service was examined, and reduce the time allotted for separate activities that can be performed in parallel or in combination (provided the activities are not inconsistent with forward-looking OSS).

CHANNEL REGENERATION

Q. WHAT IS CHANNEL REGENERATION?

A. A regenerator, or repeater, is a type of circuit equipment that amplifies or regenerates electronic digital signals as they travel along cables within the central office. When DS1 and DS3 circuit lengths exceed 655 feet and 450 feet, respectively, a repeater is used to regenerate the signal.

Q. DOES QWEST PLAN TO CHARGE CLECS FOR REGENERATING A SIGNAL IN A CENTRAL OFFICE?

A. Yes, under certain circumstances. Qwest states:

> Depending upon the circumstances, when a CLEC requests collocation in a central office and Qwest places a CLEC in a collocation location that requires regeneration, Qwest would provide regeneration at no cost to the CLEC. In cases where the line meets or exceeds Qwest standards and the CLEC requests regeneration, the CLEC will be responsible for the charges associated with the regeneration of the line.[14]

My understanding of this statement is that first, Qwest recognizes that it exerts control over the placement of CLEC equipment and its own network configuration which largely determine whether CLECs need regeneration, and Qwest will provide regeneration at no charge if (technically) needed.[15] Second, if a CLEC technically does not need, but for some reason wishes to purchase, regeneration Qwest has developed an applicable cost study.

[14] Direct Testimony of Robert J. Hubbard on Behalf of Qwest Corporation, November 7, 2001 at page 12.
[15] By control over network configuration I mean that if a Qwest requirement that CLECs use an intermediate distribution frame, or single point of termination frame, results in CLECs' extended cable lengths such that regeneration is needed, Qwest will provide the regeneration at no charge.

Q. HAVE YOU EXAMINED QWEST'S CHANNEL REGENERATION COST STUDY?

A. Yes.

Q. WHAT COMMENTS DO YOU HAVE REGARDING THE ASSUMPTIONS UNDERLYING QWEST'S CHANNEL RENERATION COST STUDY?

A. For the reasons explained above, I recommend Qwest be required to use 80% Qwest labor to develop the labor-related costs in its Channel Regeneration cost study. Qwest's responses to WorldCom's discovery requests regarding Channel Regeneration costs is pending, and I reserve the right to file Supplemental Direct Testimony once I have received Qwest's responses.

SPACE INQUIRY REPORT

Q. WHAT IS A SPACE INQUIRY REPORT?

A. A space inquiry report is a requirement imposed by the FCC in its "Advanced Services Order" that requires an incumbent LEC to provide a requesting carrier with specific information related to a particular LEC premises.

> This report must specify the amount of collocation space available at each requested premises, the number of collocators, and any modifications in the use of space since the last report. The report must also include measures that the incumbent LEC is taking to make additional space available for collocation.[16]

[16] First Report and Order and Further Notice of Proposed Rulemaking, *In the Matters of Deployment of Wireline Services Offering Advanced Telecommunications Capability,* CC Docket No. 98-147, Released March 31, 1999 t paragraph 58.

Qwest states that its Space Inquiry Report contains the following information for each central office requested: number of collocators within the central office; amount of collocation space available; modifications in the use of space since the last report; whether there is sufficient power; number of CLECs in queue; and whether the premises is equipped with DS3 capabilities.

Q. DO YOU AGREE WITH THE DERIVATION OF QWEST'S SPACE INQUIRY REPORT COST?

A. No. Qwest's Space Inquiry cost is inflated as a consequence of methodological errors similar to those described above related to other nonrecurring cost studies, including inflated time requirements Qwest uses to develops its cost.

Qwest develops its cost for a Space Inquiry cost in five parts. Qwest assumes: (1) **30 minutes** to "verify and match documentation, determine number of collocators in office"; (2) **150 minutes** for database verification (COEFM), communication with real estate, SICM's, CO technicians and IOF if grooming or moving circuits is identified; (3) **30 minutes** to check to see if building addition is in planning stage, check with switch group to see about upcoming conversions/removals; (4) **30 minutes** to "pull report from COE-FM"; and (5) **60 minutes** to "review for completeness resolve discrepancies, Quote preparation and processing, data basing."

Qwest's response to Staff discovery request WUTC 01-025 (shown below) indicates that Qwest currently "inventories" most of the required information. Presumably, "inventories" means that Qwest maintains and regularly updates the

information, it is readily available in a database and hence requires very little time to extract the information.

Available collocation space – inventoried
Number of collocators – inventoried
Modifications of space – not inventoried
Measure to be taken to make additional space available – not inventoried
Sufficient power available to meet request – inventoried
Number of CLECs in queue at premises – inventoried
Whether wire center is equipped with DS3 capability – inventoried
Description of available space at Qwest's location – not inventoried

Q. WHAT COMMENTS DO YOU HAVE REGARDING THE ASSUMPTIONS UNDERLYING QWEST'S SPACE INQUIRY COST STUDY?

A. The functions in part (1) Qwest lists as "verify and match documentation, determine number of collocators in office." As noted above, Qwest "inventories" the number of collocators in a central office. The only need to "match documentation" would be to ensure the number of collocators is retrieved for the correct central office, which is likely the manner in which Qwest tracks the number of collocators (by CO), or to see when (or if) a report was previously provided. I recommend the Commission require Qwest to use 15 minutes for these functions in developing the Space Inquiry Report cost. Indeed, this recommendation is generous, since retrieving a number from a database should take no more than 5 minutes and CLECs should not be required to pay for Qwest to verify its documentation.

The functions in part (2), Qwest lists as "database verification (COEFM), communication with real estate, SICM's, CO technicians and IOF if grooming or moving circuits is identified." The time Qwest allots for these functions implies

that they are "not inventoried," such as modifications of space, measure to be taken to make additional space available, and a description of available space. Obtaining this information should take much less time than Qwest allots, perhaps only 30 minutes, since the group developing the report should be able to contact quickly the group(s) possessing the information, which should be readily available. For example, up-to-date diagrams should show available space and CLECs should not pay if Qwest's engineering diagrams are not kept up to date. I recommend the Commission require Qwest to use 60 minutes in developing the cost for these functions.

The functions in part (3) Qwest lists as "check to see if building addition is in planning stage, check with switch group to see about upcoming conversions/removals." The information listed in this item should be readily available to Qwest's real estate and switch planning groups. As explained with respect to the functions performed in part (2), while these items may not be inventoried by Qwest for the Space Inquiry Report, the information should be readily available to those responsible for building additions and switch conversions. Indeed, the group responsible for obtaining all the information for a Space Inquiry Report should have a standard email to send to the necessary departments for each Report. CLECs should only pay for information obtained through efficient internal communication. I recommend the Commission require Qwest to use 15 minutes in developing the cost for these functions.

The functions in part (4) Qwest lists as "pull report from COE-FM." Obtaining a report should take less time than Qwest allots and I recommend the Commission require Qwest to use no more than 15 minutes in developing the cost for this function.

The functions in part (5) Qwest lists as "review for completeness resolve discrepancies, Quote preparation and processing, data basing." CLECs should not be required to pay for Qwest to ensure that its previous functions were performed completely and without any internal conflicts. Since Qwest's Space Inquiry Report charge is a flat rate, any "quote preparation" simply requires identifying the known charge. Qwest should have a standard format for its Space Inquiry Report, so preparation and processing time should be minimal. I recommend the Commission require Qwest to use no more than 15 minutes in developing the cost for these functions.

In summary, I recommend the Commission require Qwest use the following times to develop the Space Inquiry cost (the numbers corresponding to Qwest's cost support described above): (1) 15 minutes (2) 60 minutes (3) 15 minutes; (4) 15 minutes; and (5) 15 minutes. The first four functions are performed by Qwest's CSPEC group, and the last is performed by the Infrastructure Availability Center ("IAC"). I note that in providing a Space Inquiry Report, some functions (such as emailing various departments) can be done in parallel with others, and my recommendation should serve as an upper bound of the time required.

SPACE OPTIONING

Q. WHAT IS QWEST'S SPACE OPTIONING SERVICE?

A. Space Optioning provides a prospective collocator with the ability to reserve collocation space without occupying that space. In the event space is constrained in a central office to such an extent that the prospective collocator's space reservation (should its option be exercised) would preclude another collocator from obtaining space in the central office, the prospective collocator retains the right to use the space it reserved. Qwest presents a cost study for a nonrecurring charge of $1807.17 for a Space Option Administration Fee which is "intended to recover the cost of processing the application, feasibility, common space engineering, records management, and administration of the right of first refusal process."[17] (I note that Qwest appears to have made an input error in its cost study by inserting figures greater than 1.0 for probabilities associated with activities performed by its Infrastructure Availability Center. Inserting probabilities equal to 1.0 changes Qwest's recommendation to $1097.24, assuming no other changes to Qwest's cost study).

Q. HAVE YOU EXAMINED QWEST'S SPACE OPTIONING COST STUDY?

A. Yes. The Space Optioning service appears primarily to enable a CLEC to reserve space. In addition to maintaining the CLEC's request (specific central office, amount and type of space) in queue, and possibly notifying the CLEC should the option expire or be exercised at the CLEC's request (which would

[17] Direct Testimony of Robert F. Kennedy on Behalf of Qwest Corporation, November 7, 2001 at page 13.

invoke Qwest's usual rates and charges), little else would seem to be required of Qwest.

Q. DO YOU AGREE WITH THE ASSUMPTIONS UNDERLYING QWEST'S SPACE OPTIONING COST STUDY?

A. No. Qwest uses inflated time requirements to develop its Space Optioning cost. For example, Qwest includes engineering hours but fails to justify why any engineering is required prior to a CLEC exercising its Option and occupying space. Prior to a CLEC occupying space, Qwest's regular collocation-related charges would be invoked. According to Qwest's SGAT, these charges include a "Quote Preparation Fee" ($4,195.90 for cageless and virtual collocation; $4,561.19 for caged physical collocation) which includes costs associated with engineering functions. In addition, Qwest's "space construction" charge ($56,145.24 for a 100 square foot cage) includes a significant amount of engineering costs. Indeed, the total engineering costs exceed $10,000, an amount the Arizona ALJ Order proposed be reduced by half.[18] While in some jurisdictions Qwest had planned to credit the Quote Preparation Fee against the engineering component of its Space Construction charge, no such indication appears in its SGAT. See section 8.3.1.3 of Qwest's SGAT, the definition of Quote Preparation Fee.

[18] Recommendation by the Administrative Law Judges in Arizona Corporation CommissionDocket No. T-00000A-00-0194, In the Matter of the Investigation into Qwest's Compliance with Certain Wholesale Pricing Requirement for Unbundled Network Elements and Resale Discounts, dated November 8, 2001 at page 40.

Qwest assumes a total of **16 hours** are required for Space Optioning, **2 hours** by Product Management Implementation ("PMI"), **9 hours** by the Common Systems Planning Engineering Center ("CSPEC") and **5 hours** by the Infrastructure Availability Center ("IAC"). The PMI function is described as "overall project management and coordination" under the subtitle "job monitoring, order validation, scheduling." Qwest should be able to conduct scheduling and validate the order in very little time. Since Qwest may need to communication with the CLEC regarding exercising its Option, I recommend Qwest use no more than one hour for these functions.

The SCPEC time allotted to engineering should be excluded because the engineering charges associated with Qwest's Quote Preparation Fee and Space Construction charge is more than sufficient should a CLEC decide to collocate. Qwest lists the same amount of time for CSPEC to perform "Implementation of First Right of Refusal" and "First Right of Refusal" and (though it is unclear exactly what activities are involved) only one should be permitted.

Finally, the times associated with the tasks to be performed by the IAC ("Order validation," "Quote," "Billing Work," and "CPMC First Right of Refusal") are overstated. If the PMI is conducting "order validation" it is unclear why CLECs should also pay for the IAC to conduct "order validation" and I recommend Qwest be permitted no time for this duplicate function. Given the charge for Space Optioning is a nonrecurring charge, it is unclear what functions are performed for

"Quote." Billing Work should be able to be completed relatively quickly and Qwest provides no reason to justify the time listed for the IAC to perform the function "CPMC First Right of Refusal" (especially with PMI and SCPEC also performing First Right of Refusal. I recommend that Qwest be required to use 2 hours for the IAC to develop its Space Optioning cost.

In summary, I recommend the Commission require Qwest to use 4 hours in developing the cost for its Space Optioning nonrecurring charge: 1 hour for PMI, 1 hour for CSPEC, and 2 hours for the IAC.

REMOTE TERMINAL COLLOCATION

Q. HAVE YOU EXAMINED QWEST'S REMOTE TERMINAL COLLOCATION COST STUDY?

A. Yes. Qwest's Remote Terminal collocation costs include a nonrecurring and recurring costs for Space as well as for Fiber-Distribution Interface ("FDI") termination per binder group (25 pairs). The nonrecurring cost for Space is per standard mounting unit ("SMU") of 1.75 vertical inches and is "…associated with the cabinet space and includes the cost of the cabinet and all of the work and materials associated with placement of the cabinet."

Qwest develops costs based on the weighted average of two vendors, one of which is almost twice as expensive as the other on an SMU basis. Qwest provides no reason to use a weighted average of the two vendors rather than the least-cost approach in compliance with TELRIC principles. I recommend the

Commission require Qwest to develop the Remote Collocation Space cost using only vendor A or, alternatively, to develop separate costs for separate (size) cabinets to address the variations in telecommunications equipment heights.

Qwest applies a **33%** utilization factor (to each of the two vendors) in developing its Space cost. (The lower the assumed utilization factor, the greater the cost.) Given the size of equipment a CLEC may wish to place, Qwest should use a greater utilization factor. For example, a CLEC wishing to place equipment that is 10.5 inches high (6 SMUs), could use a "Vendor A" (**13** SMU) cabinet and achieve almost 46% utilization. In contrast, a CLEC wishing to place equipment that is 24.5 inches high (14 SMUs), could use a "Vendor B" (**23** SMU) cabinet and achieve 61% utilization. I recommend the Commission require Qwest to develop the Remote Collocation space costs using a utilization factor of 50%.

Qwest lists a Quote Preparation Fee ("QPF") for Remote Collocation (and Remote Adjacent Collocation) as an individual case basis ("ICB") charge. (See Exhibit TKM-28 page 1.) Qwest claims that an ICB charge is appropriate for the QPF because the process of establishing a remote collocation is not generally predictable and the survey work required for remote collocation requests may vary.[19] There are several generic problems with ICB charges, including no opportunity for the Commission to ensure they are just and reasonable. In addition, ICB charges have no cost study so there is no assurance that duplicate

[19] Direct Testimony of Robert F. Kennedy on Behalf of Qwest Corporation, November 7, 2001 at page 9.

charges are not assessed. In fact, Qwest's Quote Preparation Fee for its collocation product includes costs associated with engineering functions that duplicate engineering costs that are included in Qwest's Space Construction charge. Once this was pointed out in a recent Arizona proceeding, Qwest was willing to credit the amount of the Quote Preparation Fee toward payment of the Space Construction charge. Thus, the concern for potentially duplicate charge is a real concern.

In the case of the Remote Collocation QPF, Qwest has identified no specific functions that it would perform to be included in this charge that are not already included in the cost study. Indeed, the Remote Collocation cost study includes material, engineering and installation costs, and even includes costs associated with rights-of-way and the "distance between cabinets." If Qwest's other collocation cost studies are any indication, the QPF is associated with engineering activities that duplicate those included in other charges and, if reasonable, should be credited against those charges. If a QPF is to be allowed for Remote and Remote Adjacent Collocation at all, it should be based on reasonable and explicit assumptions and credited against Qwest's Space nonrecurring charge.

BONA FIDE REQUEST ("BFR")

Q. HAVE YOU EXAMINED QWEST'S BONA FIDE REQUEST COST STUDY?

A. Yes. Qwest proposes to assess a nonrecurring charge of $2662.22 for processing a Bona Fide Request.

Q. DO YOU AGREE WITH THE ASSUMPTIONS UNDERLYING QWEST'S BONA FIDE REQUEST COST STUDY?

A. No. Qwest's Bona Fide Request cost study includes a total of **26 hours** combined for its Infrastructure Availability Center ("IAC") and Interconnection Planning ("IP") group.

BEGIN CONFIDENTIAL DISCUSSION* *END CONFIDENTIAL DISCUSSION will not be necessary since sufficient information should be provided in the CLEC's BFR. Assuming that some BFRs may require additional information, I recommend the Commission permit Qwest to use no more than 3 hours for each group for these activities. (I have assumed that when no additional information is needed, the meetings, etc. will require two hours for each group, and that fifty percent of the time additional information is needed and the full four hours would be needed.)

BEGIN CONFIDENTIAL DISCUSSION* *END CONFIDENTIAL DISCUSSION Given the information that CLECs are required to provide in the BFR,[20] I

[20] Qwest's list of functions seems to invokes the question of a legal interpretation that a CLEC applicant has decided and it is inappropriate for CLECs to pay for a Qwest legal interpretation.

recommend the Commission permit Qwest to use no more than 30 minutes in developing the cost for these activities. ***BEGIN CONFIDENTIAL DISCUSSION* *END CONFIDENTIAL DISCUSSION*** CLECs should not pay for Qwest to obtain internal approval of a BFR. Qwest has an incentive to delay and thereby deny CLEC access to network capabilities. Considering that some amount of time is required to draft findings and recommendations, I recommend the Commission require Qwest to use not more than 6 hours for this activity.

In summary, I recommend Qwest's BFR cost be developed using 3.5 hours for the IAC and 13.5 hours for its IP group.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes, at this time.