Exhibit No. _____ (LR-1T)
Docket No. UT-003013 – Phase D

BEFORE THE

WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

IN THE MATTER OF THE CONTINUED COSTING AND PRICING OF UNBUNDLED NETWORK ELEMENTS, TRANSPORT, TERMINATION, AND RESALE	**)** **)** **)** **)**	**DOCKET NO. UT-003013 PHASE D**

PHASE D DIRECT TESTIMONY OF

LARRY RICHTER

ON BEHALF OF

VERIZON NORTHWEST INC.

SUBJECT: COSTS FOR MULTIPLEXING, FIBER OPTIC PATCHCORD,

VIRTUAL COLLOCATION AND DEDICATED TRANSIT SERVICE

NOVEMBER 7, 2001

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I. INTRODUCTION

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Larry Richter, and my business address is 600 Hidden Ridge, Irving, Texas 75038.

Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?

A. I am employed by Verizon Services Group as Staff Manager – Service Cost. I am testifying on behalf of Verizon Northwest Inc.

Q. WHAT ARE YOUR RESPONSIBILITIES IN THIS CAPACITY?

A. I am responsible for testifying in support of Verizon's wholesale, retail, access, and collocation cost studies for the former GTE service territories. In this role, I work directly with the Costing group that prepares the cost studies.

Q. WHAT IS YOUR EDUCATIONAL BACKGROUND AND EXPERIENCE IN TELECOMMUNICATIONS?

A. I received a Bachelors Degree in Business Administration from Northwood University. I have been employed by Verizon for over 32 years. I joined General Telephone Company of California in 1968 working in the Outside

Plant Installation, Repair, and Maintenance Department. I transferred to General Telephone Company of Southwest in 1973 and remained in the same type of job. In 1975, I was promoted into management, where I was primarily associated with Network Operations in varying capacities, each with increasing responsibilities. These positions included first line supervisor, area support, service and facilities management. In 1987, I became manager of the DART (Dispatch, Assignment, Repair and Test) Center for one of the largest service centers in Texas. In 1988, I accepted a position in the Finance group, providing business analysis, service results, and budget creation and tracking for Network Operations and Engineering and Construction work groups. In 1996, I moved to another finance position, responsible for capital budget creation and tracking for the Company's Texas/New Mexico Region. In 1998, I accepted a position at GTE Service Corporation in the Costing group responsible for cost study development for retail, wholesale, access, and collocation services. In 2000, I assumed the position of Staff Manager – Service Cost, with primary responsibility for testifying before state commissions in support of Verizon's cost studies.

Q. HAVE YOU TESTIFIED PREVIOUSLY BEFORE PUBLIC UTILITY COMMISSIONS?

A. Yes. I have testified before the Washington, California, Illinois, North Carolina, Michigan, and Hawaii public utilities commissions.

Q. PLEASE STATE THE PURPOSE OF YOUR TESTIMONY.

A. I am filing testimony to explain the cost elements and composition of Verizon's Multiplexing and Expanded Interconnection Services ("EIS") Cost Studies for the state of Washington, which is attached to my testimony as exhibits LR-2C and LR-3C, respectively. In my testimony, I explain the cost study inputs, technical assumptions, and cost study results.

It is important to note that Verizon's cost studies submitted in this proceeding comport with the total element long run incremental cost ("TELRIC") approach reflected in the FCC's pricing rules, a number of which have been invalidated by the U.S. Court of Appeals for the Eighth Circuit.[1] Although Verizon has long opposed the FCC's TELRIC standard, it has been obliged to use that standard in its studies here, as the Eighth Circuit's decision has been stayed pending U.S. Supreme Court review.[2] In the meantime, there is considerable uncertainty about the appropriate cost standard to be used in developing costs for collocation arrangements, UNEs,

[1]Iowa Utils. Bd. v. F.C.C., 219 F.3d 744, 759 (8th Cir. 2000).
[2]Iowa Utils. Bd. v. F.C.C., No. 96-3321 (8th Cir. Sept. 22, 2000) (order granting motion for partial stay of mandate).

and the like. Therefore, Verizon reserves the right to modify its cost studies once the cost methodology issue has been resolved at the federal level.

Q. DOES VERIZON'S COST STUDIES COMPLY WITH PREVIOUS RULINGS OF THIS COMMISSION?

A. Yes, Verizon's cost studies take into account previous rulings by this commission. Verizon witness Mr. Bert Steele addresses how Verizon's rates incorporate these previous rulings.

II. MULTIPLEXING

Q. WHAT IS MULTIPLEXING?

A. Multiplexing is the combining of two or more channels into a single channel for transmission over the telecommunications network. Multiplexing also refers to the division of a transmission facility into two or more channels. For transmission of data signals, the more channels or the higher the bandwidth of a signal, the more data that can be transmitted over the medium. Special telecommunications equipment is necessary to combine or divide channels at the various levels.

Q. WHAT COSTS ARE ASSOCIATED WITH MULTIPLEXING?

A. In this context, the costs associated with multiplexing are for the labor of a central office technician to install jumpers on a cross connect panel. There are two types of multiplexing: 1)DS1 to DS0 (voice grade) and 2) DS3 to DS1 signaling. Verizon will only be presenting costs for DS3 to DS1 multiplexing in Phase D of this proceeding, because the costs for DS1 to DS0 multiplexing were presented in Phase B as part of Verizon's proposed monthly recurring costs for DS1 to DS0 multiplexing.

Q. HOW WERE THE COSTS FOR THE CENTRAL OFFICE CONNECTIONS DEVELOPED?

A. The central office jumper connection costs were developed by multiplying the average time to run a jumper by the loaded labor rate for a central office technician. The average time to run these multiplexing jumpers is based on a jumper wiring time and motion study. The development of these costs can be found in Exhibit LR-2C.

III. EXPANDED INTERCONNECTION SERVICES ("EIS") COST STUDY

Q. PLEASE DESCRIBE HOW VERIZON'S EIS COST STUDY WAS DEVELOPED.

A. The EIS Cost Study was developed using a "bottoms-up" approach of analyzing all of the elements involved in Verizon's provisioning of collocation. A team of costing personnel, Subject Matter Experts ("SME's"), field management employees, and technicians assisted in the data gathering. For activities provided by contractors, input was received directly from the contractors.

The methodology used in preparing the EIS Cost Study outlined in Exhibit LR-3C is the same methodology used in developing Verizon's EIS Cost Study that was filed in Phase A of this proceeding. The Washington Commission established permanent collocation rates in Phase A based on this cost methodology.

Certain collocation costs already approved by this Commission in Phase A are also applicable to Verizon's virtual collocation offering. For example, the costs previously approved for facility pull, facility terminations, and DC power are relevant for virtual collocation arrangements as well. In Phase D of this proceeding, I am only presenting those additional costs that were not addressed in Phase A.

Q. ARE THERE ANY NEW COLLOCATION COST ITEMS PRESENTED IN THE EIS COST STUDY OUTLINED IN EXHIBIT LR-3C THAT MAY ALSO APPLY TO CAGED OR CAGELESS COLLOCATION ARRANGEMENTS?

A. Yes. The EIS Cost Study presents costs for Facility Cable Category 5, Fiber Optic Patchcord, and Cable Duct Space – Fiber Optic Patchcord that may be applicable to a virtual, caged or cageless collocation arrangement. Verizon did not present costs for these rate elements in Phase A of this proceeding.

Q. HOW ARE THE RESULTS OF THE EIS COST STUDY PRESENTED?

A. The EIS Cost Study for the state of Washington is filed as Exhibit LR-3C. The Study includes a description of the development of costs, a glossary of terms, a summary of the cost and rate elements, and the supporting workpapers. Below I will describe the activities and the costs associated with a CLEC request for fiber optic patchcord, virtual collocation, and Dedicated Transit Service ("DTS").

A. *FIBER OPTIC PATCHCORD*

Q. WHAT IS A FIBER OPTIC PATCHCHORD?

A. The fiber optic patchcord is an optical fiber jumper with fiber connections on each end that connects the collocation arrangement to Verizon's fiber distribution panel.

Q. WHAT FIBER OPTIC PATCHCORD COSTS ARE INCLUDED IN VERIZON'S STUDY?

A. As addressed in Mr. Steele's testimony, Verizon is proposing both non-recurring charges ("NRC") and monthly recurring charges ("MRC") for fiber optic patchcord. Verizon's cost study includes the following fiber optic patchcord costs.

1. Fiber Optic Patchcord Pull (NRC)
2. Fiber Optic Patchcord Termination (NRC)
3. Fiber Optic Patchcord –24 Fiber (Connectorized) (NRC)
4. Facility Termination – Fiber Optic Patchcord (MRC)
5. Cable Duct Space - Fiber Optic Patchcord (MRC)

Q. PLEASE EXPLAIN HOW THE COSTS FOR THE FIBER OPTIC PATCHCORD PULL NRC WERE DEVELOPED.

A. The fiber optic patchcord pull is the placement of the fiber optic patchcord from the Competitive Local Exchange Carrier's ("CLEC's") equipment to a fiber distribution panel. The costs are based on the central office equipment installer's hour per unit to perform this activity and the loaded labor rate. The central office equipment installer will place the fiber patchcord in a fiber duct system, and the time used to estimate this activity is based on the hours per unit to place cable in the Verizon central office. This is consistent with the methodology used to develop the other facility pull costs contained in Verizon's EIS Cost Study that was approved by the Commission in Phase A of this proceeding. The hours per unit is multiplied by the loaded labor rate of the central office equipment installer. The hours per unit used in the study were developed by central office staff personnel, field managers, and central office equipment installers whose job responsibilities are to perform equipment installation activities within Verizon central offices. These same hours per unit are used by Verizon central office engineers to estimate installation times for Verizon's own equipment. The development of these costs can be found on page 23 of Exhibit LR-3C.

Q. PLEASE EXPLAIN HOW THE COSTS FOR THE FIBER OPTIC PATCHCORD TERMINATION NRC WERE DEVELOPED.

A. The fiber optic patchcord termination is the connection of the fiber optic patchcord to the fiber distribution panel. The costs are based on the central office equipment installer's hours per unit to perform this activity and the loaded labor rate. The central office equipment installer will connect the patchcord to the assigned connecting points at the fiber distribution panel. This cost is determined on a per termination basis. The development of these costs can be found on page 24 of Exhibit LR-3C.

Q. PLEASE EXPLAIN HOW THE COSTS FOR THE FIBER OPTIC PATCHCORD-24 FIBER (CONNECTORIZED) NRC WERE DEVELOPED.

A. The fiber optic patchcord-24 fiber cost is based on Verizon's cost per foot of the 24-fiber optic patchcord and the appropriate material loadings. Verizon used in its calculations an average length of 185 feet for a fiber optic patchcord. This is based on average lengths of patchcords purchased by Verizon during a two-year period**.** The average length is multiplied by the cost per foot of a 24-fiber patchcord to develop the cost per fiber optic patchcord. The development of these costs can be found on pages 27 - 28 of Exhibit LR-3C.

Q. PLEASE EXPLAIN HOW THE COSTS FOR THE FACILITY TERMINATION – FIBER OPTIC PATCHCORD MRC WERE DEVELOPED.

A. The facility termination fiber optic patchcord costs include the labor, equipment, and floor space that is associated with a fiber optic termination at the fiber distribution panel. The labor portion is the engineering and installation labor of the equipment, relay racks and the optical distribution panel equipment. The equipment portion is the relay racks and optical distribution panel equipment. The floor space is based on the space occupied by a relay rack, depth of the equipment, and half of the aisle space in front and back of the relay rack. Verizon calculates the labor, equipment, and floor space costs on a per connector basis by dividing the total costs by the number of connections that can be made on an optical distribution panel. An annual cost factor is then applied to this result and divided by twelve to develop a monthly cost per connector. The floor space cost per square foot is the same as approved in Phase A of this proceeding. The development of these costs can be found on page 66 of Exhibit LR-3C.

Q. HOW WERE THE COSTS FOR THE CABLE DUCT SPACE - FIBER OPTIC PATCHCORD MRC DEVELOPED?

A. The cost of the cable duct space - fiber optic patchcord is based on Verizon's cost for the material, material loadings, and labor to engineer and install a 102 foot fiber duct system within a Verizon central office. The labor hours to engineer and install the duct system were provided by SMEs who are responsible for the engineering and installation of this equipment. The material and labor costs are divided by 102 feet to produce a cost per foot. The total cable duct cost is divided by the number of fiber optic patchcords that can be placed in the duct system. The resulting duct cost is expressed as a cost per foot per fiber optic patchcord connection. An annual cost factor is applied to the cost per foot of duct system and divided by twelve to develop a monthly cost. As indicated above, these costs may be applicable to a virtual, caged or cageless collocation arrangements. The development of these costs can be found on page 70 of Exhibit LR-3C.

B. VIRTUAL COLLOCATION

Q. WHAT IS VIRTUAL COLLOCATION?

A. Virtual collocation is an arrangement between a CLEC and Verizon to place the equipment provided by the CLEC in Verizon's central office. Under this arrangement, Verizon agrees to install, maintain, and repair the equipment.

Q. WHAT VIRTUAL COLLOCATION COSTS ARE INCLUDED IN VERIZON'S STUDY?

A. Virtual collocation costs include the labor for activities, the material, and equipment, and floor space required to collocate equipment provided by the CLEC within Verizon's central office. The cost elements for a virtual arrangement are grouped into the following non-recurring and recurring rate elements as addressed by Mr. Steele.

1. Virtual Engineering/Major Augment (NRC)
2. Facility Cable-Category 5 Connectorized (NRC)
3. Virtual Equipment Installation (NRC)
4. Virtual Software Upgrades (NRC)
5. Virtual Card Installation (NRC)
6. Virtual Equipment Maintenance (MRC)

Q. PLEASE EXPLAIN HOW THE VIRTUAL ENGINEERING COSTS AS INCLUDED IN THE ENGINEERING/MAJOR AUGMENT NRC WERE DEVELOPED.

A. Verizon incurs costs to plan and engineer a CLEC's request for virtual collocation space within a Verizon central office. Verizon personnel, including the Central Office Equipment Engineer, Land & Buildings Engineer and the Outside Plant Engineer, meet at the central office to identify

arrangements required to provide collocation as requested by a CLEC. As a part of this process, the future use of space within the central office is evaluated to determine the best location for the equipment provided by the CLEC. Once the planning phase is completed, the engineers work on the actual provisioning of space to accommodate the CLEC's collocation request. Status meetings are held throughout the engineering process to discuss the progress of the CLEC virtual collocation request. The costs for these functions can be found on page 22 of Exhibit LR-3C.

Q. PLEASE EXPLAIN HOW THE COSTS FOR THE FACILITY CABLE-CATEGORY 5 CONNECTORIZED NRC WERE DEVELOPED.

A. Category 5 cable is used when data is being transmitted via metallic cable between equipment, panels or the main distribution frame. These category 5 cable costs are applicable to a virtual collocation arrangement, but will also apply to caged and cageless collocation arrangements. As noted earlier in my testimony, the category 5 cable costs were not included in Verizon's EIS Cost Study presented in Phase A of this proceeding. The cost is based on Verizon's cost of the cable plus the appropriate material loadings. To determine the category 5 cable cost, the average cost of the cable was determined by averaging the cost of 100-foot, 150-foot, and 200-foot cables. This average cable cost is divided by the average length of the three cables,

resulting in a cost per linear foot of category 5 cable. The development of these costs can be found on pages 27-28 of Exhibit LR-3C.

Q. PLEASE EXPLAIN THE ACTIVITIES ASSOCIATED WITH THE VIRTUAL EQUIPMENT NRC INSTALLATION ELEMENT.

A. The engineer is responsible for creating the work order that describes the location for and how the equipment is to be installed. This includes the provisioning of the power and connecting cables for access to the network. The central office equipment installer installs the equipment based on the work order provided by the engineer. The central office equipment installer will need to inventory the equipment to be sure that all the equipment has arrived. The installer will install the equipment, including all cards, power, and connecting cables. When the installation is complete, an equipment test time will be arranged with the CLEC. If during the test process a discrepancy is found, it will be worked out with the CLEC.

Q. HOW WERE THE COSTS FOR THE VIRTUAL EQUIPMENT INSTALLATION NRC DEVELOPED?

A. The engineering and installation costs are based on time estimates provided by Verizon's Network Planning Group for the types of equipment that have been "virtually" installed in Verizon's central offices. These activity times

are applied to Verizon's loaded labor rate for a central office equipment engineer and a central office equipment installer. Verizon developed a weighted cost for circuit equipment based on the frequency that each type of equipment is virtually collocated in Verizon's central offices. The costs for these functions can be found on pages 29-31 of Exhibit LR-3C.

Q. PLEASE EXPLAIN HOW THE VIRTUAL SOFTWARE UPGRADE COSTS WERE DEVELOPED.

A. The costs associated with software upgrades reflect the labor time required to upgrade the software for each type of equipment being requested by CLECs for installation. The labor hours are provided by the National Operations Center ("NOC") managers. The labor hours are multiplied by the loaded labor rate for the central office equipment installer. These costs are weighted based on the frequency of the equipment being installed, similar to the development of the engineering and installation costs. The development of these costs can be found on pages 32-34 of Exhibit LR-3C.

Q. PLEASE EXPLAIN HOW THE VIRTUAL CARD INSTALLATION COSTS WERE DEVELOPED.

A. The Virtual Card Installation cost includes the time the central office equipment engineer spends engineering the installation, and the time incurred

by a central office equipment installers to install the card. Engineering time includes such tasks as determining the location of the base unit into which the card is to be installed; determining the appropriate cables; lengths and connections; and ordering materials. Verizon calculates a weighted average cost per card installed based on the frequency each type of equipment is collocated in Verizon's central offices. The development of these costs can be found on pages 35-37 of Exhibit LR-3C.

Q. WHAT COSTS ARE INCLUDED IN VIRTUAL EQUIPMENT MAINTENANCE?

A. The cost elements included in the Virtual equipment maintenance are the frame space and both routine and trouble maintenance activities. Below I will explain how each cost is developed.

Q. PLEASE EXPLAIN HOW THE FRAME SPACE COSTS WERE DEVELOPED.

A. The frame space cost consists of two components – the relay rack (frame cost) and the floor space the relay rack occupies. The frame cost is derived by developing the total cost for an eight-foot standard relay rack, including the relay rack material, engineering and installation labor of the relay rack, and travel time for the central office equipment installer. The total cost is

divided by four to produce a cost per quarter rack. Material loadings are added to the material and an annual cost factor is used to develop an annual cost per quarter rack. This annual cost is divided by twelve to provide a monthly cost for a quarter rack.

The floor space costs presented in Phase D are based on the same methodology used for determining the floor space costs Verizon presented and the Commission approved in Phase A in this docket. The floor space costs are those costs to provide environmentally conditioned floor space, based on an average cost per square foot. Floor space costs were determined by examining the building investment amounts, square footage, and monthly maintenance/utility expenses of a selected sample of central offices of varying switching technology and size utilized by Verizon across the state of Washington. Information from these selected central offices was used to calculate the average cost per square foot in the EIS Cost Study. The square footage for the frame space takes into account the size of the relay rack, equipment in the rack, and one-half of the aisle in front and in back of the equipment. These costs are then divided by four to produce a cost per quarter rack.

Finally, the monthly frame cost is added to the monthly floor space costs to provide a total monthly cost. The development of these costs can be found on pages 73, 77-82 of Exhibit LR-3C.

Q. PLEASE EXPLAIN HOW THE VIRTUAL EQUIPMENT MAINTENANCE COSTS WERE DEVELOPED.

A. Equipment maintenance costs were developed for both routine and trouble maintenance activities. The activities and time estimates are provided by NOC managers and central office technicians responsible for performing maintenance on the types of equipment provided by CLECs. The annual time estimates are multiplied by the loaded labor rate of the central office technician and divided by twelve to produce a monthly cost. These costs are based on a per equipment base unit. The next step was to determine the number of base units for each type of equipment that can be placed in an eight-foot relay rack. This quantity was multiplied by the equipment maintenance cost to give a cost per rack. The equipment frequency was applied to the rack cost to provide a weighted cost per rack. The weighted cost per rack was divided by four to provide the cost per quarter rack. The development of these costs can be found on pages 73-76 of Exhibit LR-3C.

C. DEDICATED TRANSIT SERVICE (DTS)

Q. PLEASE DEFINE DEDICATED TRANSIT SERVICE.

A. Dedicated Transit Service ("DTS") allows a CLEC to interconnect facilities and equipment with another CLEC's facilities and equipment. This connection will be a dedicated connection at the DS0, DS1, or DS3 transmission level or via dark fiber. This connection must be made within the same Verizon central office and the CLEC must provide its connecting facility assignments.

Q. HOW WERE THE COSTS DEVELOPED FOR DTS?

A. Verizon anticipates that DTS requests for DS0, DS1 and DS3 will be processed in the same manner as dedicated non-switched transport requests, and DTS requests for dark fiber will be processed in the same manner as dark fiber dedicated transport requests. Thus, Verizon's proposed costs for dedicated non-switched transport and dark fiber submitted in Phase B of this proceeding provide relevant DTS costs. The costs used are the ordering, service connection, and disconnect costs for a "new" dark fiber order and the "change" order costs for metallic non-switched dedicated transport for DS0, DS1, and DS3.

Q. CAN YOU SPECIFY WHICH SPECIFIC CLEC DEDICATED TRANSPORT COSTS THAT VERIZON PROPOSED IN PHASE B WERE USED FOR DTS COSTS?

A. Yes. If you refer to pages 7-WA 26 AND 7-WA 27 of Exhibit No. C-1160 (LC-2C), the ordering and provisioning costs for a DS0 and DS1 and Higher "change" order for dedicated transport were used. For dark fiber, please refer to page 7-WA 18 of the same exhibit for the ordering and provisioning costs for dedicated transport.

Q. WHAT TYPES OF COSTS WILL VERIZON INCUR FOR PROCESSING CLEC REQUESTS FOR DTS?

A. Verizon will incur costs for ordering, provisioning, CO wiring (central office and jumper material) and disconnect activities associated with CLEC requests for DTS. In addition, there are three additional costs that will also apply to a DTS order: 1) record order costs, 2) OSS transition costs, and 3) OSS transaction costs. The record order costs are those associated with an administrative change to an existing CLEC account, such as a name change. Verizon is proposing to use the record order costs of $3.70 for a manual order and $2.09 for a semi-mechanized order that were presented in Phase B of this proceeding. The OSS transition costs of $3.27 and the OSS

transaction costs of $3.76 previously adopted by the Commission in Phase A would also apply to DTS orders.

Q. PLEASE EXPLAIN THE ORDERING PROCESS FOR DTS.

A. A CLEC will place its order for DTS via the Access Service Request ("ASR") process, which will be handled by Verizon's National Access Contact Center ("NACC") located in Durham, North Carolina. The NACC service consultants that will handle CLEC requests for DTS are also responsible for processing the Inter-Exchange Carrier ("IXC") ASRs. The NACC has been in existence for approximately 20 years and has a great deal of experience in processing IXC requests for both switched and special access services. The NACC's processes and systems for IXCs are closely aligned with the ones that will be required for processing DTS requests.

The CLEC has an option to send the ASR to the NACC electronically or manually. Once the NACC receives the ASR, it is checked for completeness and accuracy. The NACC then releases the order into the Verizon's access order processing system, which routes it to the appropriate provisioning and central office installation work groups involved in completing Washington orders.

Q. HOW WERE THE COSTS DEVELOPED FOR ASR ORDERING ACTIVITES FOR DTS?

A. Verizon conducted time and motion studies of the activities performed by the Service Consultants in the NACC to establish the work time associated with the various types of orders handled there. DTS orders are expected to be processed in the same manner as dedicated non-switched transport orders. To derive the costs associated with DS0, DS1, and DS3 DTS ordering, the work times for non-switched dedicated transport "change" order are multiplied by the loaded labor rate of the NACC Service Consultants. To derive the costs associated with dark fiber ordering, the work times for dark fiber "new" order are multiplied by the loaded labor rate of the NACC Service Consultants. The development of these costs can be found on pages 90-93 and 179 of Exhibit LR-3C.

Q. WHAT ARE THE PROVISIONING ACTIVITIES ASSOCIATED WITH DTS REQUESTS?

A. DTS ASRs for Washington are provisioned through Verizon's Business Response Provisioning Centers ("BRPCs") located in Newbury Park and Upland, California. The BRPC receives the order from the NACC, verifies that the order is correct and is entered into the facility administration system, called Telecom Business Solutions ("TBS"); checks for accuracy and

completeness; and enters a distribution code into TBS to route the order to the required work groups. The BRPC must access facility records in its inventory database, change the records to identify the configuration requested by the CLEC, and create updated circuit and design layout reports ("CLRs/DLRs"). The costs for DS0, DS1, and DS3 DTS provisioning are the same costs as the dedicated transport "change" order costs that were filed in Phase B. The costs for dark fiber provisioning costs are the same as the dark fiber "additional line" costs that were filed in Phase B. Verizon uses the "additional line" costs rather than the "initial line" costs because not all of the provisioning activities associated with the "initial line" would be necessary to provision for DTS fiber service.

Q. HOW WERE COSTS DEVELOPED FOR THE PROVISIONING ACTIVITIES COMPLETED BY THE BRPC?

A. Cost personnel used data from the TBS database to determine the number and type of orders or lines worked by each group in the BRPC. The BRPC productive hours were used to develop the time per ASR. The work time was multiplied by the loaded labor rate for the BRPC. The development of these costs can be found on pages 129 and 168 of Exhibit LR-3C.

Q. PLEASE DISCUSS THE CO WIRING ACTIVITIES ASSOCIATED WITH DTS REQUESTS.

A. CO wiring consists of two cost components – the central office labor to install the jumper and the jumper material costs. For the central office activities, the central office technician receives the provisioning information from the BRPC. The technician interprets the information and installs jumpers to connect the two CLECs facilities. For DS0 services, the jumper will be a one pair metallic jumper. For the DS1 and DS3 services, two (2) metallic jumpers -- one for transmit and one for receive -- will be placed to connect these types of facilities. For dark fiber requests, a fiber optic patchcord will be installed to connect the CLEC facilities.

For the jumper material costs, when a CLEC requests DTS, a physical connection must be made between the two CLEC facilities. The connection takes place at a designated panel for metallic or fiber connections and the connection is made with material termed "jumper material". The jumper material list is the cost of the various types of jumpers that may be used.

Q. HOW WERE THE CO WIRING COSTS DEVELOPED FOR DTS?

A. For central office work, "jumper running" studies were conducted to develop the time required to install or remove one jumper. The time per jumper was

multiplied by the central office technician loaded labor rate to develop the cost per jumper. Costs are based on the number of jumpers required for the services requested.

The cost of the jumper material is based on Verizon's cost of the jumper material and material loadings. The length of the jumper material is based on average lengths of jumpers to span cross connect panels used for connecting facilities. The jumper length used in the study is generally 25 feet. Since the jumper length for DS3 and fiber come in set lengths, the set length nearest to 25 feet was used for DS3 and fiber. The development of these costs can be found on pages 63-65 and 183 of Exhibit LR-3C.

Q. PLEASE DESCRIBE THE DISCONNECT ACTIVITIES ASSOCIATED WITH DTS REQUESTS.

A. The disconnect activities are similar to the ordering, provisioning, and central office activities for an installation request. An order to disconnect the service will be prepared by the CLEC and transmitted to the NACC via an electronic or manual method. The NACC will check the order for completeness and accuracy and send it to the appropriate work groups to disconnect the service. The BRPC will remove the information from the facility database and send a disconnect order to the central office. The

central office technician will then remove the jumpers from the appropriate equipment. A completion notice is then sent to confirm disconnection.

Q. HOW WERE THE DISCONNECT COSTS DEVELOPED FOR DTS?

A. The disconnect costs for DTS are the same as those for non-switched dedicated transport and dark fiber that were filed in Phase B of this proceeding. The ordering costs are based on time and motion studies conducted in the NACC for order processing, which I previously discussed. The provisioning costs are based on time in the BRPC for processing the order and issuing a disconnect order to the central office technician to physically remove the jumpers. The BRPC time is based on the break down of the work groups, number of orders worked, and time worked in the BRPC. This was previously discussed in the provisioning of DTS. The central office work is based on the time to remove jumpers in the central office per the time and motion study completed on jumper running. This study was discussed in more detail earlier in my direct testimony. The development of these costs can be found on pages 90-91 and 166-167 of Exhibit LR-3C.

V. SUMMARY

Q. BRIEFLY SUMMARIZE YOUR TESTIMONY.

A. Verizon has developed comprehensive cost studies that support Verizon's proposed costs for multiplexing, fiber optic patchcord collocation, virtual collocation, and DTS. The cost studies provide a detailed examination of the activities necessary to provide the services to CLECs. In addition, these studies conform to the TELRIC economic principles that have been invalidated by the U.S. Court of Appeals for the Eighth Circuit. Verizon will continue to support these studies in this proceeding but does so with the reservation that it may need to make changes when the TELRIC methodology issue is resolved at the federal level.

Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes.