COMMONWEALTH OF MASSACHUSETTS

DEPARTMENT OF TELECOMMUNICATIONS AND ENERGY

Proceeding by the Department on its own Motion to Implement the Requirements of the Federal Communications Commission's Triennial Review Order Regarding Switching for Mass Market Customers	)	**D.T.E. 03-60**

INITIAL PANEL TESTIMONY OF VERIZON MASSACHUSETTS

(Hot Cuts)

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I. INTRODUCTION

A. PURPOSE AND SCOPE OF THE TESTIMONY

Q. WHAT IS THE PURPOSE OF THIS TESTIMONY?

A. This testimony is submitted on behalf of Verizon Massachusetts ("Verizon MA") in response to the FCC's Triennial Review Proceeding. In its *Triennial Review Order*,[1] the FCC found that, in some markets, the current hot cut process, used to transfer loops from incumbent switches to CLEC switches, can pose operational and economic barriers to CLECs deploying their own switches. *Triennial Review Order* ¶ 465. The FCC determined that the hot cut process could be improved if cutovers were offered on a bulk basis. *Id.* ¶ 474. Accordingly, as a precursor to the elimination of UNE-P in particular markets, the FCC directed state commissions to either approve and implement a batch cut process or issue detailed findings that the current hot cut processes do not give rise to impairment in a market and that a batch cut process is therefore unnecessary. *Id.* ¶ 490. The FCC directed states to decide the appropriate volume of loops to be included in the batch and to approve the specific process to be employed in performing batch cuts. As the FCC noted, "the process adopted will necessarily vary based on the relevant incumbent's particular design and

[1] Report and Order and Order on Remand and Further Notice of Proposed Rulemaking, *In the Matter of Review of Section 251 Unbundling Obligations of Incumbent Local Exchange Carriers, Implementation of the Local Competition Provisions of the Telecommunications Act of 1996, Deployment of Wireline Services Offering Advanced Telecommunications Capability*, FCC 03-36, CC

cut over practices." *Id.* ¶ 489. In the alternative, a state commission may determine that the absence of a batch cut process is not causing impairment for a particular market, and make detailed findings to that effect. *Id.* ¶ 490. This testimony presents Verizon MA's new "batch cut" process. The testimony also addresses Verizon MA's network design which, as recognized by the FCC, will be an integral part of Verizon MA's batch cut process. Accordingly, this testimony addresses four principal issues:

- The nature of a hot cut process that Verizon MA currently offers — a Project, or Large Job, process.
- An additional "batch" hot cut process that MA Verizon proposes to offer in response to concerns raised in the FCC's *Triennial Review Order*.
- The TELRIC cost of providing "Large Job" and batch hot cuts and proposed rates for these processes.
- The "scalability" of Verizon MA's hot cut processes — *i.e.*, Verizon MA's ability to handle the level of hot cut activity that would be expected if unbundled local switching (and therefore the combination of unbundled network elements known as the UNE

Docket Nos. 01-338, 96-98, 98-147 (rel. Aug. 21, 2003) ("*Triennial Review Order*").

Platform, or "UNE-P") were to be eliminated as a competitive provisioning alternative.

B. THE WITNESSES

Q. WHO IS SPONSORING THIS TESTIMONY?

A. This testimony is offered by a witness panel consisting of (in alphabetical order):

- Eugene J. Goldrick
- Carleen A. Gray
- Maryellen T. Langstine
- Thomas Maguire
- James L. McLaughlin
- Bruce F. Meacham
- Michael A. Nawrocki

The background and qualifications of each of these witnesses are set forth in Exhibit I-A to this testimony.

While all members of the Panel have reviewed and agree with this testimony in its entirety, each Panel member assumed primary responsibility for specific segments of the testimony. Each Panel member relies on the facts and analyses developed by the other Panel members in their areas of primary responsibility.

C. ORGANIZATION OF THE TESTIMONY

Q. PLEASE DESCRIBE THE ORGANIZATION OF THIS TESTIMONY.

A. The testimony is divided into four parts (of which this is the first), each addressing a separate subject area. The parts, and the witnesses principally responsible for the discussions in each part, are as follows:

- PART I (Introduction): This section is submitted on behalf of the entire Panel.
- PART II (Hot cut processes): Messrs. Maguire and Nawrocki, along with Ms. Langstine and Ms. Gray are principally responsible for this section of the testimony. Mr. Maguire provides expertise on operational issues, Mr. Nawrocki addresses technical and engineering issues, Ms. Langstine provides expertise on Operations Support Systems ("OSS"), and Ms. Gray is responsible for product management issues.
- PART III (Hot cut costs and rates): Mr. Meacham, Mr. Goldrick and Ms. Gray are principally responsible for this section of the testimony. Mr. Meacham addresses cost issues, Mr. Goldrick addresses the statistical analysis of the work times and the precision of the cost calculations and Ms. Gray addresses rate structure and rate application issues.
- PART IV (Hot cut scalability): Messrs. McLaughlin and Maguire, along with Ms. Langstine, are principally responsible for this section of the testimony.

Each part is accompanied by one or more exhibits, each of which is numbered to indicate the specific Part of the testimony to which it relates, and the exhibit sequence within that Part. Thus, Exhibit I-A is the first exhibit to this Part I of the testimony; and Exhibit III-B is the second exhibit to Part III. These exhibits include worksheets, tabulations of backup data, relevant diagrams and flowcharts, and the electronic spreadsheet models that were used in preparing particular portions of the testimony.

For convenience, we provide in Exhibit I-B a complete list of Exhibits, and, in Exhibit I-C, definitions of certain acronyms used throughout this testimony.

D. OVERVIEW OF THE TESTIMONY

Q. PLEASE SUMMARIZE THE CONCLUSIONS THAT VERIZON REACHES IN THIS TESTIMONY.

A. Verizon MA's principal conclusions are as follows:

- The hot cut processes that Verizon MA currently offers or will shortly begin offering in Massachusetts provide CLECs with a range of effective and efficient options that utilize current technology and comply with Verizon MA's obligations under this Department's orders and under the FCC's *Triennial Review Order*. These include a "batch" hot cut process that complies with the requirements of FCC Rule 319(d)(2)(ii). Notwithstanding the fact that Verizon MA is offering such a process, a batch hot cut process

is unnecessary to ensure Verizon MA's ability to meet, in a timely and efficient manner using its existing hot cut processes, the volume of unbundled loop migrations that could be expected if CLECs were no longer entitled to purchase local switching on an unbundled basis.

- Verizon MA's cost studies demonstrate the efficiencies associated with the use of forward-looking systems such as the Wholesale Provisioning Tracking System ("WPTS").
- Verizon MA's hot cut processes are "scalable," in that they can handle the volume of hot cuts predicted for a post-UNE-P environment. This would be true even without Verizon's new batch hot cut process.

II. HOT CUT PROCESSES

A. PURPOSE OF TESTIMONY

Q. WHAT IS THE PURPOSE OF THIS PART OF VERIZON MA'S TESTIMONY?

A. The purpose of this Part of the testimony is to describe the "batch" hot-cut process that Verizon MA will be introducing in the near future. This batch process will be in addition to Verizon MA's basic fully coordinated hot cut, for which the Department adopted costs in D.T.E. 01-20 ("Option I"), and the basic "less manually coordinated" WPTS option for which Verizon MA submitted costs in response to the Department's orders in D.T.E. 01-20.

B. BACKGROUND

1. Definition of a "Hot Cut"

Q. WHAT IS A HOT CUT?

A. The term "hot cut" is used in the local exchange industry to describe the near-simultaneous disconnection of a Verizon MA working loop from a port on one carrier's switch, and the reconnection of that loop to a port on a different carrier's switch, without any significant out-of-service period. Initially, the loop may be any of: (a) a Verizon MA retail loop, (b) a loop being used to provide resold service, (c) a part of a UNE-P arrangement, or (d) a UNE-L connected, through a CLEC collocation arrangement, to a CLEC switch, and being used by that CLEC to provide local exchange service to one of its customers. After the cutover, the loop would generally be a UNE-L connected through to a different CLEC switch. A simplified diagram of the basic physical connections and disconnections involved in a typical hot cut is provided in Exhibit II-A.

Q. HOW DOES THE HOT CUT PROCESS AVOID ANY SIGNIFICANT OUT-OF-SERVICE PERIOD FOR THE CUSTOMER BEING CUT OVER?

A. Continuity of service is maintained through the continuous exchange of information concerning the status of the migration between the CLEC that will provide service after the cutover, Verizon's Regional CLEC Coordination Center ("RCCC"), and Verizon MA's frame technicians. In addition to this exchange of information, most of the necessary connections are pre-wired, in order to reduce the time required for the

actual cutover and thus to minimize the duration of any out-of-service condition. (The connections that are pre-wired prior to the "due date" of the cut (*i.e.*, prior to the day on which the cut is actually made), and those that are made and broken on the due date itself, are identified in Exhibit II-A.)

Finally, on the "due date" of the hot cut, Verizon MA ensures that the CLEC is ready to move forward with the migration, checks the status of the line at the time of the cutover in order to ensure that no call is in progress, and immediately notifies the CLEC when the wires have been moved.

Q. WHY IS THIS COORDINATION BETWEEN VERIZON MA AND THE CLEC NECESSARY?

A. Coordination is necessary for two reasons. First, some form of coordination is necessary to ensure that dial tone is available on the new provider's switch port at the time of the cutover. This ensures continuity of the customer's ability to make outgoing calls. (Verizon MA will not complete the migration if the CLEC dial tone is not present.)

Second, coordination is necessary to ensure that the customer's number is ported immediately after the Verizon MA frame technician completes the cut. This ensures continuity of the customer's ability to receive incoming calls. *See Triennial Review Order* ¶ 465 n.1409. Although there are various steps involved in local number porting, the key step is notification

of the Number Portability Administration Center ("NPAC") that the physical transfer of the customer to the new provider's switch has been completed and that the number can therefore be ported. This final notification cannot be made before the cutover — because that would prevent the customer from receiving incoming calls before the cutover — but it must be made as soon as possible after the cutover. Under current procedures, this notification is submitted by the new local service provider.

Q. IN DEFINING HOT CUTS, YOU INDICATED THAT THE FINAL STATE OF THE CUT-OVER LOOP WOULD GENERALLY BE AS A UNE-L ARRANGEMENT CONNECTED THROUGH TO A CLEC SWITCH. WHY DID YOU EXCLUDE CASES IN WHICH THE CUSTOMER IS BEING TRANSFERRED FROM A CLEC TO VERIZON MA'S RETAIL SERVICE?

A. The process used for such "winbacks" differs from the standard Verizon-to-CLEC hot cut process in a very significant respect. Specifically, in a winback cutover, little or no coordination is required between Verizon MA and the CLEC. As discussed above, coordination is required in a standard hot cut in order to ensure that dial tone is available from the customer's new carrier, and that the customer's number is ported, at the time the loop is cut over. In a winback scenario, however, the new dial tone is being provided by Verizon MA, and it is Verizon MA that submits the final authorization to port the customer's number. It is also Verizon MA, of course, that performs the physical wiring work that completes the

hot cut. Thus, winbacks primarily require coordination *within* Verizon rather than coordination between Verizon and a CLEC.

Winbacks differ from standard Verizon-to-CLEC hot cuts in another way. CLECs sometime fail to provide Verizon MA with the circuit identification information necessary for a successful cutover. In such cases, Verizon MA has no choice but to provision the customer's service on a separate line.

Q. ARE WINBACKS ADDRESSED IN THIS TESTIMONY?

A. Only to a limited extent. Since a winback is a retail service, rather than a service provided to a CLEC, the manner in which that service is provided is not part of this proceeding and thus is not addressed in this testimony. However, winbacks are appropriately taken into account in Verizon MA's scalability analysis (Part IV of this testimony), since they are part of the additional work load that would result from the elimination of UNE-P, and would use some of the same Verizon resources as standard hot cuts.

2. Hot Cuts of IDLC-Equipped Loops

Q. WHAT IS INTEGRATED DIGITAL LOOP CARRIER ("IDLC") TECHNOLOGY?

A. IDLC is a loop provisioning technology. In IDLC-equipped loops, the electrical signal generated by the end user's customer premises equipment is converted into a channelized, digital, DS0 format at a Remote Terminal ("RT"). The DS0 channels are then multiplexed, in

groups of 24, into DS1 signals, and are transported to the central office over a fiber feeder or other high-speed digital feeder facility. At the central office, the feeder facility is terminated and IDLC traffic is routed as DS1-level signals directly to the digital line ports on the switch. Since in IDLC technology voice traffic is delivered to the central office and into the switch as a multiplexed, DS1-level signal, there is no direct appearance of individual analog voice-grade loops in the central office.

Q. WHAT IS THE RELEVANCE OF IDLC TECHNOLOGY TO HOT CUTS?

A. Although IDLC is a well-accepted and efficient means to deliver voice traffic over a digital loop carrier system to a digital switch, there is no technically feasible, practicable means of obtaining access to individual voice-grade loops at the central office when such loops are provisioned over an IDLC system. Accordingly, before a customer served by an IDLC-equipped loop can be cut over to a switch-based CLEC, the customer must be shifted from an IDLC-equipped loop to an all-copper loop or to a loop served via Universal Digital Loop Carrier ("UDLC") technology (which, unlike IDLC, can be unbundled in the central office).

Q. HOW IS THIS CHANGE IN FACILITIES ACCOMPLISHED?

A. In the case of IDLC-equipped loops, a technician must be dispatched to the Serving Area Interface ("SAI") associated with the copper distribution pair that serves the customer. (Because the SAI is part of the outside loop plant, such dispatches are referred to as "outside" dispatches.) The

distribution pair for an IDLC-equipped loop is cross-connected at the SAI to a copper "sub-feeder" pair that is in turn connected to IDLC electronics at the RT. In order to permit a hot cut to be made, the distribution pair must be moved at the SAI so that it will be cross-connected either to a pair in a copper feeder system, or to a sub-feeder pair associated with a UDLC system in the RT. This is illustrated in Exhibit II-B-1.

If spare copper or UDLC facilities are not available at the SAI, then a "line and station transfer" ("LST"; also known as a "pair swap") may be required. In an LST, the technician moves *another* Verizon MA retail customer from copper or UDLC facilities to IDLC equipment. The customer for whom the hot cut was requested can then be moved to the freed-up copper or UDLC facilities. This is illustrated in Exhibit II-B-2. Indeed, in some cases, even more complex rearrangements of the outside plant will be required in order to free up copper or UDLC facilities.

Generally, two outside dispatches will be required for a hot cut on an IDLC-equipped loop, the first to confirm the availability of suitable replacement facilities and the second, on the due date, to actually move the customer's service to the new facilities. (All necessary connections at the central office are pre-wired before the customer's service is cut over in the field on the due date.) CLECs have consistently resisted an alternative process that has been suggested by Verizon in which only a

single dispatch would be required (*i.e.*, the customer would be moved on the first dispatch if a suitable alternative facility was available).

Q. HOW DOES THIS AFFECT THE HOT CUT PROCESS?

A. The outside dispatch that is required must be coordinated with the other activities involved in the cut to ensure that the cut can be made on the due date. For example, a hot cut for an IDLC-equipped loop will be scheduled for a specified four-hour period (morning or afternoon), rather than for a specific time, because of variability in the travel conditions and other factors that may affect the time required for the outside technician to reach the SAI.

3. Organizations Involved in Implementing Hot Cuts

Q. PLEASE IDENTIFY THE VERIZON ORGANIZATIONS INVOLVED IN PERFORMING A HOT CUT.

A. The principal operations and personnel at Verizon that are involved in implementing a hot cut and performing hot-cut related activities are:

- The National Market Center ("NMC"), which is responsible for processing Local Service Requests ("LSRs") that are submitted by the CLECs.
- The RCCC, which "project manages" the hot cut process and ensures proper coordination between Verizon and the CLEC.
- The Assignment Provisioning Center (the "APC"), which handles facility assignment issues related to the migration request, such as

ensuring that a suitable alternative facility (copper or UDLC) is available if necessary.

- The frame technicians at the Verizon MA Central Office where the cut is performed.
- Field technicians (where outside dispatches are required)
- The Recent Change Memory Administration Center ("RCMAC"), which is responsible for removing the translations from Verizon's switch once a Verizon-to-CLEC migration is complete (thus terminating the provision of Verizon dial tone to the customer).
- The Local Number Portability Center ("LNPC"), which handles Verizon activities related to the porting of the customer's number.

4. Verizon MA's Hot Cut Processes Satisfy the Forward-Looking Technology Standard

Q. DOES VERIZON MA UTILIZE THE MOST EFFICIENT TECHNOLOGY CURRENTLY AVAILABLE FOR PERFORMING HOT CUTS?

A. Yes.

Q. PLEASE EXPLAIN THE BASIS FOR THAT CONCLUSION.

A. Any consideration of hot cuts must begin with the understanding that they require physical disconnection and connection of wires, and that wiring is inherently a manual process. Contrary to the assertions that CLECs have made in numerous forums, Verizon is aware of no viable, technically feasible, practical option for automating the wiring function out of existence. *See Triennial Review Order* ¶ 465 n.1409 (referring to a hot cut

as a "largely manual process requiring incumbent LEC technicians to manually disconnect the customer's loop, which was hardwired to the incumbent LEC switch, and physically re-wire it to the competitive LEC switch . . . .").

It should also be noted that some additional steps have been included in Verizon MA's hot cut process at the request of the CLECs, for service assurance reasons. *See* D.T.E 01-20, *UNE Order* at 493. Although these steps could be eliminated (and some effort and cost saved) if the CLECs chose to assume a greater level of responsibility for service assurance, the additional time that is required reflects the needs or desires of Verizon MA's customers (the CLECs), rather than any inefficiency in the manner in which such needs and desires are met. As the Department noted in adopting Verizon MA's hot cut process, AT&T admitted that it wants the coordination provided by Verizon's RCCC. The Department accordingly upheld its earlier finding regarding the significance of the RCCC. *Id.*

Subject to those two essential qualifications, Verizon MA's hot cut processes use automated technology to the maximum extent that is practical and efficient.

Q. SOME CLECS HAVE SUGGESTED THAT THE WIRING PROCESS IN THE CENTRAL OFFICE COULD BE COMPLETELY AUTOMATED BY SYSTEMS THAT USE ROBOTIC TECHNOLOGY TO MAKE AND BREAK CONNECTIONS AT THE FRAME. PLEASE COMMENT ON THIS CLAIM.

A. Devices do exist that automatically make copper-to-copper physical connections between any of a set of input positions and any of a set of output positions. For the most part, Verizon utilizes these devices in small, unstaffed central offices that serve an average of a few thousand lines (and in which, incidentally, there is minimal if any collocation). (Examples are central offices in such towns as Ashby, Bernardston, Bolton, and Northfield.) By enabling Verizon to make cross-connections automatically and remotely, such devices reduce the need for frame technicians to travel to those offices.

However, such devices cannot be efficiently scaled up to serve larger central offices. Indeed, the largest cross-connect matrix of which we are aware can make connections between a set of about 5,000 input and output pairs — far smaller than the number of pairs served by even a moderately sized central office. In order to manage central offices of larger than 5,000 lines, the only solution at present is to divide a Main Distributing Frame ("MDF") into "zones" roughly the size of the cross-connect system. Obviously, for true "any-to-any" connectivity to be available in such an arrangement, extensive cross-connections would be necessary *between* the individual "zones." For larger central offices, the number of zones necessarily increases, as does the number of positions on the cross-connect device that would have to be devoted to inter-zone connections. In Verizon's judgment, this need for partitioning, and for

cross-connections between the partitioned zones, would render such devices unusable for large-scale central offices. The only theoretical alternative to this sort of daisy-chaining would be to segment the wire center so that certain lines could be connected only to certain ports or POT bay appearances, and this would not be a viable option for CLECs that want the ability to access *any* feeder pair served by the central offices in which they collocate.

Moreover, although automated cross-connect devices are capable of connecting and disconnecting circuits automatically, manual wiring would still be required, where such devices are used, to establish connectivity from the MDF through the automated system to the loops served by the central office. There are two choices for establishing this connectivity. First, the necessary connections could be established on an as-needed basis. In that scenario, however, the need for a manual connection in order to implement a CLEC interconnection request would not be eliminated. (MCI has acknowledged that such a strategy would not make any sense.) Second, the loops served by the central office could all be pre-wired to the automated system and the automated system could be pre-wired to the MDF. Thus, in addition to the vendor cost of an automated system sufficiently large to be connected to all of the loops in a central office, Verizon MA would also incur substantial costs in pre-wiring the necessary connections. Those costs, of course, would appropriately

be borne by the cost causers — *i.e.*, the requesting CLECs. Even then, though, Verizon MA may fail to recover the capital costs associated with pre-wiring if CLECs can avoid using the service or services whose rates are set to recover those costs.

For these reasons, automated cross-connect devices are neither feasible nor cost-effective for use in the larger central offices that support virtually all of the collocation and hot cut activity in Verizon MA's network. Verizon, of course, closely monitors new product offerings from its vendors, and when any promising new device appears, evaluates it for its ability to reduce costs and improve performance. As yet, no automated cross-connect device has appeared that can efficiently eliminate the need for manual work in cross-connecting a UNE loop to a CLEC's POT bay in a large central office.

Q. CLECS HAVE ALSO SUGGESTED THAT THROUGH APPROPRIATE USE OF GR-303 TECHNOLOGY, VERIZON COULD IMPLEMENT "ELECTRONIC LOOP PROVISIONING," THROUGH WHICH LINES COULD BE CUT OVER BETWEEN SWITCH PROVIDERS ON A SOFTWARE BASIS, WITHOUT REQUIRING ANY PHYSICAL CONNECTION OR DISCONNECTION WORK. PLEASE COMMENT ON THIS CLAIM.

A. The concept of using GR-303 technology to accomplish Electronic Loop Provisioning is flawed from both a technical and a practical implementation standpoint.

First, GR-303 technology does not support multi-carrier applications such as the cutover of loops between switch providers. While GR-303 vendor

products do support the existence of multiple interface groups between the remote terminal and the digital switch, they do not support control of, and access to, the GR-303-compliant RT electronics by more than one carrier. GR-303 technology requires a high degree of sophisticated real-time coordination between the digital switch, the RT electronics and the associated OSS. Thus, multi-carrier access to a GR-303 system would require partitioning of control, security, provisioning, and testing functions, as well as other measures that would prevent carriers from inadvertently or intentionally interfering with each others' services. At this time, Verizon is not aware of any vendor solution — much less one supported by industry-wide standards bodies — that would address these issues.

Second, beyond these technical issues is the practical reality that GR-303 technology is not widely deployed in Massachusetts. From an efficiency standpoint, the necessary conditions to support deployment of GR-303 as a loop technology have not materialized to date. In addition, loops equipped with Next Generation Digital Loop Carrier ("NGDLC") technology — which are the only loop systems capable of supporting GR-303 deployment — represent a very small percentage of total working loops in Massachusetts. Thus, even if all NGDLC-capable systems and OSS were somehow upgraded to support GR-303, this would still represent a relatively small percentage of loops that could take advantage of GR-303 as a potential cutover tool.

Finally, even if all of these issues were somehow solved, it is unlikely that CLECs would be willing to underwrite the cost of pre-provisioning multiple DS1 connections to every NGDLC system in the office, which is what would be required — at a minimum — to enable electronic provisioning of GR-303 loops.

Q. HAVE OTHER ELECTRONIC LOOP PROVISIONING ALTERNATIVES BEEN PROPOSED?

A. Yes, a number of proposals, differing in various technical details, have been floated in various regulatory proceedings. We are not aware of any that provides a feasible, practical, cost-effective means of eliminating the need for hot cuts in Verizon MA's network. For example, a form of Electronic Loop Provisioning that had been proposed by AT&T was considered by the FCC in its *Triennial Review* proceeding. The FCC concluded that the feasibility of the proposal had not been established. The FCC cited evidence that an effective Electronic Loop Provisioning process would require "a fundamental change in the manner in which local switches are provided" and "dramatic and extensive alterations to the overall architecture of every incumbent LEC local telephone network," at a cost estimated at more than $100 billion. The FCC accordingly rejected the proposal, stating that "the record in this proceeding does not support a determination that electronic provisioning is currently feasible." *Triennial Review Order* ¶ 491 & n.1517.

Q. IN WHAT SPECIFIC RESPECTS ARE VERIZON MA'S HOT CUT PROVISIONING PROCESSES EFFICIENT, TECHNOLOGICALLY UP-TO-DATE, AND FORWARD-LOOKING?

A. First of all, the *ordering* of a hot cut makes use of Verizon's electronic ordering interfaces and up-to-date, highly efficient OSS. In addition to providing a means of transmitting the LSR from the CLEC, Verizon's OSS move a sizable portion of properly completed LSRs through the service order generation process and, in turn, move these orders through the assignment process and into the RCCC, thus obviating the need for manual order processing in the NMC and manual assignment by the APC.

Q. IN WHAT OTHER RESPECTS ARE VERIZON MA'S HOT CUT PROCESSES FORWARD-LOOKING?

A. Another important factor is Verizon MA's use of WPTS.

Q. WHAT IS WPTS?

A. WPTS is a system that was deployed in Massachusetts by Verizon in response to the Department's order in D.T.E. 01-20 to offer CLECs a "less manually coordinated" hot cut option ("Option II"). WPTS assists the CLEC community, the RCCC, and Verizon's frame organization in the coordination functions associated with hot cuts. It automatically retrieves information on hot cut orders from Verizon's OSS, and serves as a "clearinghouse" for a wide range of data on the progress of those orders. At appropriate points, it automatically forwards work for review and verification to the CLEC and to Verizon's RCCC. It provides a secure web

site on which a CLEC (and authorized Verizon personnel) can view (and download) status information. It also provides a platform for the delivery of messages between Verizon and the CLEC, thus in most cases eliminating the need for telephone calls. The system thus helps to ensure that all key steps of the hot cut process are properly completed and that all necessary communications between the CLEC and Verizon work teams occur effectively and at minimum cost.

Q. IS WPTS UTILIZED BY OTHER INCUMBENT LECS?

A. No. WPTS was developed by Verizon as an enhancement to its hot cut process, and it is unique to Verizon. It should be noted that other ILECs have expressed interest in the system.

Q. TO WHAT EXTENT IS WPTS UTILIZED FOR COMMUNICATIONS BETWEEN THE VERIZON ORGANIZATIONS INVOLVED IN A HOT CUT?

A. Aside from its role in facilitating the exchange of information between Verizon and the CLEC, WPTS has also given frame technicians the ability to communicate electronically with the RCCC (and directly with the CLEC) about CLEC dial tone issues, the CLEC's willingness to proceed with the cut (the "go-ahead"), and the completion of wiring work. Verizon is currently using handheld devices on a trial basis. Such devices provide frame technicians with more rapid and convenient access to WPTS and other systems.

5. Hot Cut Processes Utilized By Verizon MA

Q. WHAT HOT CUT PROCESSES ARE OFFERED BY VERIZON?

A. Verizon MA currently uses three separate, though closely related, hot cut processes: two "basic" hot cut processes – the fully coordinated option for which the Department adopted costs in D.T.E. 01-20 and the WPTS "less manually coordinated" option, which Verizon MA filed in compliance with the Department's orders in 01-20, and a "Large Job" or "Project" process. In addition, Verizon has developed a new process that we refer to as a "batch" hot cut process. The fully coordinated "basic" process was discussed in depth in D.T.E. 01-20, and the "less manually coordinated" WPTS option will be addressed by the Department in a separate proceeding. The basic hot cut process flow is attached as Exhibit II-C. Accordingly, only the Large Job/Project and "batch" processes are described in detail here.

No additional special hot cut processes exist, or are required, for different types of migrations (Verizon-to-CLEC; CLEC-to-CLEC; Verizon retail (or resale)-to-UNE-L; or UNE-P to UNE-L), for different types of end users (*e.g.*, residential or business), or for orders submitted in different ways (*e.g.*, via Local Service Interface ("LSI") or via Electronic Data Interface ("EDI")). Simply put, a hot cut is a hot cut.

Q. CAN VERIZON MA PERFORM CLEC-TO-CLEC HOT CUTS WITH ITS BASIC HOT CUT PROCESS?

A. Yes. The only problem such cuts raise is the practical one referred to above in connection with winbacks — in some cases, CLECs fail to provide necessary circuit ID information to Verizon MA.

C. THE "LARGE JOB" ("PROJECT") HOT CUT PROCESS

1. In General

Q. WHAT IS VERIZON MA'S "LARGE JOB" HOT CUT PROCESS?

A. In the ordinary course of business, Verizon MA uses the basic hot cut process for orders of varying sizes, some of them quite large. However, Verizon MA does employ a separate process in cases in which CLECs are willing to aggregate their orders by central office and due date. Verizon refers to this as the Large Job, or Project, Hot Cut Process. (It has sometimes been referred to informally as the "bulk" hot cut process, however we do not use that term in this testimony.) Like Verizon MA's basic hot cut process, the Large Job process is ISO 9000 certified.

Q. PLEASE PROVIDE A BASIC DESCRIPTION OF THE LARGE JOB PROCESS.

A. The CLEC initiates the Large Job process by contacting the NMC to request Project treatment for a group of orders. The NMC then negotiates a due date and a fall-out date with the CLEC and the frame organization. (The "fall out" date is a separate fallback due date for lines for which unresolved dial tone problems exist on the day before the primary due date.) In order to allow for quick identification of the individual orders in the job, the CLEC submits LSRs whose Purchase Order Numbers

("PONs") all start with the same four characters. All orders in the job that are in a particular central office and have a particular due date will be assigned to a single RCCC coordinator.

A flow chart describing the steps in the Large Job process is provided in Exhibit II-D.

Q. HOW DOES THE LARGE JOB PROCESS DIFFER FROM THE BASIC HOT CUT PROCESS?

A. In most respects, including particularly the wiring work required, the two processes are identical. The principal differences lie in the facts that in the Large Job Process: (a) the due date is negotiated rather than being the five-business-day standard interval; (b) a single PON prefix is assigned to all orders included in the Project, as described above; (c) a "project spreadsheet" is used; (d) the CLEC is notified by telephone of the completion of each batch of cuts in the Project; and (e) loops included in a Project are typically cut over after normal business hours.

Q. WHY ARE DUE DATES FOR LARGE JOBS SET THROUGH NEGOTIATION, RATHER THAN THROUGH THE USE OF A FIXED, STANDARD INTERVAL?

A. The negotiation process enables Verizon to schedule Large Job work in a way that makes the most efficient use of its force. However, the company is currently evaluating the implementation of an automated scheduling system for Large Jobs, similar to the approach used for some types of field-dispatchable UNE orders.

Q. PLEASE DESCRIBE THE USE OF PROJECT SPREADSHEETS.

A. Verizon proposes to modify the spreadsheet process that has been used in the past, as a result of discussions held at a series of technical workshops in New York concerning the Large Job process (the "New York workshops").

Originally, the CLEC provided a spreadsheet to Verizon listing all of the lines to be included in the Project. This sheet became the blueprint for all subsequent activities related to the Project. The sheet allowed Verizon to monitor the CLEC's issuance of LSRs, and to ensure that they were consistent with the spreadsheet. It also provided CLECs and Verizon's Frame organization with a listing of the lines to be cutover on the due date, and the order in which they would be cut over.

However, in the New York workshops, various CLECs criticized the spreadsheet process as inefficient, and asked if Verizon would be willing to replace the CLEC-generated spreadsheet with a report automatically generated by WPTS on the basis of the LSRs submitted by the CLEC. (Such reports can now be downloaded electronically by the CLEC.) Verizon indicated that it was willing to do this provided that the CLECs realized that absent a CLEC-provided spreadsheet, Verizon would no longer be able to check to ensure that LSRs had been submitted for all of the lines that the CLEC intended to include in the Project.

MCI indicated in the New York workshops that it opposes the elimination of the CLEC-provided spreadsheet. Nevertheless, other CLECs support the change in the spreadsheet process, and it appears to Verizon to represent a positive change in the direction of simplifying the hot cut process. Accordingly, we are proposing to eliminate the use of the CLEC-provided spreadsheet, as described above. (This proposed process change is reflected in the Forward-Looking Adjustment Factors applied to the relevant work times, as described in greater detail below.) To the extent that the Department concludes that Verizon MA should continue to utilize the CLEC-provided spreadsheet in Large Job hot cuts, Verizon MA should be permitted to modify its proposed rates, in order to ensure that it recovers any additional costs associated with that requirement.

Q. PLEASE DESCRIBE THE DUE DATE COORDINATION PROCESS FOR LARGE JOBS AND THE MANNER IN WHICH IT DIFFERS FROM THE EQUIVALENT PROCESS FOR BASIC HOT CUTS.

A. Some CLECs have indicated that they prefer to be notified of the completion of the cut by telephone in the case of Large Jobs, even though completion information is also available through WPTS. Accordingly, Verizon calls the CLEC after each batch of approximately 20 lines in the Project is cut over.

Q. HOW ARE IDLC LINES TREATED IN THE CONTEXT OF LARGE JOBS?

A. This is another aspect of the Large Job process that will be changed as a result of discussion at the New York workshops. Originally, Verizon did not handle lines that would require an outside dispatch (such as IDLC-equipped lines) as part of a Large Job Project, opting instead to handle them as a basic hot cut due to the need to dispatch a technician to the SAI. In fact, whenever Verizon determined that any circuits listed as part of a Large Job were IDLC-equipped, Verizon contacted the CLEC and asked it to submit a supplemental LSR removing the circuits from the Large Job, and to resubmit the cut requests as "basic" hot cut orders.

Q. IN WHAT RESPECTS DOES VERIZON INTEND TO MODIFY THIS POLICY?

A. During the New York workshops, Verizon proposed to discontinue its policy of requiring CLECs to omit supplemental LSRs for any IDLC lines from a Large Job. Instead, we proposed to automatically remove IDLC-equipped lines from Large Jobs, and to convert them to basic hot cut orders, without requiring submission of a supplemental LSR by the CLEC. The CLECs participating in the New York workshops supported this change.

Q. IN SUCH CASES, WHAT WOULD BE THE DUE DATE FOR THE RESUBMITTED ORDER?

A. Where feasible, Verizon would arrange to make the cut by the due date that had been negotiated for the Large Job Project, even though the loop in question had been removed from the Project.

2. The "Managers' Area" Policy

Q. DOES VERIZON HAVE ANY POLICY THAT LIMITS THE NUMBER OR LOCATION OF THE CUTS THAT CAN BE INCLUDED IN A SINGLE LARGE JOB?

A. According to the general guidelines that arose out of discussions between CLECs and Verizon during the development of the Large Job process, a Project will be worked in one central office per Manager's Area (up to two central offices per geographic area) on a particular negotiated due date. (A Manager's Area is defined as the region that includes the central offices supervised by a particular Verizon manager. There are typically many managers within a geographic region. For purposes of this policy there are seven geographic areas in the Commonwealth. This is an overall limit, not a per CLEC limit. There is also a limitation of 150 cut-over lines per central office per due date. These limitations allow Verizon's managers to balance their force with minimal need for additional overtime. If a CLEC requires more than 150 lines, the Large Job process can be utilized on separate negotiated due dates to meet their requirements.

This guideline was developed collaboratively, in an attempt to optimize resource utilization by all parties. When in the past customer (end user or CLEC) requirements dictated that these guidelines be modified, Verizon has made every attempt to do so. Indeed, Verizon has performed Large Jobs that went beyond the 150 line/central office, 300 line/geographic area limits described above.

As discussed in the New York workshops, the maximum daily number of central offices included in a Project can be increased as necessary to accommodate CLEC volumes. Further, the Manager's Area policy itself will obviously be reviewed and modified as appropriate in the context of the larger hot cut volumes that might result from a non-impairment finding by the Department and the resulting elimination of UNE-P.

3. Advantages of the Large Job Process

Q. WHAT ARE THE ADVANTAGES OF THE LARGE JOB PROCESS?

A. For both Verizon MA and the CLEC, Large Job processing enables large numbers of lines to be cut over in a way that makes the most efficient use of the parties' work forces. Because of the need for coordination, hot cuts require attention from both Verizon and CLEC personnel on the due date, and on various occasions before the due date. If a large number of orders submitted by a single CLEC can be processed together, on a systematic basis, then both Verizon and CLEC personnel will face a relatively constant amount of work over a predictable period of time. This allows for more efficient force management than would be possible if the same number of cuts were completed on a sporadic and independent basis. This, rather than any reduction in the amount of work required per hot cut, is the principal benefit of the Large Job process.

Q. GIVEN THE LARGER NUMBER OF LINES INVOLVED, WHY ISN'T THE AMOUNT OF WORK REQUIRED FOR A LARGE JOB HOT CUT

SIGNIFICANTLY SMALLER, ON A PER-LINE BASIS, THAN THE AMOUNT REQUIRED FOR A BASIC HOT CUT?

A. As noted previously, the core of the hot cut process is physical wiring work, and the same amount of wiring is required per line whether orders are processed independently or as part of a Large Job. Other steps also involve similar levels of work for both processes. Moreover, the Large Job process has some steps, such as interval negotiation, that are not utilized in the basic process.

D. THE "BATCH" HOT CUT PROCESS

Q. WHAT WAS THE REASON FOR THE CREATION OF AN ADDITIONAL "BATCH" HOT CUT PROCESS?

A. The process was developed to respond to the issues raised by the FCC concerning hot cuts in the *Triennial Review Order*. The "Batch" hot cut optimizes the efficiencies of the Project process regardless of the CLECs' ability to aggregate orders on a CO-by-CO basis. It also allows the accumulation of orders for multiple CLECs, whereas Project hot cuts are CLEC-specific. More significantly, it eliminates the need to coordinate since Verizon proposes to manage the entire process from order acceptance to port activation. All of this results in virtually seamless migrations and lower CLEC costs.

Q. HOW ARE THESE BENEFITS ACHIEVED?

A. In essence, under the batch process, a CLEC will be permitted (but not required) to earmark specified hot cut orders for batch processing. In

each central office, orders submitted for batch processing will be held until a "critical mass" of such orders is reached.

The size of the critical mass will vary from office to office. The manager of each individual central office, based on the volume of cuts and the optimum level of frame staffing, will determine the number of lines that will constitute a critical mass *in that office*. For example, a "critical mass" might be achieved relatively rapidly in an extremely busy staffed office, while a remote, less active office might accumulate orders until a technician makes a scheduled visit to the office.

Q. WOULD THERE BE ANY LIMITS ON THE AMOUNT OF TIME THAT THE ORDER WILL BE HELD?

A. Yes. Initially the minimum holding period will be ten business days and the maximum period will be 35 business days. Once Verizon determines the "float rate" of hot cuts on each CO, this holding period will be adjusted.

Q. HOW WOULD THE CLEC KNOW WHEN THE CUTOVER WILL ACTUALLY BE MADE?

A. The LSR submitted by the CLEC will specify a due date 35 business days in the future, corresponding to the maximum holding period for the batch process. The CLEC will receive notification of the actual cutover date on or before "DD-minus-6" (*i.e.*, six days prior to the actual due date), and will be required by DD-minus-3 to give Verizon a sign-off (*i.e.*, a "go/no-go" indication) for the cut through WPTS. The sign-off will verify that there is dial tone on the CLEC facility that will be used to serve the customer.

(Verizon will explore the possibility of modifying this process to provide for the use of an automated due date scheduler for batch jobs in larger offices.)

Q. WHAT WILL HAPPEN WHEN THE CRITICAL MASS IS REACHED?

A. When the critical mass is reached, the "batch" will be created. The orders in the batch will be re-dated to show the new due date (which will generally be six days after the batch is created), the CLEC will be notified, and Verizon will begin preparing for the cutover. The cutover process will differ in one very significant way from the current Large Job process. As a condition of utilizing the batch process, CLECs would be required to authorize Verizon to submit the final number-port activation order to NPAC in place of the CLEC. This will virtually eliminate the need for coordination with the CLEC at the time of the cutover. In order to facilitate this process, the CLEC will be required to include in its DD-minus-3 sign-off a verification that it has created a port order in the NPAC database for Verizon to activate on the due date.

Q. WILL NPAC ACCEPT A PORT NOTIFICATION FROM VERIZON WHEN THE LINE IS BEING CUT OVER TO A CLEC?

A. Verizon has discussed this matter with NPAC, which has indicated that it would be willing to accept the port notification provided that appropriate authorization is provided by the CLEC.

Q. WOULD THERE BE ANY OTHER DIFFERENCES BETWEEN LARGE JOB PROCESSING AND BATCH PROCESSING OF ORDERS?

A. Yes. Because of the reduced coordination requirements, the CLEC will not need to know the precise order in which the lines will be cut. Thus, the cutover schedule will not need to be rigidly tied to the order in which LSRs and lines are listed in a spreadsheet or WPTS report. This will give the frame work force increased flexibility to organize the orders in a way that will reduce somewhat the time spent moving between one cut and the next.

Q. WHAT WOULD HAPPEN AFTER A CUT IS COMPLETE?

A. Once the cut and the number port are complete, Verizon MA's translations for the retail or UNE-P service previously provided to serve the customer will be removed from the switch. Upon completion of each cut, Verizon will notify the CLEC through WPTS. Verizon will also complete the service orders, thus generating a Provisioning Completion Notice ("PCN") and a Billing Completion Notice ("BCN") to the CLEC.

Q. HOW WOULD VERIZON MITIGATE THE IMPACT OF THE 10-TO-35-BUSINESS-DAY HOLDING PERIOD FOR BATCH ORDERS?

A. A CLEC would have the option of transferring the customer to UNE-P until the line is cut. This would be accomplished simply by submitting a UNE-P order for the customer before the batch hot cut order is submitted. (The UNE-P order must complete before the hot cut order is submitted.) For batch cut orders submitted in market areas in which Verizon is relieved of its obligation to provide mass market local switching on an unbundled

basis, a service functionally similar to UNE-P would be provided, but only, as noted above, for the holding period of the order. (Initially, and subject to subsequent review by the Company, Verizon MA proposes to price the interim UNE-P-like service at the rates currently applicable to UNE-P.)

Q. PLEASE PROVIDE A FLOWCHART OF THE BATCH PROCESS.

A. Such a flowchart is provided in Exhibit II-E.

Q. WHAT REQUIREMENTS WOULD BE IMPOSED ON CLECS THAT WISH TO UTILIZE THE BATCH PROCESS?

A. The nature of the process would entail certain restrictions:

- The option of putting (or keeping) the customer on a UNE-P or UNE-P-like arrangement during the holding period prior to the cut could only be made available for lines that are, before the submission of the CLEC LSR, either Verizon retail lines, resold lines, or UNE-P lines. Any other type of line would require a hot cut before a transitional UNE-P like service could be established.
- As noted above, the CLEC must authorize Verizon to submit the final number port notification to NPAC.
- The process would not apply to IDLC lines and to certain other loop types.
- Use of WPTS would be mandatory.

- Once the batch hot cut order has been submitted, no changes to the interim UNE-P account could be made without canceling and re-issuing the hot cut order.
- The process is not available for UNE-L to UNE-L migrations as this would involve a third party CLEC in the porting process.

Q. WOULD CLEC ORDERS AUTOMATICALLY BE INCLUDED IN THE BATCH PROCESS?

A. No. The batch process would be an optional service, not a requirement. A CLEC would have to submit an LSR specifically requesting the process.

Q. WHAT OPERATIONAL BENEFITS WOULD THE BATCH PROCESS CREATE FOR CLECS?

A. The batch process would greatly reduce the need for CLEC personnel to become involved in the coordination process, thus reducing the "internal" CLEC costs associated with hot cuts. The CLECs would also be able to eliminate their involvement with the porting activation, again reducing their costs.

Q. WHAT IS THE STATUS OF THE DEVELOPMENT AND AVAILABILITY OF THE BATCH PROCESS?

A. Verizon expects to begin a trial of the process in November, and is working towards commercial availability by the end of the second quarter of 2004.

Q. FCC RULE 319(D)(2)(II) RELATES TO STATE COMMISSION REVIEW AND APPROVAL OF A "BATCH CUT MIGRATION PROCESS." IS THE BATCH PROCESS DESCRIBED ABOVE A "BATCH CUT

MIGRATION PROCESS" WITHIN THE MEANING OF THE FCC'S RULE?

A. Yes.

Rule 319(d)(2)(ii) defines a "batch cut process" as "a process by which the incumbent LEC simultaneously migrates two or more loops from one carrier's local circuit switch to another carrier's local circuit switch, giving rise to operational and economic efficiencies not available when migrating loops from one carrier's local circuit switch to another carrier's local circuit switch on a line-by-line basis." The process described above is consistent with that definition.

The specific requirements of Rule 319(d)(2)(ii) are set forth below:

- Rule 319(d)(2)(ii)(A)(1) requires a state commission reviewing a batch process to "first determine the appropriate volume of loops that should be included in the 'batch.'" As noted above, we would propose to perform the cuts when a "critical mass" of lines is reached. The "critical mass" standard does not require any prior specification of an absolute minimum or maximum number of lines, which as noted will vary from office to office.
- Rule 319(d)(2)(ii)(A)(2) states that a "state commission shall adopt specific processes to be employed when performing a batch cut, taking into account the incumbent LEC's particular network design

and cut over practices." The process proposed by Verizon is described above.

- Rule 319(d)(2)(ii)(A)(3) requires the state commission to "evaluate whether the incumbent LEC is capable of migrating multiple lines served using unbundled local circuit switching to switches operated by a carrier other than the incumbent LEC for any requesting telecommunications carrier in a timely manner, and may require that incumbent LECs comply with an average completion interval metric for provision of high volumes of loops." Timeliness is assured here by the limitations on the "holding period" for batch orders, the availability of a transitional, UNE-P-like service while the lines accumulate in the batch, and by Verizon's scalability analysis. To the extent that the Department wishes to address metrics issues related to batch hot cuts, they should be addressed in a metrics-related proceeding, rather than in this proceeding.
- Rule 319(d)(2)(ii)(A)(4) requires the adoption of batch hot cut rates in accordance with the FCC's UNE pricing rules. Such rates are proposed for the batch process in Part III of this testimony. The Rule further requires that these rates "reflect the efficiencies associated with batched migration of loops to a requesting telecommunications carrier's switch, either through a reduced per-

line rate or through volume discounts as appropriate." Such efficiencies are reflected in Verizon's cost studies.

Although Verizon's batch process satisfies Rule 319(d)(2)(ii), as described above, it is important to note that Verizon is not *required* to offer a batch process.

Q. WHY IS THAT?

A. The FCC's Rule requires only that the Department "either establish an incumbent LEC batch cut process as set forth in paragraph (d)(2)(ii)(A) of this section or issue detailed findings explaining why such a batch process is unnecessary, as set forth in paragraph (d)(2)(ii)(B) of this section." Subsection (B) in turn states: "If a state commission concludes that the absence of a batch cut migration process is not impairing requesting telecommunications carriers' ability to serve end users using DS0 loops in the mass market without access to local circuit switching on an unbundled basis, that conclusion will render the creation of such a process unnecessary. In such cases, the state commission shall issue detailed findings regarding the volume of unbundled loop migrations that could be expected if requesting telecommunications carriers were no longer entitled to local circuit switching on an unbundled basis, the ability of the incumbent LEC to meet that demand in a timely and efficient manner using its existing hot cut process, and the non-recurring costs associated with that hot cut process. The state commission further shall explain why

these findings indicate that the absence of a batch cut process does not give rise to impairment in the market at issue."

As we demonstrate in Part IV of this testimony, these requirements are satisfied, and therefore no batch process is required. Verizon has nevertheless proposed, and is willing to offer, the process described above.

III. HOT CUT COSTS

A. PURPOSE OF TESTIMONY AND BACKGROUND

Q. WHAT IS THE PURPOSE OF THIS PART OF VERIZON'S TESTIMONY?

A. This testimony presents Verizon MA's analysis of the forward-looking, non-recurring costs that it incurs in connection with the processing and provisioning of CLEC-requested hot cuts using the Large Job and batch processes discussed in Part II of this testimony. We also propose rates based on those costs. This testimony does not address the non-recurring costs to Verizon MA of providing hot cuts pursuant to the non-WPTS process previously litigated in D.T.E. 01-20, or the WPTS option that Verizon MA filed in D.T.E. 01-20, or of any other wholesale, access or retail services.

Q. PLEASE DESCRIBE THE STRUCTURE OF VERIZON MA'S CURRENT HOT CUT RATES.

A. Verizon MA's hot cut rates for the standard non-WPTS process approved by the Department in D.T.E. 01-20 are charged under a rate structure involving three separate rates:

- A Service Order charge, which recovers the costs associated with processing an LSR that requires a hot cut. This charge is imposed on a per-order basis.
- A Service Connection — Central Office Wiring charge, which essentially recovers the cost of the wiring and pre-wiring activities associated with a hot cut. These costs are incurred within the Central Office Frame organization. This charge is assessed on a per-link basis, with separate charges for the first and additional links.
- A Service Connection — Other (Provisioning) charge, which recovers costs associated with coordination and other activities related to the management of the hot cut. These costs are incurred in a variety of organizations, including principally the RCCC, the RCMAC, and the APC. Like the Service Connection — Central Office Wiring charge, this charge is assessed on a per-link basis, with separate charges for the first and additional links.

Additionally, a Manual Intervention Surcharge, assessed on a per-order basis, is specified for cases in which a CLEC submitting an order chooses not to do so through the available electronic interfaces, which causes Verizon MA to incur additional costs associated with manual order handling in the NMC.

Each rate has associated with it an "expedite" charge that applies to requests for expedited service.

Finally, if a CLEC requests a Verizon MA technician to be dispatched to the field in connection with a hot cut, under the circumstances permitted by the Department in D.T.E. 01-20 (*UNE Order* at 486-87), an Installation Dispatch charge reflecting the costs associated with the Outside Plant technician will apply.

Q. WHAT ARE THE LEVELS OF VERIZON MA'S APPROVED HOT CUT RATES, AND HOW WERE THOSE RATES SET?

A. Verizon MA's hot cut costs were reviewed by the Department in its most recent UNE cost case, D.T.E. 01-20. The Department-approved rates for "Option I" hot cuts on two-wire loops are: $1.02 per order for the Service Order function, $19.70 for Central Office Wiring (first link), and $67.09 for Provisioning (first link).[2] There are also separate rates for the associated additional-link, expedited service, and manual processing charges. The three rates specified above add up to $87.81. The average actual per-line rate would, of course, vary depending upon the number of orders, the number of lines included in an order, whether expedited service had been requested, and whether the Manual Intervention Surcharge would apply. In many cases, the effective rate would be significantly below $87.81,

[2] The Department has not allowed Verizon MA to charge these rates until it reviews and approves the "less coordinated" WPTS option for which Verizon MA submitted costs in response to the Department's orders in D.T.E. 01-20.

because of the allocation of the Service Order charge over all the lines involved in multi-line orders, and because in many cases the applicable Wiring and Provisioning rates would be the lower "additional-link" rates instead of the higher initial-link rates.

Q. WHAT HOT CUT PROCESSES WERE CONSIDERED IN VERIZON MA'S NEW COST STUDIES?

A. This testimony addresses the cost of the current Large Job/Project process (which utilizes WPTS) and the new "batch" hot cut process described in Part II of this testimony.

Q. WHAT RATE STRUCTURE IS VERIZON MA PROPOSING HERE FOR HOT CUTS?

A. Verizon MA proposes to utilize the same three-part rate structure that is set forth in its D.T.E. 01-20 compliance filing and that is described above. This structure best reflects the manner in which hot-cut-related costs are incurred by Verizon.

In addition, however, a new, fourth rate element, the IDLC Surcharge, is now being added for cases in which Verizon MA is required to substitute facilities before a cut can be made — *i.e.*, primarily where the loop is provisioned using IDLC technology. This charge will apply to each IDLC-equipped loop that is being cutover to a UNE-L configuration. As explained in Part II of this testimony, before an IDLC-equipped line can be cut over to a CLEC, the customer's service must be switched to an all-copper or UDLC facility. The costs associated with this charge are

incurred principally in four organizations: the Outside Plant, the Central Office Frame, the RCCC, and the APC.

Finally, Verizon MA reserves its right to recover, through a future filing, any costs associated with the implementation of OSS support for the batch process that are not recovered in existing rates.

Q. WHAT ASSUMPTIONS DID VERIZON MA MAKE CONCERNING THE OPERATIONAL DETAILS OF THESE TWO HOT CUT PROCESSES?

A. We assumed that the processes will be provisioned as described in Part II of this testimony, and in the associated exhibits.

Q. THE FCC IS CONSIDERING MODIFICATIONS TO THE TELRIC APPROACH IN WC DOCKET NO. 03-173. WHAT IS THE RELEVANCE OF THOSE CHANGES TO THESE STUDIES?

A. The testimony presented here is based on current TELRIC approaches, consistent with current FCC regulations and with the prior orders of the Department. To the extent that the TELRIC methodology is changed at any time in the future, or to the extent that it is replaced by some alternative methodology, Verizon MA reserves its rights to submit revised rates consistent with such new methodology.

B. COSTING METHODOLOGY

1. In General

Q. WHAT ARE NON-RECURRING COSTS?

A. Non-recurring costs are the costs Verizon MA incurs in connection with the one-time activities necessary to process and provision CLEC requests for the initiation, change, or disconnection (termination) of service, or for

other one-time activities related to UNEs provided by Verizon MA to CLECs.

Non-recurring costs are incurred in response to a specific event by a specific cost causer, and involve easily identifiable, concrete tasks. The most efficient and equitable means of recovery, accordingly, is through a one-time charge to the cost causer — *i.e.*, in this case, the CLEC that requested the hot cut.

Q. HOW DID VERIZON MA ASSESS THE NON-RECURRING COSTS AT ISSUE IN THIS PROCEEDING?

A. Verizon MA's "NRC Model" was modified for this purpose. Only the portions of that Model relevant to hot cuts were utilized here.

Q. PLEASE DESCRIBE THE NRC MODEL.

A. This is the same basic model that was utilized by Verizon MA — and that was the basis of the non-recurring charges approved by the Department in D.T.E 01-20.

The NRC Model, which is provided as Exhibit III-A, implements a bottoms-up calculation that measures each cost arising in connection with servicing individual CLEC requests for UNEs and related services (in this case, hot cuts). The Model identifies all of the activities involved in fulfilling such requests, organized by the functional organizations within Verizon that perform each activity.

Q. DESCRIBE THE STEPS UTILIZED BY THE NRC MODEL TO DETERMINE VERIZON MA'S NON-RECURRING COSTS.

A. There are four major steps in the NRC Model. First, Verizon generally employs a survey process, discussed further below, in order to determine the average amount of time currently required to perform each activity. Second, these times are adjusted through the application of several factors, also explained below, to reflect work times in a forward-looking environment. Third, these "forward-looking" work activity times are multiplied by the appropriate labor rates in order to calculate the total non-recurring costs. Fourth, appropriate overhead loadings (common overhead and gross revenue loading) are applied to calculate a final rate.

Q. HOW DO VERIZON MA'S COST STUDIES, AND ITS PROPOSED RATES, AVOID DOUBLE RECOVERY OF VERIZON MA'S COSTS?

A. Because the work tasks identified in the Model are specific to the services at issue here (*i.e.*, various forms of hot cuts), and because measures approved in previous UNE cases have ensured that none of the costs recovered through non-recurring charges are taken into account in the development of recurring charges, Verizon MA's proposed rates do not create any risk of double recovery.

Q. HOW WAS THE NRC MODEL MODIFIED FOR THIS PROCEEDING?

A. Although the underlying model logic remained the same, tabs were included for the new hot cut processes only. A tab was also created for the IDLC Surcharge calculation, which uses a slightly different method for calculating the costs, as will be discussed below. A tab was added to

explicitly calculate an expedite surcharge, rather than as an increased cost for each non-recurring rate element, for those jurisdictions where an expedite surcharge on a basic hot cut is being proposed. Except for the APC and RCMAC, new activity descriptions were included for the other impacted organizations and data to calculate new task times for these activities were gathered. Also, factors and labor rates were updated in value and for applicability to the studies at hand.

2. Forward-Looking Nature of Verizon's Cost Studies

Q. ARE VERIZON MA'S NON-RECURRING COST STUDIES FORWARD-LOOKING?

A. Yes. First, the processes that are studied are themselves forward-looking, as described in Part II of this testimony. Second, the non-recurring cost studies have taken into account all anticipated efficiencies over a three-year planning period resulting from the deployment of forward-looking technology and improved processes. In conducting the studies, Verizon identified productive work times and reflected the savings due to projected system improvements and methods. Indeed, Verizon MA's studies reflect an extremely optimistic view regarding the potential benefits of future technologies and learned efficiencies.

Q. DOES THE NRC STUDY PROCESS REFLECT FORWARD-LOOKING OSS?

A. Yes. The non-recurring cost process fully reflects Verizon's implementation of forward-looking wholesale OSS and its adoption of

process improvements that reflect a forward-looking efficient environment. Key attributes of this environment include:

- Electronic application-to-application ordering interface for the carrier;
- Flow through service order and work order distribution processes; and
- Mechanized coordination and communication through WPTS.

3. Determination of Forward-Looking Work Times

a) In General

Q. PLEASE EXPLAIN THE STEPS USED TO DETERMINE AND ADJUST WORK TIMES IN THE NRC MODEL.

A. The process of determining forward-looking work times involves the following steps:

- Identify, and map to the relevant organizations, the non-recurring ordering, wiring, and provisioning activities required for hot cuts.
- Determine the average amount of work time required to perform each work activity when it is performed *today*.
- Apply a "Typical Occurrence Factor" (the frequency, in percent terms, with which an activity is performed currently) to the estimate of the average work time determined in the preceding step. This produces the total average time (in minutes) consumed today for

the work activity, taking into account the fact that the activity need not be performed in all cases.

- Apply to the time identified in the preceding step a "Forward-Looking Adjustment Factor" ("FLAF"). The FLAF is a factor expressed in percent terms that reflects the reduction in frequency with which an activity is expected to be performed and/or a reduction in the time needed to complete the activity by the end of the forward-looking three-year planning period. The result of this adjustment is a forward-looking work time.

Q. IS THE BASIC APPROACH APPLIED IN THIS TESTIMONY TO ESTIMATE RELEVANT FORWARD-LOOKING WORK TIMES THE SAME AS THE APPROACH THAT WAS USED BY VERIZON MA IN D.T.E. 01-20?

A. Yes.

b) Identification of Relevant Activities

Q. HOW WERE THE ACTIVITIES INCLUDED IN THE NRC MODEL FOR HOT CUTS DETERMINED?

A. The NRC Model contains the activities performed in each functional organization within Verizon associated with the ordering, wiring, and provisioning of hot cuts to requesting CLECs. The list of activities was developed based on input from the appropriate work center personnel who are engaged in the day-to-day work activities needed to satisfy CLEC hot cut service orders. This process was designed to identify a

comprehensive list of the individual work steps that are or may be involved in fulfilling such requests.

c) Determination of Current Work Times

Q. HOW WERE CURRENT AVERAGE WORK TIMES DETERMINED?

A. In the cases of the NMC, Central Office Frame, and the RCCC, the current average work times in Verizon MA's NRC Model are based on a new rigorous survey of personnel actually involved in the relevant work functions under study. In the case of the APC and the RCMAC, the times that were approved for two-wire hot cuts in D.T.E. 01-20 were utilized for all new processes in this case (*i.e.*, the Large Job and Batch).

Q. WHY IS THE USE OF PREVIOUSLY-APPROVED WORK TIMES A REASONABLE APPROACH FOR THE APC AND RCMAC?

A. The APC and the RCMAC are only minimally impacted by the increased utilization of WPTS or the other new hot cut processes discussed in this testimony. As a result, the times, occurrences, and adjustments adopted by the Department in D.T.E. 01-02 are still valid. The work times for the APC and the RCMAC accordingly reflect all of the Department's ordered adjustments to Verizon MA's work times.

Q. IS VERIZON'S SURVEY METHODOLOGY RELIABLE?

A. Yes. The new Verizon times are based on surveys of employees who have actual experience in performing hot cuts, and the process, as

described below, is designed to elicit accurate work-time estimates for the relevant processes.

Q. PLEASE DESCRIBE THE SURVEY PROCESS.

A. Verizon Service Cost personnel used process workflows and discussions with supervisory personnel of the centers to develop surveys to determine the time required to complete various work activities. The surveys were then administered to the organizations responsible for the ordering, wiring, and provisioning of hot cuts.

Verizon distributed surveys to those employees actually involved with ordering, wiring, and provisioning hot cuts for Verizon's CLEC customers. Detailed instructions were provided.

The Service Cost staff monitored survey results to ensure collection of the surveys from respondents in all work groups. Substantial efforts were made to convey the importance of the process and the need for unbiased employee response.

Q. WHAT REVIEW PROCESS DID VERIZON EMPLOY TO ASSURE THE RELIABILITY OF THE SURVEY RESULTS?

A. The work time estimates were reviewed at several levels.

First, the single points of contact in each department who distributed and collected the survey forms examined the responses. In order to maximize the response rate, if the response forms were incomplete or no response

was received from an individual, the contact person went back to the respondent to obtain valid answers.

Second, the service cost analysts conducted a thorough review of the survey data. If answers were ambiguous, the cost analyst went back to the point of contact within the relevant organization to have the respondent provide a clearer response. In a handful of cases, the survey form was disregarded entirely because it was either blank or had incorrectly populated entries.

Third, the frequency distribution of the responses (*i.e.*, the amount of time that the value of each response appeared) was reviewed for each work activity on a per-unit basis. The data set was then trimmed by eliminating the 10% of responses with the highest time estimates and the 10% of responses with the lowest time estimates. This is a standard statistical tool employed to eliminate potential biased responses. It is the same method used in Olympic Scoring of events where the highest score and the lowest score of a ten judge panel are dropped, and the remaining eight scores are averaged together. Exhibit III-B provides the statistical basis behind the trimmed mean calculations for each activity.

Fourth, as discussed in more detail below, the averages were reviewed, variances were computed, and standard statistical confidence intervals were determined in order to estimate the precision of the results.

d) Application of Occurrence Factors to Current Work Times

Q. EXPLAIN THE PROCESS BY WHICH CURRENT AVERAGE WORK TIMES ARE ADJUSTED IN THE NRC MODEL TO REFLECT THE FREQUENCIES WITH WHICH EACH ACTIVITY IS PERFORMED.

A. Current average work times are adjusted within the NRC Model by multiplying the average time it takes to perform an activity (when it in fact occurs) by the frequency with which the activity is expected to be performed — *i.e.*, the estimated percentage of cases in which the activity will be required. The result is an average time required for the activity across all orders — those in which it is required, and those in which it is not. Field managers (*i.e.*, the managers of those personnel who completed surveys) were polled by the cost analysts to determine in today's environment how frequently a given activity is performed in the ordering, wiring, and provisioning of hot cuts. As a result of this poll, Verizon developed a Typical Occurrence Factor to reflect and adjust for the frequency with which each activity is performed.

e) Adjustment of Current Work Times to Develop Forward-Looking Work Times

Q. PLEASE EXPLAIN HOW FORWARD-LOOKING ACTIVITY TIMES WERE DEVELOPED.

A. As noted above, average current work times were adjusted by applying a FLAF to the total time currently required to perform the work. The adjustments reflect future operating conditions assuming anticipatable improvements in processes, productivity, and mechanization, including

enhancements to OSS resulting in reduced work times and/or increased electronic "flow-through" in Verizon's automated systems. The FLAF accounts both for anticipated reductions in the frequency with which an activity must be performed and reductions in the time needed to perform the activity.

Q. WHY IS THE USE OF CURRENT AVERAGE WORK TIMES A REASONABLE STARTING POINT FOR ESTIMATING FORWARD-LOOKING COSTS?

A. Current average work times are a reasonable starting point for estimating forward-looking costs because the current average times are known and measurable. The expert personnel from whom the work time estimates were obtained were explicitly instructed to provide estimates that reflected only the productive time required to perform a particular work task. Attempting to determine forward-looking work times without using current times as a baseline would amount to nothing more than speculation.

Q. HOW WERE THESE FLAFS DEVELOPED?

A. The subject matter experts within the functional organization most familiar with the hot cut processes were asked to identify the impacts of any known system or process improvements expected over the three-year planning period. In some cases, Service Cost personnel applied an even more aggressive FLAF to account for likely improvements which would result from other factors.

f) Other Issues

Q. HOW WERE WORK TIMES DETERMINED FOR PROCESSES THAT VERIZON HAS NOT OFFERED REGULARLY IN THE PAST, AND FOR WHICH THE SURVEY APPROACH DESCRIBED ABOVE IS THEREFORE INAPPLICABLE, SUCH AS THE NEW BATCH PROCESS?

A. To a great extent, the activities performed in the batch process correspond to similar activities performed in the Large Job process. In concert with the subject matter experts, Service Costs personnel examined each activity identified under the Large Job process for applicability and impact to the batch process.

Q. HOW DID YOU DETERMINE THE COSTS ASSOCIATED WITH HOT CUTS ON INITIAL LINES VERSUS HOT CUTS ON ADDITIONAL LINES (WITHIN A SINGLE ORDER)?

A. For those activities that are expected to be performed in the same fashion regardless of the number of lines (*e.g.*, those in the NMC), the time associated with the activity was assigned to the initial line and zeroed out for the additional line. For activities in the RCCC and the CO Frame, a robust linear regression analysis was performed on the data set to identify whether there was a non-variable component of the activity. This non-variable component was assigned all to the initial line. The variable component was then included on all lines (initial as well as additional).

Q. HOW DID YOU DETERMINE WHETHER THIS "A + B X" APPROACH WAS MEANINGFUL?

A. Given an activity with a sufficient number of samples, if the t-statistic for both the intercept (non-variable component) and slope (variable

component) were high enough to indicate a strong relationship in the data, then the "a + b x" results were used rather than the calculated mean.

Q. HOW DID YOU DETERMINE THE APPROPRIATE TRAVEL TIME TO AN UNMANNED CENTRAL OFFICE WHEN SUCH TIME WAS RECORDED IN VIRTUALLY NONE OF YOUR SAMPLES?

A. Based on data from the Work Force Administration-Dispatch In ("WFA-DI") system, the amount of travel time incurred in Massachusetts as a percentage of total central office technician time was determined. This was then included as an added amount within the cost studies, where appropriate.

Q. WHY DID YOU NOT USE WFA-DI DATA FOR THE REST OF YOUR COST STUDY?

A. WFA-DI data is too aggregated to provide data sufficiently detailed to enable the necessary cost studies. For example, WFA-DI does not enable the identification of time associated with the initial line versus additional lines. However, the overall average determined from WFA-DI serves as a useful validation of the estimates derived from the survey process.

Q. HOW DID YOU DETERMINE THE TIME ASSOCIATED WITH THE IDLC SURCHARGE?

A. First, there was one explicit activity identified in the RCCC. Second, it was assumed that the APC would be involved for assignment purposes, and the previously litigated connect time was used. Third, a new line needs to be established at the frame. If a spare copper or UDLC facility to the SAI exists, this needs to be done once. If a spare copper or UDLC facility to

the SAI does not exist, this needs to be done at least twice – once (or more) to move a different in-service customer to a new facility and once to move the customer for whom the hot cut is being requested. However, once this is done, the time identified in the central office frame for the hot cut itself is credited out of the cost study. Fourth, outside plant engineers were questioned as to the amount of time needed to perform the transfers out at the SAI. Finally, an estimated percentage was applied to reflect how often a spare copper or UDLC facility would exist in the SAI serving the customer for whom the hot cut is being requested.

4. Application Of Forward-Looking Labor Rates To Determine Forward-Looking Direct Costs

Q. HOW ARE THE WORK TIMES CONVERTED INTO COSTS?

A. The first step in the conversion is the multiplication of the work times by the relevant labor rates.

Q. PLEASE EXPLAIN HOW LABOR RATES WERE DEVELOPED IN THE NRC MODEL.

A. Verizon MA's starting point for developing the labor rates was the base-year 2002 basic wage expense for each Job Function Code divided by the total productive hours for employees within that Code. The labor rates for each relevant job function in each functional organization involved in Verizon's hot cut processes are shown in Exhibit III-C.

Q. WHAT IS A JOB FUNCTION CODE?

A. The Job Function Code is a code used by Verizon to identify a specific type of work function, such as an NMC Service Representative.

Q. WHAT IS A "PRODUCTIVE HOUR"?

A. Productive hours are the time spent on specific job functions, such as preparing orders and provisioning loops. Labor rates must also recover the cost associated with an employee's non-producing time for activities such as clerical support and supervision of reporting personnel, as well as the costs for paid absence, premium time, payroll taxes, and benefits. These expenses are distributed over productive hours to produce the total directly assigned labor cost per hour.

Q. HOW WERE THE LABOR RATES FOR THIS FILING DEVELOPED?

A. The labor rates were developed using total year 2002 expenses from data sources such as payroll records and time sheets.

Q. WERE THE LABOR RATES TRENDED FORWARD FOR PURPOSES OF THESE COST STUDIES?

A. Yes. The NRC Model averages the labor rates over a three-year planning period (2004-2006), for which Verizon believes realistic predictions can reasonably be made of the expected process times. The 2002 labor rate data was trended to the middle of 2005. This labor rate at the midpoint of the planning period is considered to be the average over the entire planning period. The Labor Trend Factors used to bring the 2002 labor rates to 2005 is 1.02 for each year of the period from 2003 to 2005, and

1.00 to project rates from 2002 to 2003. The factor is based on Verizon's estimate of non-management annual salary increases based on the most recent labor contract settlement.

Q. WAS THE APPROACH TAKEN TO THE COMPUTATION OF LABOR RATES FOR PURPOSES OF THIS STUDY THE SAME AS THAT USED IN D.T.E. 01-20?

A. For the most part, yes. The development of the 2002 labor rates as well as the trended labor rates was done in the same manner as the development of the base year and trended labor rates used in D.T.E. 01-20. However, the midpoint of the planning period is being used in this case to represent the average labor rate rather than the levelization algorithm employed in the previous case. The midpoint approach is much simpler and just as accurate as the levelization approach for averaging values that change in a linear fashion (as the trended labor rates do). Also, of course, the labor rates used in this case are based on more recent data than was utilized in D.T.E. 01-20.

5. Application of Factors and Other Adjustments To Direct Labor Costs

Q. WHAT FINAL ADJUSTMENTS WERE MADE TO THE FORWARD-LOOKING LABOR COSTS TO DETERMINE THE FINAL NON-RECURRING COSTS FOR PURPOSES OF THIS STUDY?

A. After applying the forward-looking labor rate to yield the forward-looking direct costs, four more steps were taken to determine the final costs.

- First, Verizon MA multiplied the forward-looking disconnect costs by a Present Worth Factor to reduce the forward-looking disconnect cost to its present value.
- Second, Verizon MA added the forward-looking connect costs to the present worth value of the disconnect cost.
- Third, Verizon MA multiplied the total cost figure resulting from the above two adjustments by the Common Overhead Factor, in order to apportion common overhead expense to the direct non-recurring costs. The Common Overhead Factor does not include any labor expenses from the functional organizations that are directly assigned to non-recurring costs.
- Finally, Verizon assigned to the direct plus common costs a Gross Revenue Loading ("GRL") by multiplying the costs identified in the previous step by the GRL Factor. This factor recovers uncollectibles and the state and Federal Communications Commission assessments that Verizon is required to pay under applicable law.

Q. HOW WERE THE FINAL COSTS MAPPED TO THE SERVICE ORDER, CENTRAL OFFICE WIRING AND PROVISIONING COST ELEMENTS?

A. The resulting costs associated with the NMC are mapped to the Service Order costs. Central Office Wiring costs include only the costs associated with central office frame work. Provisioning costs include the costs

incurred by the RCCC, the APC and the RCMAC. Finally, the IDLC surcharge includes the relevant IDLC-specific costs associated with Field Installation, Central Office Frame, the RCCC, and the APC.

Q. IS THE FOUR-STEP APPROACH DESCRIBED ABOVE CONSISTENT WITH THAT USED IN THE NON-RECURRING COST STUDIES IN D.T.E. 01-20?

A. Yes.

Q. WHAT VALUES WERE USED FOR THE COMMON OVERHEAD FACTOR AND THE GROSS REVENUE LOADING?

A. The values are the ones that were filed by Verizon MA's May 29, 2003 Compliance Filing in D.T.E. 01-20.

Q. WHY DIDN'T YOU UPDATE THESE FACTORS TO BE MORE CURRENT?

A. Although it would generally be appropriate to update these values to reflect more current data and to reflect the latest accounting practices, use of the compliance factors would enable a better comparison to the individual non-WPTS hot cut rates that were approved less than six months ago and to the individual WPTS hot cut rates that are pending further review by the Department. As a result, the costs for the large job and batch processes needed to be presented on an equivalent basis.

6. Statistical Validation of Results

Q. WERE VERIZON MA'S NON-RECURRING COSTS SUBJECT TO A STATISTICAL REVIEW?

A. Yes. The data collected by Verizon were used to calculate the statistical precision of the non-recurring cost estimates developed in these studies.

Q. PLEASE SUMMARIZE THE STATISTICAL VALIDATION PROCESS.

A. The responses from the non-recurring time surveys were used to calculate the average times and variances for the non-recurring work activities. These results were combined with other NRC Model inputs, including (but not limited to) Typical Occurrence Factors, FLAFs, and labor rates, to calculate the precision with which Verizon's non-recurring costs are estimated. These precision levels are set forth in Exhibit III-D.

Q. IS THIS APPROACH CONSISTENT WITH THE ONE UTILIZED IN D.T.E. 01-20?

A. Yes.

Q. WHY IS IT USEFUL TO ASSESS THE PRECISION LEVELS OF VERIZON'S NON-RECURRING COSTS?

A. It is, of course, impossible for Verizon to measure the time it will take to perform every future instance of every non-recurring work activity and use the averages of these instances to develop non-recurring costs and rates. The Verizon NRC Model develops non-recurring costs based on average work activity times that are calculated from samples. As a result, the non-recurring costs based on the sample averages might differ from those that would be calculated using all actual future instances of non-recurring work activities. In statistical language, this difference is known as "sampling error." Statisticians have developed techniques for quantifying the degree of sampling error (precision) in any given situation. The precision levels shown in Exhibit III-D quantify the likely degree of sampling error that is

embedded in Verizon's proposed non-recurring costs. For example, a precision level of 10% with 95% confidence means we can be 95% sure that the non-recurring cost, based on the samples, is within 10% of the actual, or "true," average non-recurring cost. A precision level of 5% with 95% confidence means we can be 95% sure that the non-recurring cost is within 5% of the actual or true average non-recurring cost. Thus, smaller precision levels are better than higher precision levels.

Q. PLEASE INTERPRET THE PRECISION LEVELS SET FORTH IN EXHIBIT III-D.

A. The precision levels shown in the Exhibit are generally quite small. This means that there is a very high likelihood that Verizon MA's proposed non-recurring costs are very close to the "correct" forward-looking average non-recurring costs. For all of the nonrecurring charges at issue here, there is a 95% chance that Verizon MA's non-recurring costs are within 12.6% or better of the correct ones.

7. Treatment of Disconnect Costs

Q. ARE DISCONNECT COSTS INCLUDED IN THESE COSTS STUDIES?

A. Yes.

Q. IN THE CONTEXT OF A HOT CUT, WHAT DOES "DISCONNECT COSTS" REFER TO?

A. In a hot cut, an existing retail, UNE-P, or resold line, or a CLEC UNE-L line, is migrated to a specific CLEC's UNE-L arrangement, in order to access that specific CLEC's switch. At the termination of this new UNE-L

service, Verizon MA must physically disconnect the loop from the facilities of the specific CLEC.

Q. HOW ARE DISCONNECT COSTS TREATED IN THE NRC MODEL?

A. Disconnect costs are developed in the same manner as described for service provisioning, but are then discounted to reflect the time value of money based on a 2.5 year forecasted life and a 11.45% cost of capital. Discounting these costs properly recognizes that Verizon will not incur disconnect expenses until some time in the future (assumed to be the average UNE service life). Disconnect costs are then added to the connect costs to determine the total non-recurring costs. The Department approved this approach in D.T.E. 01-20.

C. RESULTS OF THE COST ANALYSIS AND PROPOSED RATES

Q. WHAT ARE THE RESULTS OF VERIZON'S NEW COST STUDIES, AND WHAT RATES IS IT PROPOSING BASED ON THOSE STUDIES?

A. The rates are set forth in Exhibit III-E.

Q. DO THE SERVICE ORDER, CENTRAL OFFICE WIRING, AND PROVISIONING RATES DERIVED HERE APPLY TO ANY NON-RECURRING ACTIVITY OTHER THAN HOT CUTS?

A. No.

Q. PLEASE COMPARE THESE RATES WITH THE HOT CUT RATES SET BY THE DEPARTMENT IN D.T.E. 02-01.

A. The rates set here are lower than the $87.81 rate set in D.T.E. 01-20 for a fully coordinated hot cut.

IV. SCALABILITY

A. PURPOSE OF TESTIMONY

Q. WHAT IS THE PURPOSE OF THIS PART OF VERIZON MA'S TESTIMONY?

A. In this Part of its testimony, Verizon MA shows that its hot cut process is scalable, in that it can be used to handle the greater volumes of hot cuts and related work that would be expected to result from the elimination of local switching as an unbundled network element in Massachusetts (and the consequent elimination of UNE-P as a competitive entry and provisioning strategy for CLECs). The analysis is based on the conservative customer migration estimates developed by Dr. William E. Taylor in his testimony.

B. BACKGROUND AND OVERVIEW

Q. WHICH OF THE HOT CUT PROCESSES DESCRIBED IN PART II OF THIS TESTIMONY IS ASSUMED FOR PURPOSES OF VERIZON MA'S SCALABILITY ANALYSIS?

A. For purposes of this analysis, we have assumed that the "basic" hot cut process would be utilized. Although in a real post-UNE-P environment, Large Job and batch processing would undoubtedly account for a significant percentage of hot cut orders, particularly in the conversion of the embedded base, this scalability analysis is limited to the basic process. Since, as noted previously, the Large Job and batch processes enable Verizon to make more efficient use of its work force than the basic

process, the analysis presented here is conservative (*i.e.*, biased towards overestimation).

Q. WILL ANY CHANGES HAVE TO BE MADE TO THE BASIC PROCESS TO ACCOMMODATE INCREASED HOT CUT DEMAND?

A. No. The process itself is flexible enough to accommodate a large range of demands.

Q. WHAT CHANGES WOULD BE REQUIRED TO HANDLE INCREASED DEMAND?

A. As with all non-recurring functions, the basic input is work time, and the basic constraint on the volume of work that can be handled is the size of the relevant work force. Verizon's basic approach to meeting increased demand would be to appropriately increase the size of the work forces at its central offices and at work centers such as the NMC and the RCCC.

Q. PLEASE PROVIDE AN OVERVIEW OF THE SCALABILITY ANALYSIS PRESENTED HERE.

A. The first step in the analysis is the determination of the number of additional workers that would have to be added in various work centers to meet the incremental demand for hot cuts and related activity resulting from the elimination of UNE-P. This analysis is performed by a spreadsheet model which is described in greater detail below.

The second phase of the analysis considers hiring, training, work space, and other issues, in order to show that the force expansion that would be required is feasible, and that no external constraint (such as limitations in

the size of central offices) would prevent Verizon from achieving the requisite hot cut volumes.

C. THE FORCE-LOAD MODEL ("FLM")

Q. WHAT MODEL IS VERIZON MA USING TO ESTIMATE THE ADDITIONAL FORCE REQUIREMENTS THAT WOULD RESULT FROM THE ELIMINATION OF UNE-P?

A. Verizon has developed a spreadsheet model that we refer to as the "Force-Load Model" ("FLM"). A copy of the Model is provided in Exhibit IV-A, and Model documentation is provided in Exhibit IV-B. The model can be run on a personal computer using any recent version of Microsoft Excel.

Q. WHAT IS THE FIRST PHASE OF THE ANALYSIS PERFORMED BY THE FLM?

A. The first phase is the determination of the incremental level of hot cuts and Verizon MA winbacks that would be required in a post-UNE-P world. This incremental hot cut demand has two components: the incremental demand resulting from the normal movement of customers between carriers, and the incremental demand resulting from the conversion of the embedded base. It should be emphasized that the FLM seeks to predict *incremental* (*i.e.*, additional) work resulting from the elimination of UNE-P, not total work levels.

The work volume estimates are based on the assumptions and data described in the testimony of Dr. Taylor.

Because the embedded base conversion is a temporary phenomenon — *i.e.*, it will be completed within a 27-month period — the analysis necessarily reflects a changing incremental work load over time.

Q. WHAT IS THE NEXT STAGE OF THE FLM'S ANALYSIS?

A. Next, the Model converts the incremental work requirements into incremental staffing levels. In general, this is done by converting work loads to work times, which are then converted into incremental force requirements.

Q. PLEASE EXPLAIN HOW THE INCREMENTAL HOT CUT AND WINBACK DEMAND RESULTING FROM CUSTOMER MIGRATION IS CONVERTED INTO INCREMENTAL STAFFING NEEDS IN THE CENTRAL OFFICE.

A. First, the number of hot cuts and winbacks is allocated among all of Verizon MA's central offices in Massachusetts. Since detailed data on the total number of hot cuts per office is not available, this was done by allocating the total demand on the basis of the number of UNE-P lines in each central office. The number of UNE-P lines is a good indicator of the current level of competitive activity in a particular office, which in turn provides the best way to predict hot cut levels in a post-UNE-P environment.

Q. WHAT IS THE NEXT STEP?

A. Next, the total number of incremental hot cuts and winbacks is converted to incremental minutes of frame technician work, based on factors

reflecting the minutes required to cut over or install each line. These factors are derived from Verizon's WFA system but are consistent with the current work times determined in Verizon MA's cost studies.

Incremental work time is then converted into an incremental work force level through division by a factor representing a standard number of minutes per month for a central office technician.

The force levels are then adjusted by a standardized factor reflecting an allocation of time to sick time, vacations, and training. Incremental supervision requirements are accounted for by applying an associate/manager ratio to the incremental number of associates determined through the analysis described above.

Q. HOW ARE IDLC LINES HANDLED IN THE MODEL?

A. The techniques are very similar, except here there is an additional level of incremental work required for outside dispatches.

Q. HOW ARE INCREMENTAL WORK REQUIREMENTS IN THE NMC, RCCC, AND OTHER WORK CENTERS ACCOUNTED FOR?

A. Techniques similar to those described above for central office technicians are utilized, with the following variations: (a) The work loads at the NMC and the RCMAC are proportional to the number of orders handled, not the number of lines; (b) NMC and LNP demand are driven largely by the number of non-flow-through orders handled, so that flow-through levels

need to be factored into the analysis; and (c) Winback orders do not give rise to any work requirements in the RCCC.

Q. PLEASE DESCRIBE THE ANALYSIS USED FOR THE CONVERSION OF THE EMBEDDED BASE.

A. The analysis is similar to the analysis of incremental hot cut demand resulting from customer migration, as described above. The volumes were determined as described in Dr. Taylor's testimony. The FLM addresses demand for five periods starting with the submission of the embedded base conversion plan to the Department at the end of Month 2 (all months being measured from the Department's non-impairment determination). The five periods are: (a) Months 3 through 5 (during which the CLEC may continue ordering new UNE-Ps); (b) Months 6 through 13 (the remainder of the first 13-month embedded-base conversion period); (c) Months 14 through 20 (the second, 7-month embedded-base conversion period); (d) Months 21 through 27 (the last, 7-month, portion of the embedded base conversion period); and (e) Months 28 forward (the post-conversion "steady state" period). During the embedded base conversion, both the conversion itself, and customer migration, are taken into account. After the conversion is completed, the only incremental demand remaining is caused by customer migration.

Q. IN MOST CASES, THE FLM PREDICTS A NON-INTEGRAL NUMBER OF INCREMENTAL WORKERS AT EACH CENTRAL OFFICE (0.13 WORKERS, 0.57 WORKERS, ETC.). HOW DOES THE FLM HANDLE THIS?

A. A very conservative approach would be to round up to the next highest whole number in each central office and work center. For the central offices, however, this approach would be excessively cautious. For example, a cluster of central offices in a rural area, each of which requires (say) an incremental staff of 0.1 people, could be handled by a single person traveling from office to office as needed. Indeed, this is the strategy currently used in many rural areas, where many of the central offices are currently unstaffed. Within such clusters, the fractional workers can simply be added together rather than rounded up before adding.

More generally, requirements for fractional workers *outside* of clusters can be handled by job shifting and overtime within the framework of existing staffing levels. Thus, outside of clusters, standard rounding is applied at the individual central office level.

Q. WHAT WAS THE BASIS FOR ASSIGNING CENTRAL OFFICES TO CLUSTERS WITHIN THE FLM?

A. Essentially, a cluster is defined as any group of central offices located near enough to each other to permit the use of a traveling work force.

D. HIRING, TRAINING, AND RESOURCE ISSUES ASSOCIATED WITH THE WORK FORCE EXPANSION

Q. HOW WOULD VERIZON MEET THE INCREMENTAL HIRING LEVELS PREDICTED BY THE FLM?

A. In general, the elimination of UNE-P, a basic premise of the analysis, would free up a large number of workers handling UNE-P-related tasks in

central offices and at work centers; this could account for some of the new work force needs. We would, however, expect to rely in part on new hires.

Q. HOW DOES VERIZON HIRE NEW EMPLOYEES FOR ITS CENTRAL OFFICES AND FOR WORK CENTERS SUCH AS THE NMC?

A. Verizon's current collective bargaining agreement specifies a process under which a certain percentage of job openings must be offered first to current employees. Otherwise, the jobs can be filled through new hires. Verizon's standardized hiring processes would be used for this purpose.

Q. WHAT QUALIFICATIONS DOES VERIZON REQUIRE FOR AN APPLICANT FOR A CENTRAL OFFICE OR WORK CENTER REPRESENTATIVE POSITION?

A. Generally, there are no educational requirements for new hires to associate positions, although a high school or equivalent diploma is preferred. Applicants are required to pass a battery of tests that measure situational judgment and basic cognitive skills. A physical and drug screening are also required and, for field technician jobs, requirements for working aloft.

Q. DOES VERIZON BELIEVE IT CAN HIRE THE NUMBER OF PEOPLE REQUIRED IN A RELATIVELY SHORT PERIOD OF TIME? IF SO, WHY?

A. Yes. First, a sufficient number of potential employees are clearly available. Because of force reductions in the telecommunications industry over the last several years, there is a large pool of experienced workers available to fill incremental staffing needs. Indeed, because the qualifications for these positions are relatively modest, as described

above, Verizon would not be limited to hiring experienced telecommunications workers. An analysis of current unemployment statistics for Massachusetts provided by Dr. Taylor in his testimony shows that qualified job seekers are available in numbers far exceeding those that would be required by Verizon.

Third, the well-publicized meltdown in the global telecommunications industry has resulted in massive layoffs and force reductions. Until recently, the *Financial Times* maintained a website tracking announcements of layoffs by major communications employers. According to this compendium, between July 2000 and May 2002, the global telecom sector cut approximately 539,000 jobs.[3] In the U.S., as of May 2002, Qwest, BellSouth and Verizon had announced job cuts of 13,000, 4,200 and 7,500 respectively. In September 2002, SBC announced a reduction of 11,000 jobs, in addition to the 10,000 jobs eliminated in the first three quarters of 2002.[4] AT&T's announced layoffs amounted to 10,000 jobs by May 2002.

Fourth, FCC data on U.S. telephone employment also shows a dramatic reduction, continuing into 2003. Based on preliminary data through March

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[3] *See* http://news.ft.com/ft/gx.cgi/ftc?pagename=View&c=Article&cid=FT3MOCS3OPC, the FT.com Telecoms job cuts watch, last updated May 14, 2002. This figure includes telecom operators, cable operators and network equipment providers, categories that have been particularly hard hit.

[4] "SBC to Cut 11,000 Jobs and Investment Due to Outmoded Regulatory Scheme and Weak Economy," SBC Press Release, September 26, 2002.

2003, total employment has fallen by about 160,000 jobs from its peak in 2001. *See* Exhibit IV-C.

In sum, all indications from the labor markets suggest that sufficient workers are available to manage the expected additional work load from incremental hot cuts.

Q. WHAT STRATEGY WILL VERIZON USE FOR FILLING THE INCREMENTAL WORK FORCE NEEDED TO HANDLE THE EMBEDDED BASE, GIVEN THE FACT THAT THOSE PEOPLE WOULD ONLY BE NEEDED FOR A MAXIMUM OF 27 MONTHS?

A. Verizon has the ability to hire temporary workers for up to one year. Those workers can be terminated or converted to full-time employees at the end of the one-year period.

Q. WHAT TRAINING WOULD BE REQUIRED FOR THE NEW CENTRAL OFFICE TECHNICIANS AND SERVICE REPRESENTATIVES AT THE WORK CENTERS?

A. Training requirements vary depending on job title. For the central office environment, both Central Office Technicians and Frame Specialist titles are utilized to perform hot cut activity. Formal training includes a hands-on basic frame course, hot cut certification training, and courses designed to utilize OSSs for managing work and on-the-job training. The work centers employ a formal instructor-led course, a computer-based training (CBT) course, and on-the-job training. Here again, the training is focused on the specific tasks associated with the job requirements and covers use

of OSS, line translations, database, customer contact skills and order entry, to name a few.

Q. HOW LONG WOULD IT TAKE TO PUT TRAINED WORKERS IN PLACE?

A. A trained workforce could be put in place relatively quickly. In accordance with Verizon's standard training requirements, new central office technicians would be required to attend approximately 20 hours of training, which could be provided within a single week. Service representatives would require approximately 112 hours of training, delivered over three weeks. Since the projected demand will not materialize all at once, Verizon will have time to hire and train the necessary staff on a rolling basis.

Q. WILL WORK SPACE (OFFICE SPACE) AND FACILITIES (COMPUTERS, ETC.) BE AVAILABLE AT THE LEVELS REQUIRED FOR THE NEW EMPLOYEES?

A. Yes. Verizon's force levels have been significantly reduced in the recent past, which will make it easier to provide office space, computers, and other needed office tools for new employees. Also, existing office space has been consolidated, freeing up additional space. Making new office space and facilities available, to the extent necessary, should not impose any insurmountable obstacles. Verizon has frequently had to provide space and facilities for additional staff on a rapid basis (*e.g*, in connection with the establishment of new work centers).

Q. WITH SPECIFIC REFERENCE TO CENTRAL OFFICE WORK, WILL THE ADDITIONAL FORCE REQUIREMENTS LEAD TO CROWDING THAT COULD INTERFERE WITH NORMAL WORK AT THE FRAME?

A. No. The necessary additional hiring would merely bring the level of frame activity closer to staffing levels prevailing in earlier years, at which crowding was not a problem.

Q. ARE VERIZON'S OSSS CAPABLE OF HANDLING THE ADDITIONAL ORDERING ACTIVITY THAT WOULD BE ASSOCIATED WITH THE ELIMINATION OF UNE-P?

A. Yes. Indeed, Verizon would not expect overall ordering levels to increase significantly, since by and large UNE-P orders would simply be replaced by UNE-L orders. In any event, Verizon's OSSs are robust and are scalable to support significant increases in transaction volumes.

Verizon follows a comprehensive capacity management process to ensure that its systems have sufficient capacity to handle current and projected volumes. Capacity management is an ongoing process. Verizon collects key system performance data such as CPU utilization, memory utilization, and transaction volumes. Verizon analyzes the performance data and identifies any servers that are exceeding pre-defined utilization thresholds. Verizon also extrapolates from existing performance data to anticipate future utilization based on predicted transaction workload. Based on the utilization data and the predicted future needs, Verizon develops specific action plans for addition system tuning, application architecture changes,

and infrastructure upgrades for hardware and system software components.

Q. CAN NPAC HANDLE THE ADDITIONAL DEMAND FOR NUMBER PORTING THAT WOULD BE ASSOCIATED WITH A SHIFT FROM UNE-P TO UNE-L?

A. Yes. In an *ex parte* submission to the FCC, the current number portability administrator, NeuStar, states that the NPAC database has the capability to handle in excess of 25 telephone number ports per second, a level of performance that should be ample to support any conceivable increase in hot cut demand. Note that 25 ports per second amounts to approximately 65 million ports per month. However, NeuStar's web site indicates sufficient overall NPAC capacity for "tens of millions" of transactions per day, corresponding to hundreds of millions of transactions per month. (*See* http:// www.neustar.com/numbering/npac.cfm.) Our estimated volume of incremental hot cuts for Massachusetts is much less than one million per month. Thus, the additional demand on the NPAC database would amount to much less than one percent.

Q. DOES THIS CONCLUDE THE PANEL'S TESTIMONY?

A. Yes.