PUBLIC UTILITIES COMMISSION
505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3298

July 28, 2004 Agenda ID #3764

TO: PARTIES OF RECORD IN RULEMAKING 95-04-043 / INVESTIGATION 95-04-044
(FCC Triennial Review Nine-Month Phase)

- RE: NOTICE OF AVAILABILITY OF PROPOSED DECISION REGARDING HOT CUT PROCESSES AND PRICING

Consistent with Rule 2.3(b) of the Commission's Rules of Practice and Procedure, I am issuing this Notice of Availability of the above-referenced proposed decision. This proposed decision is being issued by Administrative Law Judge (ALJ) Thomas Pulsifer on July 28, 2004. An Internet link to this document was sent via e-mail to all the parties on the service list who provided an e-mail address to the Commission. An electronic copy of this document can be viewed and downloaded at the Commission's Website (www.cpuc.ca.gov).

Any recipient of this Notice of Availability who is not receiving service by electronic mail in this proceeding or who is unable to access the link to the Commission's web site given above may request a paper copy of the above documents from the Commission's Central Files Office, at (415) 703-2045; e-mail cen@cpuc.ca.gov.

The proposed decision of ALJ Pulsifer will not appear on the Commission's agenda for at least 30 days after the date it is mailed. Pursuant to Resolution ALJ-180, a Ratesetting Deliberative Meeting to consider this matter may be held upon the request of any Commissioner. If that occurs, the Commission will prepare and mail an agenda for the Ratesetting Deliberative Meeting 10 days beforehand, and will advise the parties of this fact, and of the related ex parte communications prohibition period.

When the Commission acts on the proposed decision, it may adopt all or part of it as written, amend or modify it, or set it aside and prepare its own decision. Only when the Commission acts does the decision become binding on the parties.

Parties to the proceeding may file comments on the proposed decision as provided in Article 19 of the Commission's "Rules of Practice and Procedure." These rules are accessible on the Commission's website at http://www.cpuc.ca.gov. Pursuant to Rule 77.3 opening comments shall not exceed 15 pages.

Consistent with the service procedures in this proceeding, parties should send comments in electronic form to those appearances and the state service list that provided an electronic mail address to the Commission, including ALJ Pulsifer at trp@cpuc.ca.gov. Service by U.S. mail is optional, except that hard copies should be served separately on ALJ Pulsifer and Assigned Commissioner Kennedy, and for that purpose I suggest hand delivery, overnight mail or other expeditious methods of service. In addition, if there is no electronic address available, the electronic mail is returned to the sender, or the recipient informs the sender of an inability to open the document, the sender shall immediately arrange for alternate service (regular U.S. mail shall be the default, unless another means – such as overnight delivery is mutually agreed upon). The current service list for this proceeding is available on the Commission's Web page, www.cpuc.ca.gov.

/s/ ANGELA K. MINKIN
Angela K. Minkin, Chief
Administrative Law Judge

ANG:hl2

Attachment

PROPOSED DECISION OF ALJ PULSIFER (Mailed 7/28/2004)

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking on the Commission's Own Motion into Competition for Local Exchange Service.	Rulemaking 95-04-043 (Filed April 26, 1995)
Order Instituting Investigation on the Commission's Own Motion into Competition for Local Exchange Service.	Investigation 95-04-044 (Filed April 26, 1995) **(FCC Triennial Review Nine-Month Phase)**

OPINION REGARDING HOT CUT PROCESSES AND PRICING

(See Appendix 5 for Appearances)

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I. Introduction

This decision addresses the implementation of "hot cut" processes[1] and related pricing applicable to Pacific Bell Telephone Company doing business as SBC California (SBC) and Verizon California, Inc. (Verizon) pursuant to the Federal Communications Commission (FCC) Triennial Review Order (TRO), adopted on February 20, 2003.[2] The FCC released the text of its TRO on August 21, 2003, which was published in the Federal Register on September 2, 2003 and which became effective on October 2, 2003. The TRO required state commissions, among other things, to approve within nine months of the effective date of the TRO, or by July 2, 2004, a batch cut migration process to be implemented by ILECs. Alternatively, state commissions were directed to make detailed findings explaining why such a process would not be necessary in a particular market.

As originally initiated, these proceedings relating to hot cut processes were part of a larger inquiry to identify those markets, if any, in which competitive local exchange carriers (CLECs) are not impaired without access to designated

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[1] A "hot cut" is the process whereby the incumbent carrier manually disconnects the customer's loop from the incumbent's switch and physically rewires it to the competitive LEC switch, while reassigning the customer's telephone number from the incumbent switch to the competitive local carrier's switch

[2] Report and Order and Order on Remand and Further Notice of Proposed Rulemaking, In the Matter of Review of the Section 251 Unbundling Obligations of Incumbent Local Exchange Carriers (CC Docket No. 01-338); Implementation of the Local Competition Provisions of the Telecommunications Act of 1996 (CC Docket No. 96-989); Deployment of Wireline Services Offering Advanced Telecommunications Capability (CC Docket No. 98-147), FCC No. 03-36, ¶ 669 (rel. Aug. 21, 2003) (hereinafter, "TRO").

unbundled network elements (UNEs) offered by incumbent local exchange carriers (ILECs). In such markets, the TRO required that the ILEC be relieved of obligations to offer the designated network elements on an unbundled basis. The combination of UNEs typically offered to CLECs, including loops, ports, and switching, is generally referred to as the "UNE Platform" (UNE-P).

The TRO recognized that an efficient and economical process would be required to migrate customer loops from the ILEC switch (under UNE-P) to the CLEC switch utilizing the unbundled loop (UNE-L) and to support competition in local markets after the elimination of UNE-P. Accordingly, an integral part of our state proceeding involved development and implementation of "hot cut" processes to migrate both the embedded base of UNE-P loops on a batch basis and to accommodate increased ongoing demand for hot cuts due to the elimination of UNE-P in designated markets.

On March 2, 2004, however, the United States Court of Appeals for the District of Columbia Circuit issued an opinion in *United States Telecom Association v. Federal Communications Commission*, No. 00-1012 (*USTA II*).[3] *USTA II* vacated provisions of the TRO relating to both the delegation of state authority to determine whether CLECs are impaired without access to unbundled elements and the substantive tests that the FCC promulgated for making such determinations. On June 16, 2004 the District Court's *vacatur* order became effective. On June 18, 2004, an Assigned Commissioner's Ruling suspended

[3] This Circuit Court Opinion is known as *USTA II*, where *USTA I* refers to a prior Circuit Court Opinion in *United States Telecom Association v. FCC*, 209 F.3d 415 (D.C. Cir. 2002) which had invalidated much of the FCC's previous efforts to identify network elements to be unbundled.

those provisions of the TRO proceeding that were vacated by the Court, setting aside submission, until such time as the FCC issues new or interim local competition rules.

On July 2, 2004, a supplemental Assigned Commissioner's Ruling was issued, indicating the portion of the proceeding relating to hot cut issues would continue forward. As noted in the ruling, although *USTA II* vacates portions of the TRO relating to the deployment analysis for designated UNEs, nothing in *USTA II* exempts this Commission from the provisions related to development of a batch cut process. While the Court explicitly vacated the national impairment finding, it was conspicuously silent as to the FCC's order to states to develop a batch hot cut process. In any event, implementation of a low-cost, efficient batch hot cut process will be a critical part of any post UNE-P world.

Accordingly, in this decision, we complete the four tasks that the FCC assigned to states concerning the batch cut process: determining the volume of loops in the batch, adopting a specific process, evaluating the ability of an ILEC to timely migrate lines now served by UNE-P, and adopting Total Element Long Run Incremental Cost (TELRIC) rates for the batch cut process.[4]

In addition, we recognize that because no immediate change in UNE-P availability will occur as a result of this order, the hot cut processes addressed in this order may not be immediately required.

For SBC, our performance of these four tasks leads us to conclude:

[4] 47 C.F.R. §51.319(d)(2)(ii)A

1. SBC's volume limitations of 50 loops for daily batch, 100 for defined batch, and a negotiated higher amount for bulk project are approved on an interim basis.
2. SBC's proposed batch cut process is approved, but we identify other issues, such as 911 coordination, that require resolution before final implementation.
3. SBC's ability to migrate customers through a seven-day notice option reasonable and workable.
4. We adopt TELRIC based prices for SBC, and a detailed price schedule contained in Appendix 1.

Concerning SBC's batch cut process, we conclude that additional work is required in various aspects of the proposed hot cut provisioning, as well as some resolution of pricing issues, before those processes will be adequate for use by CLECs in a seamless, efficiently priced manner. We outline in the order below the additional steps that SBC must accomplish in order to make the hot cut processes acceptable for use in a seamless manner and provide directives for completion of these additional steps.

For Verizon, our performance of these four tasks leads us to the following conclusions:

1. Verizon proposes to set a batch volume based on a "critical mass approach" in each central office and does not propose a specific numerical batch size. We approve this on an interim basis.
2. Verizon's proposed batch cut process is approved on an interim basis, but we identify other issues, such as 911 coordination, that require resolution before final implementation.

3. Verizon's proposal to migrate customers in an interval between 6 and 26 days fails to provide a seamless migration. We order Verizon to provide specific provisioning intervals to CLECs.
4. Verizon's proposed TELRIC prices for the batch hot cut process exceed those of SBC by large amounts and are not justified as reasonable. We order further proceedings to develop reasonable prices.

In summary, Verizon's proposed hot cut process is deficient in major elements, and incapable of providing a "seamless" transition. Further proceedings are essential.

II. Requirements of the TRO Relating to Hot Cuts: Standards for Approval

The migration of a customer's loop from a UNE-P to a UNE-L serving arrangement is referred to as a "hot cut." As described in the TRO, a "hot cut" defines the process whereby the "incumbent LEC technicians . . . manually disconnect the customer's loop, which was hardwired to the incumbent LEC switch, and physically re-wire it to the competitive LEC switch, while simultaneously reassigning (*i.e.*, porting) the customer's original telephone number from the incumbent LEC switch to the competitive LEC switch." (*TRO* ¶ 465 n.1409.) Generally, the new connection would be cut over while the customer's loop is "hot" – *i.e.*, in active service, hence, the term "hot cut." The schematic diagrams included in Appendix 1 of this order illustrate the before-and-after hot cut process for a typical SBC central office.

The FCC promulgated 47 C.F.R. § 51.319(d)(2)(ii), defining a "batch cut process" as one by which the ILEC simultaneously migrates two or more loops from one carrier's switch to another carrier's switch, "giving rise to operational and economic efficiencies" not available when loops are migrated on a line-by-

line basis. In this manner, the batch hot cut (BHC) process would be used to cut over the existing embedded base of CLEC customer lines from the ILEC switch (utilizing UNE-P) to the CLEC switch (utilizing UNE-L).

Concerning the hot cut process, the FCC orders that:

> "In each of the markets that the state commission defines pursuant to paragraph (d)(2)(i) of this section, the state commission shall either establish an incumbent LEC batch cut process . . . or issue detailed findings explaining why such a batch process is unnecessary . . . ." (47 C.F.R. § 51.319(d)(2)(ii))

The FCC further states that:

> "Specifically, we ask the state commissions, within nine months of the effective date of this Order, to approve and implement a batch cut migration process – a seamless, low-cost process for transferring large volumes of mass market customers . . ." (*TRO* ¶ 423)

The FCC concluded in the TRO that on a national basis, competing carriers left without access to unbundled local circuit switching for mass market customers would be impaired due to economic and operational barriers resulting from the ILECs' current cut over or "hot cut" processes. (§ 459) The FCC found that competing carriers are impaired without access to UNE switching for mass market customers based on "the combined effect of all aspects of the hot cut process on competitors' ability to serve mass market voice customers."[5] The FCC, in paragraph 470 of the *TRO*, said that: "Although hot cut costs vary among incumbent LECs, we find that on a national level that these costs contribute to a significant barrier to entry."

[5] TRO at ¶473.

Although this national finding of impairment was vacated by *USTA II*, the factual evidence in our record supports our independent findings (consistent with the provisions of the TRO left unchanged by *USTA II*) that CLECs do require an efficient, reliable, and low cost hot cut process wherever UNE-P is eliminated. For this reason, we find that whenever UNE-P is eliminated in California, a batch cut process is necessary.

In establishing the batch cut process, the TRO specifically requires that we:

1. determine the appropriate volume of loops that should be included in the batch (47 C.F.R. § 51.319(d)(2)(ii)(A)(1));

2. adopt specific batch cut processes, taking into account the ILEC's network design and cut-over practices (47 C.F.R. § 51.319(d)(2)(ii)(A)(2)); and

3. evaluate whether the ILEC is capable of timely migrating multiple lines served using unbundled switching to switches operated by other carriers (47 C.F.R. § 51.319(d)(2)(ii)(A)(3)).

4. adopt rates for the batch cut activities it approves in accordance with the Commission's pricing rules for unbundled network elements. These rates shall 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. (47 C.F.R. § 51.319(d)(2)(ii)(A)(4)).

We address each of these requirements in the order below.

In particular, we adopt the minimum volume of loops to be included in the batch size for SBC in Section VI.C.1 and in Section VIIIC.1 for Verizon. The batch sizes are adopted on an interim basis contingent on subsequent testing and

evaluation of performance metrics, as discussed below, to ensure that the resulting processes are being performed in a "seamless" manner.[6]

We adopt, on an interim basis, specific batch hot cut processes separately proposed by each ILEC (as summarized in Section IV for SBC, and Section VII for Verizon), taking into account network design and cutover practices utilized by each company. We adopt these processes only on an interim basis in view of the additional development needed to provide adequate assurances that the requisite hot cut volumes can be processed in a "seamless" manner.

We also address whether, or to what extent, the hot cut proposals of the incumbents are sufficiently scalable to meet the potential increase in demand resulting from the elimination of UNE-P. In succeeding sections, we address the need for the hot process to be augmented to accommodate more complex migration scenarios, including seamless migration of customers taking both voice and data services over a single line.

In Sections VI and VII, respectively, we evaluate the extent to which each of the ILECs is capable of timely migrating multiple lines served from UNE-P to UNE-L. We then address in Section XIII the question of pricing for the hot cut processes to conform to applicable pricing rules and to recognize batching efficiencies. Rule 319(d)(2)(ii)(A)(4) addresses the rates that the Commission is to adopt for the batch cut process it approves.

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[6] The Commission "may require that incumbent LECs comply with an average completion interval metric for provision of high volumes of loops." 47 C.F.R. § 51.319(d)(2)(ii)(A)(3). Such metrics would measure the ILEC's performance of the batch cut process.

While the vast majority of migration orders under current UNE-P arrangements can be processed by the ILEC electronically without the need for manual intervention, UNE-L migration requires a hot cut involving manual provisioning and testing activities that are prone to error and take significant time to accomplish. Hot cut capacity is limited by a number of factors, such as the labor-intensive nature of the process and the practical limitations on how many hot cuts the LECs can perform without interference or disruption in service. In the TRO, the FCC held that the ILEC's existing hot cut processes examined in the various Section 271 proceedings are unreliable as an indicator of performance at the very high volumes at issue in this proceeding.[7] We note that without UNE-P, customer loop migrations will increase in number and will require a streamlined process capable of handling a complex variety of transition scenarios.

The hot cut process raises potential service reliability issues because it entails interruption of the customer's service. First, from the time the customer's loop is disconnected from the ILEC's switch until it is reconnected to the CLEC's switch, the customer has no dial tone and is without telephone service. Second, even after the customer's loop is connected to the CLEC's switch, the customer cannot receive incoming calls until the customer's number is successfully ported to the CLEC's switch. To the extent that carriers are subsequently required to replace UNE-P with UNE-L serving arrangements, therefore, provisions need to be made for an efficient and economical process for cutting over the CLEC customer's loop to avoid creating disparities between CLEC and ILEC service

[7] *TRO at* ¶469.

reliability. Accordingly, to the extent that an ILEC is no longer required to provide UNE switching to serve mass market customers in particular markets, the TRO requires that a BHC be approved and implemented. Because we make no findings in this order concerning whether the mass market triggers are met in any of the markets where CLECs compete, UNE-P will not be eliminated as a result of this order. Consequently, no specific timeline is activated by this order for the starting or end date for wholesale cutover of the embedded base of UNE-P lines to UNE-L through a BHC process. Nonetheless, to the extent that a BHC may be necessary at a future point where UNE-P lines are to be migrated to UNE-L status, and in the interests of a complete record, we set forth our findings concerning whether the proposed hot cut processes would result in a "seamless" transition at TELRIC-based pricing.

As discussed below, we conclude that the proposed hot cut processes proposed by SBC and Verizon are not yet sufficiently developed to provide a "seamless" transition to UNE-L in the event that UNE-P were to be eliminated. We set forth the additional requirements that need to be addressed by SBC and Verizon in order for their proposed hot cut processes to be deemed adequate to provide a "seamless" transition from UNE-P to UNE-L.

Regarding the BHC process, the FCC stated:

> Generally, however, we expect these processes to result in efficiencies associated with performing tasks once for multiple lines that would otherwise have been performed on a line-by-line basis. For example, pursuant to the processes in place in at least some states, the incumbent LEC currently will pre-wire circuits on the central office frame, verify the presence of dial tone, and communicate with competitive LECs regarding problems encountered on a line-by-line basis. [footnote omitted] Under a batch cut process, these activities might be undertaken simultaneously for all lines affected by a given

> batch order. In addition to developing a cost-effective hot cut process, state commissions should evaluate whether the incumbent LEC is capable of migrating batch cutovers of unbundled loops combined with unbundled local circuit switching to unbundled stand-alone loops for any requesting carrier in a timely manner. Specifically, state commissions may require that incumbent LECs comply with an average completion interval metric, including any further disaggregation of existing loop performance metrics (*i.e.*, quality or maintenance and repair metrics), for provisioning high volumes of loops. Finally, if they have not done so already, state commissions should adopt TELRIC rates for the batch cut activities they approve. These rates should reflect the efficiencies associated with batched migration of loops to a competitive LEC's switch, either through a reduced per-line rate or through volume discounts. (TRO § 489).

III. Procedural and Operational Background

By ruling dated July 31, 2003, a phase was initiated in the Local Competition Rulemaking / Investigation (R.95-04-043 / I.95-04-044) for conducting these proceedings as required by the TRO.

Pursuant to a prehearing conference on September 30, 2003, by rulings dated October 8, and October 20, 2003, the proceeding was segmented into three major components relating to (1) mass market switching deployment, (2) high-capacity loops and dedicated transport deployment, and (3) development of appropriate hot cut processes.

Pursuant to ALJ ruling, preliminary testimony by SBC and Verizon on their proposed hot cut processes was served on November 7, 2003. A hot cut collaborative workshop was held on November 17, 2003. The ILECs presented more complete hot cut proposals by testimony mailed on December 15, 2004.

SBC's December 15th testimony on proposed California batch cut processes incorporated, to the extent deemed possible, certain CLEC industry recommendations developed in batch cut collaborative workshops in the SBC Midwest states[8] and the SBC Southwest states.[9]

Other parties served reply testimony on the ILEC proposals on January 15, 2004. The interested parties participating in the hot cut portion of the TRO proceeding, other than SBC and Verizon, were primarily the CLECs: AT&T Communications of California, Inc. (AT&T), MCI, Covad Communications (Covad), and CalTel. The Commission's Office of Ratepayer Advocates (ORA) and The Utility Reform Network (TURN) also filed briefs, which were generally in support of the CLEC position on hot cut issues. A follow-up workshop collaborative was held on December 15, 2003 addressing line splitting arrangements. The purpose was for parties to narrow areas of dispute as to appropriate batch hot cut processes involved in UNE-P customers' migration to a UNE-L environment where both voice and data are provided on a loop by two different CLECs. A subsequent workshop on performance metrics was held on March 22, 2004. Evidentiary hearings were also conducted on hot cut-related issues.

Testimony was also served on hot cut pricing proposals, with the ILECs serving their testimony on January 7, 2004, and other parties serving reply testimony on January 28, 2004. Evidentiary hearings began on January 26, 2004

[8] The Midwest states include Illinois, Indiana, Michigan, Ohio and Wisconsin.

[9] The Southwest states include Arkansas, Kansas, Oklahoma, Missouri and Texas.

and continued through February 27, 2004. [10] Opening briefs were filed on April 12, 2004, and reply briefs were filed on May 13, 2004.

Each of the ILECs propose processes for both batch hot cuts for the embedded base of UNE-P lines and ongoing individual hot cuts for new CLEC customers prospectively, arguing that their proposals are compliant with the TRO and overcome impairment associated with the hot cut process. The CLECs claim the ILECs' proposed hot cut processes, both on a batched and individual basis, fail to meet TRO requirements and do not provide for a seamless transition from UNE-P to UNE-L. The CLECs argue that a hot cut process must be capable of handling seamless and timely migrations of high volumes of mass market customers, including all customer services, and capable of handling migrations among any carrier of the customer's choosing.

IV. SBC Hot Cut Processes (47 C.F.R. § 51.319(d)(2)(ii)(A)(2));–Overview

In addressing the four tasks assigned to the Commission by the TRO, we will begin with task 2, the adoption of a hot cut process, and subsequently address the size of the batch, the capacity of the process, and its price.

A. Position of SBC

SBC presented a proposal covering both one-at-a-time hot cuts for ongoing customer churn and a batch process for the cutover of the embedded base of existing UNE-P to UNE-L lines. SBC currently performs two types of hot cuts—Frame Due Time (FDT) and Coordinated Hot Cut (CHC). The FDT option

[10] Only a portion of the hearings addressed hot-cut-issues. Additional issues covered in the hearings relating to mass-market switching and high-capacity loops / transport deployment are not addressed in the instant order.

describes a hot cut that is scheduled for a predetermined time with no CLEC coordination required. The "Local Operations Center" (LOC) technician travels to the central office (when necessary), runs the jumper from the "carrier's facility assignment"[11] to the end-use customer appearance on the frame, and then performs the "lift and lay," (i.e., the physical process to disconnect the customer loop from ILEC switching equipment and to reconnect it to the CLEC's switching equipment). Once this process is completed, the technician performs dial tone and phone number verification tests.

A CHC generally requires not only similar activities, but also coordination between the CLEC and workgroups within SBC on the day of the hot cut. In the case of an Integrated Digital Loop Carrier (IDLC) CHC, the field technician coordinates with the LOC.

SBC proposes three new hot cut options for one-at-a-time processing:

1. *Enhanced Daily Process.* This option is designed to support the CLECs' acquisition of new customers.

2. *Defined Batch Process.* This option is designed to allow CLECs to transition their embedded base of UNE-P customers to the CLEC's own switch. This offering may also be used for new acquisitions.

3. *Bulk Project Process.* This option provides CLECs with an additional manner for scheduling hot cuts. The Bulk Project offering may be used for both new acquisitions and embedded base customers and may be used in instances where the requesting CLEC wishes to arrange

[11] The Carrier Facilities Assignment is the point where the line to the CLEC collocation area appears on the frame.

for hot cut options that are not available under either the Enhanced Daily Process or the Defined Batch Process.

SBC proposes three batch cut options that differ in the numbers of cut-overs to which they pertain and in the days and times of availability, as follows:

1. *Daily Batch.* With this option, each CLEC can request up to 50 mass market cut-overs per day in each of SBC's central offices. The due date intervals that currently apply to SBC's hot cut process (namely, three business days) is carried over to this process. Daily batch cuts are available Monday through Friday (excluding holidays), from 8:00 AM to 5:00 PM.

2. *Defined Batch.* This option permits up to 100 hot cuts per day per CLEC in each central office, scheduled at any hour of any day, except Sunday. (Database maintenance is done at the National Portability Administration Center (NPAC) on Sundays.) Defined Batch orders are to be received 13 business days before the date on which the cuts are to be made.

3. *Bulk Project.* The Bulk Project offering will be akin to today's negotiated "project," whereby SBC and the requesting carrier work together to plan the transition of a large, negotiated, number of loops to the requesting carrier's switch. This number may be much higher than the 100-loop maximum (per CLEC per central officer per day) under the Defined Batch offering. Even after the embedded base has been transitioned to CLEC switches, this option will remain available for carriers to transition large numbers of mass market customers from SBC's network to their own network.

B. Position of Other Parties

Three major CLEC parties sponsored testimony concerning SBC's batch cut processes, AT&T, MCI, and Covad. Generally, the CLECs claim that SBC's

proposed hot cut processes do not meet the TRO requirement for a "seamless" process, and are deficient in that they:

- cannot handle the volumes needed to migrate customers between carriers if CLECs lose access to UNE switching;
- fail to address the migration of all customer services;
- create unacceptable delays on customer migrations;
- create unacceptable service disruptions; and
- fail to set forth an efficient end-to-end process (including database changes and porting of customer numbers) for migrating customers between carriers.

The specific problems with the hot cut processes claimed by the CLECs and proposed remedies are discussed below. The CLECs argue that a BHC process should not be approved until the deficiencies have been adequately addressed. The CLECs argue that although SBC provided assurances that its proposed systems are adequate, those assurances are not supported by the facts.

C. Discussion

We agree that the proposed SBC systems are not yet sufficiently developed to ensure a seamless transition from UNE-P to UNE-L in their present form. For that reason, we adopt the batch processes and volume limits proposed by SBC only on an interim basis. We set forth additional requirements that need to be met, as discussed below, in order for the proposed systems to provide a "seamless" and "efficient" process for the migration of customer loops from UNE-P to UNE-L.

V. Batch Size, Capability of SBC's Processes to Meet Demand, and Provisioning Interval

The first task to be completed is the adoption of a "batch size." We address this task for SBC in this section.

In addition, the third task to be completed is to determine whether or to what extent SBC's existing processes, which handle hot cuts on a one-by-one basis can be scaled up to accommodate multiple hot cuts in batches sufficient in volume to meet the increased demand that would result from the elimination of UNE-P.

We address these two tasks together because the TRO called upon the states to determine the appropriate volume of loops to be included within the batch in order to meet demand assuming a 27-month transition period.[12]

Finally, a key to a seamless transition is the interval required to complete the migration. We address this aspect of task 2 in this section.

A. Position of SBC

SBC's proposed batch processes are built upon its current one-at-a-time hot cut processes. SBC emphasizes that its existing processes are well established. The SBC Panel witnesses claim that SBC's existing manual operations and Operating Support Systems (OSS) capacity can meet current hot cut demand, and can easily be scaled to meet the increased hot cut demand that

[12] FCC Rule 319(d)(2)(iv)(A), entitled "Transition timeline," required each CLEC to submit orders to transition its embedded base within a specified period after the ILEC was no longer required to provide unbundled local switching to serve mass market customers in a market. Specifically, each CLEC was to submit orders to transition one third of its embedded base of customers by the thirteenth month after such a Commission determination, the second third by the twentieth month, and the last third by the twenty-seventh month.

would result from elimination of UNE-P.[13] SBC witness Chapman calculated the volumes of both BHC for the embedded base and ongoing hot cuts that would be required absent UNE-P switching. Chapman based her analysis on data for embedded UNE-P lines as of September 2003 and the highest monthly inward UNE-P activity previously experienced at each central office.[14]

SBC witness Hopfinger also claims that the FCC has determined that SBC's existing hot cut processes, are "scalable to meet reasonably foreseeable demand."[15] The basis for the FCC's evaluation of SBC's hot cut processes, however, was in conjunction with SBC's Section 271 application to provide interLATA service within its service territory.[16] Yet, the *TRO* states that any examination of the ILEC's existing hot cut processes in the various Section 271 proceedings are unreliable as an indicator of performance at the very high volumes at issue in this proceeding.

SBC's proposed processes anticipate no significant operational changes in underlying work functions, either in the central office, or in the LOC, or in the Local Service Center (LSC), where orders are received.[17] SBC witness Heki, testified that SBC's central office workgroup has 2,372 central office technicians (*i.e.*, the employees who do the inside work at the central office), a number

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[13] Tr. Ex. 31, Joint Testimony of Cusolito, et. al, 12 / 15 / 03, 3.

[14] Ex.12, Chapman, pg 18-25

[15] Ex. 50 (Hopfinger 12 / 12 Direct), at 19-20.

[16] Ex. 50 (Hopfinger 12 / 12 Direct), at 19-20.

[17] Ex. 31 (SBC Panel), at 13.

sufficient to "keep up with increased demand."[18] While each central office in isolation wouldn't have sufficient personnel to perform all hot cuts arising there, witness Heki testified that SBC could meet demand "by reallocating technicians or using overtime to address short term spikes in demand."[19] Thus, SBC argues, no new central office workers are required.

SBC claims that performing multiple hot cuts within a single batch will yield greater economies of scale, thereby facilitating large volumes of individual CLEC hot cut orders while lowering per line cost to convert end users to their circuit switched network.[20] SBC points to new OSS offerings that will enhance the existing pre-ordering, ordering and provisioning OSS interfaces to provide CLECs more real-time information during the pre-ordering and provisioning phase, resulting in more automated processing for these requests.

SBC claims its proposed processes, designed to accommodate up to 200 cutovers per day per central office could transition the embedded base of UNE-P within the 27-month timeline laid out in the TRO even if every UNE-P in California migrated to UNE-L.[21] SBC claims its processes accommodate more than sufficient volumes (1) for CLECs to meet the FCC timelines for transitioning the embedded base of UNE-P customers to stand-alone loops and (2) for SBC to

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[18] Ex. 31 (SBC Panel 12 / 15 Direct), at 42-43.

[19] Ex. 31 (SBC Panel 12 / 15 Direct), at 42-43.

[20] Ex. 31 (SBC Panel), at 13.

[21] SBC's analysis assumes that existing UNE-L order volumes will continue, and focuses on the additional demand for hot cuts result due to migrating the embedded base and processing incremental UNE-L orders that would currently be UNE-P orders. *See* Ex. 12 (Chapman), at 19.

meet the ongoing demand for hot cuts associated with CLEC acquisitions of new customers even as those volumes increase.

As of September 2003, SBC had approximately 1.26 million UNE-P lines in service spread across more than 600 central offices. Based on the 27-month timeline established by the FCC, and assuming the unbundling obligation for local switching was eliminated for all mass market customers in California, SBC computed that approximately 420,000 lines (an average of about 700 per wire center) would need to be cut by the 13th month, 840,000 lines by the 20th month, and the remaining portion of the 1.26 million by the 27th month pursuant to the FCC-prescribed timetable. To assess its ability to migrate the embedded base using its Defined Batch process, SBC focused first on its ability to migrate the embedded base in the one central office with the highest embedded base of UNE-P lines. At this central office, SBC estimates it would need to cut approximately 6,140 lines (at most) by the thirteenth month, 12,280 lines (at most) by the twentieth month, and 18,421 lines (at most) by the twenty-seventh month in order to meet the FCC's transition timetable. Spread evenly over the 27-month transition period, this translates to about 32 lines per day (with 21 business days per month). If CLECs requested Saturday cuts, the daily number would be even lower.

SBC thus claims that its proposed volumes of up to 200 cutovers per day per central office more than accommodates the 32 lines per day that it would have to cut over in order to transition the embedded base within 27 months. Since the 32 lines per day is in the central office with the largest embedded base, SBC argues, its batch sizes can support migration of the embedded base consistent with the FCC's transition timetables. If 200 cutovers per day per central office were performed, the entire conversion for the two highest volume wire centers would be complete in approximately 90 business days – about one-

ninth of the time the FCC allotted – and for SBC California's 307 lowest volume wire centers, the work would be completed in two business days.[22]

SBC further claims its processes will meet the anticipated demand associated with new CLEC acquisitions. To project that demand, SBC assumed that all current CLEC orders for UNE-P become orders for loops requiring hot cuts. As shown in Attachment 1.3 to Ex. 12 (Chapman), SBC estimates that the most activity of this sort that any SBC central office can expect is 88 additional cuts per day. Since no daily limit applies to orders for cutovers under the Enhanced Daily process, which is intended for new acquisitions, SBC claims that the process can comfortably meet the 88 cuts per day maximum projected for SBC's busiest central office. *See* Ex. 12, at 23.

B. Position of Other Parties

MCI and AT&T argue that SBC has underestimated the resources it will require to meet the increased hot cut demand assuming the elimination of UNE-P. MCI argues that SBC should be required to modify and enhance its hot cut processes to provide the same timely, reliable, scalable and economically viable process as is currently available for UNE-P and the ILECs' retail services.[23]

MCI witnesses Starkey and Lichtenberg disagree with Chapman's claims concerning SBC's ability to accommodate increases in hot cut volumes. They

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[22] Because after September 2003, the embedded base grew at about 1% per month., (Jan. 28, 2004, Tr. at 8137-38; Jan. 30, 2004, Tr. at 8405) SBC acknowledges that these numbers that are a function of the total embedded base are slightly understated, but not enough to affect its conclusion. SBC argues that (1) the understatement is small; (2) SBC has built margins into its proposal; and (3) the understatement is more than outweighed by the fact that SBC will not be transitioning its entire embedded base. *See id.* at 8406-07.

[23] Ex. 143 (Lichtenberg / Starkey 1 / 15 Reply), at 6.

argue that her analysis fails to recognize several factors that will impact the increased volumes in hot cut demand that SBC is likely to encounter. MCI identifies three factors in this regard: (1) transition volumes from existing UNE-P to UNE-L, (2) continued growth of CLEC lines as they achieve greater market share, and (3) churn related to existing customers moving between carriers. Starkey provided a model estimating the total number of hot cuts that SBC would likely be required to accommodate.

SBC projects, at a minimum, 197,000 hot cuts per month, over the 27-month implementation period prescribed in the TRO, assuming CLECs lost access to UNE switching in all of the central offices being challenged by SBC.[24] However, MCI witness Starkey projects that SBC would have to handle increasing monthly volumes of hot cuts over the entire 27-month period, and that SBC's maximum estimated volumes are at the low end of the level that SBC would have to handle in the first few months after UNE switching were removed.[25] By the end of the 27-month period, MCI projects that SBC would have to handle 399,284 hot cuts per month, more than double SBC's monthly estimate of 197,000 hot cuts).[26] MCI's projection of monthly hot cut demand is based upon a model that takes into account existing UNE-P lines, CLEC customer growth, and existing CLEC customer churn. MCI's model uses this information, in conjunction with the FCC's transition timeline for UNE-P to UNE-L conversion to estimate (1) the volume of hot cuts in any given month

[24] Tr. 2 / 3 / 04, (Cusolito), at 8859.

[25] Ex. 143 (Lichtenberg / Starkey 1 / 15 Reply), at 30.

[26] Ex. 143 (Lichtenberg / Starkey 1 / 15 Reply), at 30.

throughout the transition period and (2) the volume of hot cuts in the "steady state" once the transition is complete. MCI estimates that the "steady state" demand at the end of the transition period will actually be higher than demand experienced during any point during the transition period.[27]

C. Discussion

1. Batch Limits (47 C.F.R. § 51.319(d)(2)(ii)(A)(1));

The question of whether SBC's proposed volume limits are sufficient to meet CLEC demand is a function of what the demand for UNE-L turns out to be, and the transition period over which UNE-P is transitioned to UNE-L. Because of the current uncertainty with respect to ultimate disposition of legal appeals of the DC Circuit Opinion, successor rules to the TRO, and potential renegotiation of interconnection agreements, we cannot determine precisely the nature, extent, pace, or duration of the transition from UNE-P to UNE-L in California. Thus, we can only render an assessment concerning the ability of SBC to meet hot cut demand under the assumptions made by parties in their testimony, recognizing that subsequent developments may result in different requirements as to the extent, timing, and schedule for UNE-P to UNE-L migrations.

SBC has offered a range of volume limits to be included in each hot cut batch per central office depending on the service option involved, as summarized above. SBC would permit every CLEC to obtain up to 50 Daily Batch cuts, plus up to 100 Defined Batch cuts, plus a negotiated number of Bulk Project cuts in every SBC central office every day (except Sunday and, for Daily Batch cuts, Saturday). SBC's hot cut processes provide for up to 100 loops per

[27] Ex. 143C (Lichtenberg / Starkey) 1 / 15 Reply) at 31-32

CLEC per day per wire center. [28] SBC claims the only limitation on the number of cuts it can perform is the number of technicians that can work safely and efficiently on the same main distribution frame (MDF) at the same time. SBC's assumptions are based on a volume of about 200,000 hot cuts per month over the 27 month transition period outlined in the TRO.

AT&T concludes that in theory, SBC's proposed batch sizes could be adequate to meet demand, but questions whether SBC can meet actual hot cut demand without adequate testing and validation of the proposed processes. MCI, however, claims that SBC's proposed 100-loops-per-day volume limit is definitely inadequate because there is no guarantee that the CLECs will be able to find a slot during which they can cut 100 loops, nor that a quick date will necessarily be available. MCI also claims that SBC's existing processes can handle only about one-half of SBC's own projected volume of hot cuts.

As noted above, the question of what constitutes an acceptable batch size depends on expected CLEC demand for hot cuts and the period over which the UNE-L transition is to be accomplished. CLEC demand for hot cuts is, in turn, a function of how extensively UNE-P is to be eliminated and replaced with UNE-L. The ability of SBC to handle hot cut volumes, both on batched basis and on an ongoing individual basis for churn and new customer growth is a function of a number of variables that currently remain in flux. One key variable is the number of UNE-P lines (both embedded and from ongoing churn) that would actually need to be cut over to UNE-L. Another variable is the actual timeline for beginning and completing the conversion. The TRO adopted a batch cut

[28] SBC Brief at 86

conversion schedule to be set in motion by state-mandated findings concerning mass market triggers. But because the TRO rules concerning mass market triggers have now been vacated and the FCC is in the process of preparing revised rules, the timing and extent of UNE-P conversions to UNE-L remain uncertain.

SBC's proposed batch size of 100 loops per day per CLEC per central office might be adequate depending on how the unknown variables are ultimately decided by subsequent FCC rules and / or by contractual agreements entered into by carriers. In the absence of this information, we cannot make definitive findings concerning a specific minimum batch size that must be accommodated. Accordingly, SBC's proposed batch size of 100 loops per day per CLEC per central office is hereby adopted only on an interim basis subject to further evaluation of performance metrics and testing to ascertain that this minimum batch size will be sufficient on an ongoing basis to meet CLEC hot cut demand on a seamless basis with the elimination of UNE-P.

As a cautionary matter, however, we believe that AT&T and MCI raise valid concerns about the potential for SBC's batch size to accommodate both the embedded base of UNE-P lines, as well as the ongoing churn from new lines, depending upon what assumptions are made about CLEC customer growth over the transition period. MCI assumes complete elimination of UNE-P statewide with transition required within the 27-month period prescribed by the TRO. To the extent that the elimination is more limited, or transitions over a longer period, MCI's assumptions would be overly pessimistic.

The essential concern with approval of a minimum batch cut volume would be to assure that no retail customer experienced any significant

interruption in service as a result of the hot cut process, and that a "seamless" cut over could be achieved. We believe that appropriate performance metrics and incentives could be used to identify any potential issues with respect to hot cut performance so that remedial measures could be taken. These remedial measures might include arranging for additional workforce to handle higher hot cut demand and / or extending the schedule for the cut over of the embedded base to be completed.

2. Capability to Accommodate Hot Cut Demand and Ability to Meet Additional Demand (47 C.F.R. § 51.319(d)(2)(ii)(A)(3))

As a framework for analyzing SBC's capability to meet additional hot cut demand, we shall reference the assumptions that underlie the TRO, since that is what parties assumed in their analysis. To the extent that the actual UNE-P conversion scope is more limited, or the time for its completion is longer than parties have assumed, SBC may be better able to meet the demand for hot cut volumes without service disruptions to affected CLEC customers.

We conclude that SBC's estimate of its ability to meet hot cut demand that would result from full elimination of UNE-P has not taken into account all of the relevant variables involved. Accordingly, before a final determination can be made concerning scalability to meet such demand, SBC needs to revise its forecasts of expected hot cut volumes to take into account the factors identified below. SBC also needs to maintain the capability and willingness to augment its workforce to meet the increased hot cut demand in a sufficiently timely and efficient manner to avoid service interruptions.

We are not persuaded that SBC's current workforce can meet its estimated volume of 197,000 hot cuts per month. SBC Witness Heki estimated that with 100% of SBC's "LFO-IN" workgroup dedicated to performing hot cuts, SBC

could handle only an average of 100,000 hot cuts per month.[29] Thus, SBC's own estimate indicates that the current LFO-IN workforce could handle only about half of the hot cuts required if CLECs lost access to UNE switching in all of the central offices that SBC is challenging. SBC would thus be unable to move the remaining half of CLEC customers' loops from SBC switches to CLEC switches on a timely basis, leaving such customers without service, or forcing them to switch to SBC.

Heki assumed that the LFO-IN workforce could handle the increased demand based on the increase projected by witness Chapman for only a single day, but could not confirm whether such workforce reallocation and / or overtime could be sustained over the entire transition period assumed to be 27 months. SBC's prior experience with minor, short-term spikes in demand is not necessarily indicative of what would be expected with an ongoing required hot cut workload.[30] The potential risk of failure to meet the increased demand is further illustrated by the fact that hot cuts currently constitute only about 5% of the work of a frame technician.[31]

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[29] The 100,000 volume figure is determined in the following manner: The average volume of hot cuts that the LFO-IN workgroup can handle is approximately 5,000 per month, utilizing approximately 5% of its workforce. Thus, utilization of 100% of SBC's LFO-IN workforce dedicated to performing hot cuts represents a 20-times increase in the 5% workforce utilization. Assuming no other changes, this increase in workforce utilization would also equate to a 20-times increase in hot cut volume. Thus, the 5,000 per month volume multiplied by a factor of 20 would translate into an average volume of 100,000 hot cuts per month (i.e., 5,000 hot cuts * 20). (See Tr. 2 / 3 / 04 (Heki) at 8862).

[30] Ex. 143 (Lichtenberg / Starkey 1 / 15 Reply), at 34.

[31] Ex. 31, Cusolito et. al Joint Testimony, pg. 42

Witness Heki did not know how many SBC central offices were manned and unmanned, nor the LFO-IN workforce percentages assigned to a specific central office versus how many are "roving." She did not know the maximum distance that an LFO-IN technician could be dispatched to assist with increased demand. It is also unclear how routine it is for SBC to reallocate LFO-IN technicians to meet demand spikes. Heki had not personally dispatched, nor was she aware of anyone who had dispatched an LFO-IN technician to cover an increase in workload at another central office in the two months preceding the date of her testimony.[32] Heki failed to incorporate estimates for the work time required for LFO-IN technicians to perform "throwbacks"[33], troubleshooting and repair, and loop "pass-overs"[34] when conversation is on the line at the time appointed for a hot cut.

SBC's volume estimates did not take into account the number of hot cuts that will arise due to churn (customers moving between carrier), nor did they account for different categories of migrations that require hot cuts and / or wiring work on the frame. SBC did not take into account the tasks associated with hot cuts that the LFO-IN workgroup performs.[35]

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[32] Tr. 2 / 2 / 04 (Heki) at 8715-8716.

[33] If a problem develops during the hot cut process, SBC employs a "throwback" process in which the customer's loop will be reconnected to SBC's switch.

[34] The technician will expend additional time beyond a normal hot cut when there is conversation on the line because he or she must "pass over" that loop to the next cut, then return and retest the loop to determine if there is conversation on it.

[35] Ex. 143 (Lichtenberg / Starkey 1 / 15 Reply), at 27-30.

Even if SBC's workforce grew to handle the increased volume of hot cuts, physical space constraints limit the number of technicians that can simultaneously perform wiring work efficiently and safely on the distribution frame,[36] particularly since hot cuts for a large group of residential customers will generally appear at random frame locations.[37] Technicians' ability to move around the distribution frame to make hot cuts is limited by: (1) the distribution frame size;[38] (2) the narrow crowded aisles between frames;[39] (3) need for a limited number of sliding ladders.[40] Thus, practical limits will remain on the number of technicians who can do simultaneous wiring work on the frame, regardless of the number of technicians that could be dispatched to a central office with high hot cut demand, without disrupting one another's wiring work, reducing efficiency and possibly creating safety hazards.[41] SBC witness Mitchell admitted that current floor space plans do not anticipate TRO requirements. Mitchell foresees that SBC will evaluate growth needs after the Commission issues an order in this proceeding. Construction of new or expanded frames, however, will take three-to-six months.[42] Thus, we question to what extent SBC

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[36] Tr. 2/3/04, (Heki), at 8828; Ex. 16 (SBC panel 11/7 direct), at 22.

[37] Ex. 142 (Starkey 12/15 Direct), at 26.

[38] Tr. 2/3/04, (Heki), at 8824-8825.

[39] Ex. 33C, (see section labeled "environment").

[40] Tr. 2/3/04, (Heki), at 8825-8826.

[41] Tr. 2/3/04, (Heki), at 8828.

[42] Tr. Vol. 58, 2/4/04; 8959

could enhance its manual wiring process sufficiently to handle the increased volume of hot cuts.[43]

SBC witness Cusolito calculated the number of labor hours available to handle hot cuts in the existing workforce in the LOC, assuming that each worker would have 7 ½ productive hours per day. That assumption accounted only for two 15 minute breaks for each worker per day, and did not deduct non-productive time such as vacations, sick days, holidays, personal days, training, company meetings or administrative tasks. During cross examination, Cusolito acknowledged that his productive hour estimate per employee is too high.[44] MCI argues that reasonable estimates for non-productive time, similar to the estimate of Ms. Hernandez, the SBC expert for the LSC, would have yielded a much lower daily productive hour estimate of 6 hours per day rather than the 7 ½ hours Mr. Cusolito used in his calculations.[45]

AT&T witness Van De Water calculated that SBC would have to provision UNE-L at more than 45 times its current rate if UNE-P switching is no longer available. SBC has failed to evaluate whether main distribution frame (MDF) and independent distribution frame (IDF) capacity would need to increase to accommodate BHC migrations. Van De Water argues that added capacity is required due to added CLEC cabling that will be needed between the CLEC's collocation cages and the appropriate IDF or MDF.[46] In view of these various

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[43] Ex. 143 (Lichtenberg / Starkey 1 / 15 Reply), at 4, 27.

[44] Tr. 2 / 2 / 04 (Cusolito), at 8737-8738.

[45] Tr. 2 / 2 / 04 (Hernandez), at 8731.

[46] Ex. 154C, Van de Water Testimony, pg. 45

uncertainties, as outlined above, we remain unconvinced that SBC could scale its hot cut processes to meet the increased the hot cut demand assuming full elimination of UNE-P on the assumed TRO timeline without expanding its workforce. In view of the uncertainties over SBC's capabilities to meet hot cut demand, we conclude that provision should be made for testing and validation to provide additional assurances that there would be no delays or other disruptions as a result of the transition from UNE-P to UNE-L. We address testing and validation requirements in Section XV below.

3. The BHC Process: Provisioning Interval Notice (47 C.F.R. § 51.319(d)(2)(ii)(A)(2))

Parties were in dispute concerning the appropriate provisioning interval for hot cuts. SBC incorporates a lag time of 13 business days to process CLEC orders in its "defined" batch process. SBC gives two reasons for the lag time: (1) to enable SBC to reallocate personnel to handle the increased volume of hot cuts and (2) to schedule posting requirements for LFO-IN workers, who are unionized.

MCI claims that SBC's proposed interval is too long, and will create inconveniences for customers and a lack of transparency in the hot cut process.[47] SBC claimed that it must have 13 business days notice due to a provision in its labor contracts requiring advanced posting of employee work schedules.[48] MCI claims that SBC does not need 13 business days to meet the schedule posting requirements of its union workers because the contract cited by SBC contains an

[47] Ex. 143 (Lichtenberg / Starkey 1 / 15 Reply), at 60-61.

[48] Ex. 31 (SBC panel 12 / 15 Direct), at 16.

exception to the schedule-posting requirement. For employees working the same hours between 9 a.m. and 5 p.m. Monday through Friday, no such posting is required.[49] Thus, we agree that SBC should be able to offer CLECs an option to have their orders processed with only seven calendar days notice so long as the order specifies a hot cut between 9 a.m. and 5 p.m. week days.

This type of hot cut could be handled by LFO-IN personnel who would not be subject to the schedule posting requirement. Ms. Heki, the LFO-IN workgroup expert testified that if SBC did not have to comply with the schedule posting requirement, it likely could shorten the lag time for processing hot cut orders.[50]

We conclude that the time lag has a bearing on the cut over of embedded UNE-P customer migration because of the various dialing features such as call forwarding, call waiting and speed dial provided by the carrier's switch, as noted by AT&T.[51] Thus, when customers are to be migrated from the SBC switch to a CLEC switch, customers must be notified, and must reprogram their phone sets. With a long delay, it would be more difficult for customers to remember when to reprogram their phone sets and / or CLECs will have to remind customers immediately before the hot cut date. Also, once an embedded UNE-P customer is told that a service-affecting event will take place on a particular day, they will expect the event to take place as scheduled. We thus find the proposal for the

[49] Ex. 35, at 98 (Section A1.03 B.2.).

[50] Tr. 2 / 3 / 04, (Heki), at 8834:13-16.

[51] AT&T Opening Brief, at 188 n.598.

seven-day notice option to be reasonable and workable, and conclude that SBC's hot cut process should be modified accordingly.

VI. Verizon's Proposed Hot Cut Processes (47 C.F.R. § 51.319(d)(2)(ii)(A)(2)) and Volume Limitations (47 C.F.R. § 51.319(d)(2)(ii)(A)(1))

A. Position of Verizon

Verizon proposes covering both ongoing hot cuts and cutover of the embedded base of existing UNE-P to UNE-L lines through a batch cut process. Verizon currently employs two types of coordinated hot cuts: (1) a "coordinated conversion" and (2) a "hot cut coordinated conversion." The only difference in the latter type involves a live continuous conference call during the entire hot cut process whereas in the former type, the CLEC is contacted only before and after the process is completed by Verizon.[52]

Verizon's BHC proposal is designed to enable a CLEC to earmark specified hot cut orders for batch processing. In each central office, orders submitted for batch processing would be held until a "critical mass" is reached, based on the volume of cuts and optimum level of frame staffing in each office. The minimum holding period would be 10 business days with a maximum of 35 business days. The CLEC would be notified of the actual cutover date no later than six days beforehand. The cutover process differs in one significant way from the Large Job process in that CLECs would be required to authorize Verizon, instead of the CLEC, to submit the final number port activation order to Number Portability

[52] A diagram of the basic hot cut process is in Appendix II-A to Exhibit 24 (Verizon BHC Panel Testimony).

Administration Center (NPAC). Doing so will virtually eliminate the need for coordination with the CLEC at the time of the cutover.

Verizon argues that, because of the reduced coordination requirements, CLECs would not need to know the precise order in which the lines will be cut, and the cutover schedule will not need to be rigidly tied to the order in which "local service requests" are received. Once the cut and number port are complete, the process will be identical to the "Basic" and "Project" processes. Upon completion of the cut, Verizon will notify the CLEC through its Wholesale Provisioning Tracking System (WPTS).

Verizon places the following additional restrictions on the use of its proposed BHC process. The process would not apply to IDLC lines and to certain other loop types. The use of WPTS would be mandatory. One the BHC is submitted, no changes to the interim UNE-P account could be made without canceling and resubmitting the hot cut order. The process would not be offered for UNE-L to UNE-L migrations, nor would it be available for line splitting or line sharing orders.

B. Position of Other Parties

As discussed for SBC, parties raise similar concerns with respect to the hot cut processes proposed by Verizon. We incorporate by reference that discussion above. As with SBC, parties argue that Verizon's hot cut processes should not be approved without first addressing the deficiencies identified by the CLEC parties. The claimed deficiencies are discussed in further detail below.

C. Discussion

We find that the proposed Verizon systems are not yet sufficiently developed to ensure a seamless transition from UNE-P to UNE-L in their present form. For that reason, we adopt the batch processes and volume limits proposed

by Verizon only on an interim basis. Verizon's proposed volume limits are not set at a specific number, but are based upon achieving a "critical mass" of orders. We set forth additional requirements to be met, as discussed below, in order for Verizon's systems to provide a "seamless" and "efficient" process for the migration of customer loops from UNE-P to UNE-L.

VII. Capability of Verizon's Hot Cut Processes to Meet Demand 47 C.F.R. § 51.319(d)(2)(ii)(A)(3)

A. Position of Verizon

Verizon argues that its BHC process is scalable to handle the greater volumes of hot cuts and related work that would be expected from the elimination of switching as a UNE offering. Verizon proposes to meet the increased demand by increasing the size of the work force at its central offices and other work centers. Verizon developed a spreadsheet model referred to as the "Force-Load Model," which first determines the incremental level of hot cuts and winbacks that would be required in a post-UNE-P world. The work volume assumptions and data are sponsored in testimony of Dr. Taylor. The Force Load Model then converts the incremental work requirements into staffing level increases in the central offices. Similar techniques are used to determine increased staffing level needs at other Verizon work centers.

For purposes of analyzing the volumes entailed in migrating the embedded UNE-P base to UNE-L, the Force Load Model segments demand into five time periods. The UNE-P embedded base conversion is assumed to be completed at the end of 27 months. Thereafter, only the only incremental demand would be caused by customer migrations. Verizon contends that it can hire and train any additional work force needed in a relatively short period of time

B. Positions of Other Parties

AT&T, MCI, CalTel and Covad take issue with Verizon's claimed processes, arguing that Verizon's processes exhibit similar flaws to that of SBC. Although the current volumes of UNE-P and UNE-L in Verizon's territory are much smaller than those in the SBC territory, the parties claim that Verizon's proposal is not sufficient to meet the expected CLEC demand if UNE-P is eliminated. The parties criticize Verizon's assumptions for not being forward looking. MCI argues that Verizon's past performance with small volumes is no indicator of how its process might perform under dramatically increased volumes. AT&T further argues that Verizon's actual base of UNE-P loops that will have to be cut is roughly double what Dr. Taylor projected using historical data. AT&T bases this claim on the position taken by Verizon's appeal of the Commission's UNE rate order, filed in the U.S. Court of Appeals, in which Verizon claims that it has lost 80,000 local customers to UNE-P migration and such orders have escalated to 35,970 per month, a 2200 % increase since January 2003.[53]

Verizon also makes inconsistent assumptions concerning expected hot cut volumes in its TELRIC pricing analysis versus in its scalability analysis. Verizon assumed greater amounts of work time in its TELRIC analysis as compared to its Force Load Model which was used to support claims of the adequacy of its existing work force.[54] Although Verizon claims that the two sets of estimates are consistent "at the aggregate level," Verizon fails to show how specific

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[53] See Ex. 157 , Verizon's Appellate Brief at 9

[54] Ex. 155C, Falcone Testimony, Ex. RVF-4, at 36:1-38:5

inconsistencies in the two sets of estimates, such as those identified in AT&T witness Falcone's testimony, can be reconciled.[55]

Another issue relating to the scalability of Verizon's processes has to do with the manual nature of the work. MCI claims that Verizon's process requires various manual tasks and that Verizon cannot handle the volume of hot cuts necessary to ensure a seamless, timely and reliable migration of customers among carriers in the absence of UNE switching.[56]

Verizon's migration analysis neglects certain types of UNE-P lines, such as digital and hi-cap lines, even though carriers using UNE-P to provide these services would be required to convert them to alternative facilities in the same 27-month timeframe.[57] Under Verizon's scenario, all the embedded UNE-P lines are to be converted to alternative provisioning methods. This produces an understatement of the embedded UNE-P base and leads to an understatement of the monthly conversions of this base during the transitional period.[58]

MCI also challenges Verizon's "steady state" concept, which reflects the period in which the market matures and demand becomes relatively constant. Verizon estimates that UNE-P migrations would reach a stable level by the 8th month of the 27-month conversion period. During this same period, Verizon calculates winbacks by applying a percentage to the number of UNE lines, resulting in a substantial increase of monthly winback volumes. Thus, MCI

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[55] Ex.155C, Falcone Testimony, Ex. RVF-4, at 39

[56] Ex. 143 Lichtenberg / Starkey, at 67-68.

[57] Ex. 143 (Lichtenberg / Starkey 1 / 15 reply), at 71-72.

[58] Ex. 143 (Lichtenberg / Starkey 1 / 15 reply), at 72.

contends that Verizon's study predicts decreasing CLEC demand in contradiction to the steady state assumption. In order to properly model a steady state, UNE-P migration counts need to grow to compensate for the loss of CLEC customers to Verizon, disconnect and other causes that were excluded from Verizon's study.[59] Therefore, to meet these net growth volumes, MCI argues that UNE-P migrations should grow each month (starting in month 9) by the amount equal to the total losses in CLEC lines, which are proportional to the total stock associated with former UNE-P lines.[60] As a result, MCI contends that proper modeling of Verizon's steady state process increases the volume of hot cuts associated with migrations by a factor of 1.6 in the 27th month of the transition period.[61]

In Table 3 of its Opening Brief, MCI provided a comparison of Verizon's volume study assumptions versus MCI's assumptions. MCI's adjustments affect the levels of net growth and total migrations assumed starting from month nine. Winback volumes increase due to an increase in the stock of UNE-L lines.[62] Migration volumes increase to account for the loss in CLECs' lines due to winbacks and disconnects.[63]

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[59] Ex. 143 (Lichtenberg / Starkey 1 / 15 reply), at 75.

[60] Ex. 143 (Lichtenberg / Starkey 1 / 15 reply), at 76.

[61] Ex. 143 (Lichtenberg / Starkey 1 / 15 reply), at 74

[62] Ex. 143 (Lichtenberg / Starkey 1 / 15 reply), at 78.

[63] Ex. 143 (Lichtenberg / Starkey 1 / 15 reply), at 78.

The impact of MCI's volume adjustments on the results of the Force Load model is summarized in Table 4 of MCI's opening brief. MCI's assumed hot cut volumes would increase the number of additional employees required to support migration-related hot cuts. Work force support increased starting from month 9: by a factor of 1.03 and by a factor of 1.6 in month 27 compared to Verizon's study. Because MCI made no adjustments to the embedded volumes, the support of the embedded conversions is the same level as in Verizon's study.

MCI also argues that Verizon ignored two components that its own volume witness, Dr. Taylor identified as incremental hot cuts: (1) migrations from UNE-P to Resale and (2) from UNE-P to UNE-L.[64] Dr. Taylor admitted that the first component should technically be counted towards total incremental hot cuts, but argued that the volumes for this component are insignificant because CLECs' share in California is relatively small.[65] MCI contends, however, that the migration volumes ignored by Verizon's volumes study – due to former UNE-P lines migrating to resale and other CLECs – would also increase dramatically compared to the current volumes.[66]

MCI also argues that Verizon excludes disconnects from its migration study.

At the time a CLEC places an order, Verizon won't know when the central office will reach "critical mass," and thus when the hot cut will occur. Verizon offers to give CLECs six days notice, unless the CLEC has not received a hot cut

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[64] Ex. 102 (Taylor 11 / 7 Direct), at 16, Table 3.

[65] Ex. 102 (Taylor 11 / 7 Direct), 26, n.7.

[66] Ex. 143 (Lichtenberg / Starkey 1 / 15 reply), at 70.

date by the 20th day after placing an order; then the CLEC will know the cut is planned for the 26th day. MCI argues that such uncertainty creates administrative difficulties, inefficiencies and customer satisfaction problems. MCI also objects to Verizon's proposed holding time for BHC orders as being too long to meet CLEC customer needs and proposes that orders be queued no longer than seven days. Embedded UNE-P customers being migrated to UNE-L must be notified so they can re-program dialing features supported by the carrier's switch. Thus, customers moving from one carrier to another are affected by lengthy provisioning delays.

Verizon agrees to consider establishing provisioning intervals for each central office, but only after the Commission approves its proposal. MCI argues, however, that specific intervals for each of Verizon's central offices must be established *before* approval of a batch hot cut process, or there is no guarantee it will ever happen.

Verizon also offers to provide CLECs a "UNE-P like" service during the lengthy wait for a customer's loop to be migrated to CLECs' switches. MCI argues that Verizon's offer is unacceptable because it will not be priced the same as UNE-P (i.e., likely higher), and it will lack the protections applicable to UNEs, thus likely increasing a CLECs' costs of migrating customers and subjecting them to discriminatory or other unacceptable practices. MCI thus opposes Verizon's proposed "UNE-P like" service and instead proposes that Verizon implement a batch hot cut process capable of handling the necessary volumes without imposing excessive delays on CLECs.

Without UNE-P, CLECs will have to put in place necessary equipment, transport and collocation arrangements in order to migrate customer loops to their own switches. Building or expanding a collocation cage, building backhaul

facilities, expanding Verizon tandem transport trunks, and expanding tandem switches takes several months.[67] These time-consuming preparations make it likely that CLECs' migration will be in peaks and valleys, not a smooth line.

Verizon also claims that the actual number of hot cuts will be lower than its estimates because some customers will choose alternate technologies and bundled voice and data services will decrease customer churn. However, MCI disputes there is any evidence that customers will choose to leave the telephone network. Further, Verizon refuses to support migrations of CLEC customer loops with bundled voice and data – the very type of customer that Verizon claims will reduce the amount of churn – in its batch hot cut process.

CalTel witness Compton testified that based on Telscape's actual experience to date, Verizon's systems for transitioning customers from UNE-P to UNE-L are not fully scalable or robust enough to migrate the quantities of existing UNE-P customers to UNE-L that would result from elimination of UNE-P.[68]

AT&T proposes that Verizon be required to propose a volume scalability test of its BHC process within 30 days of an initial Commission decision and to conduct that test and provide results to CLECs and the Commission. AT&T

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[67] Tr. Vol. 54; 1 / 29 / 01; 8301:19-22; 8366:6-8 (SBC witness cross-examination agreeing that it could take 120-180 days to provision cage-to-cage cabling for CLEC line splitting and months to provision a collocation cage).

[68] Ex. 180 at 17 (Direct Testimony of Compton). Compton testified that Telscape is the largest user of UNE-L in California, having about half of the UNE-Ls installed in California.

proposes that the Commission not give final approval to Verizon's BHC process until Verizon has successfully completed the scalability test.

C. Discussion

As discussed above with respect to SBC, we conclude that doubts remain as to whether Verizon's proposed volume limits based on accumulating a "critical mass" of orders will be sufficient to meet increased demand for hot cuts that would result with the elimination of UNE-P. Actual volume limit requirements will depend upon the nature, extent, pace, and allotted schedule for the transition from UNE-P to UNE-L. We agree with the concerns raised by MCI and AT&T with respect to the risks of errors and delays that would be faced by Verizon in meeting its volume commitments.

We agree with the adjustments that MCI calculated concerning expected growth in hot cut volume that would be required to be consistent with the "steady state" assumed in Verizon's Force Load Model, assuming a 27-month transition period as originally prescribed in the TRO. MCI's adjustments to Verizon's hot cut volumes result in an increase of the number of additional employees required to support migration-related hot cuts: work force support increased starting from month 9: by a factor of 1.03 in month 9, and by a factor of 1.6 in month 27 compared to Verizon's study. Since MCI made no adjustments to the Verizon's embedded volumes, the embedded conversions assumed in Verizon's study are not changed.[69]

Also, Verizon has not taken into account the potential growth in hot cut volume that could result over time from incorporating additional migration

[69] See MCI Opening Brief, pg. 267

scenarios into the cutover process, as discussed below. Therefore, we agree performance measures and testing in some form are appropriate to provide reasonable assurances that Verizon will be able to meet necessary volume demand for hot cuts with the elimination of
UNE-P.

D. Verizon's Provisioning Intervals (47 C.F.R. § 51.319(d)(2)(ii)(A)(2))

Verizon's manual processing of orders for the hot cut process also creates difficulties with respect to provisioning intervals. Verizon requires a 15-business day provisioning interval for a large job and between 6 and 26 business days for its proposed batch process, depending on when a "critical mass" of orders is reached in a given central office. AT&T witness Falcone testified that as a practical matter, a CLEC cannot use the Verizon large job and batch hot cut processes as customer acquisition tools, because of the delay between the CLEC order date and the hot cut execution date. The large job process was specifically designed to cut over a large quantity of lines only after customers have been acquired by the CLEC. The batch cut process is likewise not practical because the CLEC must be able to give its customers a date certain when the CLEC can migrate their service over to the CLEC switch. Given Verizon's provisioning interval between 6 and 26 business days, however, the CLEC cannot provide a date certain. Instead, CLECs must use Verizon's "UNE-P-like" service to acquire customers, and then issue a second order to move the customer to the CLEC switch using the batch process. We thus consider Verizon's provisioning intervals to be deficient. We shall require Verizon to revise its processes to provide the capability to offer specific provisioning intervals so that CLECs can inform their own customers as to a date certain when the cutover will occur.

VIII. Proposed Revisions to Existing ILEC Processes to Provide Seamless Transition for Migrating Customers (47 C.F.R. § 51.319(d)(2)(ii)(A)(2))

A. Mechanization of Manual Processes

Even if SBC and Verizon workforces were increased in an attempt to accommodate increased hot cut demand, their proposed hot cut process retains the largely manual tasks that currently exist. MCI and AT&T argue, however, that mechanization, or the minimization of human intervention, is critical to increasing reliability and scalability, decreasing provisioning intervals, and reducing resultant costs of the hot cut process.[70] MCI argues that, if done correctly, little or no manual intervention is required to move a customer from one carrier's service to another. The ILECs' processes for migrating UNE-P and ILEC retail customers from one carrier to another are highly mechanized,[71] with a very short provisioning interval and a successful competitive platform.[72] Thus, if a hot cut process is ever to be achieved that is anywhere near as seamless, accurate, timely and inexpensive as UNE-P or retail service provisioning, MCI argues, it must incorporate the highest degree of mechanization possible in existing manual processes.

MCI argues that SBC and Verizon must give CLECs access to the same OSS, databases and information that is available to the ILECs in order to produce a seamless, low-cost, and efficient hot cut process capable of handling the timely transfer of large volumes of mass market customers among carriers. MCI argues

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[70] Ex. 143 (Lichtenberg / Starkey 1 / 15 Reply), at 18.

[71] Ex. 143 (Lichtenberg / Starkey 1 / 15 Reply), at 19.

[72] Ex. 143 (Lichtenberg / Starkey 1 / 15 Reply), at 19.

that SBC and Verizon must mechanize current OSS processes to support the dramatically increased volumes of hot cuts that will occur if CLECs lose access to UNE switching. With the current manual processing of hot cuts, three-way conferencing is required on the day of the cut between the CLEC, the ILEC frame technician, and the ILEC provisioning agent. The transfer of the customer's loop from one carrier's switch to another relies upon numerous mechanical OSS processes. CLECs' UNE access to OSS includes systems, databases, information (including loop qualification information) and personnel that the ILECs use to provide five OSS functions: pre-ordering, ordering, provisioning, maintenance and repair, and billing.[73]

Further, MCI argues that SBC and Verizon must give CLECs access to loop plant information that could prevent the timely migration of a customer to the CLECs' switch (*e.g.*, presence of IDLC) and must provide a robust system and process for managing the ordering and provisioning of very high volumes of hot cuts.

AT&T proposes that SBC be provided incentives to pursue network upgrades to enable it to provision loops electronically, known as "Electronic Loop Provisioning" (ELP). SBC witness Mitchell stated that SBC has not yet "delved into [the possibility of utilizing ELP] all that deeply because the FCC said that that would be something that we would implement if there were

[73] *TRO*, ¶¶ 561, 564.

insufficient batch cut processes. And that hasn't been determined."[74] SBC is, however, participating with Telcordia on mechanized frames.[75]

We recognize that ELP is not a currently feasible technology, and will not require that it be implemented as part of the currently pending batch cut proposal. However, SBC should continue to explore the feasibility of ELP as a means of making the hot cut process more efficient in the future. We expect SBC to keep the Commission and its staff apprised of progress toward the development of ELP technology.

The SBC panel testified that its OSS upgrades promised as part of the BHC are being independently developed by SBC for a July 24, 2004, release.[76] SBC argues that this timing is necessary due to the fact that OSS changes follow the 13-state change-management process. AT&T faults this approach, arguing that the CLECs have no way of determining whether the OSS upgrades will provide sufficient enhancements to implement the BHC process, and the Commission will have no opportunity to oversee or adjudicate the planned upgrades.

We agree that SBC should report to the Commission its progress in implementing the planned upgrades to its OSS. We direct the ALJ to schedule a workshop process for SBC to provide progress reports on its OSS upgrades, and to provide an opportunity for CLEC input into the adequacy of those upgrades in producing a "seamless" batch hot cut process.

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[74] RT 58, 8962: 7-12

[75] RT 58; 8964:24-28 – 8965:1-8

[76] Ex.31, Joint Testimony, Cusolito et. al, ; also RT 53, 1 / 28 / 03, 8056:12-20

Verizon's panel witnesses stated that additional OSS support for the new aspects of its proposed batch hot cut process was not yet completed, but was expected to be available "by the end of the nine month proceeding."[77] Yet, by the close of the record, Verizon had not yet provided any proposal as to such OSS revisions. The CLECs claimed that Verizon East's OSS have been more extensively detailed compared to Verizon West.[78] In response to an ALJ ruling, Verizon provided additional information concerning the Verizon West OSS. Verizon claims that while the western system is different, it is just as robust as the eastern system, and provides CLECs with a meaningful opportunity to compete.

Verizon concedes, however, that at present, CLEC orders to convert a UNE-P arrangement to UNE-L are processed manually, and do not "flow through"[79] Verizon West's OSS. Given the relatively small volumes involved at present, Verizon considers it more cost effective to continue processing such orders manually. Verizon states that if UNE-P is no longer available, issues relating to mass migrations of CLECs from UNE-P to UNE-L arrangements will be addressed as part of a "transition plan." [80] We note, however, that this is the proceeding where the batch cut process was to be approved and implemented.

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[77] Ex. 25; Verizon Panel Testimony; 12 / 15 / 03; 12:19-22

[78] "Verizon West" refers to areas served by the former GTE while Verizon East generally refers to areas served by the former Bell Atlantic

[79] The term "flow through" means that no manual processing is required.

[80] Ex. 25, Verizon Panel Testimony, 12 / 15 / 03; 23

The lack of details concerning a plan to develop a flow-through ordering process for migrating UNE-P lines to UNE-L increases the risk that Verizon would not be equipped to handle the increased volumes of hot cuts with the elimination of UNE-P. AT&T witness Falcone testified that Verizon's flow-through rate for UNE loop orders received electronically (both UNE-P and UNE-L) ran from a low of 63.67% to 77.31% from June to October 2003. AT&T argues that this rate of flow-through is not sufficient to sustain commercial volumes in a UNE-L environment where loop migrations involve more complex activity.

Therefore, we find Verizon's batch cut proposal to be incomplete to the extent it contemplates some yet-to-instituted future proceeding as the place where implementation of a "transition plan" will actually be addressed. We cannot approve Verizon's proposed batch cut process without further explanation concerning how it contemplates such a transition plan being implemented. As part of the workshop process outlined above with respect to SBC, we likewise direct the ALJ to schedule a process for the development and implementation of a "transition process" for Verizon OSS upgrades to provide for flow through of its batch cut process.

B. 911 Database Coordination Issues Require Resolution

Another coordination issue in connection with hot cuts relates to the E-911 database which is used to identify emergency calling locations. When a customer migrates from one carrier's switch to another's (either ILEC or CLEC), the 911 database must be updated to reflect the new switching provider. If this change is not made correctly, the customer's 911 information in the "Automatic Line Identification" (ALI) database will not include the CLEC's ID or the customer's correct address if the customer has moved or the record required some other correction. Neither SBC nor Verizon has provided evidence that

there is a process in place to seamlessly and accurately handle 911 database changes 100 percent of the time. Given the critical nature of 911 service, nothing less is acceptable for customer satisfaction and public health and safety. In order to approve the batch cut process, 911 database changes should be fully coordinated so that the 911 database can handle the volume of changes necessary in a UNE-L world, where every customer migration requires such a change. Otherwise, the Commission cannot ensure that customers will enjoy the seamless, timely and accurate migration process mandated by the *TRO*.

In a UNE-L environment, two orders are required for changes to the 911 ALI database.[81] One order must go from the ILEC to the 911 provider to unlock the record in the ALI database.[82] This allows the CLEC to overlay the existing record with the updated 911 record once the migration has been successfully processed. The second order must go through the CLEC's vendor (or the ILEC if the CLEC has contracted with them) to overlay the existing 911 record with the new record.[83] These orders must be coordinated so that the ILEC unlock order arrives before the CLEC "Migrate" order to newly populate the database.

While SBC has stated that it will send the "unlock" transaction to the NPAC when the lift and lay is complete and the order is completed, it has not

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[81] The ILEC in most cases maintains the 911 Selective Router used for routing a 911 call to the appropriate Public Safety Answering Position (PSAP). The PSAP dips into the Automatic Line Identification (ALI) database when a 911 call is received to retrieve the address of the caller. The PSAP is the custodian of the data required to dispatch emergency personnel. The PSAP must have a record for each customer a facilities CLEC owns and must be able to contact that carrier.

[82] Ex. 141 (Lichtenberg 12 / 15 Direct), at 45.

[83] Ex. 141 (Lichtenberg 12 / 15 Direct), at 45.

provided sufficient details regarding this process and how the CLEC will be notified.[84] For business customers using UNE-L, at least, many ILECs do not send the "unlock" order until the CLECs migration order has actually closed in the ILEC billing system.[85] Since this will necessarily be sometime **after** the physical completion of the order, there could be a time lag where the 911 system has incorrect information on the network service provider.[86] The National Network Numbering Association (NENA) standard is to send the 911 order at the time of port.

This discrepancy between the ILEC and CLEC processes could cause a customer lead to serious problems. While the customer will be able to dial 911, the Public Safety Answering Position (PSAP) will only see the old customer record, which may or may not be accurate and will contain the wrong company ID for correction or trap and trace requests.[87] As the number of UNE-L orders increases and particularly during the bulk transition of customers from UNE-P to UNE-L, the problem will become more severe.[88] Further, the CLEC will be required to manually check the PSAP information for every hot cut order to determine if the update has been accepted and has passed the myriad of required edits.[89]

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[84] Ex. 141 (Lichtenberg 12 / 15 Direct), at 45-46.

[85] Ex. 141 (Lichtenberg 12 / 15 Direct), at 45-46.

[86] Ex. 141 (Lichtenberg 12 / 15 Direct), at 45-46.

[87] Ex. 141 (Lichtenberg 12 / 15 Direct), at 45-46.

[88] Ex. 141 (Lichtenberg 12 / 15 Direct), at 45-46.

[89] Ex. 141 (Lichtenberg 12 / 15 Direct), at 45-46.

We agree that ILEC systems should be revised so as to send the 911 record at the time of porting. This change would improve the timeliness of the 911 record process and help ensure that accurate customer information is in the 911 database. In order to avoid any problems with the critical emergency 911 services for customers during hot cut migrations, we shall require the ILECs to comport with the NENA guidelines and send the 911 order at the time the customer's telephone number is ported, oversee the development of a standard process to coordinate 911 database changes and ensure that the PSAP data base can handle the increased volume of unlock and lock requests that will arise in a UNE-L environment. We direct the ILECs to revise their processes to accommodate this revision.

C. Number Portability Coordination Issues Require Resolution

When a customer's loop is migrated from the ILEC switch to the CLEC switch, a transaction is sent to the NPAC which handles the necessary number porting to identify the "home switch" to which calls should be terminated for each UNE-L (and cable) customer.[90] In a hot cut from UNE-P to UNE-L, the ILEC would initiate this transaction by creating a "10 digit trigger" in the donor (losing) switch when the UNE-L order is created.[91] The trigger will cause incoming calls to "dip" into the NPAC database to determine the switch that now houses the number. Upon notification that the cut has been completed, the CLEC sends a transaction to NPAC to claim the number. Until the CLEC claims the number in the NPAC database, the customer cannot receive incoming

[90] Ex. 141 (Lichtenberg 12 / 15 Direct), at 47-49.

[91] Ex. 141 (Lichtenberg 12 / 15 Direct), at 47-49.

telephone calls.[92] If the NPAC transaction is not completed successfully, the customer will not be able to receive calls, and the customer's voice mail will not operate, since calls will be misdirected to the incorrect home switch.[93] Thus, the NPAC process must be coordinated and successful.

When the customer changes carriers again, the losing carrier must "unlock" the existing record to allow the winning carrier to "replace" it with its destination code. Both churn and the addition of wireless local number portability will raise the number of transactions processed by the NPAC .[94] It is questionable whether the NPAC can handle the volumes of transactions that would occur in a dynamic UNE-L market.[95]

We shall adopt MCI's recommendation that the Commission immediately open a collaborative discussion between the ILEC, CLECs, and the current NPAC administrator, Neustar, to determine NPAC's actual capabilities and to develop metrics for the completion of number portability tasks.[96] Volume testing or scalability analysis will also be required to determine whether NPAC can actually handle the volumes of numbers that will be ported in a single day. Since a failure of the NPAC system will have a serious negative impact on customers, it is critical that the Commission not withdraw CLEC access to UNE switching

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[92] Ex. 141 (Lichtenberg 12 / 15 Direct), at 47-49.

[93] Ex. 141 (Lichtenberg 12 / 15 Direct), at 47-49.

[94] Ex. 141 (Lichtenberg 12 / 15 Direct), at 47-49.

[95] Ex. 141 (Lichtenberg 12 / 15 Direct), at 47-49.

[96] Recently in New York, Verizon has indicated that it will now retain control over both of the NPAC orders in a UNE-L migration.

until it is clear that a foolproof system is in place to handle the volumes of number porting that will arise in a UNE-L world.

D. Directory Listing Issues Require Resolution

When customers are served on UNE loops, the serving CLEC must send directory listing information to the ILEC for inclusion in both the printed and on-line directories of each company.[97] This step occurs as part of the UNE-L migration order, but is not required for UNE-P to UNE-P migrations. In order to carry out a directory listing change, the CLEC completes a directory listing form and sends it with its order to the ILEC for processing. While an "as is" (*i.e.*, no change) directory listing can be ordered from the ILEC as part of the "first" retail to UNE-L migration (or UNE-P to UNE-L conversion), this process must be repeated with full information for each subsequent change.[98] This increases the likelihood of errors or deletions in the directory as it is "opened" to remove listings and "closed" to put the same listings back in.[99] During the state 271 proceedings, UNE-L carriers at the time presented evidence that directory listings being left out of the phone books, inserted into the incorrect locations in the phone books or containing incorrect customer information.[100] If CLECs were to lose access to UNE switching and be required to use only UNE-L to serve customers, the volume of directory changes to be processed would rise

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[97] Ex. 141 (Lichtenberg 12 / 15 Direct), at 49-50.

[98] Ex. 141 (Lichtenberg 12 / 15 Direct), at 49-50.

[99] Ex. 141 (Lichtenberg 12 / 15 Direct), at 49-50.

[100] Ex. 141 (Lichtenberg 12 / 15 Direct), at 49-50.

dramatically above the levels existing at the time of the problems identified in state 271 proceedings.[101]

We shall adopt MCI's recommendation that "migrate as is" (i.e., no change) functionality for directory listings be made available to CLEC-to-CLEC migrations as well as in ILEC-to-CLEC migrations to limit the number of times that this information must be added and deleted. Otherwise, the Commission cannot ensure that customers will enjoy the seamless, timely and accurate migration process mandated by the *TRO*.

E. Updating of LIDB and CNAM Databases as Part of Hot Cut Process

UNE-P customers use the Line Information Database (LIDB) and Caller Name (CNAM) databases to obtain information on caller identity and blocking options. These databases are provided by the ILEC, and no changes to these databases are required in a UNE-P to UNE-P migration, unless the customer chooses new blocking options. If no customer change is requested, the losing carrier merely deletes the customer's LIDB / CNAM information from its database and the acquiring carrier loads the telephone number's LIDB / CNAM information internally.[102] However, for UNE-P to UNE-L migrations, both LIDB and CNAM data must be reloaded because the losing ILEC will delete the information from its LIDB and CNAM processes.

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[101] Ex. 141 (Lichtenberg 12 / 15 Direct), at 49-50.

[102] MCI, as the acquiring carrier loads the data internally and at its LIDB / CNAM vendor, VeriSign.

It is important for customer satisfaction for the LIDB and CNAM updates to be done properly. If the update is not loaded or incorrect, customer information will not be available for caller name display on caller ID, potentially leading to call blocking by the called party and improper rejection of 3rd party billed calls.[103]

The LIDB / CNAM data entry step is performed while the order is in order entry. CLECs must either create CNAM data from published sources (which results in a substandard database because not all necessary data is available publicly) or dip the ILEC systems to receive the data at a per dip charge.[104] In most jurisdictions, CLECs are not entitled to take a download of the entire database from the ILECs, though it would enable the CLEC to ensure that there is consistency of information and that callers are provided with the fully functional features that they require.[105]

The ILECs have presented no evidence in this proceeding that they could seamlessly handle the volume of LIDB and CNAM databases arising if CLECs lose access to UNE switching. Therefore, we shall adopt the MCI proposal that both third-party vendors and the ILEC be required to demonstrate that their existing processes and systems are capable of handling sufficient volume to process every customer change quickly and flawlessly. As part of this process, we shall require that these processes be evaluated for error checking and reject handling recognizing that such issues have not arisen in the current

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[103] Ex. 141 (Lichtenberg 12 / 15 Direct), at 50-51.

[104] Ex. 141 (Lichtenberg 12 / 15 Direct), at 50-51.

[105] Ex. 141 (Lichtenberg 12 / 15 Direct), at 50-51.

predominantly UNE-P world.[106] Until all of these steps have been taken, we cannot conclude that the ILEC's proposed batch cut processes will meet the TRO requirements for a seamless transition to UNE-L

IX. Additional Migration Scenarios to be In Included in BHC Processes (47 C.F.R. § 51.319(d)(2)(ii)(A)(2))

Parties disagree concerning the customer migration scenarios that should be accommodated within the BHC process for purposes of this proceeding. SBC and Verizon have only addressed the simplest form of migration scenario in their proposed batch cut processes, involving a customer loop taking basic voice-only service cut over from an ILEC switch to a CLEC switch. The ILEC processes, however, do not address more complex migration scenarios, as discussed below.

SBC states that its exclusion of a given migration scenario from its BHC proposal does not mean that CLECs will be unable to obtain hot cuts or migrations under such scenarios. SBC agrees to continue to make available its current FDT and CHC processes, on their current rates, terms and conditions.[107] SBC's proposal does not contemplate the withdrawal of any process or service SBC currently offers. To the extent that status quo is to be changed, however, SBC prefers to address such changes through other forums designed to address CLEC-desired process improvements. SBC indicates that it has been actively working with CLECs on developing the guidelines for CLEC-to-CLEC migrations and line splitting scenarios in separate forums dedicated to those purposes. In addition, SBC has standing CLEC User Forum and Change

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[106] Ex. 141 (Lichtenberg 12 / 15 Direct), at 50-51.

[107] See Jan. 30, 2004, Tr. at 8377-78 (Chapman).

Management Process meetings that allow CLECs to request modifications to the existing processes.

CLEC parties, as well as ORA and TURN, representing the interests of consumers, all claim that the ILEC systems and processes are deficient in addressing only a limited range of customer migration scenarios. The CLECs claim that the failure to address these additional migration scenarios impedes competition. ORA argues that consumers should not be limited to choosing a CLEC only when their serving arrangements and needs are consistent with the lowest common denominator. Yet, if ILECs are not required to streamline their hot cut processes for other serving scenarios, ORA argues, consumers other than those with only the most basic serving arrangements will effectively be held captive by the ILECs. Mass market customers, in particular, are less likely to risk delays or problems in obtaining services from competitors when similar services can be obtained by the ILEC without such risks.

TURN likewise argues that failing to offer a batch hot cut process for these additional serving arrangements would cause significant problems for customers of competitive carriers, and would continue conditions of impairment that were identified by the FCC.[108] If UNE-P is eliminated, TURN argues that over a million customers – the vast majority of customers using competitive services – will likely need to be migrated to a service utilizing UNE-L and yet the ILECs'

[108] AT&T Ex. 154C (Van de Water Direct Testimony 1 / 15 / 04) pp. 25-26.

proposed batch hot cut process will not cover the future migration of such customers.[109]

We find that the failure to address these additional batch cut migration scenarios will result in critical deficiencies and limitations and ignoring service quality issues affecting CLEC customers under arrangements other than just the most basic form of voice-only service. As noted by MCI, consumers move frequently between carriers and expect seamless migrations and quality bundled service offerings. Consumers seek to purchase not just local voice service in isolation, but bundles of services, including long distance and features such as Caller ID, call forwarding, and broadband, among others. The requirements for a seamless batch cut process must apply to such customers, as well as those taking only basic voice service. if a competitor is to satisfy such customers' high service quality expectations for migration. We address each of the additional migration scenarios below.

A. IDLC Migrations

MCI argues that the ILEC BHC processes must accommodate migration of loops provisioned on IDLC technology. The purpose of IDLC technology is to aggregate the traffic of a large number of individual customers and then multiplex those individual signals into a single, higher bandwidth signal that can then be transported more efficiently between a remote terminal and the ILEC's central office. Because IDLC requires neither an analog conversion at the central office nor manual wiring at the ILEC's main distribution frame, IDLC allows

[109] MCI Ex. 143C (Lichtenberg / Starkey Joint Reply Testimony) pp. 43-44; AT&T Ex. 154C (Van de Water Direct Testimony 1 / 15 / 04) pp. 29-30.

local loops to be connected to a digital circuit switch more efficiently and cost effectively compared with earlier technologies. In IDLC-equipped loops, the electrical signal generated by the end user's equipment is converted into a channelized, digital, DS0 format at a remote terminal, and multiplexed into DS1 signals.

Verizon claims that IDLC loops cannot be handled through the Large Job or the proposed batch hot cut processes because 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.[110] Each of Verizon's three hot cut processes (Basic, Large Job, and Batch), however, is capable of handling large line volumes (i.e., "bulk" orders).[111] Thus, although Verizon's process would exclude IDLC lines from large job and batch orders, Verizon would still agree to process orders for IDLC-provisioned lines in large volumes through the Basic process, even if the CLEC does not separate them out.

MCI argues that Verizon should be able to include IDLC loops in its batch cut process because SBC is already doing so. SBC completes the necessary field work in advance of the hot cut date, and then includes the loop that was formerly provisioned on IDLC as part of the normal batch hot cut process. As long as Verizon excludes IDLC loops from its batch cut process, MCI argues, CLECs will be impaired in serving customers whose loops are provisioned on IDLC.

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[110] *See* Verizon Panel Direct on Batch Hot Cuts at 10-12.

[111] *See* Verizon Panel Direct on Batch Hot Cuts Process and Scalability at Part II.

Based on the explanation provided by Verizon, it is apparent that Verizon cannot provision IDLC loops through a batch cut process at the present time. MCI does not explain how the practical problems identified by Verizon could be overcome, other than to argue that SBC is already able to provide IDLC loops. Without a further record on how the SBC and Verizon systems differ with respect to IDLC constraints, we have no basis to conclude how Verizon would necessarily be able to provision IDLC in the same fashion as SBC. Thus, we conclude that further study is warranted comparing SBC and Verizon's systems to determine if there are some useful lessons that can be learned as to how to overcome Verizon's present IDLC constraints. We shall convene a workshop for this purpose, as a basis to determine the need for further IDLC provisioning by Verizon.

B. Line Splitting/Line Sharing Migration Scenarios

1. Position of Parties

The BHC processes proposed by the ILECs do not incorporate customer migration scenarios involving line splitting or line sharing. Line splitting occurs when two CLECs use a single unbundled "digital subscriber line" (DSL) loop provided by the ILEC to provide both voice service and DSL service to a single end-user customer on that same loop. In this arrangement, one CLEC provides analog circuit switched voice service and the other CLEC provides DSL-based data service. Under FCC Rule 319(a)(1)(ii)(A), the CLEC providing voice service in a line splitting arrangement may either use its own switch, or, where available, may use unbundled local switching with shared transport (ULS-ST) provided by the ILEC. SBC refers to line splitting arrangements that use SBC-provided ULS-ST for voice as "UNE Line Splitting" and refers to line splitting arrangements that use CLEC-provided switch facilities as "CLEC-Switched Line Splitting."

In provisioning line splitting over UNE-L arrangement, the loop would first be delivered to the data CLEC's collocation space. From there, the data CLEC would split the voice and data traffic, directing the data traffic to the data CLEC's network (and ultimately the Internet), and directing the voice traffic to the voice CLEC's collocation space to route voice traffic to their switch. Exhibit 99 (Testimony of Casie Murphy for Covad, Appendix KM-1, page 11) reflects this network configuration, as reproduced in Appendix 3 of this order.

SBC and Verizon are unwilling to migrate voice plus data loops in a UNE-P to UNE-L batch process, but will only terminate the customer's loop at the voice provider's collocation arrangement.

Both SBC and Verizon argue that line splitting does not meet the TRO criteria for inclusion as a batch cut migration scenario. Since the activities associated with UNE Line Splitting do not involve a change from one carrier's switch to another carrier's switch, they argue, these line splitting scenarios do not fall within the FCC definition of a batch cut, which is "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."

SBC agrees that it may make sense in the future to develop a batch hot cut process for certain CLEC-Switched Line Splitting migrations (to the extent such migrations entail a change from one local circuit switch to another and would benefit from a batch cut process). SBC, however, does not believe the line splitting scenario should be included in the initial batch cut process. Because it has received few requests for this process to date, SBC sees little or no benefit to developing a batch cut process at this time.

On all line sharing arrangements in California, the ILEC supplies the voice service to the end user and separate carrier provides the data service to the end

user. As a result, Verizon argues, elimination of unbundled local circuit switching would not affect the provision of voice (or data) service. The ILEC would simply continue to provide voice service using its own local circuit switch, with no need for a hot cut. (In addition, the *TRO* ends the obligation of ILECs to offer new line sharing arrangements after a three-year transition. *See TRO* ¶¶ 255-269.)

Verizon points to the OSS "Change Management Process" as the appropriate forum in which to resolve any line splitting issues. Verizon and the CLECs have jointly developed an OSS Change Management Process for managing the life cycle of system changes throughout Verizon's territories. This Commission approved Verizon's nationwide Change Management process in July of 2001.[112] The Change Management process includes a framework for prioritizing requested system changes, based on agreed criteria, to change requests affecting CLEC interfaces and business processes. Participants discuss change requests at monthly meetings and vote on priorities. Verizon argues that such a process is more effective in resolving technical and operational issues than a regulatory proceeding, driven primarily by attorneys and regulatory personnel who lack technical expertise.

Covad, MCI, and AT&T claim that the ILEC's proposed BHC process is deficient in failing to provide for migration of voice plus data loops. Covad argues that since line-shared and line-split loops both use circuit switching for the voice portion of the loop, such loops are included within the broad directive

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[112] Administrative Law Judge's Ruling on the May 24, 2001 Joint Motion, R.97-10-016 / I. 97-10-017 (Jul. 2, 2001).

in the TRO mandating a BHC process. Covad argues that it is irrelevant that line-shared and line-split loops are ultimately connected to both a circuit switch (for voice traffic) and a packet "switch" (to multiplex data traffic).

Covad Witness Murphy proposed that the following four migration scenarios be addressed as part of the BHC in this proceeding:

1. line-shared loop with ILEC switching to a line splitting arrangement with CLEC switching;

2. line split loop with ILEC switching to a line splitting arrangement with CLEC switching

3. ILEC retail voice-only loop with ILEC switching to a line splitting arrangement with CLEC switching;

4. UNE-P loop with ILEC switching to a line splitting arrangement with CLEC switching.

Covad disputes the ILECs' arguments that line-split or line-shared loops do not warrant a separate BHC scenario because volumes are too small. Covad argues that the BHC process is not limited by loop type volume, and that CLECs have only recently begun provisioning line splitting. Thus, the small number of line split loops in service today does not necessarily reflect the larger number that would be in service at such time, if any, that UNE access to local switching is eliminated. Covad claims that the anticompetitive practices of SBC are the reason for the limited number of currently effective line-splitting arrangements.

Because SBC and Verizon do not offer a line-splitting BHC migration scenario, the CLECs must use their own cage-to-cage cabling to transfer the customer's loop from the voice CLEC's collocation arrangement to the data CLEC's collocation arrangement. This means that the DSL data service on the loop must be disconnected while the voice portion of the customer's loop is

migrated to a CLEC switch. In order to reconnect the DSL service, however, the loop must be connected to a splitter located in the data CLEC's collocation arrangement. This arrangement results in an extended period during which the data service remains disconnected, thereby disrupting the continuity of the DSL data service feature of the CLEC customer's bundled service.

In order to provide for a more efficient migration of both the voice and data services for CLEC customers, Covad proposes an alternative to cage-to-cage cabling. Covad proposes an approach in which the customer's loop would be transferred to the data CLEC's cage by bringing the loop back to the ILEC's MDF and cross-connecting the loop to the data CLEC's collocation arrangement. Covad argues that this is the most efficient, inexpensive manner to connect the facilities of different CLECs, and won't entail extended disconnection of CLEC customers' DSL services in conjunction with a hot cut of the customers' voice service.

2. Discussion

We agree with the Covad that the ILECs' batch cut process should be augmented to accommodate the four line splitting scenarios listed above. Without an efficient batch cut process to accommodate line-splitting migration scenarios, CLECs will be at a disadvantage in seeking to offer DS0 voice grade service to mass market customers who also want DSL service over the same loop. A CLEC voice customer with DSL data service seeking to migrate to a new voice provider is currently required by the ILEC to disconnect the DSL data service before the customer can be migrated to a new voice provider.[113] This would

[113] RT 54, 8466:3-6

greatly increase the potential for disruption of the data service for thousands of customers and would impose a competitive handicap on those carriers seeking to compete with the ILECs in offering packages of voice and data services. As long as the ILEC is permitted to continue this practice of requiring customer disconnection before migrating their voice service to a new provider, the CLEC will be at a competitive disadvantage. Thus, a hot cut migration scenario is needed in which such data service disconnection is not required.

The need for an efficient process to cut over voice-grade loops from the ILEC switch to the CLEC switch includes loops involving line splitting. SBC witness Chapman argued that the batch cut process does not apply to a line split loop provisioned through a DSL arrangement, and that DSL loops are distinctly different from a DS0 loop. Yet, Verizon witness McGuire testified that most voice grade DS0 loops will support DSL service.[114] Thus, while there may be certain operational distinctions between DS0 loops with versus without DSL support, the essential fact remains that DSL loops incorporate voice service. As such, DSL loops meet the definition for a hot cut process.

We acknowledge SBC's point that under current ILEC procedures, a voice plus data loop technically "is already terminated at the data CLEC's collocation arrangement…[Therefore], "the cut-over activity would actually occur within the CLEC's collocation cage" as opposed to the cut-over activity occurring on the applicable SBC distribution frame."[115] Thus, SBC does not dispute that a hot cut must be performed in a line-splitting arrangement. The dispute is over whether

[114] RT 55; McGuire Cross Examination, 8478:14-22

[115] Ex. 12, Chapman Direct Testimony at 42 and 44.

the ILEC or the CLEC is responsible to perform such hot cuts. SBC does not currently perform the hot cut when a migrating voice-plus-data loop with ILEC switching is migrated to a CLEC switch. Covad points out, however, that the existing arrangement is the result of SBC's refusal to provide cross-connects between two CLECs collocation spaces with a jumper on the applicable SBC distribution frame. Instead, CLECs desiring to interconnect their own facilities must provision their own cage-to-cage cross connection. For example, if SBC hot cuts a loop carrying voice plus data to an CLEC voice collocation cage, the CLEC would have to use a wire pair in a cage-to-cage cable to haul the voice plus data signal to the CLEC data collocation cage in order to reach the voice / data "splitter," and then use another wire pair in the cage-to-cage cable to haul the voice signal back to the CLEC voice collocation cage so that it could be transported to CLEC's switch.[116] The schematic diagram in Appendix 4 illustrates the cabling configurations entailed in cutting over a customer's voice and data services in a line-splitting scenario.

Covad disagrees with SBC's assertion that any BHC process for voice-plus-data loops would require cage-to-cage cross connects rather than allowing CLECs to use the frame-to-cage connects already provisioned. Covad proposes provisioning line splitting over a UNE-L arrangement using the ILEC's current practice of cross connecting facilities at the applicable distribution frame. Covad argues that requiring CLECs to obtain cage-to-cage cross connects for line splitting over an unbundled loop would be inefficient, costly, and would strand existing cross-connect capacity.

[116] Ex. 143 (Lichtenberg / Starkey 1 / 15 Reply), at 43.

Moreover, a hot cut process is needed for voice-plus-data loops in order to provide a seamless migration between a CLEC and an ILEC that offer service packages of voice plus data over a single loop.

Moreover, once the data portion of the loop has been disconnected, the remaining voice-grade portion of the line is then capable of being hot cut just like any other UNE-P voice-grade line. Thus, the migration of customers subject to a line-splitting arrangement entails a DS0 voice-grade line cutover, and on that basis, such lines warrant inclusion within a hot cut migration scenario.

We agree with Covad that the migration process could be made more efficient for CLEC customers subject to a line splitting arrangement would be for the ILEC to provide for cross connects on its main distribution frame that would allow voice-providing CLECs and data-providing CLECs to provide service economically. In this way, the data-providing CLEC would not be required to provision cage-to-cage cabling from its collocation to the new voice CLEC's collocation. We accordingly adopt Covad's proposal. Covad's proposed approach is illustrated in the diagrams in Appendix 3 of this order, as excerpted from Exhibit 99 (Testimony of Casie Murphy) Appendix Exhibit KM-1, page-10. Before such a migration scenario can be implemented, however, the associated TELRIC costs would need to be determined.

We recognize that collaborative forums, such as Change Management, serve a useful role in building consensus on the technical details of implementing line splitting solutions once the policy issue is decided concerning the merits of developing a batch cut option to address line splitting. Such collaborative forums are not particularly useful, however, as a means of deciding policy issues on which parties are entrenched in disagreement. Such is the case here. Accordingly, we direct that line splitting migration scenarios must be developed

as part of the batch hot cut process in order to develop a truly seamless migration process. We leave it to the collaborative workshop process to address the technical details concerning the most efficient and least-cost way to implement the four line-splitting migration scenarios proposed by Covad. We conclude that such workshops should remain under this docket, but should be coordinated, as appropriate, with the Change Management collaborative and any related forums where line splitting is being addressed.

Accordingly, we direct the ALJ to schedule workshops to conduct further analysis to implement line splitting arrangements covering the four migration scenarios outlined by Covad as noted above. These arrangements should incorporate a plan for the ILEC to provide for cross connects on its main distribution frame that would allow voice-providing CLECs and data-providing CLECs to provide service, as proposed by Covad. The ILECs should also develop a TELRIC-based price analysis associated with such line-splitting migration scenarios.

C. CLEC-to-CLEC UNE-L Migrations

The batch cut processes proposed by SBC and Verizon do not take into account customer migration scenarios from one CLEC to another utilizing UNE-L. The ILECs argue that such CLEC-to-CLEC UNE-L migration scenario entail communications between CLECs that are not subject to control by the ILEC. In a CLEC-to-CLEC loop migration, the "winning" CLEC, porting the telephone number from the "losing" CLEC, must submit a request to the losing CLEC to port the number. Consequently, SBC argues, this required interaction between the two CLECs is not within SBC's control, and is not accounted for in SBC's proposed batch processes. Similarly, Verizon does not want to be involved in CLEC disputes related to submission of number porting information and

authorizations in connection with a CLEC-to-CLEC customer migration. Because it would not be able to determine whether the porting order had in fact been submitted and the port was ready to be activated, Verizon claims that customers could be left without service. As a result, to ensure that CLEC-to-CLEC UNE-L migrations do not undermine continuity of service, Verizon declines to include these migrations in its BHC process.

SBC further argues that there currently are not large volumes of CLEC-to-CLEC migrations (Ex. 12 (Chapman), at 37); and there is no evidence in the record to suggest that CLECs will be placing orders to migrate significant numbers of customers of other CLECs to their switches in the foreseeable future.

Verizon believes that CLEC to CLEC UNE-L migrations can be handled, however, via either the existing Basic or Large Job processes, where Verizon is not responsible for placing the porting trigger order to NPAC.

AT&T and MCI, however, claim that the ILEC batch cut proposals are deficient in their failure to address CLEC-to-CLEC migration scenarios, thereby creating a serious competitive disadvantage for CLECs. They argue that without a CLEC-to-CLEC migration scenario, CLECs would have no efficient or workable way to transition the loop serving those customers to its switch, even if the customer had already chosen to use the CLEC's services.

We conclude that the ILEC's batch cut proposals are deficient in excluding CLEC-to-CLEC migrations. The FCC states that "competition in the absence of unbundled local circuit switching requires seamless and timely migration not only to and from the incumbent's facilities, but also *to and from the facilities of*

competitive carriers." [117] Thus, we conclude that CLEC-to-CLEC migrations are a necessary part of the batch cut process required under the TRO. The exclusion of CLEC to CLEC migrations from ILEC batch hot cut process violates the TRO requirement for a seamless migration process "to and from the facilities of competitive carriers."

Any time the CLEC would issue an order for an ILEC hot cut to acquire a UNE-L customer, the order would be rejected if the ILEC processes do not accommodate the type of UNE-L to UNE-L cutover that would be required.[118] MCI argues that in that situation, it would have no efficient or workable way to transition the loop serving other carriers' customers to its switch, even if the customer had already chosen to use MCI's services. A lack of coordination could result in errors in the customer records, the loss of customer data and loss of dial tone.[119]

If CLEC access to UNE switching were eliminated, the current base of approximately 1.3 million UNE-P customers would need to be migrated to other platforms. MCI estimates that the number of UNE-L to UNE-L hot cut requests 12 months after a Commission decision of "no impairment" could be nearly 70,000 per month (each of which would be rejected under the ILECs' current proposals).[120] MCI further estimates that thirty-three months after a Commission

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[117] TRO § 478, emphasis added

[118] Ex. 143 (Lichtenberg / Starkey 1 / 15 Reply), at 44.

[119] Ex. 141 (Lichtenberg 12 / 15 Direct), at 52.

[120] Ex. 143 (Lichtenberg / Starkey 1 / 15 Reply), at 45.

decision, the number of UNE-L to UNE-L hot cut requests could exceed 200,000 per month using current CLEC market penetration and churn assumptions.[121]

The ILEC doesn't require the multi-party coordination that UNE-L to UNE-L hot cut processes would entail. The ILEC could "hot cut" the loop back to its own network via its internal "winback" process without complication.[122] In order to ensure a seamless migration process, a CLEC-to-CLEC migration scenario needs to be included in the ILEC processes.

CLECs and the ILECs continue to work collaboratively to develop CLEC-to- CLEC migration procedures, but a standardized process for exchanging customer service records (CSR) and obtaining circuit ID information is not yet in place. SBC and CLECs are in the early stages of developing a CLEC to CLEC migration process but have reached no agreements on how this process should be managed.[123] Currently, carriers can forward CSR information using their own transmission method, but no quality assurance processes exist for whatever method the carrier chooses.[124] A process needs to be developed for exchanging CSR information so that customers will not be stranded after their migration to UNE-L because other carriers have no means to obtain the information necessary to migrate the customer to another carrier.[125]

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[121] Ex. 143 (Lichtenberg / Starkey 1 / 15 Reply), at 45.

[122] Ex. 143 (Lichtenberg / Starkey 1 / 15 Reply), at 46.

[123] Ex. 141 (Lichtenberg 12 / 15 Direct), at 39.

[124] Ex. 141 (Lichtenberg 12 / 15 Direct), at 39.

[125] Ex. 141 (Lichtenberg 12 / 15 Direct), at 39.

We agree with MCI that a system must be developed for the exchange of CSR information as part of a CLEC-to-CLEC migration process. The exchange of the following information, as enumerated by MCI, should be required as a minimum starting point: billing telephone number; working telephone number; billing name and address; directory listing information (including listing type); complete service address; current PICs (for both inter and intraLATA, including freeze status); local freeze status, if applicable; all vertical features; options (such as toll blocking and remote call forwarding); tracking or transaction number; service configuration information (*i.e.*, whether customer is served via resale, UNE-P, UNE-L, etc.); the identification of the network service provider, and the identification of any line sharing or line splitting on the line.[126] MCI further argues that in order to have an efficient, seamless customer migration, at least three additional categories of information must be included in any standardized CSR exchange process, as follows: 1) the ILEC feature name and Universal Service Order Code for vertical features and blocking options so that CLECs can understand each other's CSRs; 2) circuit identification; and 3) identification of line sharing / line splitting providers.[127] In addition, MCI asks that CLECs be required to provide a contact from whom the winning CLEC can request CSR information and the providing CLEC be required to forward such CSR information within specific timeframes. MCI is currently experiencing

[126] Ex. 141 (Lichtenberg 12 / 15 Direct), at 40.

[127] Ex. 141 (Lichtenberg 12 / 15 Direct), at 40.

difficulties in retrieving CSRs from CLECs based in California and expects this problem to grow as more CLEC CSR information is required.[128]

One potential solution for housing and exchanging CSR information proposed by MCI is the establishment of a distributed CSR database, shared and maintained by CLECs and ILECs alike, that would act as a clearinghouse for customer information.[129] Such clearinghouse would enable all carriers to launch inquiries for CSR information using a common data communications protocol. CLECs would be required to maintain CSRs in a standard format, and should be required to adhere to standard delivery methods and time frames.[130] Companies that did not want to maintain their own CSRs or could not develop the software necessary to electronically transmit that information to other carriers could contract with third-party clearinghouses to support this process. We shall direct the ALJ to schedule a collaborative workshop for carriers to develop consensus on procedures for exchanging this information. Until such a distributed method is developed, the ILEC should continue providing access to the information they have about customers on their network as well as the information remaining after a customer leaves the network.[131]

AT&T proposes a remedy to address Verizon's objection to performing CLEC-to-CLEC migrations based on the required involvement of a third-party CLEC in the number porting process. AT&T proposes that Verizon simply allow

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[128] Ex. 141 (Lichtenberg 12 / 15 Direct), at 41.

[129] Ex. 141 (Lichtenberg 12 / 15 Direct), at 41.

[130] Ex. 141 (Lichtenberg 12 / 15 Direct), at 41.

[131] Ex. 141 (Lichtenberg 12 / 15 Direct), at 41.

CLECs to port the number after a hot cut and after Verizon notifies the CLEC of the hot cut completion. AT&T argues that this change would relieve Verizon of the need to do a number port, and would resolve the service integrity concerns associated with Verizon's performing the number port. We find AT&T's proposal to be reasonable, and accordingly adopt it.

D. Extended Enhanced Loop (EEL) Migration Scenarios

AT&T and MCI argue that the BHC process must include a provision to cut to an Enhanced Extended Loop (EEL). An EEL affords a CLEC the ability to deliver loops to its switch without collocation in every central office and to reduce collocation costs by aggregating loops at fewer collocations and then transporting traffic to their own switches.[132] EEL facility used to connect the customer to the carrier's switch using collocated equipment in a distant central office. Without access to EELs, MCI argues that CLECs that are not collocated in wire centers in which they have UNE-P customers would have little choice but to abandon those customers.[133]

SBC did not include conversions involving EELs in its proposed BHC process, arguing that the FCC rule neither states nor implies that the batch cut process must include all migrations that it could possibly include. SBC also claims that no other party presented a viable proposal for including EELs in the batch cut process.

SBC expresses a willingness to consider the development of a batch cut process for EELs as an enhancement to the bulk project offering after the initial

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[132] Ex. 154C Van de Water Testimony, pg. 31

[133] Ex. 143, Lichtenberg / Starkey Testimony, pg. 23-25

process roll-out, but argues that its current proposal could not readily be modified to incorporate EELs. SBC believes it would jeopardize the effectiveness or efficiency of the proposed processes by attempting to incorporate a new process for EELs now. *Id.* at 38.

Verizon argues that EELs have never been subject to hot cuts because there is no way to "hot cut" an EEL. Hot cuts have always been available only for ordinary two-wire loops, as the FCC was no doubt aware when it issued the *TRO*. EELs, by contrast, are "designed" circuits providing "special" services over a combination of a loop plus interoffice transport. In addition, Verizon claims that the ILEC cannot identify the local loop portion of an EEL in order to transfer it from one carrier to another because the circuit identification is for the entire EEL rather than the loop alone. Verizon further argues that because EELs are very rare in the mass market, there is clearly no need to have any type of "batch" or "bulk" process for migrating EEL-served customers.

If UNE-P becomes unavailable to competitors in a significant portion of the state, EEL arrangements would be necessary for competitors to reach customers in central offices where a competitor was not collocated. The EEL arrangements would be required until that competitor was able to obtain collocation in a given central office, assuming it was economical to do so. CalTel witness Compton testified that although collocation space is essential in any central office to be served by UNE-L, there are ILEC central offices where collocation space is unavailable or is very close to being full.[134] Moreover, in those central offices

[134] Ex. 180 at 14 (Direct Testimony of Compton).

where space is available, the installation interval for collocation space is 90 days in the SBC region and 120 days in the Verizon region.

TURN argues that the process of obtaining collocation in all of the affected central offices will take years, and EELs will play a pivotal role in the ability of competitors to serve mass market customers, and that exclusion of this arrangement from the ILECs' batch hot cut process thus poses a significant barrier to competition.[135]

We recognize that further development will be required before a batch cut scenario could be implemented to accommodate the provision of EELs. Nonetheless, without the provision of such a migration scenario, CLECs remain unable to provide switch-based service via UNE-L in those wire centers where they are not collocated and cannot arrange to hot cut to an EEL facility connecting the customer to the carrier's switch using collocated equipment in a distant central office.

X. Batch Hot Cut Costing and Pricing (47 C.F.R. § 51.319(d)(2)(ii)(A)(4))

A. Framework for Analysis

In conjunction with the requirement for states to approve and implement a batch cut process, the FCC also directed state commissions to adopt Total Element Long Run Incremental Cost (TELRIC)-based rates for the approved batch cut activities. The FCC defines TELRIC rates as "forward-looking" and based on the use of the "most efficient telecommunications technology currently available and the lowest cost network configuration, given the existing location

[135] MCI Ex. 143 (Lichtenberg / Starkey Joint Reply) pp. 46-47; AT&T Ex. 154C (Van de Water Opening) pp. 26, 31.

of the incumbent LEC's wire centers."[136] As noted by the FCC, "[t]hese rates shall 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."[137]

The ILECs mailed testimony on January 7, 2004, presenting TELRIC pricing proposals for their BHC processes on January 28, 2004; other parties mailed reply testimony on this issue.

1. SBC Hot Cut Prices Position of SBC

SBC proposed a batch cut rate structure on a per line basis, with pricing variations according to time of day and / or other cost drivers. SBC's pricing proposal is based on its cost study reflecting non-recurring costs.[138] SBC represents that its pricing proposal complies with FCC's TELRIC methodology set forth in its First Report and Order, CC Docket No. 96-98, FCC 96-325, adopted August 1, 1996, and also complies with the Commission's Consensus Costing Principles.[139] SBC cost witness Pearsons applied the Commission-approved shared and common cost allocation factor of 21% to its estimated TELRIC to derive SBC-proposed prices. SBC developed flat, per line rates, reflecting the following factors:

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[136] 47 C.F.R. § 51.505(b).

[137] 47 C.F.R. § 51.319(d)(2)(ii)(A)(4).

[138] The costs and rate structure that SBC proposes for its Batch Hot Cut Processes are based on the cost study sponsored in testimony of Scott Pearsons.

[139] D.95-12-016, Appendix C.

- Process used (Enhanced Daily Process, Defined Batch Process, or Bulk Project offering)
- Type of hot cut requested (FDT, CHC or IDLC)
- Time of cut (normal business hours, expanded hours, or premium hours)[140]

SBC's proposed rates for the Enhanced Daily Process are based on the type of hot cut requested, as follows:

- Enhanced Daily Process – FDT Basic Option $14.70
- Enhanced Daily Process – CHC Basic Option $20.73
- Enhanced Daily Process – IDLC Basic Option $79.09

Since all cuts in the Enhanced Daily Process occur during normal business hours, no additional rate elements for out-of-hours conversions apply. Requests for hot cuts outside of normal business hours, reflected below under the "Expanded" option, are subject to minimum volume requirements as described in SBC's Batch Cut Proposal.

SBC's proposed rates for the Defined Batch Process are based on the type of hot cut requested and the time requested for the cut:

- Defined Batch Process – FDT Option
  - Basic (M-F, 8 AM – 5 PM) $10.61
  - Expanded (M-F 6 AM – 8 AM) $10.74
- Defined Batch Process – CHC Option
  - Basic (M-F, 8 AM – 5 PM) $12.70
  - Expanded (M-F 6 AM – 8 AM, 5 PM – 12 AM, Sat 8 AM – 5 PM) $12.75
- Defined Batch Process – IDLC Option
  - Basic (M-F, 8 AM – 5 PM) $77.35

[140] Available request times vary among the three processes.

SBC's proposed rates for the Bulk Project offering are based on the type of hot cut requested and the time requested for the cut. The Bulk Project Offering includes additional rates for out-of-hours and premium cut time options.

Bulk Project Offering – FDT Option

- Basic (M-F, 8 AM – 5 PM)	$10.58
- Expanded (M-F 6 AM – 8 AM, 5 PM – 12 AM, Sat 8 AM – 12 AM)	$10.71
- Premium (M-F 12 AM – 6 AM, Sat 12 AM – 8 AM)[141]	$11.31

Bulk Project Offering – CHC Option

- Basic (M-F, 8 AM – 5 PM)	$12.67
- Expanded (M-F 6 AM – 8 AM, 5 PM – 12 AM, Sat 8 AM – 12 AM)	$12.72
- Premium (M-F 12 AM – 6 AM, Sat 12 AM – 8 AM)[142]	$13.56

Bulk Project Offering – IDLC Option

- Basic (M-F, 8 AM – 5 PM)	$77.33

SBC's cost witnesses[143] defend the reasonableness of the activities, job titles, estimated times and probabilities of occurrences with respect to the local operations center (LOC), the central office (LFO-In) and the outside plant (LFO-Out) work groups in California included in the "Bill of Costs" Tab of the Cost Study in Attachment 1 to Pearsons' testimony. The "Bill of Costs" tab details each of the items associated with any CHC, FDT or IDLC hot cut ordered under the Enhanced Daily, Defined Batch and Bulk Project Processes. SBC claims that its proposed costs reflect a reduction from about 50% to 85% off the prices that CLECs currently pay for hot cuts.

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[141] *Id.*

[142] *Id.*

[143] SBC Joint Cost Witnesses are Domenic Cusolito, Dennis Deluca and Barbara Heki.

The basic tasks in a hot cut, as previously discussed, involve administrative processes, running a jumper from the CFA to the frame, pre-testing the dial tone and phone number, performing the "lift and lay" and a final dial tone and phone number verification.

Two additional tasks are performed by the LOC when a line is migrated from an IDLC to a copper facility. The first task requires the LOC to contact the LFO-Out organization to confirm the appointment time on the order prior to the dispatch of the technician. The second task requires the LOC to receive a call from the technician when the cutover from IDLC to copper is ready to begin.

To compute TELRIC for each applicable activity required to provision the service / UNE, the job title performing the work and the labor rate associated with that job title was identified. The appropriate labor rate was multiplied by the time required to perform the activity, and then multiplied by the Work Group Occurrence Factor (WGOF)[144] and the Activity Occurrence Factor (AOF).[145]

An experienced subject matter expert (SME) representing each workgroup identified the activities and the job titles required to provision each rate element identified within the non-recurring cost study. Each workgroup SME also provided activity times and percent occurrences associated with each activity

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[144] The Workgroup Occurrence Factor is the percentage of time that a workgroup must be involved to provision the service. The WGOF may represent the fallout associated with a mechanized process, or the percent occurrence when two different workgroups share responsibility for a similar work activity.

[145] In OANAD, this occurrence was referred to as a task occurrence factor. It is the percentage of time that an activity must take place after the WGOF is considered.

based on their knowledge of the Batch Hot Cut Process to be implemented and how long it takes to perform similar activities today.

2. Response of MCI and AT&T to SBC Cost Study

AT&T and MCI each performed separate analyses of SBC's costs. AT&T and MCI claim that the SBC cost study fails to comply with the FCC's TELRIC rules, particularly Rule §51.505, Part (1) which requires the use of an efficient network configuration.

MCI argues that the batch hot cut cost study submitted by SBC does not assume a properly mechanized system, includes costs which are more appropriately recovered from SBC retail customers, and includes exaggerated work times and unnecessary work steps. MCI adjusted SBC's cost study for alleged errors relating to work steps, task times and costs associated with removing the retail customer's service from the SBC network, and applied the Commission-approved non-recurring fallout rate to generate TELRIC-compliant costs for a hot cut.[146] The rates that MCI calculated, as presented in the testimony of witness Starkey are listed in the table below.[147]

MCI Proposed Hot Cut Rates - TELRIC Compliant	Enhanced Daily Process	Defined Batch Process	Bulk Batch Process
FDT Basic Hours, per Office, per CLEC, per POTS Line (M-F 8A-5P)	$0.27	$0.25	$0.21
FDT Expanded Hours, per Office, per CLEC, per POTS Line (M-F 6A-8A, 5P-12A, Sat 8A-12A)	n/a	$0.22	$0.22
FDT Premium Hours, per Office, per CLEC, per POTS Line (M-F 12A-6A, Sat 12A-8A)	n/a	n/a	$0.26
CHC Basic Hours, per Office, per CLEC, per POTS Line (M-F 8A-5P)	$0.45	$0.36	$0.36
CHC Expanded Hours, per Office, per CLEC, per POTS Line (M-F 6A-8A, 5P-12A, Sat 8A-12A)	n/a	$0.37	$0.37
CHC Premium Hours, per Office, per CLEC, per POTS Line (M-F 12A-6A, Sat 12A-8A)	n/a	n/a	$0.43
IDLC Basic Hours, per Office, per CLEC, per POTS IDLC Line (M-F 8A-5P)	$1.53	$1.51	$1.51

[146] Ex. 146 (Starkey 1/28 Reply), at 26.

[147] Ex. 146 (Starkey 1/28 Reply), at 26. MCI provided, as Confidential Attachment 4 to Mr. Starkey's Jan. 28, 2004 batch hot cut pricing reply testimony, a copy of SBC's cost study including the proposed modifications of Mr. Starkey in support of the rates proposed in this table.

MCI recommends that the Commission adopt the rates in the table above for the following hot cut migration scenarios (voice only, UNE-L to UNE-L, line sharing, and line spitting) even though SBC has excluded the latter three from its batch hot cut proposal.[148] For migrations involving hot cuts of loops provisioned via an EEL, MCI recommends a different set of batch hot cut rates to reflect that such migrations could require additional work steps beyond those incorporated by SBC.[149] During the pre-wiring phase of a "cut-to-EEL" scenario, SBC would need to ready the interoffice DS0 circuit connecting the CLEC's distant collocation arrangement to the central office within which the cut will take place. MCI believes this is likely to take additional time beyond that required for the other hot cut scenarios.[150] Until more information is available, MCI witness Starkey assumed that these activities will require twice the amount of time SBC has identified for pre-wiring other types of migrations.[151] Thus, MCI recommends the following rates for a "cut-to-EEL" scenario.

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[148] Ex. 146 (Starkey 1 / 28 Reply), at 28.

[149] Ex. 146 (Starkey 1 / 28 Reply), at 28-29.

[150] Ex. 146 (Starkey 1 / 28 Reply), at 28-29.

[151] Ex. 146 (Starkey 1 / 28 Reply), at 28-29.

MCI Proposed Hot Cut Rates - TELRIC Compliant - Cut-to-EEL	Enhanced Daily Process	Defined Batch Process	Bulk Batch Process
FDT Basic Hours, per Office, per CLEC, per POTS Line (M-F 8A-5P)	$0.65	$0.51	$0.42
FDT Expanded Hours, per Office, per CLEC, per POTS Line (M-F 6A-8A, 5P-12A, Sat 8A-12A)	n/a	$0.45	$0.45
FDT Premium Hours, per Office, per CLEC, per POTS Line (M-F 12A-6A, Sat 12A-8A)	n/a	n/a	$0.51
CHC Basic Hours, per Office, per CLEC, per POTS Line (M-F 8A-5P)	$0.94	$0.68	$0.68
CHC Expanded Hours, per Office, per CLEC, per POTS Line (M-F 6A-8A, 5P-12A, Sat 8A-12A)	n/a	$0.75	$0.75
CHC Premium Hours, per Office, per CLEC, per POTS Line (M-F 12A-6A, Sat 12A-8A)	n/a	n/a	$0.83
IDLC Basic Hours, per Office, per CLEC, per POTS IDLC Line (M-F 8A-5P)	$3.10	$3.04	$3.04

AT&T likewise adjusted SBC's cost study, and recast SBC's cost and pricing tables, to reflect the adjustments of AT&T witness Turner. AT&T likewise claims that SBC's proposed rates are not TELRIC-compliant, and argues that SBC should be required to submit a TELRIC compliant model. AT&T witness Turner also presented an alternative pricing proposal that he claims still is not low enough to overcome impairment, but is closer to TELRIC compared to SBC's proposal. Turner's proposed adjustments to SBC's cost study are set forth in the matrix table in Attachment SET-1 to Turner's Reply Testimony (Ex. 115C). AT&T's recast TELRIC price tables were provided under seal, and are set forth in Ex.115C (Attachment SET-6; Proprietary).

3. Disposition of Cost Adjustments for SBC TELRIC Prices

We review below the proposed MCI and AT&T adjustments to TELRIC, and determine to what extent, if any, the proposed adjustments are warranted. Based on our review of the proposed adjustments to SBC's TELRIC rates, we have computed revised rates for SBC's batch cut processes as set forth in Appendix 1 of this order. We adopt these prices on an interim basis to be applied to any initial offerings of hot cut options made available by SBC pursuant to further orders either of this Commission or the FCC. Parties' proposed adjustments, and our disposition thereof, are set forth below.

a) Incorporation of System Mechanization into Cost Structure

Rule 51 states that the TELRIC of an element should be measured based on the use of the most efficient telecommunications technology currently available and the lowest cost network configuration, given the existing location of the incumbent LEC's wire centers. MCI argues that FCC rules require that if technology currently exists to mechanize the process to perform hot cuts, TELRIC must be calculated as if that technology was being used today. MCI argues that such technology does exist and, as a result, SBC and Verizon's failure to account for it in their cost studies is inconsistent with the FCC's pricing rules. The *TRO* instructs that any batch hot cut pricing must comply with TELRIC, must reflect the efficiencies gained by performing hot cuts as batch rather than one at a time, and must reduce the price that CLECs pay.

MCI argues that the ILECs have increased mechanization for their retail services by continually improving the underlying technology and systems.[152] For example, a software matrix within IDLC equipment serves the role of the main distribution frame and allows SBC to "cut" a customer's IDLC loop without any manual intervention.[153] Thus, when SBC "turns up" a retail customer's service using IDLC, there is no need in most circumstances for SBC to dispatch a technician. With modern software platforms available from multiple IDLC vendors, a carrier can map any IDLC loop to nearly any port on its digital switch on a desktop computer.[154] MCI argues that these same systems, with certain

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[152] Ex. 146 (Starkey 1 / 28 Reply), at 8 and Attachment 1.

[153] Ex. 146 (Starkey 1 / 28 Reply), at 9.

[154] Ex. 146 (Starkey 1 / 28 Reply), at 9.

modifications, can provide the same software-driven efficiency for loops being hot cut to another carrier's switch.[155] MCI claims that existing mechanized frame technology allows a carrier to cross connect all-copper pairs within a software-driven environment, via numerous methods (robotic, electronic matrix, etc.) without dispatching a technician to perform the function.[156]

SBC assumes IDLC penetration rates of approximately 50 percent in its cost studies.[157] In those circumstances where copper would remain as the most efficient, least cost technology to be used in a forward looking network design, MCI proposes that SBC use existing technologies to allow a carrier to provision services without manual cross connect (so-called "lift & lay") activities. Automated distribution frame technology is already available from Telcordia and numerous IDLC vendors.[158] Moreover, Verizon uses automated frame technology and has stated that it would use this technology for purposes of accomplishing hot cuts for unbundled loops if required.[159]

SBC argues that there is no commercially available mechanized frame that makes economic sense for SBC's network. SBC witness Mitchell testified that

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[155] Ex. 146 (Starkey 1 / 28 Reply), at 9.

[156] Ex. 146 (Starkey 1 / 28 Reply), at 11.

[157] Ex. 146 (Starkey 1 / 28 Reply), at 11.

[158] Ex. 146 (Starkey 1 / 28 Reply), at 11 and Attachment 3.

[159] Ex. 146 (Starkey 1 / 28 Reply), at 12. Verizon made this statement when appearing before the State of New York, Public Service Commission, *Proceeding on Motion of the Commission to Examine the Process, and Related Costs of Performing Loop Migrations on a More Streamlined (e.g., Bulk) Basis*, Case No. 02-C-1425, Public Transcript (pages 290-293), Testimony of Michael A. Nawrocki, On Behalf of Verizon New York, Inc.

mechanized frames are limited to 5,000 lines or fewer, and have not passed the work standards that would be required to place them into widespread use. Telcordia (formerly Bellcore) has stated that the mechanized frame industry is "not ready for prime time." Ex. 36 (Mitchell) at 7. Telcordia concluded it would cost more to cut over loops with the mechanized frames that are available today than it costs to cut over loops manually.[160]

Given the practical commercial constraints pointed out by SBC witness Mitchell, we agree that a mechanized frame technology is not commercially feasible today. Further efforts, however, to make such technology viable and cost-effective are important. Nonetheless, a forward-looking network for purposes of deriving TELRIC-based prices must be based on technology that exists today. Because such current technology does not include mechanized frames, we agree with SBC that TELRIC based prices applicable to current hot cut processes cannot incorporate such technology.

b) Charges For Removal Of Customer Number And Switch Translations

SBC's initial BHC cost study included expenses associated with removal of the CLEC customers' telephone number and other switch-related instructions from SBC's switch.[161] MCI argued that these activities are not incremental to a request for a hot cut, but are part of the SBC's customer's cancellation of service

[160] Tr. at 8963 (Mitchell)

[161] Ex. 146 (Starkey 1 / 28 Reply), at 13.

and are recovered through SBC retail rates when SBC first acquires the customer.[162]

We agree that these removal costs are not part of the hot cut process, and should be excluded from SBC's TELRIC prices to avoid double recovery. SBC witness Pearsons revised his calculations in response to MCI's concerns on this issue to exclude the costs of the SBC customer cancellation from BHC costs.[163] Accordingly, SBC's revisions appropriately resolve the dispute over this issue.

c) Surcharges To Unbundle Loops Provisioned On IDLC

SBC's BHC process includes a provision for IDLC-provisioned loops. IDLC technology integrates the digital loop carrier system directly into a switch on a digital (DS1) basis. For IDLC-provisioned loops, the analog signal generated by the end-user's customer premises equipment is converted into a digital signal at a remote terminal. The digital signal is then multiplexed into a DS1 signal, and is transported (along with the other signals with which it has been multiplexed) to the central office over a high-speed digital feeder facility. At the central office, the feeder facility is terminated, and the IDLC traffic is routed as DS1-level signals to the digital line ports on the switch.[164]

SBC argues that because voice traffic over IDLC-provisioned loops is delivered into the switch as a multiplexed, DS1-level signal, there is no technically feasible means of obtaining access to an individual IDLC-provisioned loop at the central office. Consequently, in order for an SBC customer served by

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[162] Ex. 146 (Starkey 1 / 28 Reply), at 14.

[163] RT 60; Pearsons / 9459

[164] SBC Reply Brief at 97

an IDLC-provisioned loop to be cut over to another carrier's switch, the customer's service must be moved from the IDLC-provisioned loop to either a copper loop or a loop provisioned with UDLC technology (which, unlike IDLC, permits access to individual loops at the central office). To do this, an SBC must dispatch an LFO-Out technician to the field to move the end-user's service.[165]

MCI contends that the LFO-Out work could be eliminated by unbundling the individual loops. MCI thus opposes the SBC surcharge equal to $91.50 per loop for unbundling IDLC loops so the customer may be migrated to the CLEC switch.[166] MCI argues that technology exists that would allow CLECs to access loops, especially IDLC loops, in a more efficient, unbundled way via a number of options developed by Telcordia. MCI claims that such technology would avoid the need for manual dispatch to the central office or the remote terminal for purposes of a hot cut, but would instead most likely take place via software command with no manual intervention.[167]

IDLC was implemented, in part, to reduce the number of dispatches required to provide combined services (*i.e.*, retail, resale, UNE-P).[168] MCI argues that these same efficiencies could be captured for UNE loops, although SBC has declined to develop the required processes and systems.[169] Nonetheless, TELRIC

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[165] Ex.113, SBC / DeLuca at 5-6

[166] Ex. 83 (Chapman 1 / 7 / 04 Direct and 2 / 5 / 04 revision), Pricing Schedule, Page 6.

[167] Ex. 146 (Starkey 1 / 28 Reply), at 16.

[168] Ex. 146 (Starkey 1 / 28 Reply), at 16.

[169] Ex. 146 (Starkey 1 / 28 Reply), at 16.

rules require SBC to assume a network configuration employing the most efficient technology in the least-cost manner.

SBC declined to develop IDLC unbundling processes and system, at least in part, on the basis that it has deployed only a small amount of IDLC on a statewide basis.[170] However, the percentage of IDLC appears to be growing, as SBC witness De Luca noted in revised testimony, more than doubling the estimate of the amount of IDLC now in SBC loop plant statewide.[171] Moreover, in some wire centers, the concentration of IDLC facilities can be quite large, representing more than half of all residential customers.[172]

MCI further claims that SBC California's sister company in Ohio performs IDLC unbundling through its "Facilities Modification Policy" and various 271-related agreements at no charge for UNE loops. If SBC agrees to perform IDLC unbundling in a different service territory, MCI argues that it should be willing to do so in California as well.[173]

SBC, however, denies that SBC Ohio agreed to the contract provision to which MCI refers, citing pertinent excerpts from the Public Utilities Commission of Ohio recommended decision of the arbitration panel and from the Ohio interconnection agreement.[174] Upon review of these excerpts, we agree with SBC

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[170] Ex. 146 (Starkey 1 / 28 Reply), at 17.

[171] Revised Direct Testimony of Dennis DeLuca was emailed to parties.

[172] Ex. 146 (Starkey 1 / 28 Reply), at 17.

[173] Ex. 146 (Starkey 1 / 28 Reply), at 17.

[174] SBC Reply Brief at 98-99

that the position SBC is taking in California with respect to IDLC is consistent with the position of SBC Ohio. Thus, MCI's argument is not convincing in claiming that actions in Ohio justify IDLC unbundling in California.

Moreover, MCI has not shown how IDLC loops could be unbundled using currently available technology, or how such unbundling would eliminate the LFO-Out work that is now required. Accordingly, we find no basis to disallow SBC's cost for IDLC loops.

d) Internal Consistency of Estimates

SBC witness Pearsons served an initial cost study on January 7, 2004,[175] with two subsequent revisions.[176] The last revision resulted in a reduction in costs of 20 percent. Pearsons testified that the first revision was to correct the application of "premium" versus "average" labor rates for certain tasks carried on prior to the due date of the hot cut.[177] The second revision was to reflect concerns raised by MCI and AT&T's experts regarding some of the task times in Pearsons' initial study,[178] but also to correct his task time estimates to reflect California-specific numbers rather than the 13-state wide numbers that Pearsons had used in his initial cost study filed on January 7, 2004.[179] Ms. Heki, SBC's LFO-IN expert, testified that the task times in Pearsons' cost study were higher

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[175] Ex. 84C (Pearsons 1 / 7 Direct).

[176] Ex. 86C (Pearsons 1 / 13 Revised Direct); Ex. 87C (Pearsons 2 / 5 Second Revised Direct).

[177] Tr. 2 / 6 / 04, (Pearsons), at 9457-9458.

[178] Tr. 2 / 6 / 04, (Pearsons), at 9458-9461.

[179] Tr. 2 / 6 / 04, (Pearsons), at 9467-9468.

than her expert estimates because Pearsons had used 13-state wide average input numbers.[180]

Pearsons testified that he had removed the 13-state wide average numbers from his cost study during the second revision. MCI claims that discrepancies remain, however, between Pearsons' task time estimates and those of the workgroup experts who provided estimates. MCI claims that Pearsons' estimate of time for the LOC workgroup to perform a coordinated hot cut is 12 minutes, but his estimate for the exact same set of tasks is 14 minutes.[181]

As verified by SBC in its reply brief, however, SBC witness Pearson did in fact use a 12-minute estimate for its LOC task times.[182] Accordingly, we conclude that SBC's LOC task time estimates are internally consistent.

e) Task Time for "External Issues"

AT&T witness Turner proposed to cut in half the cost study time for the LOC to "Resolve internal and external issues (pre-due date)," claiming that since hot cuts are done within the central office, there will only be *internal* issues (*i.e.*, issues internal to the central office), and no *external* issues (*i.e.*, issues relating to outside plant). Ex. 115 (Turner), at 23. SBC argues that Turner has misinterpreted the words "internal" and external" in the cost study. "Internal" refers to issues internal to the LOC, and "external" refers to issues outside the

[180] Tr. 2 / 3 / 04, (Heki), at 8811. Moreover, the Commission has rejected use of non-California-specific data in cost studies. See D.98-12-079, p. 28, rejecting GTE's non-recurring cost studies in part because the embedded data GTE used were not California specific.

[181] Tr. 2 / 3 / 04, (Cusolito), at 8778-8780.

[182] Ex. 88C, Bill of Costs, Lines 8-17; see also SBC Reply Brief, pg. 105

LOC (*i.e.*, involving other SBC departments or the CLEC). With this explanation, SBC contends that Turner's reduction is invalid. We find SBC's explanation reasonable and accept its calculations on this point.

f) Application of Task Times on a Per-Order Basis Rather than Per-Loop Basis

Turner asserts that for six LOC tasks, SBC inappropriately attributed to each individual loop a task time that should apply only to each *order* (so that, for example, the charges would apply only once, rather than twenty times, to an order for twenty loops). Ex. 115 (Turner), at 24. SBC revised its cost study in response to this concern. Specifically, in its revision, SBC now assigns a time of 0.00 minutes to four of the six tasks under the "Additional Resource Driver" column on the Bill of Costs.[183] Thus, SBC now proposes to apply the time for those tasks on an order basis rather than on an individual loop basis, as Turner advocated. For the other two tasks to which Turner referred (*see id*, lines 9 and 17), SBC has reduced the time for loops after the first loop to one half of the time for the first loop (*i.e.*, 0.50 minutes vs. 1.00 minutes). For those two tasks, the LOC Maintenance Administrator does spend time on each loop, but spends twice as much on the first loop as on the remaining loops in the same order.

We find SBC's revisions in response to Turner's criticisms to be conceptually reasonable. However, in comparing the times of those two activities with times of similar activities, we found inconsistencies. In those instances, we have revised SBC's calculations to apply its revised assumptions on

[183] *See* Ex. 88C, lines 8, 10, 11 and 12.

a consistent basis. The applicable cost elements that we have adjusted in this manner are set forth in Appendix 2.

g) Travel Time to Unmanned Offices

AT&T Witness Turner claims that SBC overstated the time for LFO-In technicians to travel to unmanned offices; receive and review service orders; perform cross connects; and perform dial tone and ANI testing and lifts and lays. Turner claims that the LFO-In organization's time estimate for "Travel time to unmanned offices" should be reduced. Ex. 115 (Turner), at 27-28. Turner argues that SBC has provided no support for the labor times associated with travel in its cost studies.

SBC argues that the General Manager of SBC's Northern California LFO for Central Office Operations (Ex. 31 (SBC Panel), at 2) is better qualified to offer an opinion on travel time that is AT&T's witness who offers literally no support for his lower time estimate. In this instance, we conclude that SBC's subject matter expert is better positioned to provide an expert opinion concerning the travel time required to an unmanned SBC central office. We shall accept SBC's estimate of travel times.

h) Allocation of Task Time for Work Orders Unrelated to Hot Cuts

Turner contends that regardless of how long it takes the technician to travel to the CO, the batch hot cut study should reflect only a fraction of that time, because the technician, after arriving at the CO, may perform more that one task. While agreeing that a technician dispatched to an unmanned office may perform work in addition to hot cuts, SBC disputes AT&T's claim that the technician performs an average of four work orders when dispatched to an unmanned central office. Ex. 115 (Turner), at 29.

We accept as reasonable Turner's estimate that a technician performs an average of four work orders per dispatch. Turner relied on his past experience and the experience of peers that have actually managed these types of functions. We also agree with SBC, however, that a technician will not necessarily spend an equal percentage of time on each task. SBC argues that if a technician cuts over, for example, 12 loops, and performs three other discrete tasks at an unmanned CO (for a total of four work orders), the percentage of the technician's travel time that should properly be assigned to the CLEC(s) that ordered the hot cuts would be 80%, not the 25% that Turner would use.[184]

We agree that the weighting of work tasks other than hot cuts should take into account the relative percentage of time spent on each task. Given the lack of specific evidence concerning what percentage of time, on average, a technician actually spends on hot cut tasks relative to other tasks at a given CO dispatch, we shall apply SBC's calculation of an 80% allocation of the technician's time at a given central office as the assumed average attributable to hot cut activities. Consequently, under this assumption the remaining 20% of the technician's time would not apply to hot cuts. Yet, SBC assumed 100% of the technician's time applies to hot cuts in its calculation. Accordingly, we shall adjust SBC's TELRIC calculations to subtract 20% of technician time as being attributable to functions other than hot cuts.

[184] This assumes that the time to cut over a loop is equal to the time to perform each of the other tasks. There is no evidence in the record for any other assumption.

i) Time to Receive and Review Service Orders

SBC's initial cost study allotted two minutes to "receive and review service order" for each loop in the order. In pre-filed testimony (at 29-30), Turner agreed that two minutes was appropriate for the first loop, but contended that only 0.50 minutes should be allotted for each subsequent loop. After consulting with its subject matter experts in this area, SBC reduced from two minutes to one minute the time for loops after the first loop on an order. In analyzing the times to receive and review service orders, we found this task to be similar to tasks in lines 8 and 9. The task in line 8 is to receive and input order onto cut log and includes a time of 1 minute for the initial loop and 0 minutes for additional loops. The task in line 9 is to screen service order and verify facility assignments are correct and is given a time of 1 minute for the initial loop and 0.5 minutes for additional loops. In comparing the three similar tasks, we conclude that if the time to receive and review service orders for an initial loop on an order is 2 minutes, then the time to receive and review service orders for additional loops on an order should be 0.5 minutes.

j) Cross Connect Times

AT&T contends that SBC inappropriately included IDF cross connect costs in its cost studies based on Turner's testimony that the cross-connect times include time to perform cross-connects on IDFs, and that IDFs are not forward looking. Ex. 115 (Turner), at 30-34. Turner believes that SBC assumed that 100% of hot cuts entail a cross connect on an IDF (as well as on the Main Distribution Frame) (*see id.* at 31, lines 12-17). On that basis, Turner proposed to eliminate the IDF cross-connect time by cutting SBC California's cross-connect times in half (*id.* at 34).

SBC denies that it assumed that every hot cut would entail a cross connect at an IDF. Because very few central offices in California have IDFs, SBC's cost study includes little or no time for cross connects on IDFs. *See* Feb. 6, 2004 Tr. at 9479 (Pearsons). SBC argues that because the few offices in California that do have IDFs have them for good reason, whatever minimal IDF-related costs may be included in the cost study are forward-looking. *See id.* at 9479-9480.[185]

We conclude that there is not enough evidence in the record to support either AT&T's or SBC's arguments regarding the cross connect times in SBC's cost study. We note that in a February 5, 2004 correction to the SBC cost study, Pearsons revised the times for cross connects from 8.71 minutes to 6 minutes for the initial driver and from 7.79 minutes to 6 minutes for the additional drivers. At this time, we accept the 6 minutes for the initial and additional drivers. However, in subsequent proceedings to produce finalized hot cut prices, we shall direct further review of this specific task time in order to ensure correct measurements of time for the SBC batch cut process.

k) Time to Perform Dial Tone and ANI Testing and Lift and Lay

Turner also argued that SBC time estimates to complete the lift and lay, ANI testing and dial tone check should be reduced to two minutes to reflect times he has seen in "various nonrecurring cost studies including those of SBC in other jurisdictions." Ex. 115 (Turner), at 34. Turner proposed to reduce from four minutes to two minutes the task time for this item (which appears at line 5 of Ex. 88C), based on his belief as to how long this activity should take. Ex. 115

[185] At the hearing, Pearsons testified that if there were any such costs, they would be "minuscule," but that he "would have to rely on Ms. Heki for that." *Id.* at 9479. MCI did question Heki (*see id.* p. 9491 *et seq.*), but not on that subject.

(Turner), at 34. SBC reduced its time estimate to three minutes based on further consideration by SBC subject matter experts. SBC argues that its subject matter experts' opinion as to how long this task takes should be given more weight than that of Turner.[186]

We conclude that Turner's estimate of two minutes for completion of the three tasks at issue is more reasonable, and shall adopt it. SBC Panel Testimony states that the "lift and lay typically takes less than a minute."[187] AT&T witness Turner testified that the task of performing the dial tone and ANI testing are essentially electronic tests that should take no more than one minute.[188] Thus, taking these statements together, we find it reasonable to conclude that all three tasks could be completed within two minutes. SBC has not explained why an extra minute would be required. Accordingly, we shall reduce SBC's three-minute estimate for these functions down to two minutes, for purposes of computing TELRIC prices.

l) Fallout Rate

AT&T contends that SBC's cost study incorporates high fallout rates. When a local service order does not flow through to service order generation without manual intervention by the LSC, the order is said to "fallout." Turner contends that SBC has failed to incorporate forward-looking flow through

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[186] Turner also claimed that SBC incorrectly included an Additional Resource Driver when the LFO-In closes out an order. Ex. 115 (Turner), at 35. SBC yielded to Turner on that point. *See* Ex. 88C, entry for "Close Order in Frame Work Station – due date."

[187] Ex. 31, SBC BHC Panel Testimony at 10-11

[188] Ex. 115 (Turner) at 35:1-2

probabilities into the BHC Cost Study, and takes issue with the percentage figure cited by SBC. SBC explains that this percentage figure is for the *LOC*,[189] and does not pertain to the LSC or the ordering process at all, but to the LOC and provisioning.

The FCC defines flow-through as the "percentage of orders that an incumbent LEC processes electronically through its gateway and accepts into its back office systems without manual intervention (i.e., without additional human intervention once the order is submitted into the system)." Performance Measures Proposed Rulemaking, 13 FCC Rcd at 12,849, ¶ 71

MCI argues that the Commission has already determined that non-recurring costs for SBC should be set based on an expectation that orders will flow through on an automated basis, without the need for manual intervention, 96 percent of the time (*i.e.*, a four percent fallout rate).[190] MCI proposes that the same assumption should be applied to the non-recurring costs and prices for SBC's batch hot cut processes.

SBC argues that the FCC has indicated that fallout is an attribute of the OSS *ordering* function, but does *not* refer to the OSS *provisioning* function. The FCC thus specifies that flow-through does not apply to provisioning:

> *Order Flow Through applies solely to the OSS ordering function, not the OSS provisioning function*. In other words, Order Flow Through measures only how the competing carrier's order is transmitted to the incumbent's back office ordering systems,

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189 *See* Ex. 88C, line 10, Activity Occurrence Probability.

190 *See* D.98-12-079 (Dec. 17, 1998), at 72-75. MCI asks that the Commission take administrative notice of its non-recurring cost order.

> not how the incumbent ultimately completes that order. (Performance Measures Proposed Rulemaking, 13 FCC Rcd at 12,849, ¶ 71 (emphasis added).)

Turner extrapolates the concepts of flow-through and fallout into the provisioning of hot cuts, contending that fallout rates applicable in the LSC should also apply when the order is being provisioned at the LOC. Thus, all the sources for the fallout figures Turner relies on are OSS *ordering* functions. Since Turner relies exclusively on percentages that pertain to the LSC, the fallout percentage he advocates would not apply to the LOC.

Besides the fact that the fallout rate that applies in the LSC cannot appropriately be extended to the LOC, SBC argues that the LOC occurrence probability percentages in the cost study are appropriate and forward looking. They reflect internal mechanization efforts that are currently underway that will reduce manual intervention of pre-due date provisioning activities as well as due date activities required for a hot cut conversion. SBC provides an explanation in its reply brief as to why the specific LOC activities identified by Turner cannot be performed electronically 98% of the time.[191] We agree with SBC's explanation and conclude that AT&T and MCI's argument regarding high fallout rates is unfounded.

m) Removal of Overtime and Shift Differentials

In its cost testimony in Ex. 84C, SBC states that the labor rate used for base hours was calculated by removing overtime and shift differentials from the average labor rate. In our review of SBC's underlying TELRIC calculations,

[191] SBC Reply Brief, pages 113-115

however, we found instances where it failed to remove overtime and shift differentials from the average labor rate. We have made the appropriate corrections to remove the effect of overtime and shift differentials as reflected in the TELRIC prices derived in Appendix 1.

n) Reduction of Time Estimates to Reflect Consolidation of Tasks

In our review of SBC's costs, we concluded that certain tasks identified as requiring separate time completion intervals could be consolidated into more compressed time intervals. Specifically, we conclude that the task (on line 15 of the TELRIC table): "time to call the CLEC to advise cut complete-due date" is similar to the task on line 13: "Receive call from CLEC and record start time and call LFO to begin cut- due date." We thus conclude that the "initial minutes" assigned to the line 15 task are not necessary. Instead, we include the line 15 task within the time already allocated for the task on line 14. "Receive call from LFO to advise cut complete and records stop time – due date." A similar adjustment is made for other entries in the costing calculation worksheet where those same tasks apply to other BHC process categories, as identified in Appendix 2.

4. Conclusion

Based upon our review of SBC's proposed rates, and consideration of the analysis done by AT&T and MCI, we conclude that the rates proposed by SBC for batch hot cuts are not TELRIC compliant and fail to substantially reduce existing hot cut rates to incorporate efficiencies of a batch process. While we do not accept all of the adjustments proposed by MCI and AT&T, we still conclude that certain adjustments to SBC's proposed costs are necessary in order to make it TELRIC-compliant.

Without the necessary adjustments, CLECs would bear a substantially increased economic burden because of the non-recurring charges they must pay for hot cuts compared to rates they currently pay to migrate customers to their network via UNE-P. These increased charges would cause a "sticker shock" that would make the migration far from seamless.[192]

Although MCI has proposed a separate set of prices for a "cut-to-EEL' migration scenario, we do not adopt any prices for that migration scenario at this time. As discussed above in reference to hot cut migration scenarios, we have concluded that further development is needed before such a scenario could be implemented. Thus, it is premature to adopt prices for this scenario at this point.

B. Verizon's Proposed TELRIC Pricing for Hot Cut Processes

1. Position of Verizon

Verizon presented its TELRIC pricing proposal in the testimony of Ann Dean[193] covering three of Verizon's different hot cut options: (1) the "Basic" hot cut process utilizing the WPTS[194] ; (2) the large job or "Project" process and (3) the BHC process. In preparing its cost study, Verizon employed the same nonrecurring cost methodology as presented in its cost filing in R.93-04-003 / I.93-04-002. Verizon asserts that its costs are compliant with D.03-03-033, and thus proposes the following structure for the three hot cut options:

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[192] Ex. 143 (Lichtenberg / Starkey 1 / 15 Reply), at 11.

[193] Ex. 28C Testimony of Ann Dean and Ex. 30 C –Verizon's Proprietary Cost Study

[194] Verizon does not propose rates for Verizon's basic, non-WPTS coordinated conversion and hot cut coordinated conversion options which are being litigated in R. 93-04-003 / I.93-04-002.

1) Hot Cut Ordering Charge: This charge is intended to recover the costs of processing and provisioning a hot cut order, broken down into "manual, semi-mechanized, and mechanized" categories. Ordering charges include activities relating to wiring and pre-wiring, coordination, and related management of the hot cut. Separate charges are assessed for the first versus additional units.

2) WPTS Coordination Expedite Charge: This charge applies when a CLEC requests service earlier than the next standard due date.

3) IDLC Surcharges: These charges cover costs due to substituting facilities before a cut can be made, primarily where the loop is provisioned using IDLC technology.

Verizon's proposed charges are summarized below:

Verizon's Proposed Hot Cut Price Structure

Description		Ordering Manual	Ordering Semi-Mechanized	Ordering Mechanized
Hot Cut Coordinated Conversions				
2-Wire WPTS Coordination Hot Cut				
"Basic"	Initial	$89.06	$86.04	$69.31
"Basic"	Additional	$58.35	$58.35	$58.35
4-Wire WPTS Coordination Hot Cut				
"Basic"	Initial	$123.55	$120.52	$101.90
"Basic"	Additional	$90.94	$90.94	$90.94
Large Job (Project)				
	Initial	$81.75	$78.72	$37.59
	Additional	$26.63	$26.63	$26.63
Batch Hot Cut				
	Initial	$58.30	$55.28	$24.37
	Additional	$22.75	$22.75	$22.75
WPTS Coordination Expedite		$18.99	$18.99	$18.99
IDLC Surcharge				
	Initial	$150.49	$150.49	$150.49
	Additional	$131.00	$131.00	$131.00

Verizon argues that its cost study is consistent with TELRIC rules, the Commission's Consensus Costing Principles, and the Commission's nonrecurring rate structure. Verizon characterizes its study as a bottoms-up analysis that measures each cost arising from servicing individual CLEC requests for hot cuts. Verizon first identified applicable work activities and durations. For Regional CLEC Coordination Center (RCCC) and CO Frame organizations, Verizon determined work durations through surveys of Verizon employees based on a self-reported time and motion study. For Field Dispatch activities,

Verizon used the sub-loop drive time study submitted in the UNE case (R.03-04-003 / I.93-04-002). For National Marketing Center (NMC) activities, Verizon developed costs using historical data from system generated reports. For Recent Change Memory Administration Center (RCMAC) activities, Verizon used approved work times from the N.Y. State PSC in C.98-C-1357.

Verizon then applied an "occurrence factor" to the work times to reflect the percentage of cases where the activity is currently required to determine average time required for the activity across all orders. Verizon also applied a "Forward-Looking Adjustment Factor" based on consultation with subject matter experts.

To convert the work times into a forward looking cost, Verizon multiplied the forward looking work time for each activity by the hourly labor cost per worker category, trended forward three years at a 4% annual escalation rate. Verizon finally applied a common overhead and gross revenue loading to the labor cost for each activity to reflect overheads, uncollectibles, and assessments. As a placeholder, Verizon utilized the common overhead loading factor that it proposed in its November 3, 2003 filing in R.93-04-003 / I.93-04-002.

2. Response of MCI and AT&T to Verizon Cost Study

MCI argues that *Verizon's* batch hot cut cost analysis suffers from many of the same conceptual problems as does SBC's. MCI argues that Verizon's hot cut costs and prices do not incorporate the mechanization that is technically feasible and achievable through deployment of electronic unbundling of IDLC and automated main frame technology. Thus, MCI claims that Verizon's batch hot cut pricing proposal does *not* comply with the required TELRIC standard, producing exaggerated cost estimates for hot cuts, relative to the governing cost

standard and, notably, prices higher than the UNE-P charges CLECs pay today in California to migrate customers.[195]

MCI did not propose specific prices based on the Verizon hot cut cost model. MCI claims it was unable to do so given the complexity of Verizon's model and Verizon's failure to produce supporting data on a timely basis. MCI requests that the Commission instead adopt its conceptual adjustments proposed for Verizon and compel Verizon to produce a revised model recalculated consistent with the Commission's determinations. AT&T, however, was able to provide specific adjustments to Verizon's cost study and recalculated rates along the same conceptual lines advocated by MCI. MCI generally believes AT&T's analysis produces rate alternatives compliant with the TELRIC standard.[196]

MCI claims that Verizon's cost studies and rates suffer from both methodological and structural problems that systematically exaggerate rates relative to what the FCC's TELRIC methodology would produce. Verizon's cost studies rely upon estimates related to the time required to complete certain tasks undertaken by its technicians and other provisioning personnel. For each activity, Verizon's NRC model estimates the expected forward-looking time as a product of three components: activity durations, occurrence factor and a forward-looking adjustment factor (FLAF). These three components are estimated through three separate processes described by Verizon, yet little if any information validating Verizon's assumptions was available in time for MCI to analyze it.

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[195] Ex. 146 (Starkey 1 / 28 Reply), at 3-12.

[196] Ex. 146 (Starkey 1 / 28 Reply), at 2-3.

AT&T likewise claims that Verizon's costs are not TELRIC-compliant. AT&T submitted its analysis through the testimony of Richard Walsh who testified that the appropriate cost for a hot cut in a forward-looking environment should be in the range of $5.[197] AT&T argues that Verizon should be required to resubmit its cost study on a TELRIC-compliant basis. In the alternative, AT&T recommends that the Commission adopt the costs and rates proposed by AT&T witness Walsh, which are based on SBC's study, modified to reflect revisions that AT&T considers more forward looking.

3. Discussion

While we do not find that all of the adjustments to Verizon's batch cut process proposed by MCI and AT&T have been justified, parties' analysis of Verizon's hot cut costs was not sufficiently completed given the complexity of the analysis and the ambitious schedule under the nine-month proceeding. Therefore, we do not find the record sufficient at this point to adopt final prices for Verizon's hot cut processes. We conclude that before specific batch cut prices are approved for Verizon, further proceedings are necessary to compare the relative methodologies between SBC and Verizon, and to understand the basis for material disparities in cost treatment. We shall direct the ALJ to issue a procedural ruling to this effect. In the event that separate TELRIC-complaint prices cannot be approved for Verizon by the time that its batch cut processes are to be implemented, we shall direct that SBC's prices be used as a surrogate for Verizon.

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[197] Ex 159 (Walsh 1 / 28 Reply) at 2:12-16

We address below our disposition of specific issues that were raised by parties concerning Verizon's cost calculations.

a) Verizon Labor Rates

Verizon asserts that its labor rates are TELRIC-compliant. Verizon derived its labor rate by taking the actual 2002 wage rates for employees who perform hot cuts and dividing the 2002 wage expense by the number of productive hours. Verizon then added to the basic rate the cost of employee benefits, premium time, payroll taxes, and paid absences, as well as tools, motor vehicles, clerical support, and supervision of reporting personnel. Verizon then applied a 1.04% inflation factor, to trend the data through 2005, the assumed period during which the rates would be in effect.

AT&T presented the testimony of Robert Flappan who conducted an analysis of the hot cut labor rates proposed by Verizon. Flappan claims that Verizon's labor rates are not TELRIC compliant, but are based on embedded costs. Flappan summarizes Verizon's proposed fully loaded hot cut labor rates for six categories of operations in Table 1 of his testimony. In Tables 2 and 3, Flappan summarizes the comparison of his proposed TELRIC-adjusted labor rates versus those proposed by Verizon.

In Ex. 161C, Table 12, Flappan summarized AT&T's proposed adjustments to Verizon's labor rate to reflect a TELRIC rather than embedded cost basis.[198]

[198] Attachment RPF-2 "Verizon CA TRO Hot cut Labor rates Restate.xls" is attached to Flappan's Ex. 161C in support of his calculations developing proposed TELRIC labor rates for Verizon. The supporting worksheets in Excel workbook format are summarized on page 36-37 of his testimony.

Flappan claims that the labor rate shown in the sixth column of his table represent efficient labor rates that would be achievable by a new entrant.

Flappan reduces Verizon's labor rates to exclude shared and common costs, which are not properly part of a TELRIC labor rate study. Flappan also claims that Verizon's costs are merely based on the historical experience of one firm, namely Verizon. Flappan proposes various adjustments that he claims are necessary to bring Verizon's labor rates into compliance with TELRIC.

Verizon disputes Flappan's claim that its labor rates are not TELRIC-compliant merely because they reflect recorded costs. Verizon asserts that it has presented the costs that it will actually incur going forward, and that its labor rates reflect the real costs of a large company with a unionized work force. Verizon disputes Flappan's claim that it has not reflected productivity gains. Verizon reflects productivity through its application of FLAF to the expected time needed to perform each hot cut activity. Adjusting both the labor rate and work time for productivity would result in double counting. Verizon criticizes Flappan's figures are being merely hypothetical, and based on Bureau of Labor Statistics data, resulting in rates as low as 30% below what Verizon will actually pay its workforce.

We agree with Verizon that TELRIC-based rates can be based on actual costs provided that those costs are otherwise forward-looking in nature. Generally, we find no basis to disallow costs that are Verizon-specific merely because they are higher than costs of other firms. We agree with AT&T, however, that shared and common costs should be excluded from base labor rates.

b) Verizon's Estimated Work Activity Durations

Verizon's cost studies identify the work steps believed to be required to accomplish the hot cut process encompassed by its various hot cut proposals.[199] Verizon then estimates the time required by its technical personnel for each work step. The work steps were identified by subject matter experts, while activity durations were obtained from a number of sources including surveys, analyses in other states or reports generated by Verizon's internal systems.

MCI's witness provided an examination of the total forward-looking times for an individual initial 2-wire hot cut contained in Verizon's cost study.[200] The most time-intensive activities reflected in Verizon's cost study are associated with Verizon's CO Frame, NMC and RCCC organizations. While both the CO Frame and RCCC activities (representing the majority of work time captured in Verizon's cost study) take place in California, many of the time estimates and all occurrence factors come from sources other than California specific data.

Verizon did not present documentation specific to its survey studies supporting many of its duration estimates, until late in this proceeding, after the time when MCI's witness could have used this information in his analysis.[201] The underlying databases allow the parties to view the sample sizes used by Verizon, *i.e.*, how many responses were used to arrive at each time estimate. Likewise, the survey forms show whether the format or wording used might have biased the

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[199] Ex. 28 (Dean 1 / 7 Direct) at 11, 14 and 15.

[200] Ex. 146 (Starkey 1 / 28 Reply), at 30-31.

[201] Hearing Tr. (Harrelson), Feb. 27, 2004 at 10830-10831. Despite AT&T's February 2 record request for these survey forms, Verizon did not produce them until February 25, two days before the close of hearings.

responses or prompted employees to overestimate or underestimate activity durations.[202] The survey instructions and questionnaires used in California were virtually the same in substance as those used by Verizon in New York and Virginia. This survey process was reviewed by the FCC in the proceedings leading to its *Virginia Arbitration Order.*[203]

MCI argues that survey responses are subjective measures, and therefore, contain a potential source of bias, such as here, where respondents had several incentives to overestimate work times, and no serious incentives to underestimate them. Moreover, Verizon did not provide a proper statistical validation of the results. Specifically, Verizon did not show that its sample of responses in the study properly represents the "population," or durations of typical hot cut activities. In fact, for the majority of activities and sample sizes were less than what is considered to be sufficient for statistical analysis.[204]

We agree that MCI has raised valid concerns regarding the reliability of Verizon's estimated work activity durations. We do not believe a sufficient basis exists for approval of the durations assumed by Verizon underlying its cost calculations. We direct that further work needs to be done to verify work durations before Verizon's costs can be finalized and approved.

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[202] Ex. 146 (Starkey 1 / 28 Reply), at 31-32.

[203] *Memorandum Opinion and Order*, (*Virginia Arbitration Order*) CC Docket Nos. 00-218 and 00-251 (rel. August 29, 2003).

[204] Ex. 146 (Starkey 1 / 28 Reply), at 33.

XI. Performance Measures for Batch Hot Cut (47 C.F.R. § 51.319(d)(2)(ii)(A)(2))

A. Background

The TRO states that in order to ensure that the ILECs' hot cut processes are being achieved, state commissions may establish performance measures to track the quality of provisioning, maintenance and repair of loops included in a batch hot cut process.[205] While the TRO does not specifically require performance measurements with respect to batch hot cut migrations[206], the TRO does recognize the value of performance measures to track ILEC performance of their new batch hot cut processes. Performance measurements have been a contested topic in this proceeding[207]. Moreover, the Commission has an open proceeding (R.97-10-016) that requires measurements and incentive mechanisms for operations and support systems (OSS), including batch hot cuts, in order to ensure that ILECs OSS do not present barriers to CLECs' ability to compete.

B. Performance Measures Proposed For SBC Hot Cut Processes

The processes by which SBC completes both the CHC[208] and the non-coordinated FDT process, are subject to certain performance measures, as defined in the California OSS OII Performance Measurement Joint Partial

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205 *TRO*, ¶ 489.

206 TRO ¶ 489.

207 Exhibits 39, 143, and 154C.

208 The SBC Coordinated Hot Cut is also known as a To Be Called Cut. For the sake of uniformity, SBC refers to the process as a Coordinated Hot Cut or CHC.

Settlement Agreement (the JPSA),[209] for assessing the timeliness of loop conversions for CLECs.

Two pre-order queries are included as part of SBC's batch cut proposal. The IDLC identification tool allows the CLEC to check the migrating loop for the presence of IDLC facilities. A second new pre-order function, the Scheduler / Reservation tool, allows the CLEC to reserve a date and time for the loop migration activity. SBC agrees to diagnostically track the IDLC pre-check and reservation queries in Measure 1 to ensure the ongoing timeliness of these pre-order transactions.

Loop conversion completions where the CLEC has requested a scheduled date and time for migration are tracked by performance measures 9 and 9A. Performance Measure 9 (Coordinated Customer Conversion as a Percent On Time) tracks the percentage of CHC conversions completed on time. On time performance for this measure is defined as completion "by the committed time," which, for the purposes of this measure, means "within one hour of the committed order due time."[210] The approved standard for PM 9 for unbundled

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209 The JPSA is the product of the ongoing Commission Rulemaking and Investigation (R. 97-10-016 / I. 97-10-017) into Monitoring Performance of Operations Support Systems Investigation (Oct. 9, 1997) (OSS OII / OIR proceeding).
On July 10, 2003, the Commission approved the most recent version of the JPSA in D.03-07-035..

210 The "committed order due time" for PM 9 is established by determining the start time of the cut-over and adding the required cut-over interval to that time. The length of time required to complete a particular CHC cut-over depends on the size and complexity of the order, so the interval for coordinated cut-overs tracked in this measure varies.

loop conversions is a benchmark of 95% on time.[211] Performance Measure 9A (Frame Due Time Conversions as a Percentage On Time) tracks the percentage of non-coordinated FDT conversion orders of up to19 basic UNE loops (with or without LNP), up to 19 DSL capable loops, and up to 99 telephone numbers (transitioned to the CLEC through the LNP process). Although SBC does not propose to modify these requirements, it has proposed separate diagnostic reporting in Measure 9 and Measure 9A of the various batch cut options to provide specific visibility to the operation of its BHC options.[212] SBC also recommends that the existing benchmark standards apply and that existing hot cut submeasures remain subject to incentive payments as defined in SBC's Performance Incentives Plan.

At the request of certain CLEC parties, the ALJ scheduled a collaborative workshop for parties to seek consensus on a comprehensive set of performance measure revisions that should apply to the hot cut processes of the ILECs. The workshop was held on March 22, 2004 with a subsequent series of conference calls. No substantive consensus was reached.

Even though participants did not reached agreement on many proposed changes to the measures, they have discussed and agreed upon some clarifying language in the measures' descriptions, methods of calculation and business rules. While these changes are not specifically required for the batch cutover

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[211] The standard for standalone LNP conversions is 98% on time.

[212] For Measure 9, loop conversions currently are tracked in the submeasure identified as "Coordinated Conversions (excluding LNP)." For Measure 9A, loop conversions are tracked in the following submeasures: "Basic Loops with LNP," "Basic Loops without LNP," "Standalone LNP" and "DSL-capable loops."

options, parties agreed they were positive improvements to the design of the measures, and are included in Attachment 6 of SBC's opening brief and Attachment 4 of SBC's reply brief.

SBC recommends that any remaining issues concerning performance measures be presented to the JPSA participants. SBC also recommends that any such issues be given priority treatment and that they be resolved within 60 days of the commencement of the next JPSA review.

To the extent systems or process changes are implemented, SBC intends to perform its standard internal testing before commercial deployment, and anticipates that the batch process will be subject to performance measures that will ensure that SBC implements the process effectively. FCC Rule 319(d)(2)(ii)(A)(3) provides that a state commission "may require that the incumbent LEC comply with an average completion interval metric for provision of high volumes of loops." Until a new batch cut process is more fully defined, SBC argues that it is premature to determine whether a new "average completion interval" performance measure will be needed, but believes that modifications of the current performance measure applicable to the existing CHC hot cut process reflecting the new batch volumes and intervals will be sufficient.

The current Measure 9 assesses the timeliness with which SBC completes service conversions to CLECs that use the CHC process. Data are disaggregated by reference to Coordinated Conversions (excludes LNP) and LNP Conversions. SBC argues that they have been an effective means for measuring timeliness of order completion and the quality of the loops provisioned.

SBC recommends that all batch hot cut transactions be subject to performance incentives under the existing relevant performance measures and under the terms of the Performance Incentives Plan adopted by the Commission

in 2002.[213] SBC argues that the incentives plan is the result of several years of negotiation and litigation between the parties and is designed to work in concert with the performance measures defined in the California JPSA. The Commission adopted the plan to ensure that SBC would provide nondiscriminatory OSS access to CLECs, and to ensure that SBC would not backslide on such commitments after receiving Section 271 relief to provide long distance.

C. Performance Measures Proposed For Verizon Batch Hot Cut Processes

Verizon believes that adequate performance measures are provided by only a limited number of modifications. Verizon proposes to modify current measure 9 (coordinated conversions: hot cut) to recognize three categories of hot cuts and proposes certain changes to the "description" portion of the measure, specifically to recognize that IDLC loops are only covered by the Basic and Large Job processes. Because IDLC loops are already covered in the current hot cut process, Verizon believes that there is no need to have separate measurement and reporting of IDLC loops.

Verizon also proposes adding new products to measure 17 (percent troubles within 7 days) and measure 42 (percentage of time interface available). Verizon argues that the CLECs proposal for hundreds of additional metrics are unworkable, unnecessary, and uneconomic.

Verizon does agree to certain additional modifications that were developed through collaborative discussions with MCI. Specifically, MCI and Verizon reached consensus that wire center, bi-monthly reporting by Verizon is

[213] D.02-03-023 and D.02-09-050.

not required for Performance Measure 9, recognizing that Verizon makes available wire center level reports through its new WPTS.

As part of this agreement, Verizon committed that the WPTS can provide the following capabilities, and that Verizon will support such capabilities indefinitely: (1) the ability for CLECs to query the status of all hot cuts for a particular Common Language Location Identifier (CLLI) code; (2) spreadsheet hot cut status reports that CLECs can print out; (3) access to historical data in WPTS for 100 days so near-term historical reports can be pulled by the CLEC; and (4) availability of "flat files" with hot cut data that can easily be downloaded to Excel spreadsheets so that data can be retained beyond 100 days by CLECs; and (5) the "flat files" must, at a minimum, include all the data needed to recalculate the metrics covering unbundled loop provisioning including the three types of hot cuts offered by Verizon. Should Verizon withdraw support for any of these capabilities at any time in the future, MCI reserves the right to request reports by wire center and on a semi-monthly basis.

Further, MCI agreed to withdraw various proposed performance measures in return for a robust measurement under PM 17. Verizon was not willing to agree to MCI's 2% benchmark, but believes that the standard in PM 17 should remain at parity. MCI claims that parity is not sufficient because Verizon doesn't provision hot cuts for itself, thus there is no reasonable retail analog to hot cuts for CLECs. Further, the 2% benchmark is applicable to Verizon's hot cuts in New York and to Bell South in Florida.

D. Performance Measures Proposed by the CLECs

Both AT&T and MCI argue that a comprehensive set of performance measures must be adopted to ensure that both SBC's and Verizon's hot cut

processes are performing adequately throughout the hot cut process – from ordering through provisioning and maintenance.

MCI developed a set of proposed performance measures for the ILECs' proposed hot cut processes through the workshop process.[214] MCI modified certain existing performance measures that have already been approved by the Commission as part of the ILEC / CLEC JPSA, and proposed new performance measures to track certain aspects of the ILECs' hot cut processes. MCI believes that its proposed performance measures provide an adequate tool for the carriers and the Commission to track and correct (if necessary) the ILECs' performance through the imposition of penalties. MCI characterizes its proposal as tentative, to the extent that the Commission has not yet finalized approval of the ILECs' proposed hot cut processes.[215]

MCI's proposal for performance measures was set forth in Attachment 4 of its Opening Brief, with an updated revision in its reply brief. MCI recommends that modifications to existing performance measures be implemented by SBC within 90-120 days of the Commission's order in the *TRO* proceeding. For new measures, MCI recommends that SBC have the processes implemented within 150 days of the Commission's order, with the processes subject to testing at commercial volumes for some period of time. MCI proposes that performance measures track all ILEC activities, systems or processes that are new to, or

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[214] MCI's proposed performance measures were submitted as Attachment 4 to its brief.

[215] None of MCI's agreements with SBC affect any of MCI's proposals for the proper standard, interval, level of disaggregation, frequency of data, geographic scope of data (*i.e.*, wire center versus statewide).

changed by, the high volume of batch hot cuts arising if CLECs lose access to unbundled switching.

MCI argues that these performance measures should, at a minimum: (1) reflect the claims made by the ILECs regarding performance of batch hot cut processes; (2) track each of the hot cut processes on a disaggregated basis; (3) track performance for all types of migrations between and among carriers, including customer loops with voice plus data; (4) require sufficient frequency of data reporting to enable the parties to identify and measure any difficulties in the ILECs' hot cut process at an early stage; and (5) report on a sufficiently granular basis (*e.g.*, wire center) so that carriers and the Commission can determine if any difficulties with the ILECs' hot cut processes are concentrated in certain locations or widespread.[216]

MCI argues that data reporting using the new levels of disaggregation and performance standards will also provide the correct incentives to SBC to resolve problems more timely. MCI also proposes that many of the measure changes be eligible for performance incentives to encourage SBC to come into compliance. MCI argues that simply modifying performance measures that track the wiring work related to hot cuts is inadequate, and that the JPSA should be modified to track the entire hot cut process. MCI set forth its proposed performance measures applicable to Verizon in Attachment 6 of its reply brief, reflecting agreements that MCI reached through discussions with Verizon subsequent to the March 22, 2004 collaborative, as outlined above.

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[216] MCI Opening Brief 294-309; TRO, ¶ 489; MCI statements at March 22, 2004 performance measure collaborative.

AT&T participated in the batch cut performance metrics workshop on March 22, 2004, and in the first two calls thereafter. AT&T worked with other CLECs to attempt to reach agreement on performance measures. AT&T argues, however, that it is not possible to design performance measures for a process that has not yet been defined. AT&T proposes that once the batch cut processes are defined for SBC, the parties and Commission should work collaboratively to put performance measures into place as quickly as possible. AT&T proposes that the Performance Measure Collaborative continue with this proceeding and that Verizon not be given final approval of its BHC process until agreement is reached and Commission approval and implementation is completed concerning performance measures and incentives for Verizon's BHC process.

E. Discussion

We recognize that appropriate performance metrics are an important feature to evaluate whether SBC's and Verizon's hot cut processes are effective in meeting their intended purpose of providing a seamless, efficient, low cost means of cutting over customers from one switch to another in an environment where UNE-P is not available. Performance measures are necessary as an early warning system enabling CLECs to detect and ask ILECs to immediately correct any problems that arise throughout the end-to-end hot cut process. Performance measures provide an indication as to whether the ILECs' systems are ble to correctly schedule and perform the actual work for the hot cut within a timely, efficient manner. Performance measures must be reported on a granular enough basis to allow CLECs to determine if there are particular central offices for which ILEC hot cut performance is deficient.

Given the highly technical nature of the performance measures, we believe that collaborative workshops should be used as at least the first step in

developing appropriate measures. Although a collaborative workshop was held, full consensus was not reached concerning the appropriate set of measures to be applied in connection with hot cut processes to be approved in this proceeding. Continued consensus building is necessary before a comprehensive set of performance measures can be finalized applicable to the ILECs' hot cut processes. While we shall continue to coordinate with the JPSA process in R.97-10-016 / I.97-10-017, we shall require that the instant proceeding continue to be used for making ultimate determinations concerning performance measures and their adequacy as a basis to warrant approval of the proposed batch cut processes.

As a starting point, we approve the performance measure modifications in those areas to the extent agreement has been reached among participants. Specifically, we approve the clarifying language in the measures' descriptions, methods of calculation and business rules to which parties agreed, as summarized in Attachment 6 of SBC's opening brief. We also approve the proposed performance measure modifications offered by Verizon including those that were mutually agreed to between MCI and Verizon, as outlined above. Verizon shall remain responsible for the commitments to which it agreed concerning WPTS capabilities as part of the package of performance measures.

At this time, we shall not adopt the additional modifications proposed by MCI where no consensus was reached. We conclude that MCI has not justified as necessary all of its additional performance measures, particularly in view of the potential cost and complexity involved. On the other hand, we do not believe that a complete analysis of all the proposed performance measures has been completed, particularly in view of the ambitious schedule for this proceeding. Moreover, because parties did not know what final form the ILECs

proposed processes would take, it was not possible to completely assess what performance measure revisions may be warranted.

We therefore direct the ALJ to schedule further workshop collaboratives for participants to consider whether additional performance metrics may be warranted for SBC and Verizon, taking into account the hot cut requirements that are adopted pursuant to this order that may not have been anticipated during earlier workshops. Also, to the extent that MCI or other parties believe that any additional performance measures are warranted, we shall require justification that such measures are necessary and cost-effective before approving them.

XII. Batch Hot Cut Testing Requirements (47 C.F.R. § 51.319(d)(2)(ii)(A)(2))

A. Parties' Positions

SBC argues that because there are so few changes to the hot cut migration process, existing internal testing procedures and the Change Management Processes are adequate to support the Commission's evaluation of the new proposed batch cut process without third party testing. SBC states that performance data for all such orders will be tracked and reported in the performance measures that currently assess pre-ordering, ordering, provisioning and system update activities for the UNE loop product. The data, however, should not be disaggregated into separate submeasures, with a few limited exceptions SBC claims that it should not be required to conduct third party testing on any of the systems or process changes it is proposing for its batch hot cut process.[217] Rather, SBC urges the Commission to adopt a "Managed

[217] SBC Opening Brief, at 75.

Introduction Plan," which SBC describes as a process for cooperative monitoring of its new batch hot cut process.[218]

Verizon opposes "volume testing" requirements as part of an approved BHC process, and interprets the *TRO* not to contemplate volume testing of an ILEC's batch hot cut processes.[219] Verizon does not believe the Commission has the option of delaying approval of the process while volume testing takes place. *See* 47 C.F.R. § 51.319(d)(2)(ii).

Verizon also claims that hot cut volume testing would be costly, difficult to manage and coordinate, and ultimately of minimal practical benefit either to Verizon, the CLECs, or the Commission. Verizon believes a test would be most reliable and effective when the testing environment is as close to "real life" as possible and the test participants do not know that the test is being conducted. Verizon, however, does intend to conduct a trial of the one step of the BHC process that will be relatively new, that is, its capability to activate the line ports on behalf of the CLECs.

Verizon expresses confidence that given the experience gained during the trial period and the scrutiny that is being given to the process in various state proceedings, all important aspects of the process will work properly. Furthermore, Verizon agrees to make ongoing modifications to the BHC process that may be needed.

MCI argues that testing should be done at commercial volumes for a period after the ILECs' proposed batch hot cut processes have been implemented

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[218] SBC Opening Brief, at 75, 125, 135-136.

[219] *See* Verizon Supplemental Panel Testimony on Batch Hot Cuts at Part III.

and operational,[220] and that the review of proposed batch hot cut process should not be left solely to the ILEC's internal testing procedures or the change management process.

AT&T likewise argues that the ILECs have not provided proof that its batch hot cut process is scalable without some form of testing. AT&T proposes that, as a prerequisite to approval of ILECs' batch cut processes, the Commission require testing of the process and a report on the results of such testing.[221] AT&T agrees, however, that alternatives to third-party testing might be adequate, but proposes that each ILEC submit to the Commission its own plan for testing its process. AT&T witness Falcone suggests, for example, that Verizon could test the migration of a group of its own customers from a direct connection of the customer's line to the Verizon switch over to another Verizon switch connected via collocated transport equipment located in the original central office, with a report on the results.[222]

SBC suggested use of a "Managed Introduction Plan" for the first time in its Opening Brief, and provided only a broad description of it.[223] As described by SBC, the purpose of the MIP would be to closely monitor early batch hot cut commercial use and to quickly react to any implementation issues. The MIP

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[220] MCI Opening Brief, at 289-293 (citing *TRO,* ¶ 423, 459, 460, 464 n. 1435, 466-467, 469, 471, 489, 562 ; Ex. 143, (Lichtenberg / Starkey 1 / 15 Reply), at 5-6, 58-60); MCI statements at March 22, 2004 performance measure collaborative.

[221] Ex. 154C, Van de Water Testimony, page 24

[222] Ex. 155C, Falcone Testimony, 1 / 15 / 04, Attachment RVF-3, pg. 72-73

[223] SBC Opening Brief, at 135-136.

would be jointly developed by SBC and CLECs, and performed by teams consisting of SBC and CLEC representatives. SBC's representatives would be assigned from the LSC, LOC, LFO-In and OSS organizations. These teams would be responsible for closely monitoring the progress of early commercial use of the batch hot cut option, and working through any issues that might arise during early commercial use to develop corrective action plans and implement any necessary process changes. SBC also proposes that the team furnish the Commission with monthly reports describing any batch hot cut problems detected, explaining the cause; identifying steps taken or proposed to achieve resolution; and reporting the status of the corrective action and the results to date.

Other parties had no opportunity to inquire about details of SBC's plan, and were unable to comment on, or to test the sufficiency of SBC's proposal through cross examination. MCI argues it would thus be legal error for the Commission to rely on SBC's Managed Introduction Plan under such circumstances. MCI proposes that SBC, as a precondition for approval of its batch hot cut process, be required to submit a detailed technical plan for third party testing of its batch hot cut process at commercial volumes. If SBC wants the Commission to consider its Managed Introduction Plan, MCI proposes that SBC submit the details of that plan for consideration at that time.

B. Discussion

Given the critical importance of a successful hot cut process to providing a seamless migration between service providers and in view of the potential risks of problems in completing necessary hot cut volumes in a timely and efficient manner as outlined above, we conclude that some process is warranted to provide validation that the ILECs' processes are working as intended. We

recognize that a balance is needed. Excessive and unnecessary testing would be inefficient and lead to added costs that would not be conducive to a competitive marketplace. On the other hand, without any means of validating new hot cut processes to ensure that they are working as intended, we would not be meeting our responsibility to implement hot cut processes that provide for a seamless migration between service providers.

Parties' differences on the issue of testing narrowed somewhat as the proceeding progressed. SBC's suggestion for a MIP indicates some positive movement in the direction of consensus on a way to provide feedback and validation that hot cut processes are working as intended. Because SBC's proposal was received after the conclusion of hearings, however, there was no opportunity to develop a complete record on the potential merits of the proposal and its relationship to other proposals for testing. We therefore direct the ALJ to provide opportunity for parties to be heard concerning the merits of SBC's MIP process as a means of providing the necessary assurances that SBC's hot cut processes are working as intended.

We also conclude that some validation process should be used for Verizon, as well. We recognize that the needs and requirements of any validation processes for Verizon may be somewhat different than for SBC. We agree in any case that third-party testing is not necessary, but more limited testing, such as that suggested by AT&T witness Falcone should be developed. As noted above, Falcone suggests that Verizon test the migration of a group of its own customers from a direct connection of the customer's line to the Verizon switch over to another Verizon switch connected via collocated transport equipment located in the original central office, with a report on the results. We direct the ALJ to

schedule a further process for parties to build consensus on the details of limited testing process for Verizon along the lines outline by witness Falcone.

Following completion of the record on these issues, we shall make a further determination concerning implementation of necessary processes to ensure validation of that the hot cut processes are working as intended.

XIII. Comments of ALJ Proposed Decision

The Proposed Decision of Administrative Law Judge Thomas R. Pulsifer was filed and served on parties on July 27, 2004. Comments on the Proposed Decision were filed on _____ and reply comments on _____ in accordance with Section 311(d) of the Public Utilities Code and Rule 77.1 of the Rules of Practice and Procedure.

XIV. Assignment of Proceeding

Susan P. Kennedy is the Assigned Commissioner and Thomas R. Pulsifer is the Assigned Administrative Law Judge in this proceeding.

Findings of Fact

1. To the extent that CLECs lose access to the UNE-P, they will require an efficient “hot cut” process for migrating customers from ILEC switches served via UNE-P to CLEC switches utilizing UNE-L.

2. The increased demand for hot cuts resulting from the elimination of UNE-P will be attributable both to the embedded base of UNE-P lines that must be cut over to UNE-L as well as to ongoing new CLEC customer growth and customer churn.

3. In order to achieve operational and economic efficiencies not available when loops are migrated sequentially on a line-by-line basis, the TRO directed

that the ILECs develop a process for the simultaneous cut over of two more loops on a "batch" basis.

4. Batch cut processing still limits the potential loop processing capacity as a result of the labor-intensive nature of the work and space limitations involved.

5. While the vast majority of migration orders under UNE-P can be processed without the need for manual intervention, UNE-L hot cut migration will require manual provisioning and testing that increases risks of error and delay.

6. To the extent that hot cuts are not processed on a timely basis or in an efficient manner, there is potential for interruption in the customer's service, both in connection with temporary loss of dial tone and the porting of the number to a different switch.

7. To the extent that a customer's service is adversely affected as a result of delays, errors, or inefficiencies in the hot cut process, the CLEC serving that customer is denied a seamless, efficient migration of the customer from UNE-P to UNE-L. .

8. SBC and Verizon each presented separate proposals to augment their existing hot cut processes, including provision for batch processing, to accommodate the increased hot cut demand anticipated with the elimination of UNE-P.

9. SBC's hot cut processes are designed to accommodate a batch size of 100 loops per day per CLEC per central office.

10. Verizon's hot cut processes are designed to accommodate an indeterminate batch size depending upon when Verizon determines that a "critical mass" of orders has been accumulated sufficient to make optimum use of staffing.

11. Because Verizon's process fails to inform the CLEC of a date certain as to when the hot cut will be performed, such uncertainty creates for the CLEC administrative difficulties, inefficiencies, and customer satisfaction problems.

12. Depending on the extent, pace, and timing of the transition for replacing UNE-P with UNE-L that may be ultimately determined, there is uncertainty as to whether the ILECs' proposed hot cut batch sizes and processing (both batch and sequential) will accommodate sufficient batch sizes and workforce capabilities to avoid delays, errors, or inefficiencies in meeting hot cut demand for basic voice-only service in a seamless, efficient, and low-cost manner.

13. The ILECs' assumptions concerning their capabilities to process hot cut volumes have not fully considered potential transition volumes from UNE-P to UNE-L, continued CLEC market share growth, and intercarrier customer churn.

14. In order to provide reasonable assurances that the ILECs will be able to satisfy hot cut demand (both on a batch and sequential processing basis) resulting from the replacement of UNE-P with UNE-L, a system of performance metrics and testing is needed.

15. SBC has not demonstrated why its 13-day provisioning interval for hot cuts cannot be reduced to 6 days, as long as the order specifies that the hot cut must be processed between 9 a.m. and 5 p.m. weekdays in accordance with the terms of its union labor contracts.

16. Although electronic loop provisioning is not currently feasible, in order to maximize the efficiencies and seamlessness of hot cut processing, continued progress toward cost-effective mechanization of manual processes is important.

17. Verizon has not yet developed a process for hot cuts to flow through the Verizon West OSS.

18. The ILECs have not provided evidence that their hot cut processes can handle 911 database changes 100% of the time and, as a result, there could be a time during the cut over transition where the 911 system has incorrect information on the network service provider.

19. In order to avoid 911 data base problems, the LEC needs to send the 911 order at the time that the customer's number is ported, oversee development of a standard process to coordinate 911 database changes and ensure that the PSAP database can handle the increased processing volume that will arise in a UNE-L environment.

20. It is questionable as to whether the National Number Portability Administration Center will be able to handle the increased volume of transactions that would have to be processed to port the customer's number to the CLEC switch as part of the hot cut.

21. It is questionable as to whether the ILECs hot cut processes are adequate to handle the increased volume of directory listing changes that would need to be processed in connection with UNE-P to UNE-L conversions.

22. It is questionable as to whether the ILECs hot cut processes are adequate to handle the increased volume of updates to the Line Information Database and Caller Name Database necessary to obtain information regarding caller identity and blocking options.

23. The ILECs have omitted certain types of customer migration scenarios from their batch hot cut processes that prevent CLECs from being able to offer a seamless, efficient migration from UNE-P to UNE-L to customers served under such scenarios.

24. Verizon cannot currently provision IDLC loops through a batch cut process, and further study would be required to identify what steps would be

required to overcome present constraints toward development of such a migration scenario.

25. The ILECs' batch cut processes do not accommodate line-splitting migration scenarios in which two CLECs in partnership use a single loop to jointly provide voice and data services to a customer.

26. To the extent that line-split loops use circuit switching for providing voice service over a portion of the loop, the line-splitting migration scenarios belong within the broad requirement for a batch cut process.

27. To the extent that CLECs seek to compete with the ILECs by offering a package of voice and DSL data services over a single loop, they will be unable to match the service reliability available from the ILEC to the extent that UNE-P is eliminated and no batch cut process is available to cut over such lines in an efficient and seamless manner.

28. Because SBC currently refuses to provide cross-connects between the two CLECs in a line-splitting arrangement with a jumper on the applicable SBC distribution frame, CLECs desiring to interconnect their own facilities must provision their own cage-to-cage cross connection.

29. One of the ways that a migration process for line-splitting arrangements could be accommodated would be for the ILEC to provide for cross connects on its main distribution frame.

30. The batch cut processes developed by the ILECs do not take into account CLEC-to-CLEC migration scenarios.

31. The TRO required that seamless batch hot cut processes be developed not just for ILEC-to-CLEC migrations, but also CLEC-to-CLEC migrations.

32. In order for a CLEC-to-CLEC hot cut migration process to be developed, carriers need a standardized process for exchanging customer service records and obtaining circuit identification with adequate quality assurance processes.

33. By allowing CLECs to port the customer's number after the hot cut is completed, Verizon would be relieved of the need to do the number port.

34. The ILECs' proposed processes do not accommodate migrations involving an Enhanced Extended Loop facility.

35. Without access to EELs, CLECs that are not collocated in wire centers in which they have UNE-P customers would be unable to offer switch-based UNE-L service to those customers if UNE-P were eliminated.

36. The TRO required that prices be adopted for the ILECs' batch cut processes based upon the TELRIC methodology.

37. Both SBC and Verizon presented proposed prices for their various hot cut options.

38. Because a mechanized frame technology is not currently developed, TELRIC-based prices applicable to hot cut processes cannot incorporate such technology.

39. Because MCI has not shown how IDLC loops could be unbundled using currently available technology, no factual basis is provided to disallow SBC's IDLC loop costs on a TELRIC basis.

40. Adjustments to SBC's costs are warranted (1) to distinguish per-order versus per-loop costs; (2) to exclude costs unrelated to hot cut tasks, (3) to reduce the task time estimates, (4) to remove overtime and shift differentials, and (5) to consolidate tasks. The Commission-adopted TELRIC prices as set forth in Appendix 1 incorporate these adjustments, as detailed in Appendix 2.

41. MCI was unable to complete its analysis of Verizon's proposed prices given the complexity of Verizon's model and delays in receipt of supporting data.

42. Although Verizon has not thoroughly explained all of the layers of cost included in its labor rate, TELRIC principles are not violated merely because Verizon has used its actual costs as the basis for its labor rate.

43. MCI has raised valid questions concerning the reliability of Verizon's estimated work activity durations utilized to develop its estimated hot cut costs.

44. Further review of Verizon's costs in a subsequent proceeding is necessary to support findings concerning its compliance with TELRIC and whether its proposed prices should be adopted.

45. Performance measures are necessary to ensure that the ILECs' hot cut processes are working as intended.

46. Although third-party testing is not necessary, some form of testing and validation of hot cut processes by the ILECs is warranted to provide assurance that the ILECs can meet the anticipated increase in hot cut demand without delays, service interruptions, errors, or other inefficiencies that would impede CLECs ability to compete with ILECs.

Conclusions of Law

1. The United States Court of Appeals for the District of Columbia Circuit, in *United States Telecom Association v. Federal Communications Commission*, No. 00-1012 (*USTA II*), vacated provisions of the TRO that delegated states authority to determine where CLECs are not impaired without access to unbundled elements and related substantive tests for making such determinations.

2. Although the vacatur took effect on June 16, 2004, nothing in *USTA II* precludes this Commission from implementing a batch cut process.

3. *USTA II* held that the FCC could not base a national impairment finding on the lack of efficient batch cut processes because the FCC lacked sufficiently granular evidence as to hot cut processes.

4. *USTA II* did not vacate the FCC's order to states to develop a batch hot cut process, and in any event, implementation of a low-cost, efficient batch hot cut process will be a critical part of any post UNE-P world.

5. Sufficient authority exists for adoption of this order concerning the process for implementing ILEC hot cut processes, both on a batch and sequential basis, as necessary to provide a seamless migration to UNE-L service to the extent that UNE-P is replaced with UNE-L serving arrangements.

6. Given the limits of the evidentiary record and uncertainties concerning the nature, extent, and timing of any UNE-P elimination that may subsequently be implemented, any authorizations in this order concerning implementation of hot cut processes and pricing should only be made on an interim, provisional basis, subject to further developments.

7. The hot cut processes proposed by the ILECs are not yet sufficiently developed to enable competitors to migrate customers from UNE-P to UNE-L serving arrangements in a seamless, efficient, low-cost manner without potential service disruptions or delays that could impede the ability to compete with the ILECs.

8. The ILEC batch hot cut processes should be expanded to provide for additional scenarios relating to CLEC-to-CLEC migrations and the four line-splitting migration arrangements proposed by Covad. Further study should be performed as a basis to determining the feasibility and cost of implementing additional migrations scenarios involving IDLC and EEL facilities.

9. In order to provide a more complete basis for finalizing appropriate hot cut processes, the ALJ should schedule further collaborative workshop forums to promote further consensus building on relevant issues as set forth in the order below.

10. The ILECs should be required to prepare further analysis concerning the processes that would be entailed, and related TELRIC costs, for implementation of the additional batch hot cut migration scenarios as set forth in the order below.

11. The prices proposed by SBC for its hot cut processes should be adjusted to reflect the revisions as summarized in Finding 40 above.

12. The prices set forth in Appendix 1, reflecting adjustments to SBC's proposed TELRIC costs, as summarized in Finding 40, should be adopted on an interim provisional basis.

13. Performance measures applicable to the ILECs' hot cut processes should be adopted as set forth in the order below, with provision for further consideration of additional performance measures pursuant to workshops.

14. Provision to devise and implement appropriate validation testing of the ILECs' proposed hot cut processes should be implemented pursuant to procedural measures set forth in the order below.

O R D E R

IT IS ORDERED that:

1. As required to implement seamless, efficient, and low-cost cut over processes for use by competitive local exchange carriers (CLEC) with the elimination of UNE-P to serve the mass market, the hot cut processes as proposed by Pacific Bell Telephone Company, doing business as SBC California, Inc. (SBC) and Verizon California, Inc. (Verizon) are hereby authorized only on

an interim basis for transitioning customer loops from an unbundled network elements platform (UNE-P) to an unbundled loop (UNE-L) basis, contingent on further workshops and proceedings as set forth below.

2. SBC's proposed batch size of 100 loops per day per CLEC per central office for the defined batch process is hereby adopted only on an interim provisional basis subject to further evaluation of performance metrics and testing to ascertain that this minimum batch size will be sufficient on an ongoing basis to meet CLEC hot cut demand with the elimination of UNE-P.

3. Verizon's proposed method of determining minimum batch size based upon achieving a "critical mass" of order volume is hereby adopted only on an interim basis subject to further evaluation of performance metrics and testing to ascertain that this minimum batch size will be sufficient to meet CLEC hot cut demand with the elimination of UNE-P.

4. In order to gain final approval and to avoid critical problems with emergency 911 services during hot cuts, the incumbent local exchange carriers (ILEC) shall modify their hot cut processes to comport with the National Network Numbering Association guidelines to send the 911 order at the time that the customer's number is ported, and shall develop a standard coordination process to ensure that the Public Safety Answering Position (PSAP) database can handle increased order volumes arising in a UNE-L environment.

5. In connection with hot cuts, the "migrate-as-is" functionality for directory listings shall be available for CLEC-to-CLEC migrations as well as incumbent local exchange carrier (ILEC)-to-CLEC migrations in order to limit the number of times that directory listing information must be added or deleted.

6. As a condition of granting final approval to the ILECs' hot cut processes, the ILECs must provide a demonstration that their existing systems and

processes are capable of handling the increased volume of Line Information Database and Caller Name Database transactions on a timely and error-free basis as a result of the replacement of UNE-P with UNE-L service.

7. The adjusted prices applicable to SBC's hot cut processes, as set forth in Appendix 1 attached hereto, based on the adjustments detailed in Appendix 2, are hereby adopted on an interim provisional basis, applicable to specific services indicated. The Administrative Law Judge (ALJ) is directed to schedule additional proceedings, as necessary, to complete the record concerning finalized hot cut pricing for the migration scenarios set forth in Appendix 1, as well as for additional migration scenarios to be developed or explored pursuant to Ordering Paragraph 11 below.

8. Verizon's proposed prices applicable to its hot cut processes are not adopted at this time. Further proceedings shall be scheduled by the ALJ as necessary to complete the record concerning Verizon's prices sufficient to form the basis for adopted total element long incremental cost (TELRIC) prices for Verizon. In the event that separate TELRIC-complaint hot cut prices are not approved by the time that batch hot cut processes are required to be implemented for Verizon, SBC-adopted prices shall be used as a surrogate for Verizon.

9. The revisions in performance measures proposed by SBC and Verizon with respect to their proposed hot cut processes are hereby approved on an interim provisional basis, pending the results of further collaborative workshops to ascertain what additional revisions to performance measures may be warranted.

10. The revisions to performance measures for Verizon's process that were mutually agreed to between MCI and Verizon are hereby approved. Verizon

shall remain responsible for the related commitments to which it agreed concerning its "Wholesale and Provisioning Tracking System".

11. The ALJ is hereby directed to set forth the appropriate scheduling and procedural coordination measures to address the following technical implementation issues:

a. A workshop shall be scheduled to provide a process for CLECs to provide technical input into the process being implemented by SBC to upgrade its operating support systems (OSS). The workshop shall provide for periodic progress reports on SBC OSS upgrades to the Commission. The workshop shall also address the implementation of a transition plan for Verizon West's hot cut processes to flow through its OSS upgrades.

b. A workshop shall be scheduled to open collaborative discussions among the ILECs, CLECs, and the current Number Portability Administration Center (NPAC) administrator to determine NPAC's actual capabilities and to develop metrics for the completion of number portability tasks associated with the increased hot cut volume in a UNE-L environment.

c. A workshop shall be scheduled to address the technical issues, including costs, required to implement the four line splitting batch hot migration scenarios proposed by Covad Communications, incorporating the provision of cable-to-cable cross-connections on the ILEC's distribution frame, as illustrated in Appendix 2 of this order. This workshop shall be coordinated, as appropriate, with existing collaborative forums where line splitting issues have previously been considered, such as Verizon's Change Management Process.

d. A workshop shall be scheduled to address implementation issues relating to CLEC-to-CLEC migration scenarios with particular focus on a standardized process for exchanging customer service records and circuit identification

information in order that customers are not stranded after their migration to UNE-L.

e. A workshop shall be scheduled to address implementation issues relating to potential development of a hot cut migration scenario involving enhanced extended link (EEL) facilities, and IDLC facilities, including associated costs.

f. A workshop shall be scheduled to be coordinated, as appropriate, with joint partial settlement agreement collaboratives in R. 97-10-016, regarding further revisions that may be warranted for additional performance measures applicable to the hot cut processes to be implemented for SBC and Verizon in connection with the conversion from UNE-P to UNE-L service.

g. A workshop shall be scheduled to address the design and implementation of appropriate processes for testing and validating the hot cut processes proposed to be used by the ILECs. As a framework for considering a testing protocol, SBC shall provide detailed plans concerning its proposed "Managed Introduction Plan." Parties shall be provided an opportunity to review and comment on the plan as a basis for implementing appropriate testing and validation of hot cut processes. As a basis for workshop discussion, Verizon shall submit a plan for the testing of the migration of its own customers from a direct connection of the customer's line to the Verizon switch over to another Verizon switch connected via collocated transport equipment in the original central office.

Dated _____ in San Francisco, California.

See CPUC Document #177461 for
Appendices 1-5