

**Report on the Review of the
Performance Metrics and the Associated
Performance Assurance Plan
Filed by Verizon Virginia**

Presented to:

**Division of Communications
Virginia State Corporation Commission**

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April 2, 2004

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I. Introduction

A. Purpose of the Review

Performance measures or metrics and performance assurance plans play vital roles in monitoring the competitive marketplace. Performance measures in areas such as ordering, provisioning, maintenance and repair, and billing provide a method to evaluate an incumbent local exchange carrier's (ILEC's) performance in providing its wholesale and its retail services. Interested stakeholders can use the results of performance measures to monitor whether there are comparable levels of service for ILEC retail customers and competitive local exchange carriers (CLECs). Failure to meet certain standards of performance can result in incentives or remedies that encourage the ILEC to satisfy its commitments regarding the provision of services to CLECs. Therefore, it is extremely important that performance measures accurately and reliably reflect actual ILEC performance.

The Virginia State Corporation Commission (Commission) requested a comprehensive review of Verizon Virginia's (Verizon's) reporting integrity to assess whether the data generation, collection, analysis, retention, and reporting are sound, accurate, complete, and comply with relevant plans, guidelines, and Commission orders. The Commission selected The Liberty Consulting Group (Liberty) to prepare an audit plan for such a review.

Liberty's review was to be sufficient such that, recognizing its results, CLECs and the Commission and its Staff will know whether Verizon's reported performance reflects actual performance. More specifically, these parties would know whether, in reviewing and analyzing Verizon's performance reports, they can have confidence in Verizon's performance measurement processes, data quality, and conformance to Commission orders.

B. Liberty's Review Methods

Liberty drew from experiences working on a similar audit for Verizon New Jersey. The review covered general reporting procedures, organization, change management, systems and data integrity, and the Performance Assurance Plan (PAP). Liberty's review focused on the time period of July through September 2003.

Liberty organized its review primarily by domain with additional specific focus on the Metrics Change Control process and the PAP. Liberty chose the measures for detailed review on the basis of following factors:

- The measure was different from that Liberty reviewed in New Jersey or Liberty identified problems with a similar measure in its New Jersey review.
- CLECs identified the measure as either particularly important or have expressed concerns about the accuracy of reported results.
- The measure was included in the PAP and has produced substantial incentive payments.
- The measure had a variety of products or interfaces.

- Liberty's experience indicated that the measure may contain errors because of its nature or because of manual steps in the method used to calculate the results.

In addition to information gathered from CLECs at the beginning of its review, Liberty acquired most of the information needed for this review from Verizon through a series of over 900 document requests as well as interviews and meetings with Verizon personnel. Liberty conducted over 40 interviews with Verizon personnel and conducted numerous telephone conversations with Verizon's experts.

C. CLEC Input

The input from CLECs that conduct business in Virginia was an important aspect of Liberty's audit planning. Early in its review, Liberty received from the Commission's Staff a list of representatives at CLECs and made contact with several of them. Liberty initially contacted representatives of ten CLECs. Seven responded to the initial inquiry and four agreed to send data requested by Liberty. For those CLECs that volunteered to participate, Liberty requested information regarding: i) areas of concern (*i.e.*, particular measures and products) in Verizon's performance reporting, ii) perspective on confidential and proprietary information, iii) willingness to provide data (*e.g.*, local service requests, trouble reports) for use in data tracking, iv) use of Verizon's performance and PAP reports, and v) views on permitting Liberty's personnel to spend time in its work center(s) making observations and gathering data.

Two CLECs agreed to meet with Liberty and Liberty visited those CLECs' work centers during its review. The following is a summary of Liberty's observations as well as the CLEC responses to the Liberty's questions:

- Liberty observed the various ordering, provisioning, M&R, and billing processes from the CLEC perspective. CLEC representatives explained and demonstrated how they used the ordering and M&R Web GUIs as well as Customer Service Gateway. Among other things, Liberty observed CLEC representatives tracking trouble tickets and reporting troubles to the repair center. The CLECs also demonstrated the billing claims process and the steps for reporting a pre-order interface outage to Verizon.
- CLECs identified a number of issues with the ordering process. Specifically, one CLEC noted that in order to request a shorter than standard interval on an order, it must issue a standard interval request followed by an expedite request. Additionally, one CLEC noted that there were problems with certain orders that Verizon incorrectly rejected, which meant that the CLEC had to resubmit the order many times and work with the Wholesale Customer Care Center (WCCC) in order to get the order confirmed. During its visit, a CLEC showed Liberty a report listing orders delayed due to facilities reasons or troubles. The CLEC agreed to provide this report to Liberty for the September 2003 data month; however, this did not occur.
- CLECs listed some issues with the provisioning and hot cut process. One noted that new loops often did not work and required a trouble ticket; Liberty said it would investigate this issue as it pertained to the PR-6 metric. However, the CLEC

ultimately did not provide relevant data, and Liberty was unable to pursue the issue. CLECs also identified business practice issues not covered by Liberty's audit, including lack of facilities at frame due time on hot cut orders.

- CLECs had a common complaint that Verizon did not proactively notify them of M&R trouble ticket closures, leaving the CLECs unaware of repair and unable to verify exactly when a repair was complete. One CLEC explained that they often found troubles even after Verizon had closed the related trouble ticket. Liberty observed one such instance, and noted that when the CLEC reported the trouble Verizon did not open a new trouble ticket
- Liberty observed the MR-1 transactions to see in person how CLECs perform them.
- Liberty established that, consistent with their response to a data request, Verizon was not contacting CLECs to confirm trunk blockages.
- One CLEC noted that it periodically sends emails to Verizon about billing claims that had been open for an extended period of time. Additionally, Liberty reviewed one CLEC's bills and found that the distribution date printed on the bill was earlier than the date on the shipping label.
- CLECs agreed to provide Liberty with Local Service Request and Access Service Requests orders, trouble tickets, data from Daily Usage Feed files, bill information, billing claim information, and trunk blockage data for months during the audit period.
- In general, CLECs did not express any significant concerns with the PAP and its reports.

Two CLECs provided Liberty with data to use in its audit. One CLEC provided Liberty with data for Local Service Requests sent via EDI in the September 2003 data month, while another provided PON versions submitted via the Web GUI. Liberty also obtained, from a participating CLEC, Daily Usage Feed files and data on bills and billing claims sent during the audit period. Liberty compared the data provided by the CLECs with that used by Verizon to calculate the performance measures. The CLECs ultimately did not provide the requested trouble ticket or trunk blockage data.

D. Overview of Verizon Performance Measures and Performance Assurance Plan

The Commission's document "Virginia Carrier-to-Carrier Guidelines Performance Standards and Reports" (Guidelines) provides the basic definition of Verizon's performance measures. In addition, the Guidelines describe Verizon's methods, indicate what records Verizon excludes from the calculations, and give the performance standard applicable to each measure. The December 9, 2002, version of the Guidelines was effective during Liberty's review. The first month that Verizon reported its performance under these Guidelines was March 2003.¹

Verizon organized its performance measures using the following eight domains:

¹ Response to Data Request #1 (clarification).

- Pre-Ordering (PO)
- Ordering (OR)
- Provisioning (PR)
- Maintenance and Repair (MR)
- Network Performance (NP)
- Billing (BI)
- Operator Services and Directory Assistance (OD)
- General (GE).²

Within each domain there are between two and ten performance measures. The Guidelines identify each measure by its domain as well as its specific measure number. For example, PO-1 is a Pre-Ordering measure that calculates the response time of the pre-ordering CLEC-Verizon interface. In total, Verizon reports on 36 performance measures in Virginia. Within each performance measure, Verizon defines specific sub-metrics. PO-1, for example, contains nine sub-metrics, PO-1-01 through PO-1-09. PO-1-01 measures the average response time of the pre-ordering CLEC-Verizon interfaces accessing a customer service record. For actual performance reporting, many of these sub-metrics have additional granularity. In its performance reports Verizon distinguishes this level of detailed reporting using a four digit code and by the text name of the measurement. Again for example, Verizon reports results for PO-1-01 in three ways, the average response time for a customer service record through EDI, CORBA, and Web GUI interfaces. PO-1-01-6020 is the "Average Response Time – Customer Service Record – EDI." At this level of detail, there are over 520 individual results reported.

Verizon reports all or some subset of these performance measure results for individual and aggregate CLECs; the aggregate CLEC results do not include Verizon affiliated CLECs.³ Verizon reports most results on a Virginia statewide basis; however, Verizon reports some Pre-Ordering and Ordering measures on a regional basis.

There are three basic types of performance standards: parity with retail, benchmark, and no standard. In cases where there is comparable retail measurement, parity with retail is the preferred standard. In some cases, Verizon measures performance results against parity with retail plus some amount to account for inherent differences between wholesale and retail systems and operations. For example, the standard for PO-1-01 through PO-1-03 for the EDI interface is parity with retail plus not more than four seconds. The Guidelines state that the four second difference accounts for "variations in functionality and additional security requirements of interface."⁴ In cases where there is no reasonable comparable retail measurement, the Guidelines may specify a benchmark standard. Benchmarks take the form, for example, "95 percent on time," or "98 percent orders without Verizon errors." In still other cases, there are no specific

² Note, however, that Verizon does not report results for the GE domain in Virginia.

³ The exclusion of Verizon-affiliated CLEC results from the CLEC-aggregate results is common to all performance measures that have a CLEC-aggregate result. In its discussion of individual performance measures, Liberty will not always repeat this common exclusion.

⁴ Guidelines, December 9, 2002, p. 8.

standards. Verizon makes the results of these performance measures available for diagnostic and informational purposes only.

To help ensure that Verizon provides quality wholesale services to CLEC, the Commission adopted a financial Performance Assurance Plan (PAP).⁵ The PAP divides the relevant performance measurements into three categories: i) Method Of Entry (MOE), ii) Critical Measures, and iii) Special Measures. The PAP identifies additional measures that are part of the Change Control Assurance Plan (CCAP). The PAP defines calculations for bill credits in cases where performance does not meet standard. The Commission requires that Verizon apply credits to CLECs bills within 30 days of the end of the second month after the month of the review.

E. Network Metrics Platform

1. Background

Verizon's Network Metrics Platform (NMP) provides a centralized information system for calculating and reporting its wholesale performance metrics. The NMP loads performance data and generates metric results and reports. While providing domain-specific warehousing and reporting of metrics data, NMP also employs certain components and supporting processes that are not domain specific. These components exist to ensure that NMP is operationally sound and capable of accurate and reliable performance reporting. Liberty reviewed these cross-domain NMP components to determine whether sufficient processes and procedures are in place to support complete and accurate data handling.

2. Analysis and Evaluation

NMP File Management and Job Scheduling

NMP is dependent on data feeds from various Verizon legacy systems. Verizon's staff in Arlington, VA supports the operational interfaces between NMP and legacy systems.⁶ Verizon uses Source File Management (SFM) within each domain to manage the source data files that provide input to NMP and schedule the NMP warehouse load process. This process has six steps:⁷

- Generate Daily List File – SFM extracts the Daily Index Lookup files from the SFM database to serve as a file index for the process to hunt for a file for the given day.
- File Hunt – SFM checks to see if each file is present in the expected directory. If the file is not present, it raises an exception and the staff makes the appropriate contacts. Staff tracks SFM processing each day using a single spreadsheet for all domains.⁸

⁵ Performance Assurance Plan Verizon Virginia Inc., July 1, 2003.

⁶ Interview #1, October 30, 2003.

⁷ Source File Processing Management – Maintenance & Repair Design Document version 1.0; Source File Processing Standards – Provisioning Design Guidelines version 0.2

⁸ Response to Data Request #392.

- This spreadsheet contains filename, frequency, expected time of delivery, and primary and secondary source provider contacts.
- File Validity – SFM checks files for validity and completeness through duplicate version checking and the presence of an end-of-file (EOF) indicator or a trigger file to ensure that NMP received the file intact without transmission errors.
 - Archival – After NMP successfully receives and loads each file, SFM places each file in an archive directory with a timestamp.
 - Load Statistics – SFM updates a database table with file statistics such as file name, file date, and number of records received.
 - Data Load – After NMP receives all expected files, SFM triggers NMP to load the data into the appropriate warehouse using an Informatica application and supporting query routines.

Verizon's SFM processes and related procedures are comprehensive and capable of supporting accurate data input from legacy operations support systems (OSS).

NMP Balancing and Controls

Verizon currently performs a manual evaluation of the Informatica summary logs to determine the number of records that were loaded successfully and the number of records that went to error. Liberty reviewed examples of these logs. Verizon plans to adopt a standard process for Data Feed Load Validation in the first quarter of 2004.⁹

Verizon captures load statistics for each Informatica execution. The operator monitors the execution summary files during job execution. Each subsequent execution of the Informatica loads overlays these files; however, NMP archives daily log information in a Repository Manager.¹⁰

Verizon's NMP balancing and controls provide the information necessary to ensure that it accounts for all data during the various processing steps. However, the current process requires manual review of control reports to detect processing problems. The changes to the initial load process Verizon plans to implement in the first quarter of 2004 will mechanize load count balancing between inputs and possible outputs.¹¹ Verizon considers out-of-balances exceptional conditions that it must resolve prior to running weekly and monthly reports. Verizon will also introduce increased rigor regarding rejected record analysis that requires data providers to deliver corrected files to replace any rejected files. Verizon revalidates the data each time it replaces a rejected file with a corrected file.

⁹ Response to Data Request #344.

¹⁰ Response to Data Request #344 version 2.

¹¹ Response to Data Request #344.

NMP Error Handling

Verizon's system design documents provided a varied description of NMP error handling.¹² Some depicted an error table within a data flow diagram, while others used either verbiage or a flow chart to describe error processing. At a common level, NMP's error detection is limited to fundamental edits on required fields as delivered by interfacing OSS applications. NMP diverts all records deemed in error to domain-specific error tables.

Verizon indicated that the domain-specific error tables are accessible via a GUI application for review by stakeholders.¹³ While the NMP WEB GUI is available to all domains to display errors applicable to any particular domain, responsible data owners cannot the errors within NMP, but rather have to make them within the legacy systems using the change control process.¹⁴

Verizon's Billing domain does not actually use the NMP WEB GUI. In this case, NMP sends a monthly report containing records that have fallen out in error to the data owner. When there are errors, the appropriate part of Verizon's organization performs a root cause analysis and stakeholders hold a meeting to review the issue and its resolution. Verizon takes any required corrective actions in accordance with its change control processes.¹⁵

Liberty found that Verizon's system documentation was not always accurate. The ASR Ordering and Provisioning did not accurately describe error handling. In two cases, these documents indicated that Verizon retains error records for 15 days and then deletes them.¹⁶ However, Verizon said that, in fact, NMP does not delete error records.¹⁷

Verizon employs a number of algorithms to derive fields necessary for metrics reporting. In a number of instances, NMP populates fields with default values rather than generating an error when the algorithm does not have the information necessary to assign a specific value. The following table provides a few examples of possible default values.

¹² System Design Document – Order Domain version 5.0 – delivered in Interview #3 distribution package, System Design Document – LSR Provisioning version 0.2 – delivered in Interview #4 distribution package, System Design Document – OD-1 (Operator Services) – delivered in Interview #15 distribution package, System Design Document – ASR Ordering & Provisioning version 0.4 – response to Data Request #17, System Design Document – Maintenance & Repair (MR1) version 1.02 – response to Data Request #36, and System Design Document – Maintenance & Repair (MR2-5) version 1.25 – response to Data Request #36.

¹³ Interview #1, October 30, 2003.

¹⁴ Interview #3 Extended, October 30, 2003.

¹⁵ Interview #3 Extended, October 30, 2003, and response to Data Request #390.

¹⁶ System Design Document – OD-1 (Operator Services) – delivered in Interview #15 distribution package
System Design Document – Maintenance & Repair (MR2-5) version 1.25 – response to Data Request #36.

¹⁷ Response to Data Request #592.

Domain	Field	Default Value
ASR Ordering & Provisioning	STATE_CD	'ZZ'
ASR Ordering & Provisioning	PROD_TYP	'EXP'
ASR Ordering & Provisioning	PRODUCT	'XX'
Maintenance & Repair (MR-1)	CARRIER_ID	'RTL9'
Maintenance & Repair (MR-2-05)	STATE_CD	'@'
Maintenance & Repair (MR-2-05)	CLEC_ID	'????' or 'RTL9'
Maintenance & Repair (MR-2-05)	PROVIDER_IND	'L'
Maintenance & Repair (MR-2-05)	MARKET_AREA	'????'
Maintenance & Repair (MR-2-05)	PRODUCT_IND	'SIMPLE'

NMP does not track instances of defaulted field values. However, Verizon indicated that, for example, that there are no instances where NMP had to set a STATE_CD to 'ZZ' within the ASR Ordering & Provisioning domain because this state code derivation algorithm is dependent on data in one of three fields: ZLOC, ALOC, or ACTL.¹⁸

Verizon also uses manual data scrubbing on certain fields when NMP cannot derive a legitimate value. For example, in the ASR Ordering & Provisioning domain, Verizon operations personnel derive the correct value for six fields, PON Value Error, Service Type, Complexity Type, Forecast Indicator, and Facilities Availability Indicator, when NMP cannot derive them.

Verizon's error handling processes provide the capability of detecting critical errors in the data loading process. There are, however, inconsistencies in the way that Verizon handles errors, employing various methods such as reactive error review, process interruption pending corrections, and manual data scrubbing.

NMP Testing Processes

Verizon described three areas of testing within NMP:¹⁹

- Production Verification
- CCR Testing – Change Control Implementation Validation
- Source System Testing – Feed Validation.

The purpose of Production Verification is to ensure that the measurement results coming out of NMP are correct and that NMP assembles and formats all reports according to the Guidelines. Verizon described two primary components of Production Verification:

- Domain QA
 - Completeness of all measurement data
 - Accuracy of domain counts, standard deviation, presence of states, tag validation, rounding
 - Positive Reporting of all CLECs having no activity for a particular data month

¹⁸ Responses to Data Requests #339 and #340.

¹⁹ NMP Testing Process Document – delivered in Interview #3 distribution package.

- ASCII File Creation inventory against expected list
- Format Checks on all ASCII files
- Trending/Analysis on a month-to-month basis
- Value Tolerance to ensure there are no irrational numerator or denominator values.
- Reports QA
 - Trending/Analysis across data months and/or multiple report runs
 - Reasonableness/Relationships of metric components (e.g., shared numerators)
 - Completeness of all required reporting levels (state, CLEC, product, sub-product)
 - Format Checks of fonts, titles, formatting, headers and footers
 - PAP Replication through testing to reproduce the production report
 - SAS Testing of measurement results before and after SAS processing.

Verizon performs CCR Testing to ensure that it has correctly implemented all change controls for a given data month. This testing consists of four components:

- Unit Testing of individual component functionality
- System Testing to validate that the individual NMP components work together properly
 - Cross Logical Layers to flow a subset of monthly data from source files to measurement to ensure correctness of results
 - Cross Domain to flow a subset of monthly data across dependent domains to ensure correctness of results
 - Common Services Integration to check the domain against common services components (e.g., Scheduler).
- Performance Testing to validate that the overall system response meets technical requirements
- User Acceptance Testing executed by the business owner to verify the business impact of CCR changes
 - Full Month Testing provides a baseline for result comparison using a full month of data
 - Impact Analysis to execute the new version across several data months to analyze the historical impact of changes.

Verizon uses Source System Testing to analyze the effect of source system changes to the calculations of NMP measurements. This testing occurs when NMP source systems undergo major releases to ensure the changes to the source system do not adversely affect the feeds NMP receives.

3. Findings and Recommendations

Liberty has no specific negative findings regarding NMP. However, Liberty offers two suggestions for Verizon's consideration.

Despite differences in system design documentation, Verizon's error handling is reasonably consistent within NMP processing. Liberty found that NMP consistently diverts error data to domain-specific error tables and provides access to this data via a WEB GUI tool. The manner in which business owners handle errors, however, varies widely. These inconsistencies could cause varying levels of quality across metrics reporting domains. The Ordering domain has procedures in place that call for data scrubbing for certain fields and for halting processing should the process detect errors on certain legacy feeds. The Billing domain receives reports after-the-fact and deals with errors through corrective action for future reporting months via change control. Liberty recommends that Verizon adopt standard guidelines for error correction by legacy business owners to ensure consistent data quality across domains and that Verizon incorporate these guidelines into existing production verification procedures.

Verizon does not consistently monitor for possible excessive use the assignment of default values. Liberty recommends that Verizon monitor assigned default values on a regular basis. Records for which NMP assigns default values will, in many cases, behave like records that NMP excludes for metrics reporting. Procedures for monitoring the levels at which defaulting occurs should be incorporated into existing production verification procedures.

F. Metric Change Control

1. Introduction and Background

The management of changes can affect numerous parts of an organization, and requires a comprehensive and consistent process allowing for the management and tracking of the many types of changes according to their own individual processes and workflow. Common types of changes include process, document, hardware, software applications, engineering, facility, maintenance, equipment, validation, and protocol. With the growing interdependence of computing systems and applications, as well as diverse user communities, change control and proactive notification of change have become even more important. Metric Change Control (MCC) is the process Verizon uses to administer, coordinate, track, and document all changes to its wholesale metrics and to communicate changes to CLECs and the commission.²⁰

Liberty's review of MCC undertook to determine:

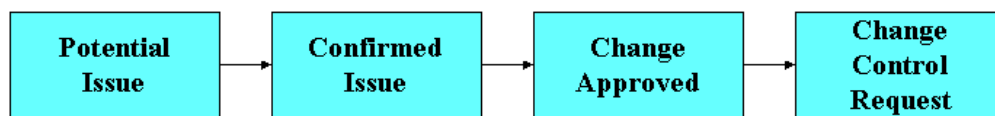
- Does Verizon distribute Change Control Notices in a timely and complete manner?
- Does Verizon effectively use Change Control Notices to improve its performance reporting processes?
- Does Verizon have effective tools for tracking metric changes?

²⁰ Response to Data Request #1.

- Are Change Control Notices clear? Do they state the effect of the change proposed or implemented?
- What is the history and trend of Metric Change Control Notices in Virginia?

Beginning June 2003, Verizon changed its MCC tracking and management tool from a Lotus Notes-based system to a web-based system called Metrics Tracking and Change Tool (MTACT).²¹ Verizon input all Metric Change Control Records (MCCR) that it had not completed to the new system at its inception. Verizon also archived all completed MCCRs.²²

Verizon follows a four-step process, depicted in the figure below, to identify, review, plan, approve, and implement all MCCRs and Work Requests:²³



In the “Potential Issue” step, Verizon’s Metrics Policy and Planning group (formerly the Regulatory Support Group) reviews issues, questions, and requested changes brought forward by various parts of the organization, to determine the need to initiate an MCCR. In the “Confirmed Issue” step, appropriate individuals meet to ensure that each organization understands the proposed changes. If Verizon approves the change (step three above), it is placed in the production queue. After change control approval, Verizon sends an initial notification to CLECs within one business day with an assigned status of *Scheduled*. Verizon gives any notification of a revision to the change control schedule a *Rescheduled* status. Verizon also issues additional notifications to reflect a modification in requirements, additional information, or completion of the MCCR. These notifications have status designations of *Amended* or *Completed*.²⁴

To assist in the prioritization and approval of its work effort and to track the various types of changes, Verizon assigns a “Change Type” to each change control record. There are three general types: Change Control Requests (CCR), Work Requests (WR), and Special Project PONs.²⁵ Verizon places a CCR into one of the following categories: i) Administrative, ii) Data Calculations, iii) Process Improvement Changes, iv) New Products/Services, and v) Regulatory Orders. Verizon divides the WRs into: i) Data File Requests, ii) File Structure Requests, iii) Internal Reports, iv) Re-Run Report Requests, and v) Special Studies Requests.²⁶

²¹ Response to Data Request #6.

²² Interview #12, October 31, 2003.

²³ Response to Data Request #236. Work Requests are similar to MCCRs but do not affect external or CLEC reports and as such are not included in this review.

²⁴ Responses to Data Requests #236 and #243 and Interview #12, October 31, 2003.

²⁵ Special Project PONs were not included in Liberty’s analysis because Verizon did not provide copies of these MCCRs.

²⁶ Responses to Data Requests #236 and #243.

Verizon requires two approvals for each CCR or WR and uses the MTACT system to record and track these approvals. The first approval takes place at the “Confirmed Issue” step as part of a Joint Application Design (JAD) process. Verizon intends this approval to ensure agreement among the data providers, change control manager, business owners, and the Metrics Policy and Planning group. Verizon’s procedures require a second and final approval prior to release of the change control record. Verizon bases the necessary approvals on a Change Type matrix. Depending on the nature of the change and its effect on external reporting, approving authority ranges from the Director of Change Control to an Executive Committee consisting of the President of Verizon Wholesale Markets, the Senior Vice President of Regulatory Compliance, and the Executive Director of Wholesale Compliance.²⁷

Once approved, an MCCR enters its production and final step. In this step, Verizon implements the changes by making the necessary modifications to program coding and source files, as well as any other revisions. Verizon then tests the change before placing it in the production environment.

2. Analysis and Evaluation

Verizon’s MCC Process

Verizon assigns each MCCR to a category consistent with the following table:

Change Type	Sub Type	Description
Change Control Request (CCR)		
Administrative	ID Table Update	Update to ID tables including CLEC ID, Test ID and affiliate ID’s
	Holiday Schedules	Update to holiday schedules
	Template Changes	Change to structure of performance reports including naming of metrics, standards, labeling, heading, footnotes, etc.
	Statistical Calculation	Changes to statistical formulae that are not corrections or regulatory orders and no impact on data reported
Data Calculation Correction	Severity 1	See table below
	Severity 2	See table below
	Serenity 3	See table below
Process Improvement	Mechanization	Completely or partially manual metric has begun or completed mechanization
	Source System Change	New Source System or changes to existing Source System that affect the data feed
	Downstream System Change	A change in a system that impacts metrics and requires modification to code but Verizon continues to accurately report results.
	Program Code Improvement	Improved coding efficiency e.g., removal of redundant, unnecessary or out-of-date code with no impact on reported results

²⁷ Interview #12, October 31, 2003.

New Product/Service		Incorporation of new products and services already covered by C2C guidelines, if coding work is required
Regulatory Order		Commission orders require modification to reported results
Special Project PONs.		
		CLEC requested changes to exclude PONs from metrics associated with a Special Project designated by the CLEC.
Work Requests (WR)		
	Various	Requests for the performance of various administrative and data management tasks

For CCR Data Calculation Corrections, Verizon defines three levels of severity as follows:

Severity Level	Description
Severity 1	For PAP metrics and other "Key" metrics ²⁸ : an error where corrected code causes any of the following: <ul style="list-style-type: none"> • Performance results go from a met to a miss or vice versa • A performance score change²⁹ • Numerator or denominator³⁰ changes by = +/-5% and Performance results shift by =5%.
Severity 2	For PAP and other "Key" metrics, an error where corrected code causes: <ul style="list-style-type: none"> • Performance results change with no change in met or miss criteria • Performance results change with no change in performance score • Performance results do change, but <5%¹⁴ For other C2C Metrics: <ul style="list-style-type: none"> • An error where corrected code causes any change in performance results or numerator.³¹
Severity 3	Program code has a significant error but no metric impact to performance, numerator or denominator. ³²

Verizon's methods and procedures require that it perform an assessment of the effect of any Severity 1, 2, or 3 MCCR. This may include a determination of performance results before and after the implementation of the change, or a business assessment for the months before, during, and after the error was in effect.³³

The level of Verizon's final approval of the change depends on the type and severity classification, as shown in the following table.³⁴

²⁸ Key metrics are designated by a state commission, e.g., OR-6-04 in West Virginia.

²⁹ This would be any change in the 0, -1, -2 performance grade.

³⁰ This applies only when there are 100 or more observations.

³¹ This applies if performance results change, but remain a "MET." Any modification to number of observations in the denominator is designated Severity 3.

³² If performance is a "MET," a modification to the number of observations will not be considered a correction. Instead Verizon will consider these a Program Code Improvement under CCR.

³³ Response to Data Request #236, see Job Aid #3A.

³⁴ Response to Data Request #236, see Job Aid #2.

Change Type	Sub Type	Required Approvals
Change Control Request (CCR)		
Data Calculations	Severity 1	<ul style="list-style-type: none"> • Executive Committee • Senior Vice President (SVP) • Compliance VP • Executive Director • Director Change Control
	Severity 2	<ul style="list-style-type: none"> • SVP • Compliance VP • Executive Director • Director Change Control
	Severity 3	<ul style="list-style-type: none"> • Executive Director • Director Change Control
Administrative	Any	<ul style="list-style-type: none"> • Director Change Control
Process Improvement Changes	Mechanization and Source System Changes	<ul style="list-style-type: none"> • SVP • Compliance VP • Executive Director • Director Change Control
	Downstream System Changes and Program Code Improvements	<ul style="list-style-type: none"> • Executive Director • Director Change Control
New Products/Services and Regulatory Orders	Any	<ul style="list-style-type: none"> • Executive Director • Director Change Control
Special Project PONs		
	Any	<ul style="list-style-type: none"> • Director Change Control
Work Requests (WR)		
	Any	<ul style="list-style-type: none"> • Director Change Control

While it does not have a formal Quality Assurance Program for its MCC process,³⁵ Verizon performs quality assurance “checks” when it generates reports. Verizon maps modifications in reporting formats or variances in report thresholds to packaged change records. Verizon indicated that it performs reasonability checks, tags presence validation, sub-metric value validation, and ASCII tag file validation during this testing. In addition, Verizon said that its metric planning and business owners continuously review performance reports to determine if any errors exist.³⁶

NMP metric calculation software runs in a production environment under the control of the Verizon Information Processing Services (VIPS) organization. VIPS manages, maintains, and monitors all the software and hardware installed in the data centers. VIPS also deploys object code into production through a structured change management process to safeguards access to metric production code and production data.³⁷

³⁵ Response to Data Request #237. Likewise, there is no formal, documented process associated with the oversight of the various domains (see response to Data Request #294).

³⁶ Responses to Data Requests #275, #279 and #282.

³⁷ Response to Data Request #238.

Verizon handles all internal disputes regarding the need for a change, scheduling of a change, and the resources necessary to implement a change through an escalation process.³⁸ Because external parties are not involved in requesting or scheduling MCCs, there is no need for a formal dispute process. However, CLECs can contact the Verizon Help Desk with any questions or bring issues to the NY Carrier Working Group for resolution.³⁹

MTACT is a web-based tool that resides at Verizon's Arlington Data Center in Arlington, Virginia. Verizon's Information Technology (IT) organization controls access to the system and both IT and the sponsoring organization must approve new users. Verizon protects remote access to the encrypted web connection using an authentication process. Verizon estimates that MTACT currently handles approximately 400 to 500 requests each month with approximately 50 to 100 of those requests related to the Potomac states. MCCRs represent approximately 50 percent of total system volumes. Verizon reports minimal down time of the system.⁴⁰

In response to Liberty's request for documentation associated with MCC and MTACT, Verizon provided user guides, job aids, training materials, and other information. Verizon also demonstrated MTACT to Liberty. Verizon could not provide any internal or external audit reports and indicated that MTACT is not included in the 2003 or 2004 internal audit plans.⁴¹

Summary of Changes

Verizon distributed to Liberty change controls applicable to Virginia.⁴² Liberty received a total of 70 Metrics Change Control Notices (MCCNs)⁴³ between August 15, 2003 and December 2, 2003, representing 98 individual transmissions.⁴⁴ Of these, over three-quarters were in the Pre-Order, Order, and Provisioning domains. During the study period there were no reported Severity 1 Data Calculation MCCRs and about an equal number of Severity 2 and Severity 3 MCCRs.

³⁸ Response to Data Request #241.

³⁹ Response to Data Request #240.

⁴⁰ Interview #12, October 31, 2003.

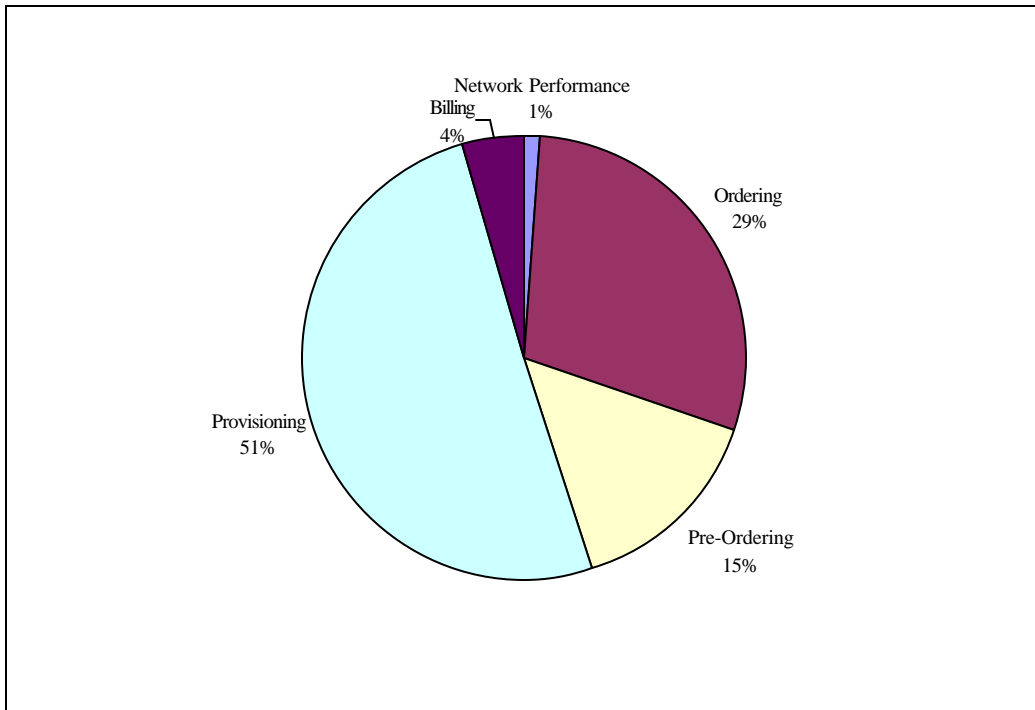
⁴¹ Interview #12, October 31, 2003.

⁴² Response to Data Request #6.

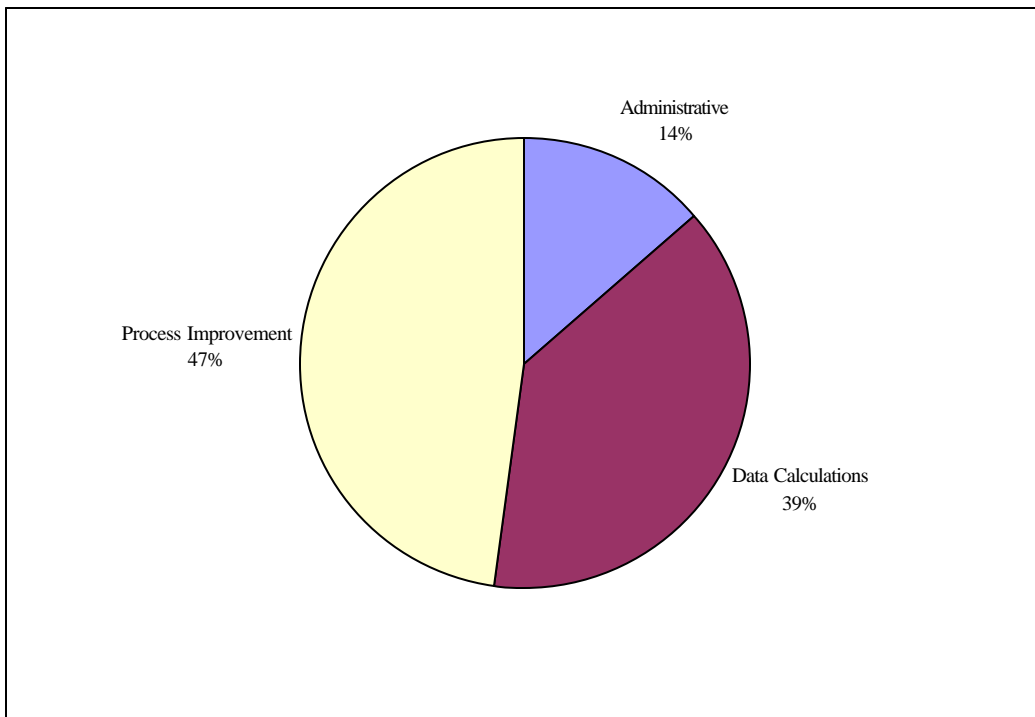
⁴³ This number represents the number of MCCN Document Numbers received during this period regardless of the status indicated.

⁴⁴ This number represents the total number of MCCN Documents received during this period including all status updates. However, due to timing, in some cases Liberty only received in progress status updates or completed MCCNs.

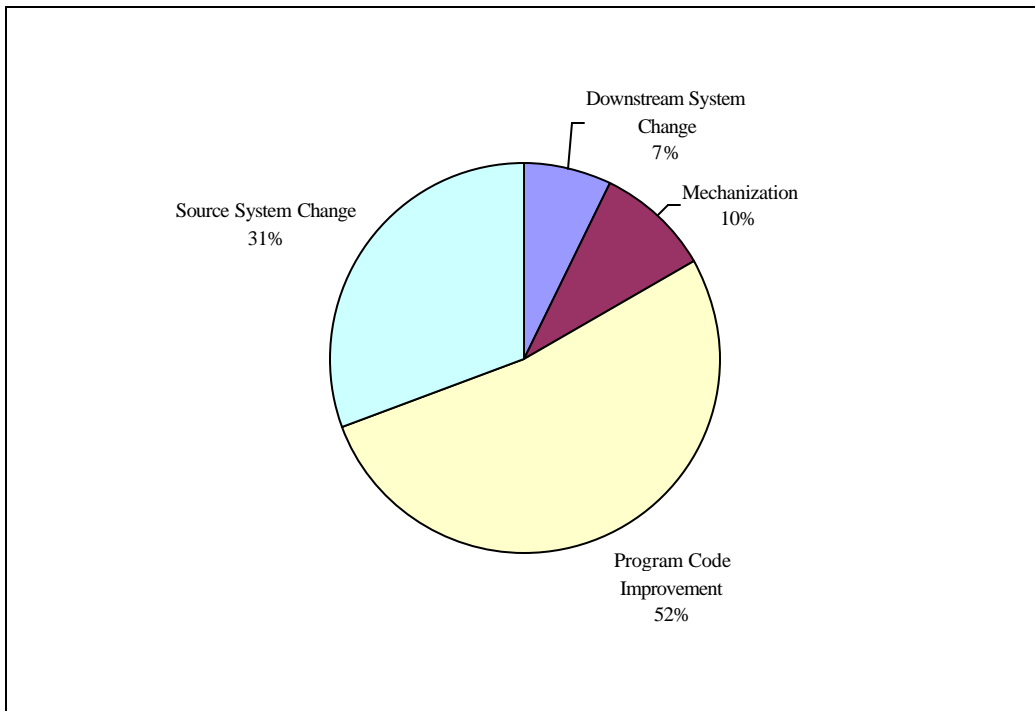
The chart below shows the distribution of changes by metric domain:



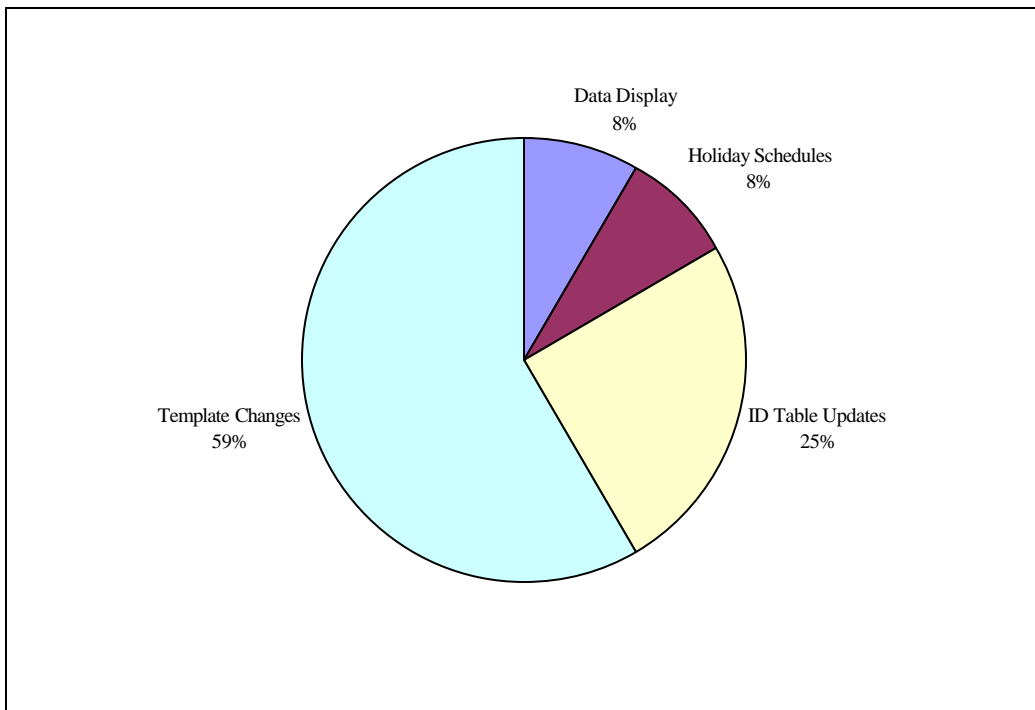
Process improvement changes accounted for nearly half as shown in the following chart:



Within process improvement changes, program code improvements represented slightly more than half of all changes as shown on the following chart:



The next chart shows the distribution of Administrative MCCRs.



From a jurisdictional perspective, changes unique to Virginia represented only 14 percent of the MCCRs processed during the study period. The majority (56 percent) affected the total Verizon footprint or total Verizon footprint without New Jersey, Pennsylvania or Connecticut.

To measure on-time performance of Verizon's MCC process, Liberty compared the scheduled filing date associated with each MCCR with a *Scheduled* status against the date associated with the corresponding MCCR with a status equal to *Completed*. To account for lags in the transmission of completed status MCCRs, as well as holidays and weekends, Liberty gave credit for an on-time completion during the first week of a new month. The results of this analysis showed that 90 percent of the MCCRs were on time.

Liberty also studied three specific MCCRs and compared the data provided to CLECs in the MCCN against data in MTACT.⁴⁵ The timeline for Metric Change Control No. 10108⁴⁶ was consistent with the information provided on the MCCR. A CLEC brought the original issue to Verizon's attention on May 12, 2003, and Verizon verified it the next day. Verizon approved a Potential Issue and Confirmed Issue on June 2, 2003. On August 14, 2003, Verizon approved both the Pre-Joint Applications Design and the MCCR. Verizon implemented the process change in the September 2003 data month, with user acceptance testing taking place on October 20, 2003. Verizon transmitted a *Completed* status MCCR on October 31, 2003. The elapsed time from Potential Issue to completed MCCR was approximately 149 days and the total elapsed time from notification to completion was about 169 days.

The timeline for Metric Change Control No. 10117 was also consistent with information provided by Verizon and Liberty generally found all data to be accurate.⁴⁷ Verizon indicated that it detected the issue in January of 2003 "as part of the overall Quality Assurance process," and opened a Potential Issue on February 12, 2003. Verizon approved the MCCR on July 10, 2003, and implemented the change in the August 2003 data month. Business Owner acceptance took place on September 30, 2003. Assuming a completed status MCCR about the middle of August,⁴⁸ it took approximately 213 days from Potential Issue to *Completed* status and, assuming an early January 2004 review of the August 2003 rerun report, between 235 and 249 days from problem identification to completion.

Liberty also requested detailed information on Metric Change Control No. 10308.⁴⁹ This MCCR was originally the only Severity 1 Data Calculation Change in the study period. Verizon issued the Potential Issue on July 30, 2003, Confirmed Issue on September 11, 2003, and approved MCCR on September 25, 2003, with implementation scheduled for the October 2003 data month. However, Verizon retracted this MCCR on November 7, 2003, and replaced it with MCCRs 10529 and 10530.

The number and nature of MCCRs indicates that Verizon is involved in on-going efforts to monitor results, as well as make necessary corrections in a timely fashion and implement process

⁴⁵ Responses to Data Requests #277, #280 and #283.

⁴⁶ Responses to Data Requests #278 and #374.

⁴⁷ Response to Data Request #280.

⁴⁸ As of December 18, 2003 Liberty has not received a Completed Status MCCR for this change.

⁴⁹ Revised response to Data Request #283.

improvements as it identifies them. However, the relatively large number of Severity 2 (Data Calculation Changes)⁵⁰ suggests the Wholesale NMP process is still not mature and stable.

3. Finding and Recommendations

Liberty has no specific negative findings regarding Verizon's MCC process. However, Liberty offers several recommendations for Verizon's consideration.

Verizon's MCC process is active and provides an adequate framework to initiate, document, track, and communicate modifications and changes to its performance reporting system to CLECs and the commission. The introduction of MTACT has greatly enhanced Verizon's ability to monitor the process, secure and document the necessary approvals, and record information unique to a change request. However, while the system to make and monitor changes is generally functioning well, the high number of Severity 2 MCCRs underscores that fact that the Wholesale NMP process remains relatively immature. Given the complex nature of the Wholesale NMP process and its reliance on upstream and downstream systems, a moderate level of activity is not unexpected. However, the high volume of MCCRs, while properly managed and tracked, is cause for concern.

Verizon generally provides timely notification of planned changes and status updates to the commission and CLECs. The current system depends on the timely maintenance of a Lotus Notes mailing list. In addition to current e-mail notification of approved CCRs and their status, Liberty recommends that Verizon provide the commission and CLECs with a weekly summary of pending, changed, and completed MCCNs directly from MTACT in spreadsheet format to accommodate ease of use. Verizon can accomplish this using the report generation capabilities embedded in MTACT.

Verizon takes an active role in monitoring and overseeing the quality of its NMP process. However, Verizon does not have a formal or documented Quality Assurance Program currently in place for its Wholesale NMP. Instead of reliance on institutional memory, Liberty recommends that Verizon develop and document its Quality Assurance process associated with the Wholesale NMP.

While MTACT represents a significant improvement over the prior LOTUS Notes-based system, its focus is on internal use. As presently configured, the system does not provide the capability for external users to access MTACT, even on a limited basis. Nor can they easily track changes by type or metric or status. Instead, external users must rely on monitoring MCCNs, which do not have a user-friendly format and may not be timely. Liberty recommends that Verizon consider the development of a method to provide external users with limited, direct access to active MCCNs in MTACT, as well as a modification to the current notification system to advise external users of the existence of an update.

⁵⁰ Liberty's review showed that there were 38 changes over a 108 day study period, which indicates that there was one Severity 2 Data Calculation Change made every three days.

G. Overall Conclusions

Overall, Liberty found that Verizon produces reasonably accurate performance results. This report contains many negative findings. However, and for the most part, correction or resolution of these findings would not produce significantly altered results. Liberty found that Verizon did not treat the Guidelines as a document requiring verbatim compliance. There were cases in which Liberty found that Verizon needed to change its methods to be consistent with the Guidelines. There also were instances where Verizon's methods were reasonable but not exactly consistent with the Guidelines.

The methods described in the PAP for Verizon's calculation of penalty payments are multifaceted. Compounding this complexity is the fact that the PAP provides incomplete or insufficient descriptions of those methods. CLECs could not verify the correctness of penalty credits or payments without additional descriptions of those methods. Liberty concluded that Verizon calculated penalties on a consistent basis, but that in some cases Verizon's methods were not clearly in line with the wording in the PAP. In this report, Liberty explains Verizon's methods. Liberty recommends that, if these methods meet the intentions of the Commission, Verizon propose changes to the PAP such that there can be no question about Verizon's calculation methods.

Another general area of complexity is the detailed methods Verizon uses to determine performance results. Verizon uses computer programming to sort through millions of records, perform various data manipulations, and ultimately produce a result each month for each of the hundreds of sub-metrics. To provide CLECs or the Commission with the opportunity to verify the accuracy of Verizon's results or to determine whether Verizon's methods are consistent with the Commission-ordered Guidelines, Verizon produced calculation business rules, or June 2003 Carrier-to-Carrier Metric Algorithms (CMAs). These algorithms are not easy for a layman to understand, and Liberty found that they contained errors or did not accurately reflect the actual computer code in many instances. This was true particularly for the M&R and PR metrics.

Liberty classified the findings resulting from its review consistent with the following table.

Classification	Description
1	<ul style="list-style-type: none"> Correction of this item could cause a change in Verizon's reported results or PAP payments. Verizon's practice or method is clearly inconsistent with the Guidelines.
2	<ul style="list-style-type: none"> Correction of this item may not change Verizon's reported results, or the magnitude of the change is unknown. Verizon's methods may be in error or inconsistent with the Guidelines.
3	<ul style="list-style-type: none"> Verizon should develop or improve its procedures or documentation. Change in this area would lead to improvement in the reliability of reported results.
4	<ul style="list-style-type: none"> The Guidelines should be revised to be consistent with Verizon's current methods, which are either acceptable or Verizon said cannot be changed. This finding is for informational purposes and does not have a specific recommendation.

The following table contains Liberty's audit findings along with the classification and the report page number for each.

<u>#</u>	<u>Class.</u>	<u>Finding</u>	<u>Page</u>
1.	3	The PAP documentation does not provide adequate coding of C2C measures to PAP measures. -----	39
2.	3	Verizon's documentation for the scoring of Critical Measures is confusing. -----	40
3.	3	The PAP does not accurately represent the availability of individual CLEC performance reports. -----	40
4.	2	Verizon's method of calculating individual bill credit penalties is not consistent with the wording in the PAP. -----	40
5.	2	EnView does not adequately emulate the PO-1 sub-metrics. -----	46
6.	4	The Guidelines for PO-1 are inconsistent. -----	46
7.	2	EnView does not adequately simulate PO-1-07.-----	46
8.	3	Verizon's PO-2 documentation is incomplete and contains an error. -----	49
9.	4	The PO-2 Guidelines lack clarity.-----	50
10.	1	Verizon is not in conformance with the Guidelines for PO-2.-----	50
11.	4	Verizon's method of making PO-2 exclusions produces more favorable results compared to another reasonable method. -----	50
12.	4	Verizon is not in conformance with the Guidelines for PO-3.-----	53
13.	4	Verizon is making an unjustified exclusion when calculating PO-3 metric results.	53
14.	2	Verizon is not in conformance with the Guidelines for PO-4.-----	56
15.	2	The definition of the denominator of PO-5 gives Verizon considerable flexibility over the outages it includes in the measure.-----	59
16.	4	Verizon is making exclusions to PO-5 although the Guidelines list none. -----	59
17.	2	Verizon's process for determining when an interface outage has begun is too subjective for PO-5.-----	60
18.	3	Verizon's PO-5 procedural document is incomplete. -----	60
19.	4	Verizon is making exclusions to PO-6 that the Guidelines do not list. -----	62
20.	2	Verizon has an unusual interpretation of the <i>Definition</i> section of the Guidelines for PO-7.-----	65
21.	4	The Guidelines for PO-7 have a minor omission.-----	66
22.	3	Verizon's PO-7 methods and procedures documentation is flawed and incomplete.	66
23.	4	The PO-8 Guidelines are incomplete.-----	69
24.	4	Verizon is not following exactly the <i>Definition</i> section of the Guidelines for PO-8.	69
25.	3	Verizon's documentation for the OR domain is not up to date and accurate in all cases. -----	83
26.	4	The Guidelines for the OR metrics are unclear.-----	83
27.	2	In a limited number of cases, Verizon uses an incorrect flow-through indicator when calculating OR-2 metric results. -----	85

28.	4	Appendix S of the Guidelines is unclear regarding the handling of special projects. -----	85
29.	2	Verizon does not exclude ASR orders for which the CLEC requested no FOC from the OR-1-02 through OR-1-10 measures. -----	102
30.	4	The Guidelines for OR-1 are unclear regarding the treatment of resent confirmations. -----	103
31.	4	Verizon does not report results for OR-1-08 consistent with the definition of the measure in the Guidelines. -----	103
32.	4	The Guidelines for OR-1 are unclear regarding Verizon's treatment of confirmations for trunk orders. -----	103
33.	4	The Guidelines do not list Verizon's exclusion of trunk service orders with negative FOC intervals for OR-1. -----	104
34.	4	The Guidelines do not document Verizon's treatment of TGSRs that it receives after 2:00 p.m. in OR-1-19. -----	104
35.	2	Verizon's treatment of LSR orders and ASR orders for the OR-2 measure when Verizon sends both a rejection and confirmation on the same PON version is inconsistent with and not addressed by the Guidelines. -----	116
36.	2	Verizon's treatment of rejections on PON versions associated with cancelled LSR and ASR orders is inconsistent and not in conformance with the Guidelines for OR-2. -----	116
37.	2	The Guidelines do not explicitly state Verizon's conventions for calculating OR-2-12. -----	116
38.	4	The Guidelines are unclear regarding Verizon's treatment of rejections for trunk orders. -----	117
39.	4	The Guidelines do not clearly specify that edit-rejects are not included in the OR-3-01 measure, but are relevant to the OR-3-02 measure. -----	120
40.	2	Verizon does not use the correct completion date to select the orders it reports in the OR-4-11, OR-4-16, and OR-4-17 measures. -----	127
41.	4	The Guidelines for OR-4 contain obsolete language. -----	127
42.	4	The Guidelines do not specify how Verizon should define the reporting month for the OR-5 metrics. -----	133
43.	4	The Guidelines for OR-5 are unclear. -----	134
44.	4	Appendix M to the Guidelines contains obsolete language regarding OR-6-03. -----	143
45.	4	Verizon's method for calculating OR-9 is not consistent with the Guidelines. -----	151
46.	4	The Guidelines for OR-10 are unclear regarding Verizon's method of processing PON notifier exceptions. -----	157
47.	3	Verizon's documentation for the PR measures is not accurate and complete. -----	184
48.	2	Verizon does not correctly distinguish between the former Bell Atlantic and GTE territories on orders and associated service orders. -----	184
49.	2	Verizon treats the majority of cancelled LSR-related service orders as non-dispatched orders for PR-1, regardless of whether the order would have involved a dispatch if completed. -----	185

50.	<u>4</u>	Verizon makes certain general exclusions to the PR metrics that the Guidelines do not reflect, and adopts conventions for other exclusions that are inconsistent with the Guidelines. -----	185
51.	<u>2</u>	Verizon has a significant number of ASR-related service orders with a missing original appointment code; this may cause Verizon to treat them incorrectly in the calculation of PR metrics. -----	186
52.	<u>2</u>	Verizon does not exclude snip-and-restore orders from its wholesale metric results for PR-1 through PR-5 and PR-8. -----	187
53.	<u>4</u>	The Guidelines need clarification regarding Verizon's definition for the CLEC trunk product group and the retail parity standard for this product group. -----	187
54.	<u>2</u>	Verizon incorrectly defines many of the UNE POTS product groups for the PR metrics. -----	187
55.	<u>4</u>	Appendix B to the Guidelines needs clarification. -----	188
56.	<u>2</u>	Verizon incorrectly excludes resale "as is" migrations from resale product group results in PR-4, PR-6, and PR-8. -----	188
57.	<u>2</u>	Verizon's algorithm for PR-1-01-3345 contains an error, and does not exclude Verizon affiliate orders. -----	189
58.	<u>1</u>	Verizon's metric algorithms for PR-1 and PR-3 contain errors. -----	205
59.	<u>4</u>	The Guidelines do not specify some of the conventions that Verizon has adopted for calculating the PR-1 and PR-3 metrics. -----	206
60.	<u>4</u>	Verizon has adopted conventions for calculating the PR-4 and PR-5 metrics that are either not included or inconsistent with the Guidelines. -----	226
61.	<u>2</u>	Verizon's metric algorithms for PR-4 and PR-5 contain errors. -----	226
62.	<u>4</u>	Verizon makes exclusions to the PR-6 metrics that the Guidelines do not list. -----	235
63.	<u>2</u>	Verizon does not define the product groups in the numerator and denominator of the PR-6 measures in the same way. -----	236
64.	<u>4</u>	Verizon has adopted certain conventions for the PR-6 measures that the Guidelines do not support. -----	236
65.	<u>2</u>	Verizon incorrectly excludes some trouble tickets from the numerator of the PR-6-01 and PR-6-03 measures. -----	236
66.	<u>4</u>	The exclusions in the Guidelines for PR-8 are unclear. -----	240
67.	<u>2</u>	Verizon's PR-8 algorithms for the resale POTS product group for PR-8 are incorrect. -----	241
68.	<u>3</u>	Verizon's documentation related to the PR-9 metric is inadequate. -----	253
69.	<u>4</u>	The Guidelines description for PR-9-01 is inaccurate. -----	254
70.	<u>2</u>	Verizon's method for basing the PR-9-08 metric on trouble reports closed within seven days of a hot cut is inconsistent with the Guidelines. -----	254
71.	<u>4</u>	Portions of Verizon's method for calculating the PR-9-08 measure are either not consistent with or not addressed in the Guidelines. -----	254
72.	<u>1</u>	Verizon does not report MR-1 results for all required services. -----	259
73.	<u>1</u>	Verizon is making an unjustified exclusion when calculating MR-1-04 results. -----	259

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74. [1](#) Verizon is under-reporting the CLEC's response time for MR-1. -----260

75. [2](#) Verizon does not meet the intent of the Guidelines for MR-1-03. -----260

76. [3](#) Verizon's MR-1 documentation is inadequate. -----260

77. [3](#) Verizon's quality control process is inadequate to assure accurate data for MR-2 through MR-5 metric calculations. -----304

78. [4](#) Verizon's interpretation of the MR-2 through MR-5 metrics includes assumptions that the Guidelines do not document. -----305

79. [3](#) Verizon's documentation of the algorithms it uses to perform the metrics calculations for MR-2 through MR-5 includes numerous errors. -----306

80. [4](#) Verizon does not adhere to the Guidelines in the calculation of MR-2-02 and MR-2-03 for 2-Wire xDSL Line Splitting. -----307

81. [2](#) Verizon does not correctly apply the exclusion of installation troubles in MR-2-02 and MR-2-03. -----307

82. [2](#) Verizon's algorithm for calculating MR-2-05 for specials is not in accordance with the Guidelines. -----307

83. [2](#) Verizon's algorithm for calculating MR-4-03 for UNE POTS Loop is incorrect. 308

84. [2](#) Verizon's algorithm for calculating the MR-4-07 and MR-4-08 retail analog for UNE POTS Loop applies incorrect exclusions. -----308

85. [4](#) Verizon's description of MR-5 in the Guidelines is unclear. -----308

86. [2](#) Verizon is not following a requirement in the *Exclusions* section of the Guidelines. -----312

87. [2](#) Verizon is not reporting retail results for all NP-1 sub-metrics. -----313

88. [4](#) Verizon is not making the same exclusions to all the NP-1 sub-metrics. -----313

89. [2](#) Verizon overstates its NP-1 results. -----314

90. [3](#) Verizon's methods and procedures documentation for NP-1 is too generic. ----314

91. [4](#) Verizon has adopted conventions for calculating the NP-2 performance metrics that are either not consistent with or not addressed in the Guidelines. -----323

92. [3](#) Verizon's documentation for the NP-2 metrics is outdated and inaccurate. -----324

93. [4](#) Verizon has adopted certain conventions for calculating the BI measures that the Guidelines do not reflect. -----338

94. [3](#) Verizon's OD-1 documentation is inadequate. -----341

95. [3](#) The OD-1 section of the Potomac states' C2C Report is misleading. -----341

II. Performance Assurance Plan

A. General Background

1. Introduction

The intention of the Virginia Performance Assurance Plan (PAP) is to “ensure Verizon Virginia Inc. (‘Verizon VA’) provides quality wholesale services to competitive carriers after Verizon VA has gained entry into the long distance market.”⁵¹ The PAP provides for financial remedies when Verizon does not meet certain performance standards.

The Commission adopted the “Virginia Carrier-to-Carrier Guidelines Performance Standards and Reports” (Guidelines) for evaluating Verizon’s wholesale performance; the PAP takes its performance measures and standards from the Guidelines. The PAP divides these measures into three service segments eligible for possible bill credits: i) Mode of Entry (MOE), ii) Critical Measures, and iii) Special Provisions. In addition, the PAP provides for additional bill credits on the basis of metrics related to the Change Control Assurance Plan (CCAP) implementation.

Verizon provides financial remedies to CLECs in the form of bill credits, payments, or penalties against Verizon. The calculation of bill credits varies depending on the type of measure missed; each service segment has an associated credit schedule and a cap on the dollar value of penalties. The Commission requires that Verizon apply credits to the CLECs’ bills within 30 days of the end of the second month after the report month.

2. Mode of Entry (MOE)

The MOE segment measures the overall level of service for the five service types through which carriers can enter the local exchange market. These five service types are resale, Unbundled Network Element-Platform (UNE-P), Unbundled Network Element-Loop (UNE-L), Interconnection (Trunks), and Digital Subscriber Lines (DSL).

Verizon generates bill credits when any one of the five service types falls below a certain level, as measured by a weighted average of performance measures. A total of \$52.72 million is available each year in bill credits related to the MOE measures, and the PAP limits the monthly amount of bill credits \$4.39 million (1/12th the yearly maximum). Under certain circumstances, the PAP permits doubling of this amount.

In total, the MOE segment covers 231, or about half, of the performance measure reported results. The table below shows the distribution of MOE reported results among the seven domains.

⁵¹ Virginia Performance Assurance Plan, p. 1.

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Measure Type	Number of Reported Results in C2C Report	Number of MOE Reported Results
Billing (BI)	4	2
Maintenance and Repair (MR)	161	84
Network Performance (NP)	20	2
Operator Services and Databases (OD)	2	0
Ordering (OR)	97	55
Pre-Ordering (PO)	58	32
Provisioning (PR)	186	56
Total	528	231

Verizon gives performance for each MOE measure a grade of 0, -1, or -2 on the basis of its statistical analyses for parity measures and on a sliding scale for measures with an absolute standard.⁵² For parity measures, the magnitude of the Z-statistic for the month determines the performance grade. A grade of 0 indicates performance that meets the standards for the measure, while a -2 grade identifies sub-standard performance. A performance grade of -1 also indicates sub-standard performance for a single month, but is subject to change depending on Verizon's performance during the next two months; if Verizon receives a 0 for both subsequent months, it revises the -1 to 0.

The PAP provides the following conversion for statistical scores on MOE measures:

Statistical Score	Performance Grade
$Z = -1.645$	-2
$-1.645 < Z = -0.8225$	-1
$-0.8225 < Z$	0

This conversion of statistical score into performance grade means that, when Verizon is performing at the standard, there is a 5 percent chance of obtaining a performance grade of -2 for a given month, approximately a 15 percent chance of obtaining a performance grade of -1 for the month, and an 80 percent chance of obtaining a performance grade of 0 for the month.

A performance grade of -1 or -2 does not necessarily translate into fines, because Verizon weights and sums performance scores for each measure to create an overall performance score by service type. It is this weighted score that determines bill credits. The following table from the PAP shows the MOE scores that result in bill credits, with the minimum adjustment implying a credit of 20 percent of the maximum monthly fine and the maximum adjustment implying a credit of the maximum monthly fine.

⁵² Appendix C of the PAP specifies the performance grade computations for non-parity measures, while Appendix D specifies the performance grade computations for parity measures.

	<u>Minimum Market Adj.</u>	<u>Maximum Market Adj.</u>	<u>% Market Adj. at Minimum</u> ⁵³
UNE - Platform	-0.25292	-0.67000	20%
UNE - Loop	-0.24862	-0.67000	20%
Resale	-0.24715	-0.67000	20%
Interconnection	-0.21429	-1.00000	20%
DSL	-0.23024	-0.67000	20%

The PAP requires that Verizon issue bill credits for each month when the aggregate performance in the five categories falls below the score listed in the “Minimum Market Adj.” column in the above table. If the score is at or below the score in the “Maximum Market Adj.” column in the above table, the PAP requires Verizon to provide the highest wholesale bill credit. The PAP contains “credit tables” for each category that list the bill credit rates for the range of scores.

If Verizon’s performance is below the midpoint of the first and second columns in the above table for three consecutive months, Verizon doubles the credits for the applicable category for all three months. In addition, the PAP requires Verizon to continue paying double fines until Verizon achieves a score of “one quarter (or greater) the difference between the minimum and maximum scores in that category in any given month.”⁵⁴

The PAP also looks at four domains (Pre-Order, Order, M&R, and Provisioning) under the resale, UNE-P, UNE-L, and DSL categories. Typically, if 75 percent or more of the performance scores under these measures are below the standard, Verizon should determine the bill credits depending on the greater of the domain results or overall market score.⁵⁵ The PAP calls this the Domain Clustering Rule.

Verizon allocates MOE bill credits to individual CLECs in proportion to each CLEC’s lines in service in that category, with the exception of interconnection trunks, for which Verizon determines the allocation by the monthly usage.

Verizon did not pay any MOE bill credits in Virginia for its July or August 2003 performance.⁵⁶

3. Critical Measures

The Critical Measures are individual reported values or groups of measures for which bill credits are available. The Critical Measures include collocation, specials, and resolution process measures, as well as a subset of the MOE for Resale, UNE-P, UNE-L, Trunks, and DSL. As a result, Verizon could provide both MOE and Critical Measure bill credits for the same measure.

⁵³ The “% Market Adj. At Minimum” indicates the amount of monthly bill credits that will be due to CLECs if Verizon trips the minimum score. For example, if Verizon were to score -.253 on the UNE – Platform MOE in a month, 20% of the \$1,933,067 monthly amount would be due (see Appendix A of the PAP for details).

⁵⁴ Virginia Performance Assurance Plan, p. 13.

⁵⁵ Page 134 and Appendix E of the Virginia Performance Assurance Plan explain the complete rules with respect to Domain Clustering.

⁵⁶ Response to Data Request #104.

When even one of the Critical Measures is a failure, Verizon issues bill credits. This method of issuing bill credits differs from that for MOE measures, in that Verizon issues bill credits for MOE measures only when one of the five broad categories is a failure.

Also, unlike MOE measures, Critical Measures that pass in aggregate may still fail for individual CLECs. In those cases, Verizon pays penalties to the CLECs for which a failure occurred. However, these individual penalties are only available for a measure that did not receive aggregate penalties.

The reported results for Critical Measures comprise 149, or about one-quarter, of the C2C reported results. The PAP includes 11 of the 20 reported results for the Network Performance (NP) measures in the Critical Measures. The following table shows the distribution of the Critical Measures reported results by measure domain.

Measure Type	Number of Reported Results in C2C Report	Number of Critical Measures Reported Results
Billing (BI)	4	2
Maintenance and Repair (MR)	161	38
Network Performance (NP)	20	11
Operator Services and Databases (OD)	2	0
Ordering (OR)	97	35
Pre-Ordering (PO)	58	11
Provisioning (PR)	186	53
Total	528	150

The scoring of the Critical Measures follow a similar process as that described for MOE above, except that Verizon typically does not weight the results.⁵⁷

The PAP requires that Verizon calculate each measure as an average of the performance for the CLECs in a given month. If the performance score in any category is -1, the PAP requires Verizon to pay between 50 and 95 percent of the maximum bill credits for that measure to eligible CLECs, with the exact amount calculated according to the tables in Appendix F of the PAP. The PAP requires Verizon to pay the maximum bill credit for a score of -2.

Only those CLECs receiving sub-standard performance on Critical Measures are eligible to collect bill credits. The amount of the bill credit on a Critical Measure is proportional to the amount of service that a CLEC receives from Verizon as compared to other eligible CLECs. Additionally, any individual CLEC with sub-standard performance for two consecutive months will receive bill credits even if the aggregate CLEC result for the measure meets the performance standard.

⁵⁷ There are some critical measures listed in Appendix table B-2 of the PAP that are weighted before being rolled up into a critical measure. However, most of the critical measures are for a single reported result or the (unweighted) combination of two or three reported results.

The total of individual CLEC bill credits cannot be above the maximum credit amount. Appendix G of the PAP states how Verizon should determine this amount:

Calculate Bill Credit Adjustment to apply to the CLECs impacted. The monthly dollars available to the CLEC are converted to a rate assuming that 1/3 of the market would receive a Z or t-score of -.8225 or less or a performance score of -1 or less. This rate is multiplied by the CLEC's qualified volume (e.g., lines in service) to determine the amount to be credited to the CLEC for that critical measure.

For July and August 2003, Verizon calculated \$223,784 in bill credits in Virginia for Critical Measures.⁵⁸

4. Special Measures

The Special Measures consist of three categories: i) flow-through measures (\$7.03 million of potential annual bill credits); ii) UNE ordering performance (\$16.87 million of potential annual bill credits, taken from MOE pool of unused dollars); and iii) Additional Hot Cut Performance Measures (\$16.87 million of potential annual bill credits).

For the UNE flow-through measures, OR-5-01 (Percent Flow-Through Total) and OR-5-03 (Percent Flow-Through Achieved), the performance standards are 80 percent and 95 percent, respectively. Verizon compiles the results for these measures for cumulative quarterly results. If Verizon misses the standard for either of these measures, it will pay a quarter of the bill credits allotted for the entire year to all CLECs that order UNEs. Each CLEC receives bill credits proportional to the number of lines it has in service.

The PAP specifies that Verizon should take the bill credits for UNE ordering performance from unused MOE funds; thus, the full \$16.87 million per year may not be available. There are four categories of Special Measures for UNE ordering performance:

- OR-1-04, Percent On Time LSRC/ASRC – No Facility Check (Electronic – No Flow-Through) – Platform and Loop/Pre-Qualified Complex/LNP
- OR-1-06, Percent On Time LSRC/ASRC – Facility Check (Electronic – No Flow-Through) – Platform and Loop/Pre-Qualified Complex/LNP
- OR-2-04, Percent On Time LSR/ASR Reject – No Facility Check (Electronic – No Flow-Through) – Platform and Loop/Pre-Qualified Complex/LNP
- OR-2-06, Percent On Time LSR/ASR Reject – Facility Check (Electronic – No Flow-Through) – Platform and Loop/Pre-Qualified Complex/LNP.

The standard for each is 90 percent. For any measure with sub-standard performance, any CLEC ordering UNEs should receive bill credits proportional to the number of lines it has in service.

⁵⁸ Response to Data Request #104.

The Special Measures additional hot cut performance measures consist of PR-9-01 (Percent On Time Performance – Hot Cut) and PR-6-02 (Installation Quality – Percent of Installation Troubles Reported Within Seven Days). The PAP requires that Verizon distribute bill credits for these Special Measures as it would for Critical Measures. Verizon provides bill credits in either of the following scenarios:

- For two consecutive months, PR-9-01 falls below its standard of 90 percent or PR-6-02 is greater than 3.00 percent.
- For one month PR-9-01 is less than 85 percent or PR-6-02 is greater than 4.00 percent.

Because each of the categories of measures described above has several associated reported results, there are a total of 16 reported results for Special Measures. All Special Measures are in the Ordering and Provisioning domains, as shown in the table below:

Measure Type	Number of Reported Results in C2C Report	Number of Special Measures Reported Results
Billing (BI)	4	0
Maintenance and Repair (MR)	161	0
Network Performance (NP)	20	0
Operator Services and Databases (OD)	2	0
Ordering (OR)	97	14
Pre-Ordering (PO)	58	0
Provisioning (PR)	186	2
Total	528	16

For its performance with Special Measures in Virginia, Verizon calculated \$803 in bill credits for July and August, 2003, all for measure PR-9-01.⁵⁹

5. Change Control Assurance Plan (CCAP)

A total of \$17.58 million in annual bill credits is available to CLECs on the basis of performance under four measures related to change control:⁶⁰

- PO-4-01: Percent of Change Management Notices Sent on Time
- PO-4-03: Change Management Notice Delay for More than Eight Days
- PO-6-01: Percent Software Validation
- PO-7-04: Delay Hours – Failed/Rejected Test Transactions – No Work Around.

⁵⁹ Response to Data Request #104.

⁶⁰ The response to Data Request #453 clarified that while the total amount the first year is \$7.03 million, the PAP allows for additional incentives of up to \$10.55 million, taken from the MOE allocation, if the CCAP incentives exceeds the initial amount.

The CCAP includes ten reported results, all in the Pre-Ordering domain.

Verizon did not generate any CCAP bill credits in Virginia for July and August, 2003.⁶¹

6. Summary of Measures in the PAP

Each measure in the PAP is associated with one or more measures in the Guidelines. The standards for these measures are either parity with retail or an absolute benchmark. These standards form the basis for the statistical analysis described in the PAP. The table below shows the type of standard by performance measure type for all reported results included in the PAP.

Measure Type	C2C Report	MOE	CRITICAL	SP	CCAP
Billing (BI)	4	2	2	0	0
Maintenance and Repair (MR)	161	84	38	0	0
Network Performance (NP)	20	2	11	0	0
Operator Services and Databases (OD)	2	0	0	0	0
Ordering (OR)	97	55	35	14	0
Pre-Ordering (PO)	58	32	11	0	10
Provisioning (PR)	186	56	53	2	0
Total	528	231	150	16	10

B. Analysis and Evaluation

Liberty reviewed the documentation, calculation, and implementation of the PAP penalties in its analysis. To understand the penalty rules, Liberty reviewed the PAP and accompanying appendices, along with actual C2C and PAP results reports. Liberty then used this documentation to recalculate actual penalties for August 2003. In order to recalculate penalties, Liberty used both aggregate and individual C2C reports for the months of July, August, September, and October 2003. Liberty needed several months of results because, in some cases, the final status of penalties depends on performance in later months. Finally, Liberty requested individual bills in order to verify that CLECs received correct bill credits.

1. Documentation

The PAP provides detailed explanations of the methods for determining bill credits. Liberty's goal in the documentation review was to determine whether the documentation was complete enough for an individual CLEC to determine its bill credits. In addition, Liberty looked at consistency and completeness of the documentation. Overall, Liberty found one major issue and several minor issues with the documentation.

⁶¹ Response to Data Request #104.

Chapter II. Performance Assurance Plan
Report on the Review of Verizon-VA's Performance Reporting and Performance Assurance Plan

The major issue is that many of the measures specified in the plan do not bear a one-to-one correspondence with C2C measures. For example, in the DSL section of MOE, the PAP contains the following measure in Table A-1-5:

OR-1-04	% On Time LSRC -No Facil Ck (E -No FT) -2W Digital -UNE/Resale
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No such measure appears in the C2C report. All measures in the C2C reports have an additional four digits that specify the reported result. Verizon intends this example listing in Table A-1-5 to be a combination of C2C measures OR-1-04-2341 and OR-1-04-3341. The PAP report lists this combination of two measures as OR-1-04-1341. Thus, a single documented measure is actually a combination of two C2C measures, and the PAP reports list those two C2C measures as one different measure.

This issue is not limited to a few scattered measures. Many of the Critical Measures and the MOE DSL measures have this characteristic. Table B-1 of the PAP appendix lists all of the Critical Measures without the final four digits of the C2C measures. Thus, even when the PAP measures are not combinations of more than one C2C measure, it is difficult to determine the corresponding C2C measure.

At Liberty's request, Verizon provided a table containing over 50 PAP measures and over 100 corresponding C2C reported measures, which showed how Verizon aggregated PAP measures.⁶² Without this additional information, a CLEC would be unable to correctly calculate the credits it was due. Liberty recommends that Verizon seek to revise the PAP to include this necessary information.

Liberty also discovered that the documentation for the scoring of Critical Measures was confusing. The PAP (p. 11) provides the following description of the MOE scoring:

Thus, for each of the measures within the five MOE categories, Verizon VA's performance will be graded 0, -1, or -2. Each measure with a performance score of -1 in a given month will be subject to change, depending upon the score for that measure in the next two months. Should Verizon VA maintain a performance score of 0 for the next two months, then the score in the original month will be changed from -1 to 0. The 0 would then be used in conjunction with all of the other metrics in that MOE category to determine an aggregate score.

This language appears to be very specific to MOE measures, as Verizon does not use the aggregate scoring for Critical Measures. However, Verizon explained that it intended this provisional scoring to apply to Critical Measures,⁶³ with the only documentation for this assertion being the general statement in the Critical Measures portion of the PAP (p. 15): "The statistical tests and performance scoring mechanism described in the MOE section also apply to these measures."

⁶² Response to Data Request #377.

⁶³ Interview #11, October 28, 2003.

Given that some of the language on page 11 is clearly specific to MOE measures, it is unclear how to interpret the blanket statement above. Liberty assumed it applied to the statistical methods and score of 0, -1, and -2, but not the provisional nature of the MOE scores. This interpretation is bolstered by the fact that the Critical Measure portion of the PAP contains the following (p.15):

For each Critical Measure, Verizon VA's performance for all CLECs during a given month will be averaged. Should the resulting performance score in any one category fall to -1 or below ("sub-standard performance"), 50% of the maximum bill credits for that measure will be payable to eligible CLECs.

It appears from this language that, instead of making a -1 score provisional, the PAP handles the uncertainty of that score for Critical Measures by providing for a lower penalty.

Liberty interprets the documentation as follows: MOE measures with scores of -1 revert back to 0 if penalty scores are 0 in the subsequent two months. Critical Measures with scores of -1, however, are subject to penalties from 50 to 95 percent of the maximum amount, depending on the severity of the miss.

Interviews conducted by Liberty confirmed that Verizon is using the MOE rule described above for Critical Measures, rather than the process described on page 15.⁶⁴ Thus, according to Verizon's calculations, for -1 penalty scores, the final dollar penalty for Critical Measures is equal to the preliminary penalty if the penalty score is -2. If the penalty score is -1, and the penalty scores for the next two months are 0, then it changes the final penalty to \$0. Otherwise, the final penalty is the same as the preliminary penalty.

Finally, the PAP does not accurately represent the availability of performance reports. More specifically, the PAP states (p. 19):

In order to ensure that there is timely information regarding Verizon VA's performance, Verizon VA will report its performance on a monthly basis. Each month, a report will be made available to all CLECs providing service in Virginia. A sample copy of the report appears in Appendix G.

In addition, the PAP states that Verizon should make available a report showing penalties.

Liberty requested all individual CLEC and PAP reports as part of its audit. However, Verizon does not even create the individual CLEC C2C report or PAP report unless a CLEC specifically requested them. Thus Verizon could not provide reports for many of the CLECs.⁶⁵ Liberty believes that, given the language of the PAP, the reports should be readily available.

⁶⁴ Interview #12, December 8, 2003 and Interview #42, February 12, 2004.

⁶⁵ Interview #26, December 8, 2003.

2. Replication

According to Verizon's August 2003 Final PAP Report, bill credits were due for several measures. Liberty attempted to replicate the August 2003 data month credits. The following table shows the required payments, according to Verizon's August 2003 Final PAP Reports.

Metric*	Description	August Required Payment	Aggregate or Individual
MR-4-08	% Out of Service >24Hrs. - Bus.	\$70,018	Aggregate
OR-10-01	% PON Exceptions Resolved within 3 Bus Days	\$41,841	Aggregate
OR-10-02	% PON Exceptions Resolved within 10 Bus Days	\$16,736	Aggregate
OR-4-16	% On Time PCN - 1 Business Day	\$466	Individual
PR-3-01	% Completed in 1 Day (1-5 Lines - No Disp) - Platform	\$792	Individual
PR-4-04	% Missed Appointment - VZ - Dispatch - Platform	\$526	Individual
PR-4-07	% On Time Performance - LNP only	\$229	Individual
PR-4-14	% Completed On Time - 2W xDSL Loops	\$448	Individual
PR-6-01	% Installation Troubles within 30 days - UNE/Resale	\$11,561	Aggregate
PR-6-01	% Installation Troubles within 30 days - POTS	\$1,860	Individual
PR-9-01	% On Time Performance - Hot Cut	\$242	Individual
Total		\$144,720	

*PR-9-01 is a Specials Measure. The rest of the bill credits listed are for Critical Measures.

As shown in the last column of the table, some of the bill credits were for aggregate performance, while others were for individual performance.

Aggregate Bill Credits Replication

Liberty used the PAP, the C2C Reports, and interview information to re-calculate bill credits for the month of August 2003. Liberty used this documentation to create computer programs and databases containing the required PAP information.

These programs first merged the PAP information on measures and penalties with the information contained on the August 2003 Aggregate C2C report. Next, the programs calculated the statistical scores and the penalty scores. For MOE measures and relevant Critical Measures, the programs applied the weights and aggregated to create a total score. This program used these final scores to calculate the bill credits due.

The table below shows the results of Liberty's verification of aggregate bill credits for August 2003. All of these credits were for Critical Measures, as Verizon passed the MOE measures.

Measure name in PAP Report	Verizon Statistical Score (Liberty score in parenthesis if different)	Penalty Score (0, -1, or -2)	Verizon Preliminary Dollar Penalty (Liberty penalty in parentheses if different)	Final Penalty on PAP Report	Liberty and Verizon Agree?	Comment
PR-4-04-1341	-1.02	-1	\$2,475 (\$2,134)	\$0	No	September 2003 score of 0; October 2003 score of 0.
PR-6-01-1200	-1.95	-2	\$11,561 (\$9,688)	\$11,561	No	penalty remained
MR-4-01-1216	-0.96 (-0.93)	-1	\$3,179	\$0	No	Slight difference in score is expected with permutation test. Penalty removed in final PAP. September 2003 sample size of 4 too small for evaluation. Activity in October 2003 with 0 score. July 2003 sample size of 4 too small for evaluation. June data was not available.
OR-10-01-1000	NA	-2	\$41,841	\$41,841	Yes	penalty remained
OR-10-02-1000	NA	-2	\$16,736	\$16,736	Yes	penalty remained
MR-4-08-3144	-1.45	-1	\$70,018	\$70,018	Yes	penalty remained
MR-5-01-5000	-0.97	-1	\$51,548	\$0	No	September 2003 score of 0; October 2003 score of 0.

The above table displays Verizon figures, with Liberty's calculations in parenthesis only when there was a difference between the Liberty and Verizon calculation. Liberty nearly matched the preliminary penalties. However, Verizon identified several of the final penalties as \$0, which differed from Liberty's calculation of the final penalty for these measures. All of these differences are due to a different interpretation of the rule for penalty scores of -1.

Liberty believes the other discrepancies, in the preliminary penalties for PR-4-04 and PR-6-01 are due to the fact that Verizon adds to the pool of possible bill credits any potential credits where the associated measures had no activity. Verizon explained how this process worked,⁶⁶ and Liberty attempted to implement it, but did not match the final credits on these two measures.

⁶⁶ Interview #11, October 28, 2003.

Overall, Liberty matched or nearly matched the aggregate penalties calculated by Verizon with the exception of the procedure for penalty scores of -1 for Critical Measures.

Individual Bill Credits Replication

To calculate individual bill credits, Liberty requested all the individual CLEC reports. However, Verizon could only provide a portion of these reports, making complete verification impossible.

Liberty created a database of all August 2003 individual CLEC reports that Verizon provided and created computer programs to calculate individual penalties. These programs were very similar to the programs described under the aggregate replication section above, except that it performed calculations on a CLEC-by-CLEC basis.

In situations where Verizon listed a penalty and Liberty did not have the individual CLEC report, Liberty used the aggregate PAP report to attempt to recalculate the penalty. In these cases, Liberty could not verify that a penalty was due, but could calculate the dollar amount, assuming that Verizon's penalty score and volume figures for the CLEC were correct.

Liberty calculated far higher penalties than Verizon reported for individual CLECs. While Liberty generally matched Verizon's analysis of which measures and CLECs required individual bill credits, Liberty calculated much higher dollar amounts for each sub-par measure.

To calculate individual bill credits, Liberty used the August 2003 Final PAP Report and PAP Appendix F, which states that the individual bill credits are to be calculated as follows (p.3):⁶⁷

Calculate Bill Credit Adjustment to apply to the CLECs impacted. The monthly dollars available to the CLEC are converted to a rate assuming that 1/3 of the market would receive a Z or t-score of -.8225 or less or a performance score of -1 or less. This rate is multiplied by the CLEC's qualified volume (e.g., lines in service) to determine the amount to be credited to the CLEC for that critical measure.

While the above text indicates that Verizon should use the lines in service to calculate the penalty, Verizon did not. Instead, Verizon used the number of items that were below the standard. Because Verizon based the rate on total lines in service, but the penalty amount on number of items below the standard, penalties for each CLEC were far below the maximum, even when an individual CLEC's service was well below the standard. Thus, a CLEC with a score poor enough to be entitled to the maximum bill credits will only receive a small fraction of these credits.

⁶⁷ The application of the rate, as described above, ensures that when a CLEC receives a performance score of -2, it will receive a credit equal to the maximum credit available multiplied by three times its proportional lines in service. While this could theoretically result in amounts credited above the maximum allowed, Verizon indicated, in Interview #11, that it made this adjustment because it was felt that if one-third of the CLECs had service below grade, then it would trip the Aggregate Rule. If this is the case, the total of individual CLEC credits would not be above the maximum allowable credit for the measure.

The following table summarizes Verizon's and Liberty's calculated bill credits for August, 2003.

Metric⁶⁸	Standard	Performance	Market Volume	CLEC Volume	Dollars Available	Liberty Calculated Credits	Verizon Calculated Credits	Additional Credits Due
PR-9-01-3520	95	93.33	754	30	\$121,841	\$14,540	\$242	\$14,298
PR-6-01-2100	parity	-1.57	2,553	948	\$32,105	\$32,105*	\$1,622	\$30,483
PR-6-01-2100	parity	-2.52	2,553	47	\$33,795	\$1,690*	\$238	\$1,451
PR-4-14-3342	95	86.11	442	36	\$20,626	\$5,040	\$448	\$4,592
PR-4-07-3540	95	91.43	1,955	35	\$119,498	\$6,417	\$229	\$6,188
PR-4-04-3140	parity	-1.26	2,349	24	\$82,375	\$2,525	\$526	\$1,999
PR-3-01-3140	parity	-3.61	11,518	556	\$54,916	\$7,953	\$569	\$7,383
PR-3-01-3140	parity	-4.38	11,518	50	\$54,916	\$715	\$223	\$493
OR-4-16-1000	95	80.00	62,978	10	\$48,815	\$23	\$3	\$20
OR-4-16-1000	95	80.00	62,978	10	\$31,241	\$15	\$2	\$13
OR-4-16-1000	95	80.00	62,978	10	\$219,665	\$105	\$16	\$89
OR-4-16-1000	95	75.00	62,978	4	\$48,815	\$9	\$2	\$7
OR-4-16-1000	95	75.00	62,978	4	\$31,241	\$6	\$1	\$5
OR-4-16-1000	95	75.00	62,978	4	\$219,665	\$42	\$8	\$33
OR-4-16-1000	95	92.26	62,978	1472	\$36,611	\$2,567	\$70	\$2,497
OR-4-16-1000	95	92.26	62,978	1472	\$23,431	\$1,643	\$45	\$1,598
OR-4-16-1000	95	92.26	62,978	1472	\$164,749	\$11,553	\$317	\$11,236
Total						\$86,948	\$4,563	\$82,385

*This figure would have been higher, but was subject to the maximum bill credit.

As shown, the differences are significant. While Verizon calculated that \$4,563 was to be paid, Liberty calculated the correct number to be \$86,948.

⁶⁸ Individual metrics may be listed more than once because penalties were due for more than one CLEC. However, due to confidentiality issues, the CLEC names are not shown on this table.

Verizon's Determination of Which Measures and CLECs Receive Bill Credits

To determine whether an individual CLEC was due any credit, Liberty first created a database with all individual CLEC C2C Reports provided by Verizon. Because Verizon did not produce reports for all CLECs, Liberty was not able to match all individual bill credits. With respect to C2C Reports that Liberty did obtain, Liberty matched all but two of the individual bill credits. The table below highlights these differences.

Measure with Potential Individual Penalty⁶⁹	Verizon Individual Penalty	Liberty Individual Penalty	Liberty and Verizon Agree?	Comment
OR-4-16-1000	Yes	Unknown	Unknown	Not in individual CLEC files provided to Liberty
OR-4-16-1000	Yes	Unknown	Unknown	Not in individual CLEC files provided to Liberty
PR-3-01-3140	Yes	No	No	Liberty found no activity for this CLEC ID for this measure
PR-3-01-3140	No	Yes	No	Verizon showed no penalties for this CLEC
PR-3-01-3140	Yes	No	Unknown	Not in individual CLEC files provided to Liberty
PR-4-04-3140	Yes	No	Unknown	Not in individual CLEC files provided to Liberty
PR-4-07-3540	Yes	No	Unknown	Not in individual CLEC files provided to Liberty
PR-6-01-2100	Yes	No	Unknown	Not in individual CLEC files provided to Liberty
PR-6-01-2100	Yes	No	Unknown	Not in individual CLEC files provided to Liberty

Liberty determined that Verizon should have issued an individual penalty for one specific CLEC for measure PR-3-01-3140, while Verizon did not list another as a CLEC that was to receive an individual bill credit. Additionally, Verizon's August 2003 Final PAP Report lists a bill credit for a CLEC (for measure PR-3-01-3140) despite the fact that according to that CLEC's report received by Liberty, there was no activity on that measure in August 2003.

The other discrepancies listed in the table are all due to the fact that Verizon was unable to provide CLEC reports that verified the penalties, and thus, Liberty could not evaluate whether Verizon correctly calculated the penalties.

⁶⁹ Individual metrics may be listed more than once because penalties were due for more than one CLEC. However, due to confidentiality issues, the CLEC names are not shown on this table.

3. Electronic Bill Reconciliation

In total, Verizon calculated that it owed \$66,880 in bill credits due to poor aggregate performance for July 2003, as shown in the table below.

Metric*	Description	July Required Payment	Aggregate or Individual
MR-4-08	% Out of Service >24Hrs. - Bus.		Aggregate
OR-10-01	% PON Exceptions Resolved within 3 Bus Days	\$41,841	Aggregate
OR-10-02	% PON Exceptions Resolved within 10 Bus Days	\$16,736	Aggregate
OR-4-16	% On Time PCN - 1 Business Day	\$143	Individual
PR-3-01	% Completed in 1 Day (1-5 Lines - No Disp) - Platform	\$9,483	Individual
PR-4-04	% Missed Appointment - VZ - Dispatch - Platform	\$350	Individual
PR-4-07	% On Time Performance - LNP only	\$83	Individual
PR-4-14	% Completed On Time -2W xDSL Loops	\$159	Individual
PR-6-01	% Installation Troubles within 30 days - UNE/Resale	\$8,302	Aggregate
PR-6-01	% Installation Troubles within 30 days - POTS	\$2,109	Individual
PR-9-01	% On Time Performance - Hot Cut	\$561	Individual
Total		\$79,767	

*PR-9-01 is a Specials Measure. The rest of the bill credits listed are for Critical Measures.

Verizon was to distribute these credits among 11 CLECs. To verify these payments, Liberty compared screen shots of electronic bills to calculated payments on the July 2003 Final PAP Report. Liberty determined that all the required credits for aggregate poor performance appeared on the report.

Verizon also owed bill credits for poor individual poor performance. Liberty could not verify these credits because of the lack of August bill information.⁷⁰

C. Findings and Recommendations

The PAP documentation does not provide adequate coding of C2C measures to PAP measures.

Measures listed in the PAP documentation do not have a one-to-one correspondence with the measures found in the C2C reports. Because of this, it would be extremely difficult for a CLEC to determine its credits, even if it had the both the PAP documentation, its individual C2C report, and the Aggregate C2C report.

Liberty recommends that Verizon update its documentation with information concerning how Verizon aggregated various C2C measures in order to determine PAP penalties.

⁷⁰ Liberty used the month of July 2003, because the August electronic bill credits were not available as of the writing of this report.

Verizon's documentation for the scoring of Critical Measures is confusing.

A second documentation issue concerned the scoring of CLEC performance for Critical Measures. In Liberty's opinion, the documentation is unclear as to whether scores of -1 are treated as conditional, as they are with MOE measures. Liberty's review of the PAP shows that -1 scores for Critical Measures were not intended to be conditional.

The different interpretations of the treatment of -1 penalty scores when dealing with Critical Measures resulted in Liberty's calculated fines that were approximately \$57,000 more than those calculated by Verizon.

Liberty recommends that Verizon revise its documentation to clarify how Critical Measure penalty scores of -1 are treated, and, if necessary, modify its penalty calculation so that it is consistent with the new documentation.

The PAP does not accurately represent the availability of individual CLEC performance reports.

The PAP states that Verizon will provide report its performance monthly and provide a copy of this report to all CLECs providing service in Virginia. However, Verizon only produces reports for CLECs that request them. In fact, Verizon does not create either a C2C report or a PAP report, unless a CLEC has requested them. Liberty believes that, given the language of the PAP, the reports should be readily available.

Verizon's method of calculating individual bill credit penalties is not consistent with the wording in the PAP.

Liberty successfully identified which CLECs were to receive penalties, in cases where Verizon was able to provide individual CLEC reports. Because Verizon did not produce many of the individual CLEC reports, Liberty was unable to verify some of the individual CLEC penalties.

Liberty found a gross under-calculation of the individual penalties, due to the use of a numerator that is not consistent with the wording in the PAP; Verizon did not use lines in service, as implied by the PAP. As a result, Verizon underreported more than \$80,000 of individual bill credits for the August 2003 data month.

Verizon believes its use of the number of misses below the standard as a method for calculating individual penalties is consistent with the PAP. Liberty acknowledges that the use of individual misses below the standard leads to the results that Verizon calculated. However, Liberty believes that Verizon's method is not consistent with the wording in the PAP. Therefore, Liberty recommends that the Commission's Collaborative Committee discuss and resolve the issue of how to calculate the individual bill credits.

III. Pre-Ordering Performance Measures

A. General Background

The pre-ordering measures report on the availability and responsiveness of various aspects of Verizon's pre-order OSS. The Guidelines list eight pre-ordering measures with 24 sub-metrics. The PAP focuses on the following six pre-ordering measures and ten sub-metrics:

- PO-1-01, PO-1-03, and PO-1-06
- PO-2-02
- PO-4-01 and PO-4-03
- PO-6-01
- PO-7-04
- PO-8-01 and PO-8-02.

The PAP lists PO-1-06 and PO-2-02 as Critical Measures.

For its audit of the pre-ordering measures in Virginia, Liberty built on the knowledge gained during its recent audit of Verizon's New Jersey pre-ordering measures, focusing on differences that existed in Virginia. As part of its audit, Liberty obtained an overview of Verizon's processes and systems that generate the data used for these measures. Liberty reviewed how Verizon captures the raw data and whether it collects and reports all relevant data. Liberty also identified all exclusions that Verizon makes to the source data and assessed the processing steps applied by Verizon to that source data to generate the reported pre-ordering metric results. The latter assessment included a review of the programming algorithms Verizon uses to develop the metric results.

Liberty determined whether key data field definitions are consistent with the Guidelines, and assessed whether Verizon correctly calculates any derived values from the source data. Liberty also identified whether there appeared to be any significant opportunities for inaccuracies in the source data. In addition, Liberty recalculated the pre-ordering performance sub-metric results as a check on the reliability of Verizon's processes.

B. PO-1, Response Time OSS Pre-Ordering Interface

1. Background

The PO-1 measure reports on the responsiveness of Verizon's OSS pre-ordering interfaces. The PO-1 sub-metrics report the average response time of different queries (e.g., requesting and receiving a customer service record). There are nine PO-1 sub-metrics.

There are three pre-ordering interfaces through which a CLEC may access Verizon's pre-order OSS: Electronic Data Interchange (EDI), Web Graphical User Interface (Web GUI), and Common Object Request Broker Architecture (CORBA). Verizon reports performance results for the PO-1 sub-metrics separately for each interface. The standard for most of the PO-1 sub-

metrics is parity with retail plus an allowance for variations in interface functionality and the security requirements between retail and CLEC transactions.

Except for PO-1-07, Verizon determines response times for CLEC queries for the PO-1 sub-metrics using actual CLEC transaction data. Verizon measures these CLEC response times from the time Verizon's OSS receives the query to the time the OSS sends out a response. Verizon measures all retail PO-1 transactions (and PO-1-07 for CLECs) using EnView, a performance evaluation tool that simulates the action of a Verizon or CLEC employee accessing the OSS. EnView initiates at least ten transactions for each query type during every normal business hour. Verizon measures EnView response time from the time it sends a query to the time it receives a response.

For PO-1-05, the Guidelines indicate that Verizon always combines Telephone Number Reservation with Address Validation and that, for Verizon service representatives, this is a required two-step process requiring two separate transactions. The Guidelines also note that there is no retail Parsed CSR transaction, so Verizon is to report basic CSR as the retail PO-1-09 result.

The Guidelines state that normal exclusions include Saturday, Sunday, and major holidays, as well as hours outside of the normal report period which are 8:00 a.m. to 9:00 p.m. Monday through Friday. The Guidelines also state that Verizon is to note time aberrations resulting from failures of the EnView robot or its transmission links and report them without exclusion in a footnote of the monthly performance report.

Verizon reports all of the PO-1 sub-metrics on a statewide basis. Additionally, Verizon reports PO-1, except for PO-1-09, in aggregate for both Verizon retail and all CLECs. Verizon reports PO-1-09 results on a CLEC-specific basis. The standard for the PO-1-01, PO-1-02, PO-1-03, PO-1-05, PO-1-06, and PO-1-07 sub-metrics is parity with retail plus four seconds for EDI and CORBA, and parity with retail plus seven seconds for Web GUI. The standard for PO-1-04 and PO-1-09 is parity with retail plus ten seconds. The standard for PO-1-08 is 0.33 percent.

The Guidelines provide the following formulas for the PO-1 sub-metrics:

PO-1-01: Average Response Time – Customer Service Record (CSR)

(Sum of all response times for CSR transactions)/(Number of CSR transactions)

PO-1-02: Average Response Time – Due Date (DD) Availability

(Sum of all response times for DD availability)/(Number of DD availability transactions)

PO-1-03: Average Response Time – Address Validation

(Sum of all response times for address validation)/(Number of address validations)

PO-1-04: Average Response Time – Product & Service Availability

(Sum of all response times for product and service availability)/(Number of product and service availability transactions)

PO-1-05: Average Response Time – Telephone Number Availability & Reservation

(Sum of all response times for telephone number availability and reservation)/(Number of telephone number availability and reservation transactions)

PO-1-06: Average Response Time – Mechanized Loop Qualification – xDSL

(Sum of all response times for mechanized loop qualification)/(Number of mechanized loop qualifications)

PO-1-07: Average Response Time – Rejected Query

(Sum of all response times for a rejected query)/(Number of rejected query transactions)

PO-1-08: Percent Timeouts

(Number of transactions that timeout)/(Total number of transactions)

PO-1-09: Parsed CSR

(Sum of all response times for parsed CSR transactions)/(Number of parsed CSR transactions)

Three of the PO-1 sub-metrics are relevant to Verizon's PAP. During the July and August 2003 reporting months, Verizon did not incur any penalties associated with PO-1.⁷¹

2. Analysis and Evaluation

Verizon stated that the processes, methods and procedures, and source data for PO-1-01 through PO-1-07 and PO-1-09 are largely the same in Virginia as in New Jersey, except for a difference in the hours of operation it reports.⁷² Liberty reviewed those procedures for completeness and consistency.

⁷¹ Responses to Data Requests #198 and #203 (July and August 2003 C2C Reports).

⁷² Response to Data Request #63.

Verizon did not report on PO-1-08 in New Jersey. Therefore, Liberty conducted a complete review of this sub-metric in Virginia, including assessing all related processes, procedures and methods, and other Verizon documentation.

Appendix C to the Virginia Guidelines states that:

In order to make a like for like comparison between Request Manager and the OSS an adjustment is made to the response times prior to calculating the Request Manager and OSS response time differences. The daily average response time for the Live Wire Address Validation transaction is combined with the response time for the Live Wire Telephone Number Select transaction.

This relates to the note in the Virginia Guidelines for PO-1-05 that Verizon combines Telephone Number Reservation with Address Validation and that, for Verizon service representatives, this is a two-step process that involves two separate transactions. When a CLEC submits a Telephone Number Availability and Reservation request, Verizon's systems first automatically perform an Address Validation transaction. Because this is not true for the Verizon retail systems, Verizon combines the EnView retail Telephone Number Availability and Reservation response time with the EnView retail Address Validation response time to obtain comparable results. Although not noted in the Guidelines, the same situation is also true for PO-1-06, *i.e.*, the wholesale Livewire system automatically performs an Address Validation when a CLEC requests a PO-1-06 Mechanized Loop Qualification transaction. Because of this, Verizon combines these two types of transactions when calculating its retail PO-1-06 results to ensure comparability with the wholesale results.

Liberty identified a conflict in the information provided in Appendix C to the Virginia Guidelines and in the Guidelines section dealing with PO-1. Specifically, Appendix C states that for EnView:

The monthly average is calculated for each transaction type by averaging all of the daily average response times.

Liberty interprets this to mean that Verizon is to calculate an average response time for each day, and then average those response times to obtain the monthly average, which it would then report as the metric result. The PO-1 section of the Guidelines, however, states that:

Average Response Time is the sum of the response times divided by the number of Pre-Ordering queries in the report period.

This would be the true average, obtained by adding all of the response times for the entire month and dividing by the number of queries. The two results will be the same if there were the same number of transactions each day; otherwise the results will likely be different. During the review, Liberty obtained the information necessary to determine that the EnView-based metric results reported by Verizon are the true average.⁷³ Liberty also determined that Verizon is using the

⁷³ Responses to Data Requests #557 and #161.

same averaging method for all transactions, including transactions that it does not obtain from EnView.

Liberty conducted an interview with Verizon personnel who demonstrated the Verizon retail representatives' steps for each of the six PO-1 transaction types.⁷⁴ Liberty also reviewed the EnView customized scripts. Verizon uses EnView to obtain both retail and CLEC PO-1-07 metric results, so Liberty gathered information on the EnView steps for both retail and CLEC queries. During the interview, Verizon personnel also demonstrated the CLEC wholesale procedure for the CSR transaction.

For the period through September 2003, EnView used one simulated query for PO-1-07, a CSR transaction with an invalid telephone number.⁷⁵ Liberty submitted data requests to learn about this query and whether it was representative of all query types, and Verizon issued Metric Change Control Record No. 10459 to substitute an address validation query for the CSR query. Liberty attempted to investigate whether the EnView results for the new address validation query would be representative of all rejection times for all transactions, but Verizon provided a non-responsive answer.⁷⁶ Liberty has requested a meaningful response to its data request, but Verizon has not provided it.⁷⁷ Accordingly, Liberty is unable to determine whether the PO-1-07 address validation query is representative of all reject times for all transactions.

The Guidelines allow for the exclusion of weekends and holidays as well as "hours outside of the normal report period." The Guidelines state that "normal exclusions include..." Liberty learned that there are no "non-normal" exclusions for PO-1.⁷⁸

The Guidelines state that:

If response time aberrations occur due to EnView robot failure or network failure between EnView and the VZ Operations Support Systems (OSS), VZ notes such failure times, and reports the data without exclusion in a footnote on the report.

Liberty confirmed that Verizon excludes EnView response time aberrations from the monthly reported results (*i.e.*, they are in neither the denominator nor the numerator of the PO-1 sub-metrics) and includes them in a footnote to the monthly report.⁷⁹

The Guidelines for PO-1-08 state that the denominator is: "Total number of transactions." Liberty confirmed that the "total number of transactions" in the denominator includes every wholesale transaction (*e.g.*, including rejected transactions and transactions that time out) from PO-1-01 through PO-1-06 and PO-1-09.⁸⁰

⁷⁴ Interview #9, November 14, 2003.

⁷⁵ Response to Data Request #62.

⁷⁶ Response to Data Request #551.

⁷⁷ Responses to Data Requests #163 (revised), #550, #551, and #597.

⁷⁸ Response to Data Request #61.

⁷⁹ Response to Data Request #164.

⁸⁰ Response to Data Request #65.

Liberty recalculated all of the PO-1 results for Virginia for September 2003 and obtained the same results as those reported by Verizon.⁸¹

3. Findings and Recommendations

EnView does not adequately emulate the PO-1 sub-metrics.

For PO-1-01, Verizon obtains retail performance results from EnView. However, EnView obtains the PO-1-01 CSR information from BOSS, while the Verizon retail representatives obtain their CSR information from a different system, ExpressTRAK. Thus, EnView is not accurately emulating the retail transaction because it is accessing a different system.

Livewire is the repository for service addresses, telephone numbers, etc. Verizon's retail representatives access Livewire via the SN4 application. However, for all PO-1 sub-metrics except PO-1-06 (Mechanized Loop Qualification), EnView does not access Livewire via SN4. Accordingly, the roundtrip transmission time for these EnView transactions is likely to be different from (and probably shorter than) the actual roundtrip transmission time experienced by Verizon service representatives.

Liberty recommends that Verizon improve its EnView simulation processes so that they are more representative of actual retail transaction results.

The Guidelines for PO-1 are inconsistent.

Appendix C to the Guidelines states that for EnView, "[t]he monthly average is calculated for each transaction type by averaging all of the daily average response times." The PO-1 section of the Guidelines, however, states that, "Average Response Time is the sum of the response times divided by the number of Pre-Ordering queries in the report period." These two methods of calculation will normally yield different results (*i.e.*, averaging sub-averages does not normally yield the same result as averaging the entire population). Verizon stated that it follows the procedure described in the PO-1 section of the Guidelines. Liberty recommends that Verizon seek a revision to Appendix C of the Guidelines.

EnView does not adequately simulate PO-1-07.

Verizon uses an invalid CSR transaction to obtain PO-1-07 reject results using EnView. However, EnView obtains the CSR information from BOSS rather than from the ExpressTRAK system used by Verizon representatives. Accordingly, the PO-1-07 results do not provide a good indicator of reject time, even for the CSR transaction alone. Verizon followed this procedure up to and including the September 2003 data month. Metric Change Control No. 10459 states that Verizon will stop using an invalid CSR starting with the October 2003 data month, at which time they will use an invalid Address Validation transaction to obtain PO-1-07 results. Liberty did not

⁸¹ Responses to Data Requests #260 and #735.

received information from Verizon to confirm that this new transaction will be representative of the rejection times for all types of PO-1 transactions.⁸²

C. PO-2, OSS Interface Availability

1. Background

PO-2 reports on the availability of the Verizon OSS pre-order and maintenance interfaces. More specifically, this measure reports the actual time these interfaces are operational as a percentage of the scheduled availability. Verizon reports on two PO-2 sub-metrics in Virginia.

The Guidelines define scheduled availability for the OSS interfaces as follows:

- *Prime Time: 6:00 a.m. to 12:00 a.m. Eastern Time (ET) Monday through Saturday, excluding major holidays*
- *Non-Prime Time: 12:01 a.m. to 5:59 a.m. ET Monday through Saturday, and all day Sunday and major holidays.*

Verizon determines the actual OSS interface availability by combining the outages reported by CLECs with those reported by EnView. For calculation of outage times, Verizon divides each hour into six-minute intervals. A CLEC reports interface outages to Verizon's Wholesale Customer Care Center (WCCC), which enters the information including outage times into a tracking system. Verizon reviews this information weekly to determine which of the reported troubles are interface outages that it includes in PO-2 calculations. As detailed in the description of PO-1, EnView is to generate at least ten transactions for each query type each hour. EnView reviews these transactions separately by transaction type for each interface and for its OSS. The transaction is then determined to be successful, unsuccessful, or not issued. Verizon is to consider an interface unavailable only when all transactions in a six-minute interval are unsuccessful and at least one of the corresponding OSS transactions is successful. If there is one successful interface transaction during the six-minute interval, Verizon considers the interface available for that period.

Verizon compares the CLEC-reported outages with those determined by EnView to establish the existence and duration of an outage. If the timeframe for the outages coincide, that outage will be included in the PO-2 calculation. If the outage timeframe reported by the CLEC does not correspond exactly with that reported by EnView, Verizon will use the earliest reported start time and latest reported end time for its calculations.

Verizon reports performance results for the PO-2 sub-metrics separately for each interface: EDI, Pre-Ordering/Ordering/Maintenance Web GUI, CORBA, and Maintenance Electronic Bonding. Each interface has a set of processing complexes comprised of primary and back-up servers. When calculating the availability of each interface, Verizon takes into account the number of processing complexes associated with that particular interface.

⁸² Responses to Data Requests #163 (revised), #550, #551, and #597.

The exclusions listed in the PO-2 section of the Guidelines are:

- Troubles reported but not found in Verizon's systems
- Troubles reported by a CLEC that were not reported to the Verizon designated trouble reporting center
- Scheduled interface outages for major system releases where Verizon provided CLECs advanced notification of the downtime in compliance with Verizon guidelines.

The Guidelines also state that Verizon will exclude a six-minute interval from all calculations if that interval is unmeasured.

Verizon reports the combined results of the District of Columbia, Maryland, Virginia, and West Virginia. The report reflects an aggregate of CLEC results. The standard for PO-2-02 is greater than or equal to 99.5 percent, and PO-2-03 does not have a standard. In all, there are three individual reported results for this measure.

The Guidelines provide the following formulas for the PO-2 sub-metrics:

PO-2-02: OSS Interface Availability – Prime Time

(Total number of scheduled prime time hours in the month for all available processing complexes minus the total number of unscheduled prime time outage hours in the month for all available processing complexes)/(Total number of scheduled prime time hours in the month for all available processing complexes)

PO-2-03: OSS Interface Availability – Non-Prime Time

(Total number of scheduled non-prime time hours in the month for all available processing complexes minus the total number of unscheduled non-prime time outage hours in month for all available processing complexes)/(Total number of scheduled non-prime time hours in the month for all available processing complexes)

One of the PO-2 sub-metrics is relevant to Verizon's PAP. During the July and August 2003 reporting months, Verizon did not incur any penalties associated with this measure.⁸³

2. Analysis and Evaluation

Verizon stated that the methods, procedures, and processes for calculating PO-2 are the same for Virginia as for New Jersey, with the exception of differences in reporting hours.⁸⁴ Liberty reviewed Verizon's PO-2 documentation applicable to Virginia.

⁸³ Responses to Data Requests #198 and #203 (July and August 2003 C2C Reports).

⁸⁴ Response to Data Request #67.

The New Jersey Guidelines for PO-2 noted that Verizon did not have a mechanized means (such as EnView) to measure availability of the Electronic Bonding interface and that it used CLEC and Verizon employee trouble reports for that purpose. The Virginia Guidelines for PO-2 contain no such statement, but Liberty suspected that the same process applies in Virginia. The Virginia Guidelines state that “EnView measurement of the EDI, Web GUI and CORBA interface availability is as follows...” without mentioning Electronic Bonding. Liberty confirmed that Verizon is not measuring the Electronic Bonding interface availability using any mechanized system.⁸⁵

The Guidelines call for Verizon to exclude “unmeasured six (6) minute measurement periods.” From Verizon’s perspective, there can never be any unmeasured six minute periods because CLECs are always (at least in theory) measuring interface availability. For Virginia, Verizon includes all six minute periods in the denominator, even those for which EnView has not polled the interface.⁸⁶

An exclusion that applies to PO-2 is for scheduled interface outages. Liberty found in New Jersey that Verizon made this exclusion from the numerator but not from the denominator. Liberty’s review determined that this is also the case in Virginia.⁸⁷

Verizon stated that it uses the same processing complexes in Virginia as in New Jersey.⁸⁸ Liberty found that, in New Jersey, Verizon was not using EnView to measure availability of one of the CORBA complexes for PO-2. Verizon said that it implemented Metric Change Control No. 10205 to correct this problem as of July 2003.⁸⁹

Liberty obtained the September 2003 PO-2 data from Verizon and used it to recalculate the metric results for that month.⁹⁰ Liberty’s results were the same as those reported by Verizon.

3. Findings and Recommendations

Verizon’s PO-2 documentation is incomplete and contains an error.

Verizon’s Virginia PO-2 documentation does not reference the fact that Verizon combines CLEC-reported outages with EnView-reported outages in the results calculation.⁹¹ In fact, the documentation relates solely to obtaining and processing EnView data. In addition, the documentation references EnView measurements for Electronic Bonding, although Verizon has stated that EnView does not monitor Electronic Bonding in the Potomac states. Liberty recommends that Verizon revise its PO-2 documentation to correct these problems.

⁸⁵ Response to Data Request #166.

⁸⁶ Response to Data Request #167.

⁸⁷ Response to Data Request #168.

⁸⁸ Response to Data Request #68.

⁸⁹ Response to Data Request #97.

⁹⁰ Response to Data Request #260.

⁹¹ Response to Data Request #165.

The PO-2 Guidelines lack clarity.

For PO-2 metric reporting purposes in the Potomac states, Verizon only uses EnView to measure the availability of the EDI, Web GUI and CORBA interfaces. It does not use EnView to measure the availability of the Electronic Bonding interface. This means that Verizon only includes CLEC-reported Electronic Bonding outages in the PO-2 metric results. The New Jersey Guidelines specifically note this fact, but the Virginia Guidelines do not, although the *Methodology* section of these Guidelines does refer only to EDI, Web GUI, and CORBA in discussing the EnView measurement process. Liberty recommends that Verizon seek a revision to the Guidelines to specifically note that Electronic Bonding availability is only being measured using CLEC-reported outages.

Verizon is not in conformance with the Guidelines for PO-2.

Verizon is not following the *Methodology* section of the Guidelines for PO-2. That section states that:

Availability is calculated by dividing the total number of six (6) minute measurement periods in a 24-hour day (excluding unmeasured six (6) minute measurement periods) into the number of periods with no successful transactions for the day and subtracting this from 1 and multiplying by 100.

However, Verizon is not in fact excluding the unmeasured six minute measurement periods before it performs its division. This serves to inappropriately improve the reported PO-2 results. Verizon's justification is that, even though a six minute period may go unmeasured by EnView, CLECs could still call in a trouble report for that six minute period. This reasoning by Verizon, which Liberty believes is not consistent with the intent of the Guidelines, would mean that there would never be an unmeasured six minute period as long as Verizon had at least one CLEC customer.

Liberty recommends that Verizon follow the *Methodology* section of the Guidelines for PO-2.

Verizon's method of making PO-2 exclusions produces more favorable results compared to another reasonable method.

Readers of Verizon's metric performance reports should be aware of the manner in which Verizon is making its exclusions for PO-2. An exclusion in the Guidelines is for "scheduled interface outages for major system releases where CLECs were provided with advanced notification of the downtime in compliance with VZ Change Management Guidelines." In these cases, Verizon excludes the outage in the sense that its metric reporting is exactly as if the outage and its advanced notification had not occurred. Some readers of the metric performance report might assume that Verizon would exclude the period of the possible outage from the denominator of the measure and also exclude any outages that occurred during that period from the numerator calculation, but Verizon's method, as described, is different and will always

provide it with more favorable results. Liberty recommends that Verizon seek to clarify the Guidelines with regard to the PO-2 exclusions.

D. PO-3, Contact Center Availability

1. Background

The PO-3 measure reports on the speed of answer in Verizon centers that handle CLEC ordering and maintenance issues. The two centers that take calls are: i) the Repair Help Desk, for maintenance, and ii) the National Marketing Center, for ordering. There are four PO-3 sub-metrics; however, Verizon only reports on two in Virginia.

The center hours of operation are:

- Repair Help Desk: 24 hours a day, seven days a week
- National Market Center: 8:00 a.m. to 6:00 p.m., Monday through Friday.

A CLEC can either contact its dedicated representative directly or call the general 800 number. When a CLEC calls the 800 number and selects a menu option, the system places the call in the Automatic Call Distributor (ACD) queue. If a CLEC calls its representative directly and the representative does not answer, the system forwards the CLEC call to the menu and ACD. Verizon calculates speed of answer from the time a call enters the ACD, after the selection of a menu option, to the time that a Verizon representative answers the call. Fifteen percent of calls that are abandoned and 10 percent of calls that ring busy are included in the denominator.

According to the Guidelines, Verizon excludes calls directed to and answered by dedicated representatives from the PO-3 calculations.

Verizon is to report the PO-3 sub-metrics separately for resale and for UNE, both in aggregate for all CLECs. Verizon reports PO-3-02 as a combination of results for Delaware, the District of Columbia, Maryland, Pennsylvania, Virginia, and West Virginia. For PO-3-04, Verizon reports the results for all of Verizon East.⁹²

The standard for both PO-3-02 and PO-3-04 is that Verizon answers 80 percent of calls in 30 seconds or less. There are no individual reported results for this measure.

The Guidelines provide the following formulas for the PO-3 sub-metrics:

PO-3-02: Percent Answered within 30 Seconds – Ordering

(Number of calls to main number of National Marketing Center answered within 30 seconds after the call was received by ACD)/(Total calls answered by National Marketing Center + 15 percent of abandoned calls + 10 percent of busy calls)

⁹² Verizon East includes Connecticut, Delaware, the District of Columbia, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, Virginia, and West Virginia.

PO-3-04: Percent Answered within 30 Seconds – Repair

(Number of calls to main number of Repair Help Desk answered within 30 seconds after the call was received by ACD)/(Total calls answered by Repair Help Desk + 15 percent of abandoned calls + 10 percent of busy calls)

The PO-3 measure is not included in Verizon's PAP.

2. Analysis and Evaluation

Liberty confirmed that there is only one National Market Center serving Virginia, which is located in Silver Spring, Maryland, and there is only one Repair Help Desk serving Virginia, which is located in Richmond, Virginia.⁹³

The Virginia Guidelines note that Verizon adds 15 percent of abandoned calls and 10 percent of busy calls to the denominator of the PO-3 sub-metrics. Abandoned calls are those on which the caller hangs up before reaching a Verizon representative. Busy calls occur when a caller presses a key for an option from the call management system and gets a busy signal. In this case, the caller must place a new call to the center. During its review, Liberty assessed the means by which Verizon determines the total number of abandoned and busy calls, and confirmed that Verizon was properly including the required percentages of each in the PO-3 sub-metric denominators.

The *Products* section of the Virginia Guidelines states that the PO-3 sub-metrics report separately on resale and UNE products. The New Jersey Guidelines did not differentiate, and it is Liberty's understanding that calls to the ordering or repair centers are included in metric results without regard to product. Liberty confirmed that the PO-3 metric reports include resale and UNE products combined.⁹⁴

During its New Jersey audit, Liberty identified an apparent inconsistency between the Guidelines and other Verizon methods and procedures documentation regarding the calculating of call intervals for PO-3. Both the Virginia and New Jersey Guidelines indicate that Verizon should measure the call interval from the time a call enters the ACD, after the selection of the menu option. During the Virginia review, Liberty determined exactly what start time Verizon is using for measuring speed of answer, and confirmed that it is consistent with the requirements of the Guidelines.⁹⁵

In calculating its PO-3 results in New Jersey, Verizon used two different reports, the *Daily Calls Answered Report* and the *Daily Queue Performance Report*. These two reports did not include the exact same set of calls, and using them together could have resulted in inaccuracies. Liberty asked Verizon to explain why it needed to use both types of reports in New Jersey, but the

⁹³ Response to Data Request # 70.

⁹⁴ Response to Data Request #554.

⁹⁵ Responses to Data Requests #173 and Interview Request #10, November 11, 2003 and November 18, 2003.

response was unclear and inadequate. Verizon also uses these same reports in Virginia to develop its PO-3 metric results, but in this case Verizon needs them to obtain all the required data for Virginia metric reporting purposes.

In New Jersey, Verizon's documentation of the PO-3 metric methods and processes was inadequate. Liberty asked Verizon to provide all its PO-3 documentation for Virginia if the process differed from that in New Jersey. Verizon responded that it had added a requirement to include busy and abandoned calls in the denominator, and that the standards were different between those two states.⁹⁶ However, Verizon's response did not include related process or method documentation. Liberty again requested all of Verizon's documentation for calculating the Virginia PO-3 metric results and reviewed it for completeness.⁹⁷

Liberty obtained Verizon data for PO-3 for Virginia for September 2003 and used it to recalculate the PO-3 metric results.⁹⁸ Liberty obtained the same results as those reported by Verizon. Liberty did, however, note that the data file provided to Liberty included no data for September 1, 2003, Labor Day.

3. Findings and Recommendations

Verizon is not in conformance with the Guidelines for PO-3.

The *Report Dimensions* section of the Guidelines requires that Verizon report PO-3 results separately for resale products and for UNE products. However, Verizon actually reports only one result that is for all products combined. This single result is in the monthly performance results report under the tab for Resale (Ordering) and also under the tab for UNE (Ordering). Liberty recommends that Verizon seek a revision to the *Report Dimensions* section of the Potomac states to state that the metric reports all products combined.

Verizon is making an unjustified exclusion when calculating PO-3 metric results.

The *Performance Standard* section of the Guidelines requires that Verizon report on ordering center availability from 8:00 a.m. to 6:00 p.m., Monday through Friday. Additionally, the PO-3 documentation provided to Liberty states that the ordering centers serving Virginia are open from 8:00 a.m. to 6:00 p.m., Monday through Friday. (The ordering center hours for some other states in that document specifically exclude holidays.) However, Verizon excludes holidays from its Potomac states PO-3 ordering metric calculations, although the Guidelines do not allow this exclusion.

⁹⁶ Response to Data Request #71.

⁹⁷ Response to Data Request #175.

⁹⁸ Response to Data Request #260.

E. PO-4, Change Management Notice

1. Background

PO-4 reports on the timeliness of change management notices provided by Verizon. Change management notifications schedule interface-affecting software or documentation changes, and change management confirmations verify that Verizon has finalized its documentation. There are three PO-4 sub-metrics.

The Guidelines define the different types of change notifications and confirmations and the associated timeliness standards as follows:

Change Type	Change Notification Interval	Change Confirmation Interval
Type 5: CLEC originated	<ul style="list-style-type: none"> Business Rules: = 73 calendar days Technical Specifications: = 66 calendar days 	<ul style="list-style-type: none"> = 45 calendar days
Type 4: Verizon originated	<ul style="list-style-type: none"> Business Rules: = 73 calendar days Technical Specifications: = 66 calendar days 	<ul style="list-style-type: none"> = 45 calendar days
Type 3: Industry Standard	<ul style="list-style-type: none"> Business Rules: = 73 calendar days Technical Specifications: = 66 calendar days 	<ul style="list-style-type: none"> = 45 calendar days
Type 2: Regulatory	<ul style="list-style-type: none"> Time frames specified in the Regulatory Order. If no time frame set, default to above. 	<ul style="list-style-type: none"> Time frames specified in the Regulatory Order. If no time frame set, change notification and change confirmation negotiated on an individual case basis through the change management process.
Type 1: Emergency Maintenance	<ul style="list-style-type: none"> Notification before implementation 	N/A

The Guidelines state that Verizon should not consider documentation available until it makes all material changes.

There are no specific exclusions to the PO-4 measure other than the common exclusion of Verizon affiliate data from all reported CLEC aggregate results.

Verizon reports this measure in aggregate for all CLECs in the Verizon South region.⁹⁹ For each PO-4 sub-metric, Verizon combines Type 1 and Type 2 notifications and reports the result for them as one number, and it combines Type 3, Type 4, and Type 5 notifications and reports the result for them as a second number. It follows the same procedure for reporting confirmation results. The standard for PO-4-01 is 95 percent and the standard for PO-4-03 is zero. PO-4-02 does not have an associated standard.

The Guidelines provide the following formulas for the PO-4 sub-metrics:

⁹⁹ Verizon South is composed of Delaware, the District of Columbia, Maryland, New Jersey, Pennsylvania, Virginia, and West Virginia.

PO-4-01: Change Management Notices Sent On Time

(Number of change management notifications sent within the required time frame)/(Total number of change management notices sent)

PO-4-02: Change Management Notice – Delay One to Seven Days

Cumulative delay days for change management notices sent one to seven days late.

PO-4-03: Change Management Notice – Delay Eight Plus Days

Cumulative delay days for change management notices sent eight or more days late.

Two of the PO-4 sub-metrics are relevant to Verizon's PAP. During the July and August 2003 reporting months, Verizon did not incur any penalties associated with this measure.¹⁰⁰

2. Analysis and Evaluation

The Guidelines for PO-4 imply that Verizon only reports change management notices, and not change management confirmations. In fact, the only mention of change management confirmations in those Guidelines is in the *Timeliness Standards* and *Products* sections, while all other sections, including the results formulas, only refer to notices. Liberty asked Verizon about this, and Verizon responded that it includes both change management notifications and change management confirmations in the PO-4 metric results.¹⁰¹ Liberty confirmed that both types of documents are being included.

In its New Jersey audit, Liberty found that Verizon excluded from its calculations change management notices and change management confirmations for which Verizon and the CLECs agreed to an interval shorter than that in the performance standard. The Virginia Guidelines have no exclusions. Liberty requested all methods and procedures related to the calculation of the PO-4 metric results.¹⁰² The response to that request described the treatment of these types of change management notices and confirmations for PO-4 calculations, stating:

For New Jersey: All notices associated with these Change Requests are excluded.
For other Regions: Notices actually sent associated with these Change Requests are included, and the required notification and confirmation dates will be adjusted to reflect the agreed shorter timeframe.

However, the Virginia Guidelines make no mention of using agreed-upon shorter timeframes for the PO-4 metric result calculations.

¹⁰⁰ Responses to Data Requests #198 and #203 (July and August 2003 C2C Reports).

¹⁰¹ Response to Data Request #73.

¹⁰² Response to Data Request #74.

During its New Jersey audit, Liberty learned that Verizon made three PO-4 exclusions not listed in the New Jersey Guidelines. In addition, these exclusions introduced subjectivity into the process of deciding whether to include a notice or confirmation in the PO-4 metric results. Liberty's review of Verizon's PO-4 Virginia process documentation confirmed that Verizon is also making several PO-4 exclusions in Virginia, none of which the Virginia Guidelines list.¹⁰³

Verizon issued Metric Change Control No. 10285 because of manual errors it found in the PO-4 metric results for December 2002. Verizon intended the change control to adjust the process to ensure that these errors do not recur. Liberty learned the precise nature of the errors and evaluated the steps Verizon took to prevent future recurrences.¹⁰⁴ Liberty determined that Verizon's corrective actions were adequate.

Liberty requested the September 2003 PO-4 source data from Verizon for Virginia.¹⁰⁵ Liberty recalculated the PO-4 metric results for that month and obtained a result different from Verizon's reported result. Accordingly, Liberty requested an explanation from Verizon. In its request, Liberty stated that:

If there is another Type 2 confirmation that should have been in the table, please provide a copy of it (together with all supporting documentation required to determine its impact on the September 2003 PO-4 metric results) with the response to this data request, and also please explain how the September 2003 results were calculated using the table provided to Liberty in the response to DR 260.

Verizon provided a revised table, and that table did include data for a new confirmation.¹⁰⁶ Using the new data, Liberty obtained Verizon's PO-4 reported results for Virginia for September 2003. However, Verizon chose not to provide the actual confirmation as asked for in the data request. Hence, Liberty cannot confirm that Verizon's reported results for September 2003 for Virginia are correct.

3. Findings and Recommendations

Verizon is not in conformance with the Guidelines for PO-4.

Verizon is making an exclusion for changes that do not relate to the list of interfaces in its procedures document.¹⁰⁷ Verizon's justification is that separate agreements cover some of these interfaces and others are not "critical path functions."¹⁰⁸ However, Liberty is not aware of any support for this "critical path" requirement.

¹⁰³ Response to Data Request #74.

¹⁰⁴ Response to Data Request #152.

¹⁰⁵ Response to Data Request #260.

¹⁰⁶ Response to Data Request #747.

¹⁰⁷ Response to Data Request #74.

¹⁰⁸ Response to Data Request #177.

Verizon makes a second exclusion for changes that do not materially affect the CLECs. Verizon's justification for making this exclusion is that it is following its *Wholesale Network Services OSS Interface Change Management Process (CMP)* document.¹⁰⁹ However, this CMP document does not appear to require a material impact; in fact, it seems that Type 2 and Type 3 changes, which the CMP document allows, may not always have material impacts. In addition, Verizon's justification for following its CMP document is a statement in the *Performance Standard* section of the Virginia Guidelines for PO-4 that reads:

The Timeliness standards for the PO-4 sub-metric products are listed below and are in accordance with those set forth in the Change Management processes and procedures. VZ will comply with applicable Change Management Processes and Procedures.

Verizon apparently assumes that the intention of this statement applies to much more than performance standards, although Liberty sees no reason for that assumption. This exclusion also introduces subjectivity into the process, *i.e.*, the decision as to whether a change has "material impact."

Verizon makes a third exclusion for notices or confirmations that do not include relevant documentation as appropriate for the particular change.

There can be change management notices and change management confirmations for which Verizon and the CLECs agree to a notification interval shorter than that in the performance standard. For such notices and confirmations, Verizon's procedures state that:¹¹⁰

For New Jersey: All notices associated with these Change Requests are excluded.
For other Regions: Notices actually sent associated with these Change Requests are included, and the required notification and confirmation dates will be adjusted to reflect the agreed shorter timeframe.

The Guidelines, however, do not allow for the use of shorter timeframes for any notices and confirmations. Again, Verizon's justification for using shorter timeframes is that it is following its CMP document, Section IX of which allows for more or less notification in some instances (although only the concept of less notification is in Verizon's procedures).

Liberty recommends that all relevant parties determine whether the CMP document is governing with respect to PO-4 metric calculation and reporting. Furthermore, these same parties should determine whether to revise the Guidelines to include the three exclusions Verizon is making, and to allow for the use of shorter, and longer, notification intervals.

¹⁰⁹ Response to Data Request #178.

¹¹⁰ Response to Data Request #74.

F. PO-5, Average Notification of Interface Outage

1. Background

PO-5 reports the average time interval between Verizon's identification of an OSS interface outage and Verizon's notification to the CLECs that the outage exists. The Guidelines state that Verizon will notify the CLECs via e-mail in the event of a Verizon system outage that prevents CLECs from performing pre-ordering, ordering, or maintenance transactions through any of the production interfaces and if the outage affects more than one CLEC. There is one PO-5 sub-metric.

There are no exclusions specific to the PO-5 measure other than the common exclusion of affiliate data from reported CLEC aggregate results.

Verizon reports this measure on a statewide basis in aggregate for all CLECs. Additionally, Verizon combines all types of interface outages in its calculation of PO-5-01. The standard for PO-5-01 is notification of CLECs within 20 minutes of identification of the outage. There are no individual reported results for this measure.

The Guidelines provide the following formula for the PO-5 sub-metric:

PO-5-01: Average Notice of Interface Outage

(Date and time of outage notification to CLECs – date and time the interface outage was identified by Verizon)/(Total number of interface outages for which a notice was given)

The PO-5 measure is not included in Verizon's PAP.

2. Analysis and Evaluation

During its audit in New Jersey, Liberty found that Verizon was using an estimated date/time for when it sent a notice to CLECs, rather than the actual date/time it sent the notice. In Metric Change Control No. 10297, Verizon stated that, as of September 2003, it would begin using the actual date/time stamp rather than an estimate.

Verizon indicated that the processes, methods, and procedures for developing PO-5 results are the same for Virginia as for New Jersey.¹¹¹ Liberty noted that the procedures and documentation for PO-5 for Virginia could differ from that provided to Liberty during the New Jersey audit and requested a complete copy of current procedures, but Verizon's response did not include any procedural documents and simply stated that its PO-5 procedures do not vary.¹¹² In response to Liberty's draft report, Verizon provided a procedural document for PO-5.¹¹³ Verizon also stated

¹¹¹ Response to Data Request #77.

¹¹² Response to Data Request #180.

¹¹³ Response to Data Request #180 (revision).

that the interfaces serving Virginia and New Jersey are the same, and the PO-5 results for Virginia and New Jersey are the same.¹¹⁴

The Virginia Guidelines for PO-5 include the requirement that an outage affect more than one CLEC. However, Verizon notes that every interface outage will affect more than one CLEC, rendering the requirement irrelevant.¹¹⁵ It is for this reason that the performance results and PO-5 documentation could be the same for Virginia as for New Jersey.

The Virginia performance reports for the months of July 2003 through October 2003 showed NA (no activity) for PO-5, so Liberty did not perform any results recalculation.

3. Findings and Recommendations

The definition of the denominator of PO-5 gives Verizon considerable flexibility over the outages it includes in the measure.

The denominator for PO-5 in the Guidelines is:

Total number of interface outages for which notice was given.

Because of this definition, Verizon could exclude any outage simply by not providing notice about it. Although not noted in the Guidelines, Verizon only includes in PO-5 those outages brought to the attention of the Wholesale Customer Care Center (WCCC), which is the organization that sends outage notices.

If Verizon continues to only include outages brought to the attention of the WCCC, the Guidelines should note this fact.

Verizon is making exclusions to PO-5 although the Guidelines list none.

Verizon excludes from PO-5 those outages for which it planned ahead of time and gave notice, although the Guidelines do not list this exclusion.¹¹⁶ Verizon considers these situations to be planned downtime rather than outages. In addition, Verizon does not send notices for short duration outages, and therefore does not include those in PO-5.¹¹⁷ Verizon justifies not sending out notices in these situations because Verizon's *Wholesale Network Services OSS Interface Change Management Process* document stipulates that outages of less than 20 minutes do not require notices. However, Verizon itself agrees that this document does not govern the calculation of performance results. As a specific example, Verizon's EnView system sometimes identifies outages of short duration which are not reported to the WCCC, so that notice is not given about them and they are not included in the measure. Verizon believes that not sending

¹¹⁴ Response to Data Request #75.

¹¹⁵ Response to Data Request #179.

¹¹⁶ Response to Data Request #181.

¹¹⁷ Response to Data Request #182.

notices about these short EnView outages and excluding them from PO-5 is acceptable because the outage would often be over by the time the CLECs received the notice. It is not uncommon for EnView to identify a short duration outage that is not reported to the WCCC.

It seems reasonable to Liberty to exclude both planned downtime and short outages from the PO-5 calculation. However, all parties should agree to this, and Verizon should seek a revision to the Guidelines to make these exclusions explicit.

Verizon's process for determining when an interface outage has begun is too subjective for PO-5.

When an outage is reported to the WCCC, Verizon holds an internal conference call to discuss it. At some time during this call, the outage may be "confirmed." The date and time of this "confirmation" is the "start" date and time that Verizon uses to measure the notification interval for the outage. At the time of the New Jersey audit, there had never been a month in which Verizon failed to meet the performance standard for PO-5. In fact, there had never been any interface outage included in PO-5 for which the time between the identification of the outage and the outage notification was greater than 20 minutes.

Verizon is violating its own procedures regarding the timing of outage notifications it sends out. Verizon's *Wholesale Network Services OSS Interface Change Management Process* document states that:

Within 20 minutes of the TC reporting the system outage to the WCCC, when the incident is related to connectivity, or within 1 hour when the incident is related to transaction processing, the WCCC sends a System Outage Bulletin (see sample – appendix B).

However, Verizon only attempts to send its notices within 20 minutes of when it has "confirmed" the outage, and this will virtually always be after the CLEC (termed the TC in the quote immediately above) has reported the outage to the WCCC. From this, Liberty concludes that Verizon is violating its own procedures and reporting interface outage notification intervals that are shorter than they would be if it were following its procedures.

Unless a specific situation arises for which Verizon can positively demonstrate that it is inappropriate to do so, Verizon should take the outage start time as the system down time reported by the CLEC representative or the Verizon employee, not the time Verizon has finally confirmed the outage. Verizon should still confirm that the outage did actually occur before including it in the metric results. Following this recommendation will bring Verizon into compliance with its own procedures.

Verizon's PO-5 procedural document is incomplete.

Verizon's PO-5 procedural document, provided in response to Liberty's draft report, is incomplete, providing inadequate guidance regarding the preparation of the PO-5 metric results.

The document does not state that Verizon only includes outages brought to the attention of the WCCC, nor does it note that Verizon excludes from PO-5 outages planned ahead of time and for which it gave notice to CLECs. Additionally, the document does not state that Verizon excludes from the PO-5 calculations outages of short duration, nor does it indicate that Verizon considers the “start” time for calculating the PO-5 interval to be the time when the outage was “confirmed” during its internal Verizon conference call. Liberty recommends that Verizon prepare complete and detailed procedures for the calculation and reporting of PO-5 results.

G. PO-6, Software Validation

1. Background

PO-6 reports on Verizon's software validation. Verizon installs software releases three times per year, usually in February, June, and October. In order to verify that the software will perform as designed, Verizon tests the functionality of the software release using test decks of transactions. There is one PO-6 sub-metric.

Verizon executes the test deck at the start of the Quality Assurance (QA) process and again at its completion. The Guidelines state that, within one business day following a non-emergency software release to production, Verizon will begin to execute the test deck in production using training mode. After completing the test, Verizon will report the number of test deck transactions that failed. A failed transaction occurs when the request cannot be submitted or processed, or results in incorrect or improperly formatted data.

Verizon assigns a weight to each transaction in the test deck, distributes the weights between the transaction types (*e.g.*, pre-order), and then applies them to specific transactions within each of the transaction types. Verizon reports the PO-6 metric results using the weighted transaction values in both the numerator and denominator of the calculation.

The Guidelines list no exclusions specific to the PO-6 measure.

Verizon reports the combined PO-6-01 results for the District of Columbia, Maryland, Virginia, and West Virginia. The result reflects an aggregate of all CLECs. The standard for PO-6-01 is not more than five percent of weighted test deck transactions may result in failure. There is one individual reported result for this measure.

The Guidelines provide the following formula for the PO-6 sub-metric:

PO-6-01: Software Validation

(Sum of weights of failed transactions)/(Sum of weight of all transactions in test deck).

The PO-6-01 sub-metric is relevant to Verizon's PAP. During the July and August 2003 reporting months, Verizon did not incur any penalties associated with this measure.¹¹⁸

2. Analysis and Evaluation

Verizon runs the test deck as required in the test environment. During the software release weekend, Verizon migrates its software from that test environment to the production environment. Then, within one business day of this migration, Verizon runs the test deck in the production environment. Verizon reports the results of this test deck run for the PO-6 metric results.¹¹⁹

Verizon stated that the test decks differ between New Jersey and Virginia, so that the PO-6 results could differ as well.¹²⁰ Verizon has also stated that, with the exception of the test decks, all of the processes, methods, and procedures for developing PO-6 results are the same for all Verizon East jurisdictions.¹²¹ Liberty reviewed Verizon's PO-6 procedural documents.¹²²

The Virginia Guidelines do not list any exclusions for PO-6. The Guidelines do, however, imply that only non-emergency software releases are being included. During its review, Liberty confirmed that Verizon excludes emergency software releases from the PO-6 calculations.¹²³ In addition, Liberty confirmed that Verizon excludes minor non-emergency CLEC-affecting software releases from the PO-6 results.¹²⁴

Verizon reports PO-6 results three times per year, and did not report results for the months of July 2003 through September 2003. Thus Liberty did not perform any PO-6 results recalculation.

3. Findings and Recommendations

Verizon is making exclusions to PO-6 that the Guidelines do not list.

The Guidelines for PO-6 list no exclusions. However, in calculating its PO-6 results, Verizon excludes emergency software releases. While this is not a listed exclusion, the *Definition* section of the Guidelines does imply that PO-6 could only include non-emergency software releases by stating:

Within one (1) business day, following a non-emergency software release to production as communicated through Change Management, Verizon VA will begin to execute the test deck in production using training mode.

¹¹⁸ Responses to Data Requests #198 and #203 (July and August 2003 C2C Reports).

¹¹⁹ Response to Data Request #549.

¹²⁰ Response to Data Request #79.

¹²¹ Response to Data Request #80.

¹²² Response to Data Request #187.

¹²³ Response to Data Request #186.

¹²⁴ Response to Data Request #188.

In addition, minor non-emergency CLEC-affecting software releases, for which Verizon apparently does not use the test decks, can occur at any time during the year, and these are not included in the reported PO-6 results.

Assuming all parties agree to continue excluding emergency software releases and minor non-emergency releases, Verizon should request a revision to the Guidelines to note these exclusions.

H. PO-7, Software Problem Resolution and Timeliness

1. Background

The PO-7 measure reports on the timeliness of Verizon's software problem resolution. Verizon installs non-emergency software releases three times per year. After each major CLEC-affecting software release, Verizon logs "production referrals" which are rejected transactions caused by Verizon code or documentation omissions or errors resulting in Type 1 changes. Verizon is to identify these production referrals as either rejected pre-order and order transactions reported to the Wholesale Customer Care center (WCCC), or rejected transactions resulting from test deck execution. There are four PO-7 sub-metrics.

Verizon measures the time interval for problem resolution from the time the trouble is reported to the WCCC. PO-7-01 reports on production referrals in the 30 days following a major CLEC-affecting software release.

Verizon measures all pre-order and order transactions reported to the WCCC between the hours of 6:00 p.m. on Friday and 9:00 a.m. on Monday as received at 9:00 a.m. on Monday. The Guidelines also specify that Verizon exclude affiliate data from reported CLEC aggregate results.

Verizon reports the combined data for the District of Columbia, Maryland, Virginia, and West Virginia for all sub-metrics, except PO-7-04. Verizon reports PO-7-04 for the entire Verizon East region. Verizon calculates the results of an aggregate of all CLECs. The standard for PO-7-01 is 95 percent. The standard for PO-7-02 and PO-7-04 is 48 hours, while PO-7-03 has a standard of ten days.

The Guidelines provide the following formulas for the PO-7 sub-metrics:

PO-7-01: Percent Software Problem Resolution Timeliness

(Number of production referrals resolved within timeliness standard)/(Total number of production referrals)

PO-7-02: Delay Hours – Software Resolution – Change – Transactions failed, no work around

Number of cumulative delay hours (beyond the 48 hour standard) for identified software resolution changes associated with transaction rejects with no workaround.

PO-7-03: Delay Days – Software Resolution – Change – Transactions Failed with Workaround

Number of cumulative delay days (beyond the 10 day standard) for identified software resolution changes associated with transaction rejects with a workaround.

PO-7-04: Delay Hours – Failed/Rejected Test Deck Transactions – Transactions Failed, no Workaround

Number of cumulative delay hours (beyond the 48 hour standard) for software resolution changes associated with transaction rejects with no workaround for Test Deck transactions.

The PO-7-04 sub-metric is relevant to Verizon's PAP. During the July and August 2003 reporting months, Verizon did not incur any penalties associated with this measure.¹²⁵

2. Analysis and Evaluation

Because the Guidelines for PO-7 in Virginia differ from those in New Jersey, Liberty requested all of Verizon's procedures and methods for calculating the PO-7 results in Virginia.¹²⁶ Verizon provided Liberty with several documents addressing the calculation and reporting of PO-7 results and Liberty noted that one of the flaws found in New Jersey is also present in these Virginia documents.¹²⁷ Liberty conducted a complete assessment of these documents during its review. Liberty noted that the *NMP System Design Document – PO-7 – Software Problem Resolution* received in Verizon's response included only Pennsylvania and Delaware under *Report Dimensions* for PO-7-04, although Verizon is to report PO-7-04 in Virginia as well. Liberty investigated why Verizon did not list Virginia in this document, and whether Virginia data are being included.

The documentation provided by Verizon equates Severity 1 troubles with PO-7-02 and Severity 2 and 3 troubles with PO-7-03. Liberty confirmed that this is the case and also assessed Verizon's severity definitions to ensure that they were appropriate.¹²⁸

During its New Jersey audit, Liberty found that Verizon interpreted the PO-7 Guidelines to mean that any production referral, whether from a CLEC or from a Verizon test deck transaction, must be linked to one of the transaction types in the test deck to be included in PO-7. The language in the Virginia Guidelines indicates that this is true in Virginia as well:

¹²⁵ Responses to Data Requests #198 and #203 (July and August 2003 C2C Reports).

¹²⁶ Response to Data Request #81.

¹²⁷ Response to Data Request #81.

¹²⁸ Response to Data Request #190.

After each major CLEC-affecting software release, Verizon tracks the number of rejected Pre-order and Order transactions reported to the Wholesale Customer care center (WCCC), those rejected transactions resulting from the test deck execution, and the time frame to resolve the problem.

Verizon confirmed that it interprets this sentence to mean that failed transactions reported by CLECs to the WCCC must be “related to” or “match” (in all major options) a test deck scenario if they are to be included in PO-7.¹²⁹ Verizon has never had any PO-7 performance result other than “NA,” no activity, at least in part because of Verizon’s “matching” requirement.

Although not noted explicitly anywhere in the New Jersey Guidelines, Verizon did not include Web GUI (now called LSI) failed transaction referrals in its PO-7 results. Verizon’s reason for this is that the Verizon test decks only address EDI and CORBA transactions, and Verizon believes that a failed transaction must relate to a test deck transaction to be a candidate for inclusion in PO-7. Liberty confirmed that Verizon is excluding failed CLEC Web GUI transactions from PO-7 in Virginia for the same reason.¹³⁰

During the New Jersey audit, Verizon told Liberty that when a production referral has a workaround, Verizon was required to provide that workaround within 48 hours, in addition to providing the permanent fix within ten days. Liberty confirmed that this requirement exists in Virginia as well. However, neither the New Jersey nor the Virginia Guidelines mention the requirement to provide the workaround within 48 hours.

3. Findings and Recommendations

Verizon has an unusual interpretation of the *Definition* section of the Guidelines for PO-7.

The *Definition* section of the Guidelines for PO-7 states:

After each major CLEC-affecting software release, Verizon tracks the number of rejected Pre-Order and Order transactions reported to the Wholesale Customer Care Center (WCCC), those rejected transactions resulting from the test deck execution, and the time frame to resolve the problem.

A normal interpretation of this sentence would be that Verizon reflects two types of transactions in the PO-7 results: i) those rejected transactions reported to the WCCC, and ii) those rejected transactions resulting from executing the test deck. Verizon, however, interprets the above sentence to mean that any production referral, whether from a CLEC or Verizon, must link to one of the transaction types in the test deck.¹³¹ Given Verizon’s interpretation of the Guidelines, the specific scenarios it includes in its test decks are of paramount significance to the PO-7

¹²⁹ Response to Data Request #83.

¹³⁰ Response to Data Request #192.

¹³¹ Response to Data Request #83.

metric results. For example, if the test decks “test” 60 percent of the possible types of transactions (a percent that Liberty is using for illustrative purposes only), then PO-7 is currently only measuring how thoroughly Verizon’s test deck has covered that 60 percent, and Verizon makes the subjective decision about whether a particular failed transaction should be considered in that 60 percent. In essence, PO-7 really tests how self-contained the test deck is when, again, Verizon makes this subjective decision each time it decides if a failed transaction is similar enough to a test deck transaction to be a candidate for PO-7. Liberty notes that, to date, Verizon’s subjective decisions have resulted in no production referrals ever being included in PO-7 (*i.e.*, PO-7 has always had a value of NA or R3).

Although not noted explicitly anywhere in the Guidelines, Verizon does not include Web GUI (now called LSI) failed transaction referrals in PO-7.¹³² Verizon’s reason for this is that the Verizon test decks only address EDI and CORBA transactions, and Verizon believes that a failed transaction must relate to a test deck transaction to be a candidate for inclusion in PO-7.

Liberty recommends that all parties determine if Verizon’s interpretation of the PO-7 definition in the Guidelines is appropriate. If not, Verizon should modify its PO-7 calculation processes to bring them into line with the agreed-upon interpretation of the Guidelines for PO-7.

The Guidelines for PO-7 have a minor omission.

Verizon told Liberty that when a production referral has a workaround, Verizon is required to provide that workaround within 48 hours, in addition to providing the permanent fix within ten days.¹³³ However, the Guidelines do not mention the requirement to provide the workaround within 48 hours. If all parties agree that this is a requirement, Liberty recommends that Verizon seek to change the Guidelines to include it.

Verizon’s PO-7 methods and procedures documentation is flawed and incomplete.

Verizon’s procedures for determining if a failed transaction “matches” a test deck transaction are important to minimize the subjectivity involved in determining whether there is a “match.” However, Verizon’s Procedure # QMP38.0, *WCCC Test Deck Referrals*, dated February 1, 2003, states:¹³⁴

The purpose of this document is to advise CTE - East Managers, Specialists and PM of the proper procedures to follow when being requested to determine if a reported system error was ever tested in the Verizon CTE test deck.

Thus, Verizon’s view is that all production referrals must already have been tested in the test decks or they will be excluded from PO-7.

¹³² Response to Data Request #192.

¹³³ Response to Data Request #193.

¹³⁴ Response to Data Request #81.

The document sheds no light on how to decide if there is such a “match.” The only part of the document relevant to this decision states that:

If the CTE specialist determines that the PON is identical in all major options to a scenario in the Test Deck, ...

Thus, the document simply uses the words “identical in all major options” instead of “matches” without providing any additional guidance to the Verizon employee making the decision.

Another (untitled) Verizon PO-7 procedural document notes among the criteria for PO-7 inclusion that the trouble ticket “[m]ust be resolved at the time of Metric's calculation,” although the Guidelines do not include this requirement.¹³⁵ Finally, Verizon's NMP System Design Document - PO-7 - Software Problem Resolution includes only Pennsylvania and Delaware under Report dimensions for PO-7-04, although the Guidelines for Virginia require reporting PO-7-04 for all the Potomac states combined.¹³⁶

Liberty recommends that Verizon correct its documentation errors and provide detailed and specific guidance for determining when a failed transaction “matches” the test deck.

I. PO-8, Manual Loop Qualification

1. Background

PO-8 measures the time it takes Verizon to respond to a request for manual loop qualification information (when this information is not available through an electronic database) and provide engineering record information. There are two PO-8 sub-metrics.

Manual loop qualification information may be required to provision certain more complex services. Verizon measures the time interval from the receipt of the request for information to the distribution of the information.

The Guidelines allow for the exclusion of Digital Design Loops that require loop conditioning (identified by an HXMU code) from the PO-8 calculation. Verizon should also remove test CLEC loops. Additionally, Verizon excludes weekends, from 5:00 p.m. Friday to 8:00 a.m. Monday, and holidays, from 5:00 p.m. of the business day that precedes the holiday to 8:00 a.m. of the first business day following holiday. The Guidelines also specify that Verizon exclude affiliate data from reported CLEC aggregate results.

The standard for PO-8-01 is 95 percent within 48 hours, while the standard for PO-8-02 is 95 percent within 72 hours.

¹³⁵ Response to Data Request #81.

¹³⁶ Response to Data Request #189.

The Guidelines provide the following formulas for the PO-8 sub-metrics:

PO-8-01: Percent On Time – Manual Loop Qualification

(Sum of manual loop qualification requests when the time from receipt of request for a manual loop qualification to the distribution of the loop qualification information is less than or equal to 48 hours)/(Number of manual loop qualification transactions)

PO-8-02: Percent On Time – Engineering Record Request

(Sum of engineering record requests when the time from receipt of request for an engineering record request to the distribution of the engineering record is less than or equal to 72 hours)/(Number of engineering record request transactions)

Two of the PO-8 sub-metrics are relevant to Verizon's PAP. During the July and August 2003 reporting months, Verizon did not incur any penalties associated with this measure.¹³⁷

2. Analysis and Evaluation

The Virginia PO-8 Guidelines do not contain *Report Dimensions* information. Liberty requested that information, and learned that Verizon reports PO-8 in Virginia on a statewide basis for an aggregate of CLECs.¹³⁸

Liberty obtained and assessed Verizon's procedures and methods documentation for calculating PO-8 results in Virginia.¹³⁹

During its New Jersey audit, Liberty noted that Verizon was including in its PO-8 results every request for manual loop qualification, regardless of whether the information was available in an electronic database. If a CLEC submitted a request for manual loop qualification in New Jersey instead of executing a Facility Availability pre-order transaction, that request would be included in the New Jersey PO-8 results. During its review, Liberty determined that this same finding holds in Virginia.

Liberty requested Verizon's source data for PO-8 for September 2003 for Virginia. Using that source data, Liberty recalculated the PO-8-01 metric results, obtaining the same result as that reported by Verizon. PO-8-02, Engineering Record Request, has never had any activity in Virginia.¹⁴⁰

¹³⁷ Responses to Data Requests #198 and #203 (July and August 2003 C2C Reports).

¹³⁸ Response to Data Request #84.

¹³⁹ Response to Data Request #85.

¹⁴⁰ Response to Data Request #196.

3. Findings and Recommendations

The PO-8 Guidelines are incomplete.

The PO-8 Guidelines for Virginia do not include a *Report Dimensions* section. Liberty confirmed with Verizon that it reports PO-8 at the CLEC aggregate level, and that the geography is by state.¹⁴¹

Verizon should seek a revision to the Virginia Guidelines to include a *Report Dimensions* section containing company and geography data for PO-8.

Verizon is not following exactly the *Definition* section of the Guidelines for PO-8.

The *Definition* section of the Virginia Guidelines for PO-8 states that:

The PO-8 Manual Loop Qualification metric measures the response time for the provision of Loop Qualification information required to provision more complex services (e.g. 2-Wire-xDSL) when such information is not available through an electronic database.

However, Verizon is actually including in the PO-8 results every request for manual loop qualification it receives from CLECs, regardless of whether the information was available in an electronic database.¹⁴² In fact, if a CLEC submits a request for manual loop qualification instead of executing a Facility Availability pre-order transaction, the request will always be included in PO-8. In other words, Verizon assumes that the CLECs have first tried to obtain the information electronically before they submit a request for manual loop qualification.

¹⁴¹ Response to Data Request #84.

¹⁴² Response to Data Request #313 as clarified on October 24, 2003.

IV. Ordering Performance Measures

A. Background Information and Summary of Findings

The ordering measures report on various aspects of Verizon's ordering process, including timeliness, completeness and accuracy. The Guidelines divide ten ordering measures into 30 sub-metrics. The PAP focuses on the following six ordering measures and 18 sub-metrics:

- OR-1-02, OR-1-04, OR-1-06, OR-1-12, OR-1-13, and OR-1-19
- OR-2-02, OR-2-04, OR-2-06, and OR-2-12
- OR-4-11, OR-4-16, and OR-4-17
- OR-5-01 and OR-5-03
- OR-6-03
- OR-10-01 and OR-10-02.

Of these, the PAP identifies OR-1-02, OR-1-04, OR-1-06, OR-1-12, OR-1-13, OR-1-19, OR-2-04, OR-2-06, OR-4-16, OR-10-01, and OR-10-02 as Critical Measures.

This first section of the Ordering chapter contains a summary of Liberty's findings and recommendations. The following sections on each of the OR family of measures (*i.e.*, OR-1, OR-2, etc.) contain more specific findings and recommendations. In addition, this first section provides i) overview descriptions of Verizon's ordering process and ordering metric data to assist the reader in understanding the metric write-ups that follow, ii) Liberty's assessment of Verizon's ordering data integrity, and iii) Liberty's assessment of some generic aspects of Verizon's OR metric calculation processes.

1. Summary of Liberty's Findings and Recommendations for the OR Domain

Liberty found that Verizon produced generally accurate results for the OR performance measures. Liberty successfully replicated the results for all of the sub-metrics it attempted to recalculate for the September 2003 data month. Liberty also found that Verizon is generally following the Guidelines by correctly applying exclusions and properly defining the logic and data fields it uses to calculate the denominators and numerators in the OR metric calculations. Throughout this audit Liberty found the Verizon personnel assigned to work with Liberty on the ordering metrics to be knowledgeable and cooperative.

Liberty found that, in general, Verizon's documentation for the ordering domain was comprehensive, and covered the ordering source systems, data flows from the source systems to the NMP warehouse, the data files that Verizon extracts from NMP to calculate the metrics, as well as definitions of data fields and methods for applying exclusions. However, Liberty had to issue data requests to clarify certain areas that Verizon did not present in a clear or complete fashion in the documentation.

In the "Findings and Recommendations" sections below for each of the ordering metrics, Liberty identified the problems it discovered with Verizon's processes. In many of these findings, Liberty found that Verizon's method was reasonable but that Verizon should seek a clarification to the Guidelines to make clear the process it is following. In other instances, Liberty found that Verizon needed to change its methods for making exclusions or calculations to be consistent with the Guidelines.

2. Verizon's Ordering Process

As part of its audit, Liberty obtained an overview of Verizon's business processes and systems that generate the data used for the OR measures. Liberty reviewed how Verizon captures the raw data and whether it collects and reports all relevant data. Liberty also sought to identify whether there were any significant opportunities for inaccuracies in source data.

CLECs submit requests for services to Verizon through Local Service Requests (LSRs) and Access Service Requests (ASRs).¹⁴³ CLECs may submit LSRs electronically through a Web GUI interface, via Verizon's NetLink EDI interface, or by mail/fax. CLECs order all resale products and most UNE products with LSRs. CLECs may submit ASRs electronically through the Web GUI, the Carrier Service Gateway (CSG), via Verizon's Network Data Mover (NDM) EDI interface,¹⁴⁴ or by mail/fax. CLECs order interconnection trunks and DS0, DS1, and DS3 specials with ASRs.¹⁴⁵

The Local Service Ordering Guidelines set forth the information that CLECs need to provide in an order. CLECs assign their own purchase order number (PON) to orders, and can supplement or cancel orders using a different version number for the same PON. As noted in the Guidelines, Verizon does not record orders that fail basic front-end edits in its ordering system. For LSRs submitted through the Web GUI and ASRs submitted through the CSG, Verizon's systems perform basic front-end edits on the CLEC user's screen, and prevent the CLEC from submitting an order with errors. For LSR and ASR orders submitted through EDI, Verizon's systems apply basic edits before the order moves to Verizon's backend systems. There are no basic edit processes for fax or mail orders, as Verizon representatives input these directly into the service order processor (SOP).

LSRs that Verizon receives via EDI or the Web GUI flow to the LSR gateway system, Request Manager. Request Manager performs preliminary edits on the order and sends it to either

¹⁴³ Verizon includes all types of orders submitted by LSR (N, T, C, R, D, and F) in the OR metrics, except for OR-6-01, OR-6-04, and OR-1-13, from which Verizon excludes D orders, and OR-6-01, from which Verizon excludes R and F orders. Verizon includes all types of orders submitted by ASR (N, C and D) in the relevant metrics. Dark fiber is not included in the OR metrics.

¹⁴⁴ Liberty learned during the New Jersey audit that NDM functions as an interface between Verizon's EDI translator and that of the CLEC.

¹⁴⁵ During Interview #3, October 23, 2003, and in response to Data Request #23, Verizon clarified that it receives DS0 EEL orders via ASRs but other types of DS0 orders via LSRs. CLECs order non-DS0, DS1, and DS3 specials via LSRs. In response to Data Request #822, Verizon stated that, while CLECs order most DS1 products via ASR, there are two types of DS1 products, platform Integrated Services Digital Network Primary Rate Interface (ISDN PRI) and UNE Platform T1, that CLECs order via LSR.

Request Broker, the Verizon automated order generating system, or to the National Market Center (NMC) for manual handling. Request Manager creates records for each event on the order such as submission, confirmation or rejection, SOP completion, and billing completion.

Many LSR orders submitted electronically can flow all the way through to Verizon's SOP, expressTRAK, without manual intervention. In other cases, these LSRs drop out, and Verizon representatives in the NMC must review and input them manually into expressTRAK. These representatives also receive and input into expressTRAK any LSRs that CLECs submit by fax or mail. Verizon representatives use the NetStatus system to track and investigate PONs, errors, and exceptions for LSR orders.¹⁴⁶ NetStatus can access data from other ordering systems, as well as downstream billing and provisioning systems such as the Customer Record Information System (CRIS) and Work Force Administration (WFA).

Verizon's expressTRAK system generates one or more service orders for each LSR, depending on the services that the CLEC requests. All systems downstream from expressTRAK process information on the service order level. Request Manager keeps track of all service orders that relate to a given PON or LSR, and stores relevant date and time information about an LSR. The system also generates the notifications that Verizon sends to a CLEC to acknowledge the receipt of EDI files, to confirm or reject an order, and to inform the CLEC of order or billing completion. For Web GUI orders, the Request Manager system sends these notifications to the CLEC over the same Web GUI. For EDI orders, Request Manager sends a message to Verizon's NetLink system, which then sends the notifications to the CLEC in EDI format. Verizon's NetStatus system stores timestamp information for orders that NetLink processes.

ASRs that Verizon receives via CSG or NDM flow to the NMC, where Verizon representatives enter the orders manually into the ASR gateway system, the Exchange Access Control and Tracking System (EXACT). EXACT performs much like Request Manager, and records information about each event on the order, such as submission, firm order confirmation (FOC) or rejection, and completion. The NMC personnel perform checks on the order, accessing information from other Verizon systems such as the Trunk Inventory Record Keeping System (TIRKS) as necessary. If there are no errors or facilities issues, the representatives create service orders for the ASR in the Access Service Order Processor (ASOP). Verizon's ASR ordering systems do not send notifications to the CLEC through EDI or the Web GUI. Instead, CLECs can view information on their orders in EXACT, which is accessible through the CSG.

3. Verizon's Metrics Data

Liberty reviewed the process by which Verizon extracts data from its legacy source systems and sends them to the NMP data warehouse. Liberty also reviewed the process by which Verizon extracts data from the NMP warehouse and creates the data tables that its metrics algorithms use to process results each month.

¹⁴⁶ During the New Jersey audit, Verizon indicated that NetStatus was its system for the Verizon East footprint. The NetStatus system replaced Verizon's Pontronics systems in August 2002.

Verizon accumulates selected data from ordering source systems in its NMP data warehouse. Verizon sends information on LSR orders to NMP daily from Request Manager and information on LSR order EDI notifications and acknowledgments from the NetStatus system. Verizon sends information on ASR orders to NMP on a daily and monthly basis from EXACT and WFA, and on a weekly and monthly basis from TIRKS.¹⁴⁷ Verizon also sends information on a routine basis from its NMP GUI, PON Shop, and Decision Support Systems (DSS) applications for specific OR measures.

Verizon performs a series of transformations on the data from the legacy system files to organize it into the NMP database structure, but Verizon leaves the source data unaltered. During these processing steps, Verizon performs basic error checks on key fields such as PON, state, CLEC ID, and event dates. Any records that fail basic error checks fall into error files. The business owners of the data review these error files and incorporate any valid records back into the NMP warehouse. Verizon indicated that Request Manager has basic edits and checks built in to the system to reject LSRs that do not have key fields populated, and, as a result, there is only a very remote chance that any LSR records drop into error tables.¹⁴⁸ Liberty requested additional information on this issue, because Verizon's documentation indicated that "null" was a valid value for many important data fields sent from the source systems to NMP. Verizon was unable to adequately address this issue during the audit, and stated only that it was in the process of completely revising its ordering system design documentation.¹⁴⁹ Liberty concluded that, at a minimum, the documentation that Verizon provided during the audit was out of date and did not cover all topics adequately. Liberty recommends that Verizon update its documentation and, in particular, more clearly address the data integrity issue.

To calculate the metrics each month, Verizon extracts selected information from the NMP warehouse and places it in data marts and then in specific data tables. In addition to fundamental information such as the state, CLEC, PON, and product, these tables contain certain derived values. NMP calculates such values as the elapsed time between Verizon's receipt of an LSR and its distribution of the LSR confirmation or reject. It also calculates indicator fields such as those used to denote on-time completion or test CLEC and Verizon affiliate PONs.

During the creation of the data marts, Verizon also updates the timestamp information for LSRs that it receives via EDI. NMP initially populates the date/time for order receipt and for the creation of notifications (such as LSR confirmations or billing confirmations) with data from Request Manager. If NMP can match NetLink timestamp information for a given PON, it replaces the data from Request Manager with data from NetLink. Thus, in all cases, the times that Verizon sends a notification for EDI orders in the LSR data table reflects the date/time that NetLink translates, encrypts, and attempts to send the notification to the CLEC.¹⁵⁰

¹⁴⁷ Interview #3, October 23, 2003.

¹⁴⁸ Response to Data Request #342.

¹⁴⁹ Response to Data Request #341 (clarification).

¹⁵⁰ In response to Data Requests #323 and #324, Verizon indicated that it had a manual process in place to find and investigate orders that NMP does not match with a NetLink timestamp. Verizon indicated that it did not find any EDI confirmations or rejections for the September 2003 reporting month that did not have a NetLink timestamp.

Verizon recently issued Metric Change Control No. 10102, stating that it would no longer overlay the timestamp from NetLink for LSR receipt date/time in NMP. Verizon found that the NetLink timestamp was later, rather than earlier, than the timestamp in Request Manager. Verizon stated that the NetLink system receives an EDI LSR order first, but that Request Manager receives and opens the order and records the first timestamp. Request Manager then returns the order to NetLink for decryption, and NetLink records a later timestamp. Verizon indicated that it found that the timestamp from NetLink was typically a second or two later than that from Request Manager.¹⁵¹ Verizon completed the change in July 2003.¹⁵² The change was appropriate given Verizon's new understanding of its systems. Although Verizon used the wrong timestamp through July 2003 for the purpose of calculating the OR-1 and OR-2 metrics (which should be the interval between receipt date/time and rejection or confirmation date/time), the effect on reported results was negligible.¹⁵³

Typically, the timestamp that Verizon records for sending an EDI notifier to the CLEC is after encryption and immediately prior to the time Verizon sends the file. However, if a CLEC's system is down and unable to receive the EDI notifier from Verizon, Verizon records the timestamp associated with its first attempt to send the notifier, rather than the later time when it actually sends the notifier and the CLEC's system is able to receive it.¹⁵⁴ This approach is consistent with the language in the Guidelines for OR-1 and OR-2. However, there is no similar language in the Guidelines for OR-4, OR-7, OR-8, and OR-9, all of which measure the timeliness of notifications to the CLEC. Liberty recommends that Verizon seek a clarification to the Guidelines to add similar language to OR-4 regarding BCNs and PCNs, to OR-7 regarding confirmation or rejection notifiers, and to OR-8 and OR-9 regarding acknowledgments.

Each month, Verizon creates the LSR Order Fact table, which it uses in calculating most of the OR metrics.¹⁵⁵ Verizon selects records to be included in the LSR Order Fact table for a given month by extracting from the NMP warehouse any ordering records that have one of the following dates within the reporting month: received date, confirmation date, reject date, CRIS notification date, SOP notification date, or the provisioning completion notification date from Resource Manager.¹⁵⁶

Verizon creates an ASR Order Fact table and a Trunk Fact table that it uses for certain OR-1 and OR-2 metrics. For these tables, Verizon selects records for a given month by extracting from the NMP warehouse any ordering records that have had activity during the reporting month, such as a submission, rejection, or confirmation.¹⁵⁷ Verizon creates an Order Acknowledgements table for OR-8 and OR-9. Verizon selects records to be included in the Order Acknowledgement table

¹⁵¹ Interview #3, October 23, 2003.

¹⁵² In its comments on Liberty's Draft Report, Verizon notified Liberty that it completed this change control in July 2003.

¹⁵³ Verizon uses the receipt date, rather than receipt date and time, for the OR-7 metric. Because the on-time indicator for this measure is in business days, the error would have no effect.

¹⁵⁴ Responses to Data Requests #521, #529, and #721.

¹⁵⁵ Verizon does not use this file for all metrics. For example, Verizon uses separate files for calculating OR-3-02 and OR-10.

¹⁵⁶ Interview #3, October 23, 2003.

¹⁵⁷ Interview #3, October 23, 2003.

by extracting records from the NMP warehouse that have either a receipt date or an acknowledgement date within the reporting month.¹⁵⁸

Verizon also creates several other data tables that it uses to calculate specific metrics: a Resend table for OR-3-02, a Flow-through Fact table for OR-5-03, an Accuracy table and a Directory Listing Accuracy table for the OR-6 metrics, and an Exception Order Fact table for the OR-10 metrics. Liberty explains how Verizon creates these tables in more detail in its discussion of the individual metrics.

4. Liberty's Review of Verizon's OR Data

An important element of Liberty's audit of the OR metrics was the analysis of the accuracy and completeness of the data that Verizon uses to calculate the metrics. If the data that NMP uses to calculate the metrics is inconsistent with the data captured by Verizon's ordering source systems, the results that Verizon reports would be inaccurate even if it has correctly defined the key variables, properly applied exclusions, and accurately coded its metrics algorithms. Similarly, if data were missing from NMP, Verizon would be underreporting its results.

Verizon uses the LSR Order Fact table from NMP in most of the OR metrics (*i.e.*, OR-1 through OR-4, OR-5-01, OR-6-03, and OR-7). Liberty focused its data analysis efforts on the LSR Order Fact table since these data constitute by far the vast majority of orders.¹⁵⁹

When Liberty audited the OR domain in New Jersey, it took a sample of PONs from the LSR Order Fact table and compared the data for certain key data fields to data from Verizon's ordering source systems. In general, Liberty had found that the data matched, and did not repeat the exercise during the Virginia audit. However, Liberty did identify an issue in the New Jersey audit surrounding the order line quantity, in which the number of lines in the submitted order occasionally differed from that in the order confirmation. In all cases in which Liberty found a discrepancy, the greater number of lines was in the submission data. When there is a discrepancy in the line count between these two sources, NMP always uses the line quantity that is the greater of the two for the purposes of populating the line count field in the LSR Order Fact table. The line quantity is important in Virginia because Verizon uses it to distinguish between orders that require facility checks (greater than five lines) and those that do not (five or fewer lines). In some cases, Verizon would classify an order into a category that would allow for a longer confirmation or rejection response interval.

During the audit of Virginia's performance measures, Verizon indicated that in some cases it could do work on an order and reduce the number of lines on the original order to a smaller number. Verizon's position was that to hold it to a shorter interval standard and to use the number of confirmed lines would not give Verizon credit for the time that it invested in working the order. Verizon stated that when it investigated the issue, it found that it affected about 2

¹⁵⁸ Interview #3, October 23, 2003.

¹⁵⁹ For example, there were roughly 140,000 Virginia records in the September 2003 LSR Order Fact table, compared to roughly 700 relevant records in the ASR Order Fact table and roughly 500 in the Trunk Fact table.

percent of orders, and would not have a significant effect on reported results.¹⁶⁰ Liberty believes that Verizon's position on the issue is reasonable; however, it is one that may cause confusion. Liberty therefore recommends that Verizon seek a clarification to the Guidelines to make this convention clear.

Liberty also obtained a limited amount of ordering data from two participating CLECs. Liberty used this independent data source to check against the data from NMP that Verizon uses to calculate the metrics.

One CLEC provided data for LSRs that it sent to Verizon via EDI during September 2003. Liberty selected 40 of these orders and compared the CLEC's data to the data that Verizon recorded in NMP. In all cases, Verizon's receipt dates/times were within a few minutes of those recorded by the CLEC's system. The LSR confirmation dates/times also were all within a few minutes of each other except for one case, where the CLEC's time was approximately one hour later than that recorded by Verizon. The PCN/BCN dates/times matched in all but four cases, and in each case the CLEC's receipt time for the notifier was between 30 minutes to over 4 hours later than the time recorded by Verizon. Liberty asked the CLEC if it had any system problems during these times (because Verizon records the time of its first attempt to send the notifier) but received no response.

The CLEC also provided EDI acknowledgement receipt times for 28 of the 40 PON versions. In all cases but two, Verizon's timestamp was within a few minutes of that recorded by the CLEC in its system. In one case, the CLEC had recorded receipt approximately 30 minutes later than the time that Verizon sent it; in the second case, the CLEC's receipt time was roughly one hour later. Liberty asked the CLEC if it had any system problem during this time, which would explain the time difference (because Verizon records the time of its first attempt to send the acknowledgement), but received no response.

Liberty asked Verizon whether it could explain the discrepancies in times for the one confirmation, four BCNs/PCNs, and two acknowledgments. Verizon stated that it calculates the confirmation based on the time that Verizon first attempted to send the notification. Verizon also provided the time that it successfully sent the notification for these seven orders.¹⁶¹ In all cases but one, the time that Verizon resent the notification was consistent with the time that the CLEC recorded for the notification. Verizon investigated the one remaining PON, and found that it had encountered a connectivity problem while sending the notification to the CLEC's systems. Verizon added that EDI assumed that the transaction was not successful and continued to try and send the notification until it could do so successfully.¹⁶²

Another CLEC provided data on nearly 50 PON versions that it submitted through Verizon's Web GUI. Liberty expected that the data from both parties would match exactly, because the CLEC provided screen prints for receipt, confirmation, rejections, and PCNs/BCNs from Verizon's Web GUI.

¹⁶⁰ Interview #23, October 23, 2003.

¹⁶¹ Response to Data Request #722.

¹⁶² Response to Data Request #722 (clarification).

The “time sent” as indicated on the printout of the Web GUI screen did not exactly match the LSR receipt time that Verizon recorded in NMP. In most cases, the Verizon receipt time was a few minutes later than the “time sent;” however, in several cases, it was earlier. Verizon stated that the “time sent” on the printout is entered by the CLEC, and that Verizon does not edit this input. Verizon added that the receipt time that it uses as receipt time for metric calculations is the time it records in its Gateway systems.¹⁶³

For the five PON versions that Verizon rejected, the rejection dates/times matched exactly. The dates/times for the BCNs and PCNs on the PON versions that were actually completed matched exactly between both parties. Liberty also found that one CLEC PON version was not in Verizon’s data at all. Verizon stated that this version of the PON did not pass Verizon’s front-end edits, and therefore did not record it in NMP.¹⁶⁴

The confirmation dates/times matched exactly except for three PON versions. Liberty asked Verizon to investigate the reason for the differences. For two of the three PON versions, Verizon recorded in NMP the date and time of the first confirmation that it sent, while the CLEC had provided a copy of a later resent confirmation. This treatment is appropriate, because Verizon measures its performance based on the first confirmation that it sends to the CLEC for a given PON version, not one that it resends at the CLEC’s request. For the third PON version, Verizon recorded the date/time that it sent a jeopardy report to the CLEC as the confirmation date/time in NMP, and the CLEC had provided a copy of the later order confirmation.¹⁶⁵ Verizon stated that it treats a jeopardy report on a PON version as an order confirmation. Stated differently, if Verizon sends a jeopardy notice before it sends a confirmation on a given PON version, it will record the date/time of the jeopardy notice as the confirmation date/time that it uses for the purposes of OR-1. Verizon indicated that this situation is rare, because jeopardy notices normally occur after Verizon confirms the order.¹⁶⁶ Liberty recommends that Verizon seek a clarification to the Guidelines for OR-1 to make this convention explicit. Liberty was otherwise satisfied that Verizon’s data for these CLEC orders was accurate.

When Liberty examined Verizon’s LSR Order Fact data table, it found examples of LSR PON versions that had both a reject and a confirmation, and, in all cases, Verizon rejected the PON version first. During the New Jersey audit, Verizon indicated that in some cases it mistakenly rejects a PON version, usually through human error. If the CLEC calls to inquire why Verizon rejected the order, or if Verizon discovers a mistake during internal reviews of orders, the NMC representative can update the LSR and then confirm the same version of the PON. Verizon includes such PON versions in both the confirmation and reject metrics. In these cases, the flow-through indicator that Verizon has recorded in NMP for these PON versions reflects that of the confirmation. For the OR-1 metrics, the flow-through indicator is correct, and the performance results would reflect Verizon’s delay in confirming the order.¹⁶⁷

¹⁶³ Written response to Interview #28, January 8, 2004.

¹⁶⁴ Written response to Interview #28, January 8, 2004.

¹⁶⁵ Interview #28, January 20, 2004.

¹⁶⁶ Supplemental written response to Interview #28, January 20, 2004.

¹⁶⁷ During the New Jersey audit, Verizon indicated that certain of these confirmed orders flowed through because Verizon corrected a system problem, such as unavailability of the Line Information Data Base, so no manual intervention in handling the order was required.

For the reject timeliness metric, OR-2, however, Verizon uses a flow-through indicator associated with the confirmation rather than the reject in some instances. This is incorrect. Liberty found that the number of cases in which this occurred was very small in comparison to the total number of orders, and that it would have a minimal effect on reported results.¹⁶⁸

Verizon indicated that it had discussed this issue in its CLEC working groups and that the CLECs could not agree on how Verizon should treat such situations. Some CLECs reportedly felt that Verizon should count the rejection, even though the flow-through indicator may be incorrect. Verizon noted that, in some cases, the confirmation could occur in the month after the rejection. In that case, if Verizon were to look for instances in which it both confirmed and rejected a PON version, it would not accurately identify all cases.¹⁶⁹ Liberty acknowledges that this unlikely is an situation and, nevertheless, recommends that Verizon exclude from the OR-2 metrics any PON version that it confirmed after it sent a reject notice in the same month because the flow-through indicator for these PON versions will be incorrect.

5. General Review of Verizon's Metric Calculation Process

Liberty's audit included an examination of the key data fields used by Verizon to calculate each OR metric to determine if they were consistent with the Guidelines. Liberty assessed whether Verizon correctly calculated any logic flags and any fields derived from source data. Liberty also analyzed whether Verizon adequately implemented the exclusions set forth in the Guidelines for each measure.

Liberty discusses the details of this analysis for each OR measure in the following sections of this chapter. With a few exceptions, Liberty found that Verizon had appropriately defined and calculated key variables and that Verizon properly implemented the exclusions listed in the Guidelines. Liberty noted certain instances where Verizon should seek clarifications to the language of the Guidelines to reflect how it applies these exclusions, or to reflect additional exclusions that it makes.

Liberty reviewed the programming algorithms that Verizon uses to calculate the OR measures to determine if they produced results that were accurately defined and consistent with the Guidelines. As part of its analysis, Liberty examined how Verizon defined the numerator and denominator of the measures to determine whether orders could fall through the cracks and go unreported. Verizon uses a separate algorithm to calculate each product group result for the OR metrics, and Liberty reviewed each one to determine if it was calculating the result correctly and in a manner consistent with the Guidelines. Liberty recalculated the CLEC aggregate results for selected sub-metrics as an additional check on the reliability of Verizon's results.

¹⁶⁸ Liberty found 128 Virginia PON versions with both a reject and a confirmation in the LSR Order Fact data for the September 2003 data month. This equates to less than one-tenth of 1 percent of the PONs. Liberty also identified a case in the ASR Order Fact data.

¹⁶⁹ Interview #3, October 23, 2003.

Even though Liberty was auditing results for the September 2003 data month, Verizon only provided the June 2003 version of its CMAs for the ordering domain. Liberty found many cases in which the algorithms that Verizon provided appeared to be incorrect, but Verizon later clarified that Liberty had received the wrong algorithms, *i.e.*, something different from the code Verizon actually used to calculate the metrics. Liberty had to issue numerous data requests to substantiate that Verizon had errors in the June 2003 CMA documentation, rather than errors in the algorithms themselves. Liberty recommends that Verizon publish clear and accurate CMAs that the Commission or CLECs could use to replicate Verizon's results.

During its review, Liberty identified some common issues that affect many of the OR measures. For example, Verizon considers PARTS orders to be an interstate access service not covered by the Guidelines, and excludes all PARTS orders from the OR-1 through OR-7 metrics.¹⁷⁰ Verizon does not, however, exclude PARTS orders from the OR-8 and OR-9 metrics. These two metrics involve acknowledgements of EDI files. When Verizon sends the acknowledgement, it does not know what product the CLEC specified on the order, and therefore Verizon cannot identify and exclude PARTS orders for these measures. Verizon's treatment of PARTS orders is reasonable, but Verizon should seek a clarification to the Guidelines to specify that it should exclude such orders from the OR-1 through OR-7 metrics.

Verizon reports orders for 2-Wire Digital, xDSL loop, Line Sharing, and Line Splitting products, both resale and UNE, as part of the POTS/Pre-Qualified Complex product group if the CLEC has already completed loop qualification as part of the pre-ordering process. When the CLEC does not complete loop qualification prior to submitting its order, there will be an "R" (for required) in the loop qualification field on the LSR. Verizon's NMC representatives send such orders first to Verizon's automated pre-qualification process, which checks whether the order can be qualified based on a lookup to Verizon's loop qualification database. If the automated process can pre-qualify the order, Verizon adds information on loop length to the order, processes the order as Pre-Qualified Complex, and flows the order through to the SOP.¹⁷¹ If the order does not pass through the automated process successfully, the NMC representative sends the order to Verizon engineering for loop qualification.¹⁷²

For ASR orders, if Verizon is unable to determine the product on the order (*i.e.*, DS0, DS1, or DS3), it assigns it a category of "other." Verizon reports such orders with the UNE non DS0, DS1, and DS3 specials product group in OR-1 and the UNE specials product groups that CLECs order with LSRs in OR-2.¹⁷³ Liberty believes that this approach is reasonable, but not contained in the Guidelines. Liberty recommends that Verizon seek a clarification to the OR-1 and OR-2 Guidelines to make this convention explicit.

¹⁷⁰ Interview #3, October 23, 2003.

¹⁷¹ As Verizon explained in Interview #3, Verizon does not consider NMC representatives routing the order to the automated process to be the same as the representative "touching" the order, so the order can still qualify as flow-through.

¹⁷² Interview #3, October 23, 2003.

¹⁷³ Specifically, Verizon includes ASRs with a product category of "other" in OR-1-06-3214, OR-1-10-3214, OR-2-04-3200, OR-2-06-3200, OR-2-08-3200, and OR-2-10-3200.

The OR-1 and OR-2 metrics have three categories, i) flow-through orders, ii) orders that require a facility check, and iii) orders that do not require a facility check. Verizon uses the facilities indicator field in the ASR Order Fact data table to designate whether an ASR order requires a facility check. Verizon assigns ASR orders for DS0 specials a facility indicator of “Y” if the order is for more than five lines; otherwise it assigns a “N.” NMP assigns most other ASR orders for specials a facility indicator of “Y,” regardless of the number of lines on the order.¹⁷⁴ Verizon’s treatment is consistent with the language in the Guidelines. However, Verizon does not require a facility check on ASR orders for specials if the order is for a disconnection (*i.e.*, NMP sets the indicator to “N”). Verizon’s convention for disconnect orders is reasonable, however, it is not contained in the Guidelines. Liberty recommends that Verizon seek a clarification to the Guidelines to make explicit its treatment of ASR orders for disconnections in both OR-1 and OR-2.

Verizon stated that it had discussed with the CLEC working groups the best procedure for instances in which the CLEC calls to disconnect service on a Line Sharing situation, or when Verizon is asked to disconnect the voice portion of a Line Sharing service. In some cases, the end-user does not consider that it has to disconnect the data service from the data local exchange carrier (DLEC). Verizon creates a disconnect order that it considers a wholesale order, but not one that is requested by the DLEC. Verizon recently instituted a change to handle situations in which it must create an order to disconnect the data portion on a Line Sharing situation.¹⁷⁵ Verizon stated that it considers such orders to be administrative and that it excludes such orders from the OR-1 through OR-9 metrics.¹⁷⁶ Verizon excludes the orders within NMP and does not include information on them in the LSR Order Fact data table.¹⁷⁷ Liberty believes that this convention is acceptable; however, the Guidelines do not address exclusions for administrative orders. Liberty therefore recommends that Verizon seek a clarification to the Guidelines to reflect this exclusion for internally generated Line Sharing disconnect orders. Verizon subsequently stated that it changed the Guidelines for this measure to reflect the exclusion for internally generated LSRs and filed the revised Guidelines with the Virginia Commission in December 2003.¹⁷⁸ Liberty believes that this proposed change will correct the problem and is consistent with what Verizon currently reports for this measure.

The Guidelines refer to the “PON Master File,” in OR-1, OR-2, OR-3, OR-5, and OR-7. Liberty asked Verizon whether this language was still relevant. Verizon stated that the phrase “PON Master File” is outdated language that referred to its data collection system prior to NMP, and that it plans to make a proposal to the New York Carrier Working Group to remove the language.¹⁷⁹ Liberty recommends that Verizon seek this modification. Liberty also questioned whether the Verizon web-site references contained in the OR-1 and OR-2 footnotes were still valid. Verizon acknowledged that these references were outdated, and indicated that it had received approval to modify them in the New York Commission order of October 2003.¹⁸⁰

¹⁷⁴ Verizon provided the ASR Order Fact data table field descriptions in response to Data Request #20.

¹⁷⁵ Metric Change Control No. 10047, completed for the June 2003 data month.

¹⁷⁶ Response to Data Request #327. Verizon stated that internally generated disconnect orders have a PON prefix of “A” and end with “ZZ.”

¹⁷⁷ Response to Data Request #639.

¹⁷⁸ Response to Data Request #639.

¹⁷⁹ Response to Data Request #696.

¹⁸⁰ Response to Data Request #892.

The Guidelines for OR-1, OR-2, OR-4, OR-5, and OR-7 allow Verizon to exclude PONs associated with special projects from reported results. As described in Appendix S, CLECs may request special handling for unique or large volume orders that require coordination by Verizon's NMC. To the extent that this specialized project support causes Verizon to miss certain metrics, Verizon may exclude the PONs from the OR-1, OR-2, and OR-7 (as well as PR-1 and PR-3) metrics. Under special circumstances, Verizon may also exclude these PONs from the OR-4 and OR-5 (as well as PR-6) metrics.

Appendix S states that the CLEC should send a letter to Verizon containing: i) a list of PONs associated with the project, ii) a unique PON identifier/prefix, iii) a start date, iv) the approximate completion date, and v) a definition of the special handling and the deviation from standard business practices that it requires. Verizon must then issue a change control notice for the special project to the affected CLEC and the Commission Staff. If Verizon wants to exclude any of the special PONs from OR-4, OR-5, or PR-6, it must provide sufficient data to explain the special circumstances to justify the exclusion.

For the OR-1 and OR-2 metrics, Verizon uses a test account indicator field to flag special project LSR orders using a look-up table in NMP and excludes these orders from results in its metric algorithms. Verizon calculates separate metric-specific indicators for LSR orders for OR-4, OR-5, and OR-7 in NMP and excludes these from results in its algorithms. Verizon excludes special projects orders that it receives via ASRs using an exclusion indicator field that it calculates on the basis of a look-up table. Verizon calculates and groups results by exclusion indicator, and includes only those with an exclusion indicator value of "Y" in reported results.¹⁸¹

Liberty asked Verizon to provide copies of the special project letters that it received from CLECs over the last six months, along with the corresponding change control notices.¹⁸² Liberty found that, in all cases, the CLECs provided a PON prefix identifier, but typically did not provide a complete list of PONs.¹⁸³ The CLECs provided the approximate start date for the project, but no completion date, instead stating that it would notify Verizon when the project was complete. Each letter contained a similar statement: "To the extent that the special handling of these project orders will cause Verizon to miss performance standards in either ordering or provisioning metrics, the CLEC agrees that these requests will be excluded from the performance metrics reported." However, the CLECs did not provide a description of the special handling that they required.

Liberty reviewed the change control notices that Verizon provided and found that they included the CLEC ID, PON prefix, relevant state, start date, and relevant metrics affected. In some cases, the change controls indicate which product (such as UNE-P) is involved. Verizon stated that the Verizon project manager and the CLEC agree upon the information that the CLEC will include in the special project letter.¹⁸⁴ Under Appendix S, the CLEC is not required to provide the relevant state for the special project in its letter to Verizon. Verizon indicated that the CLEC

¹⁸¹ Response to Data Request #634 (clarification).

¹⁸² Responses to Data Requests #409 and #411.

¹⁸³ Verizon excludes all PONs that begin with the characters of the PON prefix identifier.

¹⁸⁴ Response to Data Request #410.

provided the state to the Verizon project manager.¹⁸⁵ Verizon added that the CLEC initiates the request for special handling, and that the CLEC always has the option to submit large volumes of orders using the normal ordering process. Usually, the CLEC requests a special project because it requires special handling on its orders such as tracking sheets, meetings, or review sessions. Verizon instructs the CLEC to use a special code on its LSR so that these PONs fall out of the flow-through process and go to the NMC for manual processing.¹⁸⁶

Liberty believes that Verizon has a reasonable process for administering requests for special projects, but that some improvements are necessary. The CLEC letter does not specify the relevant states for the project, instead the CLEC and Verizon agree upon them verbally. Liberty recommends that Verizon seek a clarification to Appendix S to require that the CLEC specify in its letter the states to which the special-project PONs apply. Liberty also recommends that Verizon require that each CLEC specify in its letter a definition of the special handling it requires and the requested deviations from standard business practices due to the project, consistent with the language in Appendix S. Liberty recognizes that the CLEC may not have a list of all project PONs at the time that it sends the letter to Verizon. Liberty believes that including only the PON prefix identifier is acceptable; however, Verizon should encourage the CLEC to provide such a list of PONs in the letter when possible.

Verizon explained that it does not always take the special project exclusion on every special project order. For example, a CLEC may submit its letter near the end of the September, but have already started issuing PONs with its designated special project prefix. Verizon may not complete the change control to update the look-up table in NMP that it uses to identify such orders (by CLEC, state, PON and receipt date) until, for example, October 10th (after it has already run the September metrics). In such a case, Verizon will have included the special project orders in the September results. Verizon stated that it would not go back and restate the results for September in such a case. Instead, it would begin to exclude the PONs as special projects in the next data month, when NMP could identify the orders as special projects using the updated look-up table. Verizon indicated that including the special project orders makes its results look worse than they otherwise would be.¹⁸⁷ Liberty believes that Verizon's treatment in such cases is not consistent with the Guidelines, but is nonetheless reasonable from a practical standpoint. Liberty recommends that Verizon seek a clarification to Appendix S to require that the CLEC provide the letter at least two weeks before using the special project PONs. Alternatively, Verizon should seek a clarification to the Appendix stating that it will exclude special project PONs from the results for the month if it receives a letter from the CLEC before the 15th of that month, in order to allow Verizon the necessary time to implement the associated change control.

Liberty examined the September 2003 LSR Order Fact data to determine which orders Verizon excluded from the September 2003 OR results as special projects. In all but a few cases, Liberty found that the special project PONs that Verizon excluded were consistent with the change controls and CLEC letters that Verizon provided. Verizon substantiated that the excluded PONs

¹⁸⁵ Response to Data Request #337.

¹⁸⁶ Interview #3, October 23, 2003.

¹⁸⁷ Interview #3, October 23, 2003.

had change controls that Verizon issued prior to the six-month period that Liberty requested.¹⁸⁸ Liberty is satisfied that Verizon is correctly excluding special project PONs consistent with the Guidelines.

6. Findings and Recommendations

The following findings and recommendations relate to the Ordering domain in general or to more than one OR measure. Liberty reports additional findings in each of the sections related to specific OR measures.

Verizon's documentation for the OR domain is not up to date and accurate in all cases.

During the audit, Liberty requested additional information on a data integrity issue. Verizon was unable to adequately address this issue during the audit, and stated only that it was in the process of completely revising its ordering system design documentation. Liberty concluded that, at a minimum, the documentation that Verizon provided during the audit was out of date and did not cover all topics adequately. Liberty recommends that Verizon update its documentation and, in particular, more clearly address the data integrity issue.

Liberty found many cases in which the June 2003 CMAs that Verizon provided appeared to be incorrect. When Liberty identified these apparent errors, Verizon clarified that Liberty had received the wrong algorithms, *i.e.*, something different from the code Verizon actually used to calculate the metrics. Liberty had to issue numerous data requests to substantiate that Verizon had errors in how it prepared the June 2003 CMA documentation, rather than errors in the algorithms themselves. Liberty recommends that Verizon publish clear and accurate CMAs that the Commission or CLECs could use to replicate Verizon's results.

The Guidelines for the OR metrics are unclear.

Verizon records the line quantity for an LSR as the greater of the number of lines in the submitted order and the confirmation. Verizon indicated that in some cases it could do work on an order and reduce the number of lines on the original order to a smaller number. Verizon's position was that to hold it to a shorter interval standard while using the number of confirmed lines, would not give Verizon credit for the time that it invested in working the order. While Verizon's position on the issue is reasonable, it is one that may cause confusion. Liberty therefore recommends that Verizon seek a clarification to the Guidelines to make this convention clear.

The Guidelines for OR-1 and OR-2 indicate that, in cases where the CLEC system could not receive an EDI notifier, Verizon should record its first attempt to send the confirmation or rejection. Verizon's records its first attempt to send the EDI notifier in such cases, and it its

¹⁸⁸ Response to Data Request #748.

approach is consistent with the Guidelines. Verizon uses the same approach for all EDI notifiers, including BCNs, PCNs, and acknowledgments. However, the Guidelines for OR-4, OR-7, OR-8, and OR-9, all of which measure the timeliness of notifications to the CLEC, do not contain similar language. Verizon's approach is reasonable, and Verizon should seek a clarification to add similar language to OR-4 regarding BCNs and PCNs, to OR-7 regarding confirmation or rejection notifiers, and to OR-8 and OR-9 regarding acknowledgments.

Verizon treats a jeopardy report on a PON version as an order confirmation. Stated differently, if Verizon sends a jeopardy notice before it sends a confirmation on a given PON version, it will record the date/time of the jeopardy notice as the confirmation date/time that it uses for the purposes of OR-1. Verizon indicated that this situation is rare, because jeopardy notices normally occur after Verizon confirms the order. Liberty recommends that Verizon seek a clarification to the Guidelines for OR-1 to make this convention explicit.

Verizon excludes all PARTS orders from the OR-1 through OR-7 metrics. Verizon's treatment of PARTS orders is reasonable, but Verizon should seek a clarification to the Guidelines to indicate that it excludes such orders from the OR-1 through OR-7 metrics.

For ASR orders, if Verizon is unable to determine the product on the order (*i.e.*, DS0, DS1, or DS3), it assigns it a category of "other." Verizon reports such orders with the UNE non DS0, DS1, and DS3 specials product group in OR-1 and the UNE specials product groups that CLECs order with LSRs in OR-2. Liberty believes that this approach is reasonable, but not contained in the Guidelines. Liberty recommends that Verizon seek a clarification to the OR-1 and OR-2 Guidelines to make this convention explicit.

The Guidelines for OR-1 indicate that Verizon requires a facility check for ASR orders on DS0 specials with more than five lines, as well as for all other specials ordered via ASRs regardless of the number of lines. The Guidelines for OR-2 do not contain any language regarding facilities checks for ASR orders. Verizon does not require a facility check on ASR orders for specials if the order is for a disconnection (*i.e.*, NMP sets the facility indicator to "N"). While Verizon's convention for disconnect orders is reasonable, it is not contained in the Guidelines. Liberty recommends that Verizon seek a clarification to the Guidelines for OR-1 and OR-2 to make explicit its treatment of ASR orders for disconnections.

Beginning with the June 2003 data month, Verizon began excluding orders that it creates to disconnect the data portion on a Line Sharing situation. Verizon stated that it considers such orders to be administrative and that it now excludes them from the OR-1 through OR-9 metrics. Liberty believes that this convention is acceptable; however, the Guidelines do not address exclusions for administrative orders. Liberty therefore recommends that Verizon seek a clarification to the Guidelines to reflect this exclusion for internally generated Line Sharing disconnect orders. Verizon subsequently stated that it changed the Guidelines for this measure to reflect the exclusion for internally generated LSRs and filed the revised Guidelines with the Virginia Commission in December 2003. Liberty believes that this proposed change will correct the problem and is consistent with what Verizon currently reports for this measure.

The Guidelines refer to the "Master PON file" under OR-1, OR-2, OR-3, OR-5, and OR-7. Verizon indicated that this language was obsolete, and that it referred the data collection system prior to NMP. Liberty therefore recommends that Verizon seek a modification to the Guidelines to remove this reference.

In a limited number of cases, Verizon uses an incorrect flow-through indicator when calculating OR-2 metric results.

At times, Verizon confirms the same PON version that it had previously rejected. The flow-through indicator in the LSR Order Fact table data for the order represents that of the subsequent confirmation, not the rejection, in these cases. Therefore, for the OR-2 reject timeliness metrics, Verizon uses the wrong flow-through indicator to calculate results. Verizon should exclude from OR-2 results any rejects that Verizon follows with a confirmation on the same PON version.

Appendix S of the Guidelines is unclear regarding the handling of special projects.

Verizon has a reasonable process for administering requests for special projects, but some improvements are necessary. The CLEC's letter to Verizon requesting special project treatment does not specify the relevant states for the project, and instead the parties agree upon them verbally. Liberty recommends that Verizon seek a clarification to Appendix S to require that the CLEC specify the states to which the special-project PONs apply.

Liberty also recommends that Verizon require that each CLEC specify in its letter a definition of the special handling it requires, as well as the requested deviations from standard business practices due to the project, consistent with the language in Appendix S. Liberty recognizes that the CLEC may not have a list of all project PONs at the time that it sends the letter to Verizon. Liberty believes that including only the PON prefix identifier is acceptable. However, Verizon should encourage the CLEC to provide such a list of PONs in the letter when possible.

Verizon does not exclude special project PONs in every case. For example, a CLEC may submit its letter near the end of the month, but have already started issuing PONs with its designated special project prefix. Verizon may not complete the change control to update the look-up table in NMP, which identifies such orders, until after it has run the metrics for the month. Verizon would begin to exclude the PONs as special projects in the next data month, when NMP could identify the orders as special projects using the updated look-up table. Although Verizon's approach is reasonable from a business standpoint, it is not consistent with the Guidelines, and may make Verizon's reported results seem worse than they otherwise would be. Liberty recommends that Verizon seek a clarification to Appendix S to require that the CLEC provide the letter at least two weeks before using the special project PONs. Alternatively, Verizon should seek a clarification stating that it will exclude special project PONs in the results for the month if it receives a letter from the CLEC before the 15th of that month, in order to allow Verizon the necessary time to implement the change control.

B. OR-1, Order Confirmation Timeliness

1. Background

The OR-1 metrics report Verizon's ability to issue order confirmations in a timely manner. CLECs submit ordering requests for service in the form of LSRs or ASRs. Verizon reports eight OR-1 sub-metrics in Virginia. Six of these sub-metrics (OR-1-02, OR-1-04, OR-1-06, OR-1-08, OR-1-10, and OR-1-12) measure the percentage of order confirmations that Verizon sends on time. Two other sub-metrics (OR-1-13 and OR-1-19) measure Verizon's performance in issuing design layout records (DLR) and in responding to Trunk Group Service Requests (TGSRs).

The OR-1-02 through OR-1-10 sub-metrics focus on distinct categories of resale and UNE orders, *i.e.*, orders submitted electronically that flow-through to Verizon's backend systems, orders submitted electronically that require manual handling, and orders submitted via fax or mail. Verizon reports each of these sub-metrics for a specified number of distinct product groups, such as resale POTS/Pre-Qualified Complex and UNE specials. The OR-1-12 sub-metric focuses on Verizon's performance in issuing confirmations on orders for CLEC-to-Verizon interconnection trunks. In all, there are 40 individual reported results in this measure group.

Verizon calculates the sub-metrics for different categories of orders on the basis of timeliness standards determined by product group and order characteristics (*e.g.*, with or without facility check). The OR-1 sub-metrics report on distinct products types as detailed in the table below:

Sub-Metric	Resale	UNE	Trunks
OR-1-02	<ul style="list-style-type: none"> POTS/Pre-Qualified Complex 	<ul style="list-style-type: none"> Loop/Pre-Qualified Complex/LNP Platform 	
OR-1-04	<ul style="list-style-type: none"> POTS/Pre-Qualified Complex 2-Wire Digital Services Specials (Non DS0, DS1 and DS3) Specials DS0 Specials DS1 Specials DS3 	<ul style="list-style-type: none"> Loop/Pre-Qualified Complex/LNP Platform 2-Wire Digital Services 2-Wire xDSL Loops 2-Wire xDSL Line Sharing/Line Splitting (combined) Specials DS0 	

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OR-1-06	<ul style="list-style-type: none"> • POTS/Pre-Qualified Complex • 2-Wire Digital Services • Specials (Non DS0, DS1, and DS3) • Specials DS0 • Specials DS1 • Specials DS3 	<ul style="list-style-type: none"> • Loop/Pre-Qualified Complex/ LNP • Platform • 2-Wire Digital Services • 2-Wire xDSL Loops • 2-Wire xDSL Line Sharing/Line Splitting (combined) • Specials (Non DS0, DS1 and DS3) • Specials DS0 • Specials DS1 • Specials DS3 	
OR-1-08		<ul style="list-style-type: none"> • Specials DS0 	
OR-1-10		<ul style="list-style-type: none"> • Specials (Non DS0, DS1 and DS3) • Specials DS0 • Specials DS1 • Specials DS3 	
OR-1-12			<ul style="list-style-type: none"> • CLEC Trunks (192 or fewer forecasted trunks) • CLEC Trunks (more than 192 forecasted trunks and unforecasted trunks)
OR-1-13			<ul style="list-style-type: none"> • CLEC Trunks
OR-1-19			<ul style="list-style-type: none"> • Verizon Trunks (192 or fewer) • Verizon Trunks (more than 192)

In addition to the standard Guidelines exclusion for Verizon affiliate data, the exclusions that apply to OR-1 are:

- Verizon test orders
- Special project PONs
- Weekend and holiday hours for non flow-through orders
- For metric OR-1-19, inbound augment trunks not requested via e-mail TGSR
- For OR-1-02, scheduled SOP downtime for flow-through orders.

Verizon reports all of the OR-1 sub-metrics on a statewide basis by individual and aggregate CLECs. The standard for all OR-1 sub-metrics is 95 percent.

The Guidelines provide the following formulas for the OR-1 sub-metrics:

OR-1-02: % On Time Local Service Request Confirmation (LSRC) – Flow-Through

(Number of electronic LSRCs sent, where the confirmation date and time minus the submission date and time is less than or equal to two hours for the specified product)/(Total number of flow-through LSRs confirmed for the specified product)

OR-1-04: % On Time LSRC/Access Service Request Confirmation (ASRC) – No Facility Check (Electronic – No Flow-through)

(Number of electronic LSRCs/ASRCs, not requiring a facility check sent, where the confirmation date and time minus the submission date and time is less than or equal to the standard for the specified product)/(Total number of flow-through LSRs/ASRs not requiring a facility check confirmed for a specified product)

OR-1-06: % On Time LSRC/ASRC – Facility Check (Electronic – No Flow-through)

(Number of electronic LSRCs/ASRCs, requiring a facility check sent, where the confirmation date and time minus the submission date and time is less than or equal to the standard for the specified product)/(Total number of flow-through LSRs/ASRs requiring a facility check, confirmed for the specified product)

OR-1-08: % On Time LSRC – No Facility Check (Fax/Mail)

(Number of faxed or mailed LSRCs, not requiring a facility check sent where the confirmation date and time minus the submission date and time is less than or equal to the standard for the specified product)/(Total number of faxed or mailed LSRs not requiring a facility check confirmed for the specified product)

OR-1-10: % On Time ASRC – Facility Check (Fax/Mail)

(Number of faxed or mailed ASRCs requiring a facility check sent where the confirmation date and time minus the submission date and time is less than or equal to the standard for the specified product)/(Total number of faxed or mailed ASRs requiring a facility check confirmed for the specified product)

OR-1-12: % On Time FOC

(Number of orders confirmed within the specified interval for the product type)/(Number of orders received, either electronically or via fax, confirmed by product type)

OR-1-13: % On Time Design Lay Out Record (DLR)

(Number of DLRs completed on or before the DLR due date in TIRKS)/(Number of DLRs completed)

OR-1-19: % On Time Response – Request for Inbound Augment Trunks

(Number of requests for Inbound Augment Trunks with responses sent within specified the interval for the product type)/(Number of requests for Inbound Augment Trunks requested on a TGSR received via e-mail)

Six of the OR-1 sub-metrics are relevant to Verizon's PAP. During the July and August 2003 reporting months, Verizon did not incur any penalties associated with this measure.¹⁸⁹

2. Analysis and Evaluation

Resale and UNE Products – OR-1-01 through OR-1-10

For resale and UNE products, the Guidelines define confirmation response time as the amount of elapsed time (in hours and minutes) between the time that Verizon receives a valid order request and the time it distributes a service order confirmation.

For the OR-1 metrics, Verizon treats each version of a PON as a new order request, and there may be more than one confirmation on the same PON number. If a CLEC submits a new version of an LSR to supplement its order after Verizon has already confirmed the original LSR, Verizon will send another confirmation on the new PON version. However, as Liberty learned during the New Jersey audit, Verizon does not necessarily send a confirmation for every version. If, for example, a CLEC submits three versions of the same PON prior to the time Verizon confirms the order, Verizon will send the confirmation on the latest version, and will not send a confirmation on the first two. Verizon counts confirmations that relate to cancellations, a practice that is consistent with the Guidelines. If a CLEC submits a later version of a PON to cancel a prior version that Verizon has already confirmed, Verizon would send a confirmation on the cancellation and count the later version in the OR-1 metrics.¹⁹⁰

The Guidelines indicate that a migration of less than six lines, in which the lines are part of an account with six or more lines that Verizon must arrange, will be treated as an order for six or more lines. During the New Jersey audit, Verizon clarified that such orders do not flow through to the SOP, but instead fall to the NMC for manual processing. Once the NMC issues the service orders, Verizon updates the number of lines on the order confirmation to indicate that the request is for six or more lines.

Verizon extracts ordering data from the NMP warehouse to create the LSR Order Fact and ASR Order Fact tables used by Verizon's metric algorithms. The key data fields in the LSR Order Fact table for the OR-1-01 through OR-1-10 measures are CLEC ID, PON, PON version, receipt date/time, confirmation date/time, process flow category, order type (e.g., resale, UNE-L, or UNE-P), service order class (such as POTS/Pre-Qualified Complex, 2-Wire Digital, or specials), test account flag, confirmation interval, and on-time confirmation indicator.

¹⁸⁹ Responses to Data Requests #198 and #203 (July and August 2003 C2C Reports).

¹⁹⁰ Response to Data Request #336 (clarification).

Verizon uses the process flow category, which it determines within NMP, to select the relevant orders that it reports in the OR-1-02 through OR-1-10 sub-metrics, as follows:¹⁹¹

- Category 1 – Flow through
- Category 2 – Manually submitted, no facility check
- Category 3 – Electronically submitted, no facility check
- Category 4 – Manually submitted, facility check
- Category 5 – Electronically submitted, facility check

Consistent with the Guidelines, Verizon requires a facility check on LSR orders with more than five lines.

NMP sets the test account flag to “Z” for test CLEC and to “R” for VADI and Verizon affiliate IDs using a look-up table.¹⁹² Verizon also sets the test account flag value to “B” to indicate special project PONs that Verizon excludes from certain non flow-through metrics. NMP calculates the confirmation interval as the difference between the order receipt date/time and the date/time of the confirmation. NMP assigns a value of “Y” to the on-time confirmation indicator if the confirmation interval is within the standard interval for the given product (service order class). Liberty reviewed the elapsed time calculation used to determine the LSR confirmation (LSRC) interval and the assignment of the indicator, and concluded that NMP determined them correctly.

The key data fields in the ASR Order Fact table for the OR-1 measures are CLEC ID, PON, PON version, receipt date/time, confirmation date/time, product type (*e.g.*, DS0, DS1), activity type (N, C, or D), service order type (manual or electronic), facilities indicator, exclusion indicator, FOC interval and former territory indicator (*e.g.*, Bell Atlantic, GTE). The ASR Order Fact table data pertain only to UNE specials products.

Verizon uses the facilities indicator field to designate whether an ASR order requires a facility check. NMP sets the exclusion indicator to “Y” for test CLEC IDs, Verizon affiliate IDs, VADI, and special projects on the basis of a look-up table, as well as for PARTS orders.¹⁹³ NMP calculates the FOC interval as the difference between the order receipt date/time and the date/time of the confirmation. Liberty reviewed the calculation of the FOC interval and concluded that NMP calculated it properly.

Liberty concluded that Verizon's definitions for the key data fields used to calculate the metrics are consistent with the Guidelines.

Liberty examined how Verizon applied the exclusions set forth in the Guidelines. Verizon excludes test orders and Verizon affiliate LSR orders by a logic step in its algorithm that screens out records that have a test account flag of “R” or “Z.” For ASR orders, Verizon calculates each sub-metric result by individual CLEC and Verizon affiliate ID and by exclusion indicator (which

¹⁹¹ Response to Data Request #333.

¹⁹² Verizon provided LSR Order Fact data table field descriptions in response to Data Request #20.

¹⁹³ Verizon provided ASR Order Fact data table field descriptions in responses to Data Requests #20 and #634 (clarification).

NMP sets to “Y” for test CLEC, VADI, and Verizon affiliates), and aggregates them accordingly in the NMP reporting system. To exclude PONs associated with special projects, Verizon excludes LSR orders with a test account flag of “B” and ASR orders with an exclusion indicator value of “Y” from non flow-through OR-1 sub-metrics.

Verizon is also required to exclude orders associated with the former GTE territory in Virginia. For LSR orders, Request Manager provides a former territory indicator field to NMP. Verizon excludes any orders that have a former territory designation of GTE when it creates the LSR Order Fact data table in NMP.¹⁹⁴ For ASR orders, Verizon derives a former territory indicator in NMP and its metric algorithms include only those orders associated with the former Bell Atlantic territory in reported results.¹⁹⁵ Liberty concluded that Verizon is properly applying this exclusion.

As part of its review of confirmation intervals for LSR and ASR orders, Liberty examined how Verizon excluded weekend and holiday hours from elapsed times for non flow-through orders, and scheduled SOP downtimes from elapsed times for flow-through orders.¹⁹⁶ Liberty found that Verizon properly applied these exclusions.

The notes section of the Guidelines contains additional directions on how Verizon should calculate the OR-1 metrics. Verizon does not send information on orders that fail Verizon's basic front-end edits to NMP, and thus Verizon does not include such orders in the OR-1 metrics. For the OR-1-02 through OR-1-10 sub-metrics, Verizon selects the relevant orders that it confirmed during the reporting month, which is consistent with the notes section of the Guidelines. Verizon also defines the Pre-Qualified Complex product category to include 2-Wire Digital, 2-Wire xDSL Loops, and 2-Wire Digital Line Sharing/Line Splitting orders that were pre-qualified, consistent with the Guidelines.

The notes section of the Guidelines indicates that Verizon should use the completion notification time in instances where the order confirmation time is missing. When creating the LSR Order Fact table in NMP, Verizon populates the confirmation date/time with the SOP notification time from Request Manager if there is no actual confirmation date.¹⁹⁷ Therefore Verizon correctly applies this convention.

Verizon uses an “N” in the RTR field to indicate situations in which the CLEC does not want to receive notifications for the ASR order. The notes section of the Guidelines states that Verizon should exclude such orders from the measure. Liberty found that Verizon did not include a logic step in its OR-1-02 through OR-1-10 algorithms to check for ASR orders with an “N” in the RTR field. Verizon stated that the EXACT system always generates a FOC for an ASR regardless of whether or not the RTR field contains an “N.” Verizon acknowledged that it therefore incorrectly includes ASRs with an RTR of “N” in OR-1 results. Verizon indicated that

¹⁹⁴ Response to Data Request #317 (clarification).

¹⁹⁵ Response to Data Request #317. Verizon indicated that it bases the territory designation on the central office that serves the phone number.

¹⁹⁶ In its response to Data Request #319, Verizon confirmed that it does not include downtime from the SOACS system (referenced in a footnote in the OR-1 Guidelines), only expressTRAK.

¹⁹⁷ Responses to Data Requests #334 and #640.

it found only two cases in the data for 2003 in which - it incorrectly included an ASR in reported results.¹⁹⁸ Liberty recognizes that the effect of the error on reported results is negligible; however, Verizon should modify its algorithms to exclude such orders. Verizon also suggested that it update the Guidelines to move the language from the notes to the exclusion section of the Guidelines.¹⁹⁹ Liberty agrees with this suggestion.

The notes to the Guidelines state that Verizon should include CLEC requests for resent confirmations that it submitted electronically, as well as confirmations that it resent due to its own error. A footnote to this language states that Verizon should not count as resent confirmations those confirmations that Verizon resends due to CLEC error and confirmations resent to reschedule a missed provisioning appointment. These two statements are unclear and somewhat contradictory. Verizon stated that it measures the first confirmation it sent to the CLEC, and if the CLEC requested a resend of a confirmation electronically, Verizon would not include that resend in the OR-1 metrics.²⁰⁰ Verizon indicated that NMP excludes any jeopardy confirmation (of which one type is to reschedule a missed provisioning appointment) from its ordering data tables unless the jeopardy is the first confirmation.²⁰¹ Liberty recommends that Verizon seek a clarification to these notes to the Guidelines to make them clearer and consistent with current practice.

In all cases, Verizon counts only one confirmation per PON version for LSR orders. Verizon's source systems send information on all confirmations to NMP. In most cases, Verizon sends only one confirmation (the original) per PON version, and NMP records this date/time in the LSR Order Fact confirmation date/time field, and uses it in the OR-1 metrics calculations. In other cases, however, Verizon resends the confirmation on a given PON version due to its own error or at CLEC request.

Verizon populates certain data fields in the LSR Order Fact table data to indicate instances in which it sent more than one confirmation on a given version of a PON. Verizon uses a confirmation counter field, which is set in NMP, to indicate how many confirmations it sent on a given PON version (regardless of reason). Verizon uses a Verizon resend counter field, also set in NMP, to indicate how many confirmations it resent on a given PON version because of its own error.²⁰² For example, if the confirmation count field was 4, and the Verizon resend counter was 1, it would indicate that Verizon sent the original confirmation, resent it once because of its own error, and resent it twice more because of a CLEC request.

As Liberty learned during the New Jersey audit, if Verizon resends a confirmation for a CLEC reason, NMP does not change the entry in the confirmation date/time field in the LSR Order Fact data table. However, if Verizon resends the confirmation because of its own error, NMP replaces the original confirmation date/time with the date/time of the confirmation that Verizon resent.

¹⁹⁸ In response to Data Request #688 (clarification), Verizon stated that it found one such case. In its comments on Liberty's Draft Report, Verizon updated that number to two.

¹⁹⁹ Response to Data Request #688(clarification).

²⁰⁰ Response to Data Request #726.

²⁰¹ Response to Data Request #476.

²⁰² Verizon uses the EC Version field sent to NMP from Request Manager to identify confirmations that it sent due to a Verizon error.

For LSR orders, Verizon excludes all confirmations that it resends for CLEC reasons. In these cases, Verizon would include only the first (original) confirmation in the numerator and denominator, and the confirmation date/time that Verizon uses would be that of the first confirmation it sent. When Verizon resends a confirmation because of its own error, Verizon includes only the last confirmation that it sent in the numerator and denominator. Stated differently, Verizon does not include the first confirmation, or any other confirmation, other than the last one it sent because of its own error. The confirmation date/time in this instance is that of the last version that Verizon sent because of its own error.²⁰³ Verizon stated that it treats confirmation on ASR orders in the same fashion as LSRs.²⁰⁴

Liberty reviewed each of the algorithms that Verizon uses to calculate the OR-1 metrics. Liberty found that Verizon's algorithms are generally consistent with the Guidelines.²⁰⁵ For each of the OR-1 measures, Verizon uses a separate algorithm to calculate the result for each product group. Verizon uses separate modules within the algorithms to process LSR orders and ASR orders.²⁰⁶

OR-1-02 – % On Time LSRC – Flow-Through

Liberty examined the algorithms that Verizon uses to calculate the OR-1-02 measure. To calculate the denominator for the measure, Verizon counts the number of PONs associated with all LSRs it confirmed during the reporting month that ultimately flowed through to the service order processor without manual intervention.²⁰⁷ Verizon includes all versions of a given PON for which it has sent a confirmation for orders submitted via Web GUI and EDI. To calculate the numerator, Verizon counts the number of on-time confirmation indicators for all PON versions identified in the denominator. Verizon uses separate algorithms to calculate results for each of the three product groups.

Liberty concluded that Verizon's method for calculating these measures conforms to the Guidelines.

Liberty recalculated the CLEC aggregate result for OR-1-02-3331, the UNE POTS/Pre-Qualified Complex/LNP product group, for September 2003 using the LSR Order Fact table that Verizon provided.²⁰⁸ Liberty replicated Verizon's denominator, as well as the overall result.

²⁰³ Response to Data Request #727.

²⁰⁴ Response to Data Request #728.

²⁰⁵ Liberty identifies any inconsistencies it found in the Findings and Recommendations section.

²⁰⁶ In some cases, Verizon has a module that is unnecessary. For example, CLECs order DS3 specials only with ASRs, but the code is included for LSRs in the event that CLECs order such products with LSRs in the future.

²⁰⁷ Verizon selects PON versions with a process flow category value of 1, which indicates that the LSR flowed through to the service order processor without manual intervention.

²⁰⁸ Response to Data Request #261. Verizon does not use ASR Order Fact data for these sub-metrics because CLECs do not order the reported products with ASRs.

OR-1-04 – % On Time LSRC/ASRC – No Facility Check (Electronic – No Flow-Through)

Liberty examined the algorithms that Verizon uses to calculate the OR-1-04 measure. To calculate the denominator for the measure, Verizon counts the number of PONs associated with all LSRs that did not require a facility check (*i.e.*, those with less than six lines) that it confirmed during the reporting month, and that it received electronically but that did not flow through to the service order processor without manual intervention.²⁰⁹ For DS0 specials that are ordered via ASRs and do not require facilities verification, Verizon also counts the number of PON versions that it received electronically and confirmed during the reporting month.²¹⁰ Verizon counts all versions of a given PON for which it has sent a confirmation. To calculate the numerator, Verizon counts the number of on-time confirmation indicators for all PON versions identified in the denominator.²¹¹ Verizon uses separate algorithms to calculate results for each of the 12 product groups.

Liberty concluded that Verizon's method for calculating these measures conforms to the Guidelines.²¹²

Liberty recalculated the CLEC aggregate result for OR-1-04-2100 (the resale POTS/Pre-Qualified Complex product group) for September 2003 using the LSR Order Fact table that Verizon provided.²¹³ Liberty replicated Verizon's denominator, as well as the overall result. Liberty also recalculated the CLEC aggregate result for OR-1-04-3342, the UNE 2-Wire xDSL product group. Liberty replicated Verizon's denominator, as well as the overall result.

OR-1-06 – % On Time LSRC/ASRC – Facility Check (Electronic – No Flow-Through)

Liberty examined the algorithms that Verizon uses to calculate the OR-1-06 measure. To calculate the denominator for the measure, Verizon counts the number of PONs associated with all LSRs requiring a facility check (*i.e.*, those with six or more lines) that Verizon confirmed during the reporting month and that it received electronically but that did not flow through to the service order processor without manual intervention.²¹⁴ For specials that CLECs order with ASRs and that require facilities verification, Verizon also counts the number of PON versions

²⁰⁹ Verizon selects PON versions with a process flow category of 3, which indicates an electronically submitted (via Web GUI or EDI) LSR that does not require a facility check.

²¹⁰ Verizon selects ASR PON versions with a facility indicator of "N," which signifies that no facility check is required.

²¹¹ For ASR orders for DS0 specials, Verizon's algorithm counts the number of PON versions with a FOC interval of 48 hours or less.

²¹² Liberty initially found errors in Verizon's algorithms for the resale DS3 and UNE DS0 product groups. In response to Data Requests #681 and #682, Verizon stated that the problem was in the June 2003 CMA documentation and that the production algorithms were correct.

²¹³ Response to Data Request #261.

²¹⁴ Verizon selects PON versions with a process flow category value of 5, which indicates an electronically submitted (via Web GUI or EDI) LSR that requires a facility check.

received electronically that it confirmed during the reporting month.²¹⁵ Verizon counts all versions of a given PON for which it has sent a confirmation. To calculate the numerator, Verizon counts the number of on-time confirmation indicators for all PON versions identified in the denominator.²¹⁶ Verizon uses separate algorithms to calculate results for each of the 15 product groups.

Liberty concluded that Verizon's method for calculating these measures conforms to the Guidelines.

Liberty recalculated the CLEC aggregate result for OR-1-06-2214, the resale specials (non DS0, DS1 and DS3) product group, for September 2003 using the LSR Order Fact table that Verizon provided.²¹⁷ Liberty confirmed that Verizon had no observations for this product group for the month. Liberty also recalculated the CLEC aggregate result for OR-1-06-3211, the UNE DS1 specials product group. Liberty replicated Verizon's denominator, as well as the overall result.

**OR-1-08 – % On Time LSRC – No Facility Check (Fax/Mail) and
OR-1-10 – % On Time ASRC – Facility Check (Fax/Mail)**

Liberty examined the algorithms that Verizon uses to calculate the OR-1-08 and OR-1-10 measures. To calculate the denominator for the OR-1-08 measure, Verizon counts the number of PONs associated with all ASRs not requiring a facility check that it received via fax and confirmed during the reporting month.²¹⁸ Verizon counts all versions of a given PON for which it has sent a confirmation. To calculate the numerator for OR-1-08, Verizon counts the number of on-time confirmation indicators for all PON versions identified in the denominator.²¹⁹ There is only one product group, UNE DS0 specials, for this measure.

The definition of the OR-1-08 measure in the Guidelines indicates that Verizon should report LSRs, not ASRs. Verizon's approach for this measure is therefore incorrect, because it counts ASRs, not LSRs. Verizon informed Liberty that it no longer received LSRs via fax or mail. The performance standards in the Guidelines for faxed/mailed orders also note "fax/mail is not available for LSR orders." Liberty recommends that Verizon seek a modification to the Guidelines to change the definition and title of this measure to reflect ASRs, rather than LSRs. Verizon subsequently stated that it had changed the Guidelines for this measure to reflect ASRs and filed the revised Guidelines with the Virginia Commission in December 2003.²²⁰ Liberty believes that this proposed change will correct the problem and is consistent with what Verizon currently reports for this measure.

²¹⁵ Verizon selects ASR PON versions with a facility indicator of "Y," which signifies that a facility check is required.

²¹⁶ For ASR orders for specials, Verizon's algorithm counts the number of PON versions with a FOC interval of 72 hours or less.

²¹⁷ Response to Data Request #261.

²¹⁸ Verizon selects PON versions with a facility indicator of "N," which signifies that no facility check is required.

²¹⁹ For ASR orders for specials, Verizon's algorithm counts the number of PON versions with a FOC interval of 72 hours or less.

²²⁰ Response to Data Request #683.

Liberty concluded that Verizon's method for calculating the OR-1-08 measure does not conform to the current Virginia Guidelines.

To calculate the denominator for the OR-1-10 measure, Verizon counts the number of PONs associated with all ASRs requiring a facility check that it received via fax and confirmed during the reporting month.²²¹ Verizon counts all versions of a given PON for which it has sent a confirmation. To calculate the numerator for OR-1-10, Verizon counts the number of on-time confirmation indicators for all PON versions identified in the denominator.²²² Verizon uses separate algorithms to calculate results for each of the four product groups.

Liberty concluded that Verizon's method for calculating the OR-1-10 measure conforms to the Guidelines.²²³

Verizon reported no CLEC aggregate results for these measures in the September 2003 reporting month. Liberty reviewed the LSR and ASR Order Fact table data and verified that Verizon had no relevant fax/mail orders.²²⁴

Trunk Products – OR-1-12 to OR-1-13 and OR-1-19

OR-1-12 – % On Time FOC

For interconnection trunks, the Guidelines define confirmation response time as the amount of elapsed time (in business days) between the time that Verizon receives a clean ASR and the time it distributes a FOC. Verizon interprets the term "clean ASR" to mean the final version of the PON that the CLEC submits. As such, Verizon does not include confirmations on all PON versions in the OR-1-12 measure, but rather only includes the confirmation on the last version of the PON.²²⁵ While this interpretation is reasonable, Liberty recommends that Verizon seek a clarification to the Guidelines to make this convention clear, particularly because Verizon counts all versions of a PON that it confirms for the OR-1-02 through OR-1-10 metrics.

The Guidelines state that Verizon should restart the received date for each ASR supplement. Unlike the other OR-1 measures, Verizon forms the OR-1-12 measure on the basis of service orders, not PONs, and there often are multiple service orders related to a single PON. Service orders have the same submission and confirmation date as the PON to which they relate.

²²¹ Verizon selects ASR PON versions with a facility indicator of "Y," which signifies that a facility check is required.

²²² On ASR orders for specials, Verizon's algorithm counts the number of PON versions with a FOC interval of 96 hours or less.

²²³ Liberty initially found that Verizon's OR-1-10 algorithms also contained a module that selected LSRs. In response to Data Request #684 (revision), Verizon clarified that the LSR code was included in the June 2003 CMAs due to a production error and that NMP does not include any LSR results in OR-1-10.

²²⁴ Verizon had an ASR fax order for DS1, but it pertained to the former GTE territory in Virginia and therefore Verizon excluded it.

²²⁵ Interview #29, December 23, 2003.

The OR-1-12 sub-metric measures two product groups separately. The first product group includes ASRs for 192 or fewer forecasted trunks. The second group includes ASRs for 192 or more trunks, un-forecasted trunks, and projects. The glossary to the Guidelines defines projects as any CLEC-designated request for a new trunk group, an augment for more than 384 trunks, complex (E911 or directory assistance) requests, or requests out of the ordinary requiring special coordination, such as rearrangements. Verizon reports results for the two product groups consistent with this definition.

The Guidelines indicate that the metric measures service orders completed between the measured dates. The notes section of the Guidelines also states that Verizon should include cancelled orders in the OR-1 measures. Verizon includes completed orders in the measure, but includes cancelled orders only if Verizon sent a FOC before the CLEC cancelled the order. Verizon uses the order status date, which is the date that Verizon updates the Trunk Fact table with a completion date for the order, to select completed service orders to be included in results for the reporting month.²²⁶ Verizon selects cancelled service orders only if the FOC interval is not blank.

The language in the Guidelines notes section for OR-1 indicates that the sub-metrics should include only orders that Verizon confirmed in the calendar month. This language is contradictory to the specific language for trunks, which indicates that OR-1-12 measures on-time confirmation for completed (rather than confirmed) service orders. Verizon often completes the order in a month later than when it confirmed the order, and therefore Verizon includes in reported results orders with confirmation dates other than those in the current month. Liberty recommends that Verizon seek a clarification to the notes section of the OR-1 Guidelines to make this exception clear.

Verizon extracts ordering data from the NMP warehouse to create the Trunk Fact table used by Verizon's metric algorithms. The key data fields in the Trunk Fact table for the OR-1-12 measure are CLEC ID, PON, service order number, project number, service type (CLEC, reciprocal, etc.), ASR quantity, order type (new or augmented), forecast indicator ("Y" or "N"), order status (completed, cancelled, or pending), order status date, submission method (electronic or fax/mail), response type, FOC interval, exclusion indicator, inclusion indicator, and former territory indicator (*e.g.*, Bell Atlantic, GTE).

Verizon uses the project number field to identify projects (*i.e.*, those with a Verizon project number). Verizon uses the service type field to select only CLEC trunk orders, and excludes reciprocal, inter-exchange carrier (IEC), and wireless trunk requests from the measure. Verizon indicated that CLEC trunk service included in the measure includes both one-way and two-way trunk products.²²⁷ NMP sets the exclusion indicator to "Y" for orders associated with test CLEC IDs, Verizon affiliate IDs, and VADI on the basis of a look-up table.²²⁸

²²⁶ During the New Jersey audit, Liberty found that the order status date was significantly later than the order completion date in some cases. Liberty recommended that Verizon update its administrative procedures to ensure that it records the completion dates for all orders completed during the month in the Trunk Fact data before it extracts the data from NMP to calculate the results. Liberty did not find the same issue during this audit.

²²⁷ Interview #29, December 23, 2003.

²²⁸ Verizon provided Trunk Fact data table field descriptions in response to Data Request #20.

Verizon also uses an inclusion indicator, and counts only those service orders with a value of “Y” in reported results. NMP sets the inclusion indicator to “Y” for the initial confirmation on each PON. Verizon uses a manual review process to evaluate any orders that have more than one confirmed PON version and change the inclusion indicators as appropriate. As noted above, Verizon includes in reported results only the last version of the PON that it confirmed. If Verizon confirmed two or more versions of the PON, Verizon changes the inclusion indicator of the last confirmed version to “Y” and changes the indicator to a blank for all earlier confirmations.²²⁹

Verizon also uses a manual process to review multiple confirmations on the same PON version. If Verizon finds that it resent a confirmation due to its own error, it would change the inclusion indicator on the first confirmation on that PON version to a blank and change the inclusion indicator for the one resent due to its own error to a “Y.” In this way, Verizon calculates the FOC interval on the PON it resent due to its own error.²³⁰ Verizon leaves the indicator blank for service orders associated with any PON version for which Verizon resent a confirmation due to CLEC reasons (and thus excludes them in its metric algorithm).²³¹ Verizon also uses a blank in the inclusion indicator field to exclude service orders with clerical input errors that result in a negative FOC interval.²³² The exclusion is reasonable, but Verizon should seek a clarification to the Guidelines to reflect it. Liberty found that Verizon excluded no orders for this reason during the September 2003 data month.

Verizon uses the response type field to exclude ASRs for which the CLEC requested no response (*i.e.*, an RTR of “N”), consistent with the language in the notes section of the Guidelines. CLECs can request a FOC, a FOC and design layout record, or neither.²³³ NMP calculates the FOC interval as the number of business days between the date that the CLEC submitted the ASR and the date Verizon sent the FOC.²³⁴ Liberty reviewed the calculation of this interval and found that Verizon calculated it properly.

Liberty concluded that Verizon's definitions for the key data fields it uses to calculate the metrics are consistent with the Guidelines.

Liberty examined how Verizon applied the exclusions set forth in the Guidelines. Verizon calculates each sub-metric result by individual CLEC and Verizon affiliate ID and by exclusion indicator (which NMP sets to “Y” for test CLEC, VADI, and Verizon affiliates), and aggregates them accordingly in the NMP reporting system. Thus Verizon correctly excludes test CLEC and Verizon affiliate orders from the measures. Verizon also uses the former territory indicator to exclude orders associated with the former GTE territory in Virginia.

²²⁹ Interview #29, December 23, 2003.

²³⁰ This convention would hold as long as the PON version is the last one that Verizon confirmed. If Verizon later confirms another version of the PON, it would not include in reported results any of the confirmations on prior versions.

²³¹ Interview #29, December 23, 2003.

²³² Response to Data Request #758.

²³³ Verizon provided Trunk Fact data table field descriptions in response to Data Request #20.

²³⁴ Verizon provided Trunk Fact data table field descriptions in response to Data Request #20.

As part of its review of FOC intervals, Liberty examined how Verizon excluded weekends and holidays from elapsed times. Liberty found that Verizon properly applied these exclusions.

The Guidelines state that Verizon should exclude from the OR-1 metrics confirmations that it resends for other than Verizon error. As noted above, Verizon excludes resent confirmations for CLEC reasons using the inclusion indicator.

Liberty examined the algorithms that Verizon uses to calculate the OR-1-12 measure. To calculate the denominator for the 192 or fewer augmented trunks product group, Verizon counts the number of service order numbers related to confirmed CLEC ASRs for 192 or fewer forecasted augmented trunks. To calculate the denominator for the greater than 192/un-forecasted/project trunk product group, Verizon counts the number of service order numbers related to confirmed CLEC ASRs that it did not count in the first product group (*i.e.*, all other types of requests including new requests, projects, and un-forecasted requests). Verizon selects those service orders with an order status date (*i.e.*, completion date) within the reporting month and selects cancelled service orders only if the FOC interval is not blank.²³⁵

To calculate the numerator for OR-1-12, Verizon counts the number of service orders with a FOC interval within the standard interval, *i.e.*, ten business days for electronically submitted ASRs, and 11 business days for manual ASRs. The Guidelines indicate that this standard applies only to orders for 192 or fewer trunks. However, Verizon holds larger orders, projects, and un-forecasted trunk requests to the same standard, even though the Guidelines indicate the standard for such requests is a negotiated one.²³⁶

Liberty concluded that Verizon's method for calculating the OR-1-12 measure conforms to the Guidelines.

Liberty recalculated the CLEC aggregate result for OR-1-12-5020 (the 192 or fewer trunks product group) for September 2003 using the Trunk Fact table that Verizon provided.²³⁷ Liberty replicated Verizon's denominator, as well as the overall result.

Liberty recalculated the CLEC aggregate result for OR-1-12-5030 (the greater than 192 /un-forecasted/project trunks product group) for September 2003 using the Trunk Fact table that Verizon provided.²³⁸ Liberty replicated Verizon's denominator, as well as the overall result.

²³⁵ When Liberty examined the Trunk Fact data table, it found that Verizon had failed to calculate a FOC interval for one cancelled order and thus did not include it in OR-1-12 results. In response to Data Request #757, Verizon clarified that Verizon did not record a receipt date for a valid version of the order, and therefore it did not calculate a FOC interval. Stated differently, the CLEC apparently cancelled the order before Verizon could confirm a valid version of the order.

²³⁶ In response to Data Request #756, Verizon clarified that it negotiates the overall provisioning interval for these orders, but does not negotiate the specific confirmation interval. Verizon holds these orders to the same confirmation standard as the less than 192 trunk product group.

²³⁷ Response to Data Request #261.

²³⁸ Response to Data Request #261.

OR-1-13 – % On Time Design Layout Record (DLR)

The OR-1-13 sub-metric measures the percentage of design layout records (DLRs) that Verizon delivers by the due date. Unlike other OR metrics, Verizon excludes disconnect orders from OR-1-13, because there are no DLRs associated with them. Verizon indicated that CLEC trunk service included in the measure includes both one-way and two-way trunk products.²³⁹ Like the OR-1-12 metric, Verizon measures service orders rather than PONs for OR-1-13. Verizon does not exclude projects, un-forecasted trunks, or new trunks from the OR-1-13 results because there is no specific language allowing for these exclusions in Guidelines.²⁴⁰

Verizon extracts ordering data from the NMP warehouse to create the Trunk Fact table used by Verizon's metrics algorithm. The key data fields in the Trunk Fact table for the OR-1-13 measure are CLEC ID, PON, service order number, service type (CLEC, reciprocal, etc.), order type (new or augmented), DLR due date, DLR complete date, order status (completed, cancelled, or pending), order status date, response type, activity type, exclusion indicator, inclusion indicator, and former territory indicator (*e.g.*, Bell Atlantic, GTE).

Verizon uses the service type field to select only CLEC orders, and excludes reciprocal, IEC, and wireless trunk requests from the measure. The DLR due date is the date that the DLR is due as recorded in the TIRKS system. The DLR actual date is the completion date on the DLR record.

Verizon includes orders with a completed status in the results. Verizon uses the order status date, which is the date that Verizon updates the Trunk Fact table with a completion date for the order, to select service orders to be included in the reporting month. As Liberty learned during the New Jersey audit, Verizon records information about the DLR at the same time that it records FOC information. Verizon also includes cancelled orders only if they have a DLR due date. Stated differently, Verizon includes a cancelled order only if it completed and distributed the DLR before the CLEC cancelled the order.

Verizon uses the response type field to screen out service orders associated with ASRs for which the CLEC requested no response or only a FOC. CLECs can request a FOC, a FOC and design layout record, or neither. NMP sets the exclusion indicator to "Y" for test CLEC IDs, Verizon affiliate IDs, and VADI using a look-up table in NMP.²⁴¹ Verizon uses the inclusion indicator that it derives for the OR-1-12 measure to flag the orders that require a DLR, *i.e.*, the final confirmed version of the PON.²⁴²

Liberty concluded that Verizon's definitions for the key data fields it uses to calculate the metrics are consistent with the Guidelines.

Liberty examined how Verizon applied the exclusions set forth in the Guidelines. Verizon calculates results by individual CLEC and Verizon affiliate ID and by exclusion indicator (which NMP sets to "Y" for test CLEC, VADI, and Verizon affiliates), and aggregates them accordingly

²³⁹ Interview #29, December 23, 2003.

²⁴⁰ Interview #29, December 23, 2003.

²⁴¹ Verizon provided Trunk Fact data table field descriptions in response to Data Request #20.

²⁴² Interview #29, December 23, 2003.

in the NMP reporting system. Thus Verizon correctly excludes test CLEC and Verizon affiliate orders from the measure. Verizon also uses the former territory indicator to exclude orders associated with the former GTE territory in Virginia.

Liberty examined the algorithm that Verizon uses to calculate the OR-1-13 measure. To calculate the denominator for the measure, Verizon counts the number of service order numbers related to trunk ASRs for which the CLEC requested a DLR. To calculate the numerator for OR-1-13, Verizon counts the number of orders for which the DLR complete date is less than or equal to the DLR due date. Verizon maintained that it does not count an order with a blank DLR complete date or DLR due date in the numerator as on time.²⁴³ Verizon also stated that its intention was to count such orders as missed. Verizon indicated that in some cases, it sends the DLR directly to the CLEC and does not record the information in TIRKS, resulting in blanks in the DLR complete and due date fields.²⁴⁴

Liberty concluded that Verizon's method for calculating the OR-1-13 measure conforms to the Guidelines.

Liberty recalculated the CLEC aggregate result for OR-1-13-5020 for September 2003 using the Trunk Fact table that Verizon provided.²⁴⁵ Liberty replicated Verizon's denominator, as well as the overall result.

OR-1-19 – % On Time Response - Request for Inbound Augment Trunks

This metric pertains to requests for inbound augment trunks. As Liberty learned during its audit of this measure in New Jersey, in certain cases a CLEC asks Verizon to do engineering review of its facilities, referred to as a trunk group service request (TGSR), because the CLEC believes it needs additional facilities. The CLEC sends a TGSR to Verizon via fax or e-mail. Consistent with the Guidelines, Verizon includes only those requests submitted via e-mail (*i.e.*, it properly excludes those it receives by fax).²⁴⁶ Verizon measures the number of responses to these requests, both acceptance and denial, that it provides within the standard interval. Verizon reports results for two product groups, 192 or fewer trunks and greater than 192 trunks. Verizon does not include TGSRs for disconnects in the results, nor does it include TGSRs cancelled by the CLEC prior to Verizon's response; it does, however, include those cancelled after Verizon's response. Verizon does not exclude projects from the measure.²⁴⁷ The standard interval for accepted requests for 192 or fewer trunks is ten business days; the interval for accepted requests for more than 192 trunks is a negotiated one, although Verizon holds such requests to the same ten-business day standard.²⁴⁸ The standard interval for denied requests for 192 or fewer trunks is

²⁴³ Response to Data Request #760 (revision).

²⁴⁴ Interview #23, December 2, 2003.

²⁴⁵ Response to Data Request #261.

²⁴⁶ Response to Data Request #647.

²⁴⁷ Response to Data Request #649.

²⁴⁸ Responses to Data Requests #648 and #651.

seven business days; the interval for denied requests for more than 192 trunks is a negotiated one, although Verizon holds such requests to the same seven-business day standard.²⁴⁹

Liberty had reviewed Verizon's documentation for this measure during the New Jersey audit, and Verizon confirmed that its business process was the same for Virginia, except that Verizon no longer calculates results manually but rather calculates them within NMP.²⁵⁰ After the CLEC e-mails the TGSR to Verizon, the Verizon administrator reviews the TSGR and forwards it to the trunk capacity management (TCM) group. The TCM group reviews the request and enters a "Y" or "N" to indicate if the request was accepted or not, and enters a recommended trunk quantity. Verizon then forwards the completed TGSR to the CLEC. The TGSR metrics administrator prepares a weekly and monthly log of TGSR requests and responses. The Verizon personnel responsible for OR-1-19 measure prepare an Excel spreadsheet containing data on each TGSR and enter the data into a NMP production GUI screen. NMP computes the metric results and sends them to the NMP reporting system for release.

Liberty examined the method that Verizon uses to calculate the OR-1-19 measure. To calculate the denominator, Verizon selects all requests that had a response date within the reporting month. To calculate the numerator, Verizon counts the number of requests identified in the denominator that have response intervals within the standard. Verizon calculates the response interval as the number of business days between the time that it receives the TGSR and the date that it provides a response to the CLEC. For accepted requests for 192 or fewer trunks and requests for more than 192 trunks, Verizon counts the TGSR response as on time if the response interval is ten business days or less. Verizon counts the TGSR response as on time for both trunk product groups if the response interval is seven business days or less.²⁵¹ Verizon counts orders received after 2:00 p.m. as if it received them the next business day.²⁵² This convention is acceptable, but Verizon should seek to clarify this issue in the Guidelines.

Liberty concluded that Verizon's method for calculating these measures conforms to the Guidelines.

Verizon reported no results for the two product groups for September 2003, and Liberty confirmed with Verizon that it had no such requests.²⁵³

3. Findings and Recommendations

Verizon does not exclude ASR orders for which the CLEC requested no FOC from the OR-1-02 through OR-1-10 measures.

The notes section of the Guidelines states that Verizon should exclude from the OR-1 calculations orders for which the CLEC requested no confirmation, (*i.e.*, orders with an "N" in

²⁴⁹ Responses to Data Requests #648 and #651.

²⁵⁰ Response to Data Request #652.

²⁵¹ Response to Data Request #651.

²⁵² Response to Data Request #650.

²⁵³ Response to Data Request #653.

the RTR field). Liberty found that Verizon did not include a logic step in its OR-1-02 through OR-1-10 algorithms to check for ASR orders with an "N" in the RTR field. Verizon acknowledged that it therefore incorrectly includes ASRs with an RTR of "N" in OR-1 results. Liberty recognizes that the effect of the error on reported results is negligible; however, Verizon should modify its algorithms to exclude such orders. Verizon also suggested that it update the Guidelines to move the language from the notes to the exclusion section of the Guidelines. Liberty agrees with this suggestion.

The Guidelines for OR-1 are unclear regarding the treatment of resent confirmations.

The notes section to the Guidelines states that Verizon should include CLEC requests for resent confirmations that it submitted electronically, as well as confirmations that it resent due to its own error. A footnote to this language states that Verizon should not count as resent those confirmations that Verizon resends due to CLEC error and those Verizon resends to reschedule a missed provisioning appointment. These two statements are unclear and somewhat contradictory, and may be inconsistent with Verizon's current practice. Liberty recommends that Verizon seek a clarification to these notes to the Guidelines to make them clearer and consistent with current practice.

Verizon does not report results for OR-1-08 consistent with the definition of the measure in the Guidelines.

To calculate the denominator for the OR-1-08 measure, Verizon counts the number of PONs confirmed during the reporting month that are associated with fax or mail ASRs and that do not require a facility check. The definition of the OR-1-08 measure in the Guidelines indicates that Verizon should report LSRs, not ASRs. Liberty recommends that Verizon seek a modification to the Guidelines to change the definition and title of this measure to reflect ASRs, rather than LSRs. Verizon has stated that it changed the Guidelines for this measure to reflect ASRs and filed the revised Guidelines with the Virginia Commission in December 2003. Liberty believes that this proposed change will correct the problem and is consistent with what Verizon currently reports for this measure.

The Guidelines for OR-1 are unclear regarding Verizon's treatment of confirmations for trunk orders.

Verizon interprets the term "clean ASR" in the Guidelines to mean the final version of the PON that the CLEC submits. As such, Verizon does not include confirmations on all PON versions in the OR-1-12 measure, but rather includes the confirmation on the last version of the PON that it confirmed. This interpretation is reasonable; however, Liberty recommends that Verizon seek a clarification to the Guidelines to make this convention clear, particularly because Verizon counts all versions of a PON that it confirms for the OR-1-02 through OR-1-10 metrics.

The language in the Guidelines notes section for OR-1 indicates that the sub-metrics should include only orders that Verizon confirmed in the calendar month. This language is contradictory to the specific language for trunks elsewhere in the Guidelines, which indicates that OR-1-12 measures on-time confirmation for completed (rather than confirmed) service orders. Verizon often completes the order in a later month than the one in which it confirmed the order, and therefore Verizon includes in reported results orders with confirmation dates other than those in the current month. Liberty recommends that Verizon seek a clarification to the notes section of the OR-1 Guidelines to make this exception clear.

The Guidelines do not list Verizon's exclusion of trunk service orders with negative FOC intervals for OR-1.

Verizon currently excludes any trunk service order from the OR-1-12 metrics that has a clerical error that affects the calculation of the FOC. This convention is acceptable; however, Liberty recommends that Verizon seek a clarification to the Guidelines.

The Guidelines do not document Verizon's treatment of TGSRs that it receives after 2:00 p.m. in OR-1-19.

Verizon currently treats all TGSRs that it receives after 2:00 p.m. as if it received them the next business day. This convention is acceptable; however, Liberty recommends that Verizon seek a clarification to the Guidelines to reflect this practice.

In its comments on Liberty's Draft Report, Verizon stated that it planned to modify its business process and change the cut-off time for TGSRs to 5:00 p.m., consistent with other OR metrics. Liberty believes that a change to the business process is a reasonable alternative to seeking a clarification to the Guidelines to reflect current practice.

C. OR-2, Reject Timeliness

1. Background

The metrics within OR-2 report Verizon's ability to issue order rejects or queries in a timely manner. Verizon reports six OR-2 sub-metrics in Virginia (OR-2-02, OR-2-04, OR-2-06, OR-2-08, OR-2-10, and OR-2-12) that measure the percentage of order rejections that Verizon sends on time.

The OR-2-02 through OR-2-10 sub-metrics focus on distinct categories of resale and UNE orders, *i.e.*, orders submitted electronically that flow-through to Verizon's backend systems, orders submitted electronically that require manual handling, and orders submitted via fax or mail. Verizon reports each of these sub-metrics for a specified number of distinct product groups, such as resale POTS/Pre-Qualified Complex and UNE specials. The OR-2-12 sub-metric focuses

on Verizon's performance in issuing rejections on orders for CLEC-to-Verizon interconnection trunks. In all, there are 24 individual reported results in this measure group.

Verizon calculates the OR-2 sub-metrics for different categories of orders on the basis of timeliness standards determined by product group and order characteristics, *e.g.*, with or without facility check. The OR-2 sub-metrics report on distinct products types as detailed in the table below:

Sub-Metric	Resale	UNE	Trunks
OR-2-02	<ul style="list-style-type: none"> • POTS/Pre -Qualified Complex 	<ul style="list-style-type: none"> • Loop/Pre-Qualified Complex/ LNP • Platform 	
OR-2-04	<ul style="list-style-type: none"> • POTS/Pre -Qualified Complex • 2-Wire Digital Services • Specials 	<ul style="list-style-type: none"> • Loop/Pre-Qualified Complex/ LNP • Platform • 2-Wire Digital Services • 2-Wire xDSL Loops • 2-Wire xDSL Line Sharing/Line Splitting (combined) • Specials 	
OR-2-06	<ul style="list-style-type: none"> • POTS/Pre -Qualified Complex • 2-Wire Digital Services • Specials 	<ul style="list-style-type: none"> • Loop/Pre-Qualified Complex/ LNP • Platform • 2-Wire Digital Services • 2-Wire xDSL Loops • 2-Wire xDSL Line Sharing/Line Splitting (combined) • Specials 	
OR-2-08		<ul style="list-style-type: none"> • Specials 	
OR-2-10		<ul style="list-style-type: none"> • Specials 	
OR-2-12			<ul style="list-style-type: none"> • CLEC Trunks

In addition to the standard exclusion for Verizon affiliate data, the exclusions that apply to OR-2 are:

- Verizon test orders
- Special project PONs
- Weekend and holiday hours for non flow-through orders
- Duplicate rejects
- Any reject/query on an ASR for which a CLEC did not require a response
- For OR-2-02, scheduled SOP downtime for flow-through orders.

Verizon reports all of the OR-2 sub-metrics on a statewide basis by individual and aggregate CLECs. The standard for all OR-2 sub-metrics is 95 percent.

The Guidelines provide the following formulas for the OR-2 sub-metrics:

OR-2-02: % On Time LSR Reject (Flow-Through)

(Number of electronic rejects sent where the reject date and time minus the submission date and time is less than or equal to two hours for the specified product)/(Total number of flow-through LSRs rejected for the specified product)

OR-2-04: % On Time LSR/ASR Reject – No Facility Check (Electronic – No Flow-Through)

(Number of electronic rejects sent where the reject date and time minus the submission date and time is within the standard for orders not requiring a facility check for the specified product)/(Total number of electronically submitted LSRs/ASRs not requiring a facility check rejected for the specified product)

OR-2-06: % On Time LSR/ASR Reject –Facility Check (Electronic – No Flow-Through)

(Number of electronic rejects sent where the reject date and time minus the submission date and time is within the standard for orders requiring a facility check for the specified product)/(Total number of electronically submitted LSRs/ASRs requiring a facility check rejected for the specified product)

OR-2-08: % On Time Reject – No Facility Check (Fax)

(Number of faxed rejects not requiring a facility check sent where the reject date and time minus the submission date and time is less than or equal to the standard for the specified product)/(Total number of faxed rejects not requiring a facility check for the specified product)

OR-2-10: % On Time Reject – Facility Check (Fax)

(Number of faxed rejects requiring a facility check sent where the reject date and time minus the submission date and time is less than or equal to the standard for the specified product)/(Total number of faxed rejects requiring a facility check for the specified product)

OR-2-12: % On Time Trunk ASR Reject

(Number of rejected trunk orders that meet reject the trunk standard of less than or equal to seven business days)/(Total number of rejected trunk orders for less than or equal to 192 trunks)

Four of the OR-2 sub-metrics are relevant to Verizon's PAP. During the July and August 2003 reporting months, Verizon did not incur any penalties associated with this measure.²⁵⁴

²⁵⁴ Responses to Data Requests #198 and #203 (July and August 2003 C2C Reports).

2. Analysis and Evaluation

Resale and UNE Products – OR-2-01 through OR-2-10

For resale and UNE products, the Guidelines define reject response time as the amount of elapsed time (in hours and minutes) between the time that Verizon receives an LSR or ASR and the time it distributes a service order reject or query.

For the OR-2 metrics, Verizon treats each version of a PON as a new order request, and there may be more than one rejection on the same PON number.

Verizon extracts ordering data from the NMP warehouse to create the LSR Order Fact and ASR Order Fact tables used by Verizon's metric algorithms. The key data fields in the LSR Order Fact table for the OR-2 measures are CLEC ID, PON, PON version, receipt date/time, rejection date/time, process flow category, order type (resale, UNE-L, or UNE-P), service order class (such as UNE POTS platform or specials), test account flag, rejection interval, and on-time rejection indicator.

Verizon uses the process flow category to indicate whether i) the order flowed through, ii) the CLEC submitted it electronically or manually, and iii) the order requires a facility check. NMP sets the test account flag to "Z" for test CLEC and to "R" for VADI and Verizon affiliate IDs using a look-up table.²⁵⁵ Verizon also sets the test account flag to "B" to indicate special project PONs that Verizon excludes from certain non flow-through metrics. NMP calculates the rejection interval as the difference between the order receipt date/time and the date/time of the rejection. NMP assigns a value of "Y" to the on-time rejection indicator if the rejection interval is within the standard interval for the given product (service order class). Liberty reviewed the elapsed time calculation used to determine the LSR rejection interval and the assignment of the indicator, and concluded that NMP determined them correctly.

The key data fields in the ASR Order Fact table for the OR-2 measures are CLEC ID, PON, PON version, receipt date/time, rejection date/time, product type (e.g., DS0, DS1), activity type (N, C, or D), service order type (manual or electronic), facilities indicator, response type, exclusion indicator, rejection interval, rejection inclusion indicator and former territory indicator (e.g., Bell Atlantic, GTE). The ASR Order Fact table data pertain only to UNE specials products. NMP sets the exclusion indicator to "Y" for test CLEC IDs, Verizon affiliate IDs, VADI, and special projects on the basis of a look-up table, as well as PARTS orders.²⁵⁶

Verizon uses the facilities indicator field to designate whether the ASR order requires a facility check. NMP calculates the ASR rejection interval as the elapsed time between the order receipt

²⁵⁵ Verizon provided LSR Order Fact data table field descriptions in response to Data Request #20.

²⁵⁶ Verizon provided ASR Order Fact data table field descriptions in responses to Data Requests #20 and #634 (clarification).

date/time and the date/time of the rejection. Liberty reviewed the calculation of the rejection interval and concluded that NMP calculated it properly.²⁵⁷

Verizon uses the response type field to exclude ASRs for which the CLEC requested no response. CLECs can request a FOC, a FOC and design layout record, or neither.²⁵⁸ Verizon uses the rejection inclusion indicator to flag the PON versions that it includes in the metrics. NMP sets the field to "Y" for the first rejection on a given PON version; any subsequent rejection on that same PON version will have a rejection indicator value of "N" and will not be included in the metric. Liberty verified that NMP correctly determined the rejection inclusion indicator for all ASR data provided.

Liberty concluded that Verizon's definitions for the key data fields used to calculate the metrics are consistent with the Guidelines.

Liberty examined how Verizon applied the exclusions set forth in the Guidelines. Verizon excludes test orders and Verizon affiliate LSR orders by a logic step in its algorithm that screens out records that have a test account flag value of "R" or "Z." For ASR orders, Verizon calculates each sub-metric result by individual CLEC and Verizon affiliate ID and by exclusion indicator (which NMP sets to "Y" for test CLEC, VADI, and Verizon affiliates on the basis of a look-up table), and aggregates them accordingly in the NMP reporting system. To exclude PONs associated with special projects, Verizon excludes LSR orders with a test account flag of "B" and ASR orders with an exclusion indicator value of "Y" from non flow-through OR-2 sub-metrics.

Verizon excludes orders associated with the former GTE territory in Virginia. For LSR orders, Request Manager provides a former territory indicator field to NMP. Verizon excludes any orders that have a former territory designation of GTE when it creates the LSR Order Fact data table in NMP.²⁵⁹ For ASR orders, Verizon derives a former territory indicator in NMP and its metric algorithms include only those orders associated with the former Bell Atlantic territory in reported results.²⁶⁰

As part of its review of rejection intervals for LSR and ASR orders, Liberty examined how Verizon excluded i) weekend and holiday hours from elapsed times for non flow-through orders, and ii) scheduled SOP downtimes from elapsed times for flow-through orders. Liberty found that Verizon properly applied these exclusions.

The Guidelines specify that Verizon exclude from OR-2 metrics duplicate rejections against a unique PON (*i.e.*, the combination of CLEC ID, PON, and version number). Verizon uses a different approach for LSR and ASR orders. For LSR orders, Verizon excludes duplicates in the

²⁵⁷ When Liberty audited the OR-2 measure in New Jersey, Verizon recorded a rejection date but no time. Verizon used a default time of 00:00, which resulted in a rejection interval shorter than it should have been. Since the audit, Verizon implemented a series of change controls (*i.e.*, Metric Change Control No. 10120, No. 10279, and No. 10364) to record rejection time for ASR orders. Verizon had completed all the changes by the September 2003 data month. Liberty found that all rejected orders in the September 2003 ASR Order Fact data table had rejection times.

²⁵⁸ Verizon provided Trunk Fact data table field descriptions in response to Data Request #20.

²⁵⁹ Response to Data Request #317 (clarification).

²⁶⁰ Response to Data Request #317. Verizon indicated that it bases the territory designation on the central office that serves the phone number.

data used to calculate the metrics; for ASR orders, Verizon excludes the duplicates within the metrics algorithm. There are instances in which Verizon's systems send multiple rejections on the same PON version. During the procedure that Verizon uses to move data from NMP to the LSR Order Fact table, NMP will only place the first rejection in the LSR Order Fact table.²⁶¹ Thus there are no duplicate rejections in the LSR data. Verizon uses the rejection inclusion indicator to eliminate duplicate rejects within the metrics algorithm for ASR orders. Verizon is thus appropriately excluding duplicate rejections against the same unique PON.

There are, however, subtle differences in the way that Verizon treats LSR and ASR rejections in the calculation of the OR-2 metrics, and these differences occur when Verizon has issued both a rejection and a confirmation against the same PON version. As noted previously, Verizon sets the rejection inclusion indicator to "Y" for the first rejection on a given PON version for ASR orders, and any subsequent reject on that same PON version would have an indicator value of "N." However, if Verizon had already sent a confirmation on a given PON version, then NMP would set the rejection indicator to "N," even if it was the first rejection (but if Verizon sent the rejection prior to the confirmation, NMP sets the indicator to "Y"). For ASR orders, Verizon does not count rejections on a given PON version that it sends after a confirmation.²⁶² For LSR orders, Verizon counts the rejection regardless of whether the order also had a confirmation. Liberty recommends that Verizon treat both ASR and LSR orders in the same fashion for such cases. Liberty also recommends that Verizon seek a clarification to the Guidelines to address situations in which Verizon both confirms and rejects the same PON version.

The Guidelines also indicate that Verizon should exclude any rejection on an ASR for which the CLEC indicated that it did not require a response. Verizon's metric algorithms use the response type field to exclude ASR PONs for which the CLEC requested no response.

The notes section of the Guidelines contains additional directions on how Verizon should calculate the OR-2 metrics. Verizon does not send information on orders that fail Verizon's basic front-end edits to NMP, and thus Verizon does not include such orders in the OR-2 metrics.²⁶³ For the OR-2-02 through OR-2-10 sub-metrics, Verizon selects the relevant orders that it rejected during the reporting month, which is consistent with the notes section of the Guidelines. Verizon also defines the Pre-Qualified Complex product category to include 2-Wire Digital, 2-Wire xDSL loops, and 2-Wire Digital Line Sharing/Line Splitting orders that were pre-qualified, consistent with the Guidelines.

The notes to the Guidelines state that Verizon does not include cancelled orders in the measurement. Verizon stated that it counts all PON versions that it rejects, including those associated with orders that it originally rejected but that the CLEC later cancelled. For example, a CLEC may submit the first version of a PON that Verizon rejects. The CLEC could resubmit a second version of the PON that Verizon confirms (and counts in the OR-1 metrics). If the CLEC

²⁶¹ Response to Data Request #729.

²⁶² Response to Data Request #730.

²⁶³ The notes to the Guidelines refer to "rejected orders" as those that failed basic front-end edits, which are different from those that Verizon rejects in the SOP.

later cancels the order, Verizon would confirm the order as cancelled, and include that later confirmation in OR-1. Verizon would also count the first rejection in OR-2.²⁶⁴

Liberty found that Verizon's explanation was true for LSR orders, but not for ASR orders. Verizon's metric algorithms that use ASR Order Fact data contain logic that excludes any rejection on a PON version that is associated with a cancelled order.²⁶⁵ Therefore, Verizon excludes all rejections associated with a cancelled order that it received via ASR. Verizon's treatment of LSRs is therefore in conflict with the Guidelines and inconsistent with that for ASRs. Verizon could modify its LSR Order Fact data table in such a way as to enable it to identify and exclude rejections associated with cancelled orders. However, the OR-2 metrics measure Verizon's performance in issuing timely rejection notifications. The measurement for each PON version is valid regardless of whether the CLEC later resubmits a new PON version or eventually cancels a valid order. As an alternative, Verizon could seek a clarification to the Guidelines to remove the exclusion for cancelled orders. Verizon would then have to modify its approach for ASR orders to discontinue excluding rejections on PON versions of cancelled orders.

Liberty reviewed each of the algorithms that Verizon uses to calculate the OR-2 metrics. Liberty found that Verizon's algorithms are generally consistent with the Guidelines.²⁶⁶ For each of the OR-2 measures, Verizon uses a separate algorithm to calculate the result for each product group. Verizon uses separate modules within the algorithms to process LSR orders and ASR orders.²⁶⁷

OR-2-02 – % On Time LSR Reject (Flow-Through)

Liberty examined the algorithms that Verizon uses to calculate the OR-2-02 measure. To calculate the denominator for the measure, Verizon counts the number of PONs associated with all LSRs it rejected during the reporting month that ultimately flowed through to the service order processor without manual intervention.²⁶⁸ Verizon counts all versions of a given PON for which it has sent a rejection on orders submitted via Web GUI and EDI. To calculate the numerator, Verizon counts the number of on-time rejection indicators for all PON versions identified in the denominator. Verizon uses separate algorithms to calculate results for each of the three product groups.

Liberty concluded that Verizon's method for calculating these measures conforms to the Guidelines.

²⁶⁴ Response to Data Request #335.

²⁶⁵ This logic is contained in the metric algorithms for the UNE specials product group of OR-2-04, OR-2-06, OR-2-08, and OR-2-10.

²⁶⁶ Liberty identifies any inconsistencies in the findings section.

²⁶⁷ In some cases, Verizon has a module that is unnecessary. For example, CLECs order DS3 specials only with ASRs, but the code is included for LSRs in the event that CLECs order such products with LSRs in the future.

²⁶⁸ Verizon selects PON versions with a process flow category value of 1, which indicates that the LSR flowed through to the SOP without manual intervention.

Liberty recalculated the CLEC aggregate result for OR-2-02-2320 (the resale POTS loop/Pre-Qualified Complex product group) for September 2003 using the LSR Order Fact table that Verizon provided.²⁶⁹ Liberty replicated Verizon's denominator, as well as the overall result.

**OR-2-04 – % On Time LSR/ASR Reject – No Facility Check
(Electronic – No Flow-Through)**

Liberty examined the algorithms that Verizon uses to calculate the OR-2-04 measure. To calculate the denominator for the measure, Verizon counts the number of PONs associated with all LSRs that i) did not require a facility check (*i.e.*, those with less than six lines), ii) it rejected during the reporting month, and iii) it received electronically but that did not flow through to the service order processor without manual intervention.²⁷⁰ For specials that CLECs order via ASRs which do not require facilities verification, Verizon also counts the number of PON versions received electronically that it rejected during the reporting month.²⁷¹ Verizon counts all versions of a given PON for which it has sent a rejection. To calculate the numerator, Verizon counts the number of on-time rejection indicators for all PON versions identified in the denominator.²⁷² Verizon uses separate algorithms to calculate results for each of the nine product groups.

Liberty concluded that Verizon's method for calculating these measures conforms to the Guidelines.²⁷³

Liberty recalculated the CLEC aggregate result for OR-2-04-2200 (the resale specials product group) for September 2003 using the LSR Order Fact table that Verizon provided.²⁷⁴ Liberty replicated Verizon's denominator, as well as the overall result. Liberty also recalculated the CLEC aggregate result for OR-2-04-3200 (the UNE specials product group) using the LSR Order Fact and ASR Order Fact tables that Verizon provided. Liberty replicated Verizon's denominator, as well as the overall result.

**OR-2-06 – % On Time LSR/ASR Reject – Facility Check (Electronic
– No Flow-Through)**

Liberty examined the algorithms that Verizon uses to calculate the OR-2-06 measure. To calculate the denominator for the measure, Verizon counts the number of PONs associated with

²⁶⁹ Response to Data Request #261. Verizon does not use ASR Order Fact data for these sub-metrics because CLECs do not order the reported products via ASRs.

²⁷⁰ Verizon selects PON versions with a process flow category value of 3, which indicates an electronically submitted (via Web GUI or EDI) LSR that does not require a facility check.

²⁷¹ Verizon selects ASR PON versions with a facility indicator of "N," which signifies that no facility check is required. Verizon does not include an ASR order in the result if the CLEC has indicated that it did not want a response.

²⁷² For ASR orders for specials, Verizon's algorithm counts the number of PON versions with a rejection interval of 48 hours or less.

²⁷³ Liberty found that Verizon's algorithm for resale specials contained an error; specifically, the numerator and denominator were the same. In response to Data Request #685, Verizon confirmed that this occurred due to a CMA mapping issue and was not an actual algorithm error.

²⁷⁴ Response to Data Request #261.

all LSRs requiring a facility check that Verizon rejected during the reporting month and that it received electronically but did not flow through to the service order processor without manual intervention.²⁷⁵ For specials ordered by CLECs order via ASRs that require facilities verification, Verizon also counts the number of PON versions received electronically that it rejected during the reporting month.²⁷⁶ Verizon counts all versions of a given PON for which it has sent a rejection. To calculate the numerator, Verizon counts the number of on-time rejection indicators for all PON versions identified in the denominator.²⁷⁷ Verizon uses separate algorithms to calculate results for each of the nine product groups.

Liberty concluded that Verizon's method for calculating these measures conforms to the Guidelines.

Liberty recalculated the CLEC aggregate result for OR-2-06-3140 (the UNE-P product group) for September 2003 using the LSR Order Fact table that Verizon provided.²⁷⁸ Liberty replicated Verizon's denominator, as well as the overall result.

**OR-2-08 – % On Time Reject – No Facility Check (Fax) and OR-2-10
– % On Time Reject – Facility Check (Fax)**

Liberty examined the algorithms that Verizon uses to calculate the OR-2-08 and OR-2-10 measures. To calculate the denominator for the OR-2-08 measure, Verizon counts the number of PONs associated with all LSRs not requiring a facility check that it received via fax and that it rejected during the reporting month.²⁷⁹ For specials that CLECs order via ASRs and do not require facilities verification, Verizon also counts the number of PON versions that it received manually that it rejected during the reporting month.²⁸⁰ Verizon counts all versions of a given PON for which it has sent a rejection. To calculate the numerator for OR-2-08, Verizon counts the number of on-time rejection indicators for all PON versions identified in the denominator.²⁸¹ There is only one product group, UNE specials, for this measure.

Liberty concluded that Verizon's method for calculating the OR-2-08 measure conforms to the Guidelines.

²⁷⁵ Verizon selects PON versions with a process flow category value of 5, which indicates an electronically submitted (via Web GUI or EDI) LSR that requires a facility check.

²⁷⁶ Verizon selects ASR PON versions with a facility indicator of "Y," which signifies that a facility check is required. Verizon does not include an ASR order in the result if the CLEC has indicated that it did not want a response.

²⁷⁷ For ASR orders for specials, Verizon's algorithm counts the number of PON versions with a rejection interval of 72 hours or less.

²⁷⁸ Response to Data Request #261.

²⁷⁹ Verizon selects PON versions with a process flow category value of 2, which indicates a faxed LSR that does not require a facility check.

²⁸⁰ Verizon selects ASR PON versions with a facility indicator of "N," which signifies that no facility check is required. Verizon does not include an ASR order in the result if the CLEC has indicated that it did not want a response.

²⁸¹ For ASR orders for specials, Verizon's algorithm counts the number of PON versions with a rejection interval of 72 hours or less.

To calculate the denominator for the OR-2-10 measure, Verizon counts the number of PONs associated with all ASRs and LSRs requiring a facility check that it received via fax and that it rejected during the reporting month.²⁸² Verizon counts all versions of a given PON for which it has sent a rejection. To calculate the numerator for OR-2-10, Verizon counts the number of on-time rejection indicators for all PON versions identified in the denominator.²⁸³ There is only one product group, UNE specials, for this measure.

Liberty concluded that Verizon's method for calculating the OR-2-10 measure conforms to the Guidelines.

Verizon includes a module in its algorithms for the OR-2-08 and OR-2-10 measures that checks for LSR orders that is not necessary, but does not affect reported results. Verizon indicated that it no longer receives LSRs via fax or mail. The performance standards in the Guidelines for faxed/mailed orders state that "fax/mail is not available for LSR orders." Verizon should revise its algorithms and remove the LSR module from OR-2-08 and OR-2-10, even though it has no impact on reported results.

Verizon reported no CLEC aggregate results for these measures for the September 2003 reporting month. Liberty reviewed the LSR and ASR Order Fact data and verified that Verizon had no fax orders.²⁸⁴

Trunk Products –OR-2-12

OR-2-12 – % On Time Trunk ASR Reject

The OR-2-12 measure relates to orders with 192 or fewer trunks. Unlike the OR-1 trunk metrics, the Guidelines do not specifically state that Verizon should exclude projects. Verizon does not exclude projects or requests for new trunks (as long as they are for 192 or fewer trunks). Liberty recommends that Verizon seek a clarification to the Guidelines to make this convention explicit. The Guidelines also do not specifically state that the measure pertains only to forecasted trunks. Verizon's metric algorithm includes requests in the measure only if the CLECs forecast them.²⁸⁵ Liberty recommends that Verizon either include both forecasted and un-forecasted trunks in the metric, or, as an alternative, seek a clarification to the Guidelines to make this convention explicit.

Unlike the OR-1 trunk confirmation metrics, Verizon includes only completed orders in the measure, consistent with the notes section of the Guidelines. Unlike the other OR-2 measures,

²⁸² Verizon selects ASR PON versions with a facility indicator of "Y," which signifies that a facility check is required. Verizon does not include an ASR order in the result if the CLEC has indicated that it did not want a response. Verizon selects LSR PON versions with a process flow category value of 4, which indicates an order submitted via fax or mail that requires a facility check.

²⁸³ For ASR orders for specials, Verizon's algorithm counts the number of PON versions with a rejection interval of 96 hours or less.

²⁸⁴ Verizon had an ASR fax order for DS1, but it pertained to the former GTE territory in Virginia and therefore Verizon excluded it.

²⁸⁵ Verizon labels its product group result as less than or equal to 192 forecasted trunks in its performance reports.

Verizon forms the OR-2-12 measure on the basis of service orders, not PONs, and there often are multiple service orders associated with a single PON. The Guidelines do not explicitly state that Verizon should measure service orders (as it does for OR-1), however, Verizon's interpretation is reasonable. The submission and rejection dates for the service orders are the same as those of the PON to which they relate.

Verizon uses the order status date, which is the date that Verizon updates the Trunk Fact table with a completion date for the order, to select completed service orders to be included in results for the reporting month.²⁸⁶ The language in the Guidelines notes section for OR-2 indicates that the sub-metrics should include only orders that Verizon rejected in the calendar month. Verizon often completes the order in a month later than when it first rejected the order; therefore, Verizon includes in reported results orders with rejection dates other than those in the current month. Unlike those for OR-1, the Guidelines for OR-2 do not contain specific language for trunks regarding measuring completed (rather than rejected) service orders. However, Verizon's approach for OR-2 is consistent with that for OR-1, and Liberty recommends that Verizon seek a clarification to the OR-2 Guidelines to make this interpretation clear.

Verizon had found errors in its method for calculating the OR-2-12 sub-metric and instituted two change controls. In one case, Verizon was incorrectly calculating the rejection interval for orders that the CLEC had supplemented. Verizon correct this calculation beginning with the June 2003 data month.²⁸⁷ In another instance, Verizon discovered that it was not including all rejects on a given PON in the numerator of the measure. Verizon corrected this aspect of its calculating beginning with the August 2003 data month.²⁸⁸

Verizon extracts ordering data from the NMP warehouse to create the Trunk Fact table used by Verizon's metric algorithms. The key data fields in the Trunk Fact table for the OR-2-12 measure are CLEC ID, PON, service order number, service type (CLEC, reciprocal, etc.), ASR quantity, order type (new or augmented), forecast indicator (Y or N), order status (completed, cancelled, or pending), order status date, submission method (electronic or fax/mail), response type, rejection interval, exclusion indicator, inclusion indicator, and former territory indicator (*e.g.*, Bell Atlantic, GTE).

Verizon uses the service type field to select only CLEC orders, and excludes reciprocal, IEC, and wireless trunk requests from the measure. Verizon indicated that CLEC trunk service included in the measure includes both one-way and two-way trunk products.²⁸⁹

NMP sets the exclusion indicator to "Y" for orders associated with test CLEC IDs, Verizon affiliate IDs, and VADI on the basis of a look-up table.²⁹⁰ Verizon also uses an inclusion

²⁸⁶ During the New Jersey audit, Liberty found that the order status date was significantly later than the order completion date in some cases. Liberty recommended that Verizon update its administrative procedures to ensure that it records the completion dates for all orders completed during the month in the Trunk Fact data before it extracts the data from NMP to calculate results. Liberty did not find the same issue during this audit.

²⁸⁷ Metric Change Control No. 10143 and response to Data Request #328.

²⁸⁸ Metric Change Control No. 10355 and responses to Data Requests #328 and #755.

²⁸⁹ Interview #29, December 23, 2003.

²⁹⁰ Verizon provided Trunk Fact data table field descriptions in response to Data Request #20.

indicator, and includes in results only those service orders with a value of "Y." NMP sets the inclusion indicator to "Y" for the first rejection on each PON version.

Verizon uses the response type field to exclude ASRs for which the CLEC requested no response. CLECs can request a FOC, a FOC and design layout record, or neither.²⁹¹ NMP calculates the rejection interval as the number of business days between the date that Verizon received the ASR and the date it sent the rejection. Liberty reviewed the calculation of this interval and found that NMP calculated it properly.

Liberty concluded that Verizon's definitions for the key data fields used to calculate the metrics are consistent with the Guidelines.

Liberty examined how Verizon applied the exclusions set forth in the Guidelines. Verizon calculates each sub-metric result by individual CLEC and Verizon affiliate ID and by exclusion indicator (which NMP sets to "Y" for test CLEC, VADI, and Verizon affiliates on the basis of a look-up table), and aggregates them accordingly in the NMP reporting system. Thus Verizon correctly excludes test CLEC and Verizon affiliate orders from the measures. Verizon also uses the former territory indicator to exclude orders associated with the former GTE territory in Virginia. Verizon selects orders that have an inclusion indicator of "Y" in its metric algorithms, and thus Verizon is correctly excluding duplicate rejects (which have a blank indicator) on the same PON version.

As part of its review of rejection intervals, Liberty examined how Verizon excluded weekends and holiday from elapsed times. Liberty found that Verizon properly applied these exclusions.

Liberty examined the algorithms that Verizon uses to calculate the OR-2-12 measure. To calculate the denominator for the measure, Verizon counts the number of service orders related to rejected CLEC ASRs for 192 or fewer trunks. Verizon selects those service orders with an order status date (*i.e.*, completion date) within the reporting month. To calculate the numerator, Verizon counts the number of service orders with a rejection interval within the standard interval, *i.e.*, seven business days for electronically submitted ASRs, and eight business days for manual ASRs.

Liberty concluded that Verizon's method for calculating these measures conforms to the Guidelines.

Liberty recalculated the CLEC aggregate result for OR-2-12-5000 for September 2003 using the Trunk Fact table that Verizon provided.²⁹² Liberty replicated Verizon's denominator, as well as the overall result.

²⁹¹ Verizon provided Trunk Fact data table field descriptions in response to Data Request #20.

²⁹² Response to Data Request #261.

3. Findings and Recommendations

Verizon's treatment of LSR orders and ASR orders for the OR-2 measure when Verizon sends both a rejection and confirmation on the same PON version is inconsistent with and not addressed by the Guidelines.

In situations in which Verizon sends both a reject and a confirmation on the same PON version, Verizon's treatment of rejections after confirmations is inconsistent between LSR orders and ASR orders. For ASR orders, Verizon does not count rejections on a given PON version that it sends after a confirmation. For LSR orders, Verizon counts the rejection regardless of whether the order also had an earlier confirmation. Liberty recommends that Verizon treat both ASR and LSR orders in the same fashion for such cases. Liberty also recommends that Verizon seek a clarification to the Guidelines to address situations in which Verizon both confirms and rejects the same PON version.

Verizon's treatment of rejections on PON versions associated with cancelled LSR and ASR orders is inconsistent and not in conformance with the Guidelines for OR-2.

The notes to the Guidelines state that Verizon does not include cancelled orders in the measurement. Verizon stated that it counts all PON versions that it rejects, including those associated with orders that it originally rejected but that the CLEC later cancelled. Liberty found that Verizon's explanation was true for LSR orders, but not for ASR orders. Verizon excludes any rejections associated with a cancelled ASR PON version.

Liberty believes that Verizon's treatment for LSR orders is in conflict with the Guidelines. Verizon's approach for LSRs is also inconsistent with that for ASRs. Liberty recommends that Verizon modify its LSR Order Fact data table in such a way as to enable it to identify and exclude rejections associated with cancelled orders. As an alternative, Verizon could seek a clarification to the Guidelines to remove the exclusion for cancelled orders. Verizon would then have to modify its approach for ASR orders to discontinue excluding rejections on PON versions for cancelled order.

The Guidelines do not explicitly state Verizon's conventions for calculating OR-2-12.

Verizon does not exclude projects or requests for new trunks from the OR-2-12 result. Verizon should seek a clarification to the Guidelines to make this convention explicit. Verizon includes trunk requests in the OR-2-12 measure only if CLECs forecasted them. The Guidelines do not indicate that the measure pertains only to forecasted trunks. Liberty recommends that Verizon either include both forecasted and un-forecasted trunks in the metric, or, as an alternative, seek a clarification to the Guidelines to make this convention explicit.

The Guidelines are unclear regarding Verizon's treatment of rejections for trunk orders.

The language in the Guidelines notes section for OR-2 indicates that the sub-metrics should include only orders that Verizon rejected in the calendar month. Verizon includes only completed service orders in OR-2-12 results. Verizon often completes the order in a month later than when it first rejected the order; therefore Verizon includes in reported results orders with rejection dates other than those in the current month. Verizon's approach for OR-2 is consistent with that for OR-1, and Liberty recommends that Verizon seek a clarification to the OR-2 Guidelines to make this interpretation clear.

D. OR-3, Percent Rejects

1. Background

The OR-3 measure reports the percentage of orders that Verizon rejects or queries. The Guidelines define rejected orders as those with an omission or error in required order information. The Guidelines indicate that Verizon should report percentage reject performance against all order transactions processed in the Verizon ordering systems (including Request Manager, CAFÉ, and EXACT), not just those associated with bill completions.

Verizon reports separate percentage-reject results for resale and UNE products for OR-3-01, and reports the percentage of resubmitted EDI LSR orders that it does not reject for OR-3-02. The only exclusions that apply to OR-3 are Verizon test orders and Verizon affiliate data. Verizon reports the OR-3 sub-metrics on a statewide basis by individual and aggregate CLECs. The standard for OR-3-02 is 95 percent; there is no standard for OR-3-01.

The Guidelines provide the following formulas for the OR-3 sub-metrics:

OR-3-01: % Rejects

(Sum of all rejected LSR/ASR transactions for the specified product)/(Total number of LSR/ASR records received for the specified product)

OR-3-02: % LSR Resubmission Not Rejected

(Total EDI PONs resubmitted at Verizon's request that are not rejected by Verizon's systems as duplicative of EDI PONs already in Verizon's systems)/(Total number of EDI PONs resubmitted at Verizon's request)

The OR-3 results are not included in Verizon's PAP.

2. Analysis and Evaluation

OR-3-01 – % Rejects

The OR-3-01 sub-metric measures the percentage of orders received by Verizon that it rejects. The measure includes all orders, both electronic and manual, that Verizon receives via LSRs or ASRs. The key data fields relevant for the OR-3-01 measure in the LSR Order Fact table and ASR Order Fact table are the same as those that Liberty listed above regarding the OR-2 measures. Verizon excludes test orders and Verizon affiliate data in the same fashion as discussed for the OR-1 measures. Verizon also excludes orders associated with the former GTE territory in Virginia as discussed in OR-1.²⁹³

Liberty reviewed the metric algorithms that Verizon uses to calculate the OR-3-01 results. To calculate the denominator for the measure, Verizon counts the number of PON versions associated with all ASR and LSR orders that it received during the reporting month. To calculate the numerator, Verizon counts the total number of rejects for all PON versions that have a rejection date during the reporting month.²⁹⁴ Verizon uses separate algorithms to calculate results for resale and for UNE products.

Liberty recalculated the CLEC aggregate result for OR-3-01-2000 (resale products) for September 2003 using the LSR Order Fact table that Verizon provided.²⁹⁵ Liberty replicated Verizon's reported denominator, as well as the overall result

Verizon recently issued a change control notice stating that it found that it was not counting a small number of rejected PON versions associated with ASRs in the numerator of the measure.²⁹⁶ Verizon indicated that its NMP process counted only a single reject when there were multiple versions of the same PON with the same reject date and time, with time specified in hours and minutes. Verizon indicated that it expected to introduce seconds into the reject date and time field to correct the problem with Metric Change Control No. 10563. This problem affects the UNE product result.

Liberty found that Verizon's metric algorithms for OR-3-01 are correct, even though its method for processing the data used by one of these algorithms is not. Liberty recognizes that the change control deals with situations that are very infrequent and, as such, recognizes that the error has a negligible effect on reported results. Liberty concluded that Verizon's method for calculating this measure conforms to the Guidelines, assuming that Verizon corrects the error in its data processing.

²⁹³ As discussed earlier, Verizon excludes LSR orders associated with the former GTE territory in Virginia from the LSR Order Fact filing mart. For ASR orders, Verizon derives a former territory indicator in NMP and its metric algorithms include only those orders associated with the former Bell Atlantic territory orders in results.

²⁹⁴ Readers should note that the population of orders that Verizon rejected during the reporting month would be different from the population of orders that it received during the month. For example, if Verizon received an order on August 30 and rejected it on September 1, the order would be included in the September numerator but not the denominator.

²⁹⁵ Response to Data Request #261.

²⁹⁶ Metric Change Control No. 10563.

OR-3-02 – % LSR Resubmissions Not Rejected

The OR-3-02 sub-metric measures the percentage of EDI LSRs that CLECs resubmitted at Verizon's request and that Verizon's systems did not reject as duplicates. Verizon indicated that it designed the OR-3-02 measure to identify situations in which the CLEC resends the PON at Verizon's request, but Verizon subsequently rejects the PON version because it is already in the system. The measure therefore indicates system problems when Verizon's PON Shop application cannot find the PON even though it already exists in Verizon's ordering systems.

In certain cases, a CLEC submits a PON notifier exception trouble ticket and Verizon responds that it does not have the PON version on record. Verizon indicated that, in such a case, it would indicate on the trouble ticket status report (discussed in more detail in OR-10) that it had not received the PON version and state that the CLEC should resubmit it. Verizon uses the PON notifier exceptions with a resolution of "resend," that the CLEC subsequently resubmits at its request, as the relevant population for the measure. Verizon indicated that it would only count the PON in the OR-3-02 metric if the CLEC resubmits the PON. Verizon stated that, in many instances, the CLEC discovers that it had made a typographical error on the PON exception trouble ticket, and never sends in the PON.²⁹⁷

Verizon sends information daily on PONs that it closed to a resolution of "resend" from PON Shop to NMP. If a CLEC resubmits a PON version and it already exists in Verizon's ordering systems, Verizon rejects the order as a duplicate during basic front-end edits. The PON Shop system determines whether to reject a PON version as a duplicate by accessing the outbound file of all system error message notifiers.²⁹⁸ NMP accesses information from the PON Shop application on PONs that Verizon closed to a resolution of "resend" for which the CLEC resubmitted the PON and Verizon's system rejected it.²⁹⁹

The Guidelines for OR-3 state that edit-rejects, *i.e.* orders failing basic front-end edits, are not placed in the PON Master File and, therefore, not included in the calculation. Liberty believes that this language relates to only the OR-3-01 measure. Verizon uses information from PON Shop regarding orders that fail basic front-end edits for the OR-3-02 measure. Liberty therefore recommends that Verizon seek a clarification to the Guidelines to specify that the language refers to OR-3-01 only.

Verizon selects the resent PON records from the NMP warehouse that have a "satisfied date" within a given month, and places those records into the Resend data table used by Verizon's metrics algorithm.³⁰⁰ The key data fields relevant for the OR-3-02 measure in the Resend table are the CLEC ID, PON, version, satisfied date, and reject date. The satisfied date is the date that the CLEC resubmitted the PON.³⁰¹ The reject date is date of the relevant system error message notifier that PON Shop located for the given PON version.

²⁹⁷ Interview #21, November 12, 2003.

²⁹⁸ Response to Data Request #624.

²⁹⁹ Interview #21 (continued), November 25, 2003 and response to Data Request #621.

³⁰⁰ Interview #3, October 23, 2003.

³⁰¹ Interview #21 (continued), November 25, 2003.

Liberty examined how Verizon applied the exclusions for the OR-3-02 measure. Verizon stated that its PON Shop application does not send information on i) orders associated with test CLEC IDs, ii) Web GUI orders, and iii) orders associated with the former GTE territory in Virginia to NMP, and thus these orders are not included in reported results. Verizon indicated that while the PON Shop application sends information on orders associated with Verizon affiliates in the file it sends to NMP, Verizon does not include such orders in the data table used to calculate the measure.³⁰² Liberty concluded that Verizon is properly applying the exclusions for this measure.

Liberty reviewed the metric algorithms that Verizon uses to calculate the OR-3-02 results. To calculate the denominator for the measure, Verizon counts the number of EDI PON versions that CLECs resubmitted at Verizon's request during the reporting month.³⁰³ To calculate the numerator, Verizon counts the number of PON versions resubmitted during the month that have a blank reject date (*i.e.*, the PON was not rejected). Verizon reports the same result for this measure under the UNE and resale product groups in its performance report.

Verizon reported no results for this sub-metric for September 2003. Verizon indicated that it typically reports no observations for OR-3-02.³⁰⁴ Verizon indicated that it resolved approximately 971 PONs with a "resend" resolution in September 2003.³⁰⁵ This suggests that either CLECs did not resubmit the individual PONs, or CLECs did resubmit the PONs but the Verizon system did not reject them as duplicates.

Liberty concluded that Verizon's method for calculating this measure conforms to the Guidelines.

3. Findings and Recommendations

The Guidelines do not clearly specify that edit-rejects are not included in the OR-3-01 measure, but are relevant to the OR-3-02 measure.

The Guidelines for OR-3 state that edit-rejects, *i.e.* orders failing basic front-end edits, are not placed in the PON Master File and, therefore, not included in the calculation. Liberty believes that this language relates to only the OR-3-01 measure. Verizon uses information from PON Shop regarding orders that fail basic front-end edits for the OR-3-02 measure. Liberty therefore recommends that Verizon seek a modification to the Guidelines to clarify that the language refers only to OR-3-01.

³⁰² Response to Data Request #622.

³⁰³ Verizon selects PON versions with a satisfied date within the reporting month.

³⁰⁴ Interview #21, November 12, 2003.

³⁰⁵ Response to Data Request #620. Verizon's figure is for all states, not only Virginia.

E. OR-4, Timeliness of Completion Notifications

1. Background

The three sub-metrics within OR-4 measure Verizon's performance in issuing timely completion notifications on orders it receives through the EDI/NetLink system. The OR-4-11 sub-metric measures the percentage of completed orders for which Verizon has sent no provisioning completion notifier (PCN) or billing completion notifier (BCN) within two business days after it completed provisioning. OR-4-16 measures Verizon's performance in issuing PCNs within one business day of work order completion (the WFA completion date) in the SOP. OR-4-17 measures Verizon's performance in issuing BCNs within two business days of provisioning order completion in the SOP.

The Guidelines specify that the timeliness interval should begin with provisioning completion in the Verizon SOP system of the last service orders associated with a specific PON, and ends when Verizon's NetLink system distributes the PCN or BCN to the CLEC. In addition to the standard exclusion for Verizon affiliate data, the Guidelines list the following exclusions for OR-4:

- Verizon test orders
- Orders not received through the Verizon NetLink EDI system
- VADI orders
- Special project PONs
- For OR-4-11, any product that is not designed to generate a PCN or BCN.

Verizon reports all of the OR-4 sub-metrics on a statewide basis by individual and aggregate CLECs. The Guidelines indicate that Verizon should report separate results for resale and UNE products for OR-4-11, and total EDI orders not rejected for OR-4-16 and OR-4-17. The standard for OR-4-11 is 0.25 percent, and the standard for OR-4-16 and OR-4-17 is 95 percent.

The Guidelines provide the following formulas for the OR-4 sub-metrics:

OR-4-11: % Completed Orders with neither a PCN nor BCN sent

(Number of EDI PONs completed that have produced neither a PCN or BCN within two business days after the last service order has been updated as provisioning completed in the SOP)/(Total number of EDI PONs for which the last service order has been updated as provisioning completed in the SOP in a month)

OR-4-16: % Provisioning Completion Notifiers Sent within One Business Day

(Number of EDI PONs completed that produce a PCN one business day after work completion in WFA)/(Total number of EDI PONs for which the last service order has been updated as provisioning completed in the SOP in a month)

OR-4-17: % Billing Completion Notifiers Sent within Two Business Days

(Number of EDI PONs completed that produce a BCN within two business days after SOP provisioning completion update)/(Total number of EDI PONs for which the last service order has been updated as provisioning completed in the SOP in a month)

All three OR-4 sub-metrics are relevant to Verizon's PAP. For the July and August 2003 reporting months, Verizon incurred a \$609 penalty related to this measure.³⁰⁶

2. Analysis and Evaluation

The OR-4 metrics measure the timeliness of Verizon's work completion and bill completion notifications. Consistent with the Guidelines, Verizon includes only LSR orders that it receives via the NetLink EDI system in the OR-4 metrics. Verizon does not use the NetLink system to process EDI ASRs. Although a CLEC may submit several versions of a PON, Verizon records completion information on only the latest one. Each PON may result in several internal Verizon service orders, and Verizon records SOP completion and sends work and billing completion notifications for a given PON only after completing the last service order on the PON.

Once the work on a given service order is complete in WFA, Verizon's SOP, expressTRAK, updates the service order with a work completion date, referred to by Verizon as the SOP completion date. The SOP completion date that Verizon records in the LSR Order Fact table data is the one associated with the last service order it completed for a given PON.

For orders that Verizon receives via EDI, the PCN and BCN reflect the time that NetLink translates, encrypts, and attempts to send the PCN or BCN to the CLEC. NMP populates the PCN and BCN fields with the date and time from Request Manager first, but overlays these times with those from NetLink when it receives them.

Verizon extracts ordering data from the NMP warehouse to create the LSR Order Fact data table used by Verizon's metrics algorithms to calculate the OR-4 metrics. The key data fields in the LSR Order Fact table data for the OR-4 measures are CLEC ID, PON, PON version, order origin (EDI, web, manual), work completion date (from WFA), SOP completion date/time, PCN date/time, PCN notification source (Request Manager or NetLink), BCN date/time, BCN notification source (Request Manager or NetLink), order type (resale, UNE), test account flag, exclusion indicator, special project indicator, and make/miss indicator.

NMP sets the test account flag to "Z" for test CLEC orders and to "R" for VADI and Verizon affiliate orders using a look-up table in NMP.³⁰⁷ Verizon uses the special project indicator to flag PONs related to special projects, based on a look-up table of such projects that it maintains in NMP.³⁰⁸ Verizon calculates the make/miss indicator differently for each OR-4 sub-metric, and Liberty explains this field under each sub-metric separately.

³⁰⁶ Responses to Data Requests #198 and #203 (July and August 2003 C2C Reports).

³⁰⁷ Verizon provided LSR Order Fact data table field descriptions in response to Data Request #20.

³⁰⁸ Verizon provided LSR Order Fact data table field descriptions in response to Data Request #20.

In its metric algorithms for the OR-4 measures, Verizon checks whether the PCN date/time and/or BCN date/time are from NetLink; if they are not, it scores the order as a miss, regardless of whether it sent them on time.³⁰⁹ The Guidelines state that Verizon should consider a completion notice as sent by Verizon through EDI when the completion notice is time-stamped in Verizon's NetLink system (following translation and encryption of the completion notice). The timestamp that Verizon records in NetLink for BCNs and PCNs is consistent with this definition. Verizon's treatment is therefore consistent with the language of the Guidelines.

Verizon has a process to keep track of attempts to send confirmations to the CLEC. If the CLEC's system is unable to receive the confirmation, it remains in a queue in Verizon's system. At a certain point, if Verizon determines that it cannot send the notification, Verizon opens a trouble ticket regarding the problem. A Verizon representative will review the log and see when Verizon tried to send the notification, and populate the BCN or PCN with the attempt time (rather than the later time, when Verizon finally sends the confirmation).³¹⁰ During the New Jersey audit, Verizon indicated that situations like these are now infrequent, since most CLECs now use dedicated lines, rather than the Internet, for ordering.

Verizon uses the PCN date, rather than the SOP completion date, to select the relevant orders to include in the OR-4 measures for the reporting month. Verizon indicated that it used the PCN date because it was the best timestamp available to identify all orders that it completed during the month.³¹¹ The definitions for the measures indicate that Verizon should count the number of EDI PONs "for which the last service order has been updated as provisioning completed in SOP" in the reporting month. To be consistent with the language in the Guidelines, Verizon should modify its method to use the SOP completion date, rather than the PCN date, to select orders for the month.³¹² If a PON does not have a SOP completion date, then Verizon should exclude the order from the measure. Liberty recommends that Verizon seek to add this convention to the exclusions section of the Guidelines for these measures. Alternatively, Verizon should seek a modification to the Guidelines to reflect its current approach of using the PCN rather than SOP completion date.

If Verizon uses the SOP completion date rather than the PCN date, it will also have to modify how it extracts data from NMP to create the LSR Order Fact data table for the reporting month. Currently, Verizon extracts orders that have a PCN, or one of several other date fields (such as confirmation or rejection date/time), during the reporting month to create the data table. Verizon does not use the SOP completion date as one of its criteria. In order to properly capture all LSR orders for the OR-4 measure, Verizon would have to add the SOP completion date to its criteria.

Liberty examined how Verizon applied the exclusions set forth in the Guidelines that are common to all OR-4 sub-metrics. Liberty concluded that Verizon is correctly applying these exclusions. Verizon excludes test orders and Verizon affiliate (including VADI) orders by a logic

³⁰⁹ Response to Data Request #322.

³¹⁰ Response to Data Request #694.

³¹¹ Response to Data Request #693.

³¹² Under Verizon's current approach, it eventually reports all relevant orders, although it may report some in a later month than if it had used the SOP completion date to select the orders for the month.

step in its algorithm that screens out records that have a test account flag value of "R" or "Z". Verizon includes only those LSR orders that it receives via EDI NetLink, and therefore appropriately excludes manual orders and Web GUI orders. The Guidelines also indicate that Verizon should exclude orders that it receives through the VAN EDI system. Verizon indicated that the VAN EDI system no longer exists.³¹³ Therefore, Verizon should seek a modification to the Guidelines to remove this reference. Verizon uses the OR-4 exclusion indicator to exclude special project PONs in its metric algorithms. As discussed under OR-1, Verizon excludes orders associated with the former GTE territory in Virginia from the LSR Order Fact data table, and thus appropriately excludes such orders from reported results.

OR-4-11 – % Completed Orders with neither a PCN nor BCN sent

The OR-4-11 measure focuses on the percentage of orders that have completed in the service order processor but the CLEC received neither a PCN nor a BCN within two business days.

Liberty examined the logic that Verizon uses to assign a value to the make/miss indicator for OR-4-11. If the intervals between SOP completion date/time (or the proxy) and PCN date/time, and between SOP completion date/time (or the proxy) and BCN date/time are both greater than two business days, Verizon considers the order a miss. Verizon also considers the order a miss if i) the interval between the SOP completion date/time and the PCN date/time is greater than two business days and there is no BCN date/time, and ii) both the SOP completion date and the work completion date are not available (but there is a PCN to indicate the order was completed).³¹⁴ If there is no SOP completion date/time, Verizon uses the work completion date from WFA as a proxy. Liberty examined the indicator and determined that Verizon defined it correctly.

As discussed above, Verizon uses the PCN date, rather than the SOP completion date, to select the relevant orders to include in the OR-4-11 measure for the reporting month. If a PON does not have a SOP completion date, Verizon should exclude the order from the measure. Using the suggested method, Verizon would not have to resort to using a proxy date to calculate the make/miss indicator for the numerator.

The Guidelines contain an additional exclusion for the OR-4-11 sub-metric. Verizon should exclude orders for products not designed to generate a PCN and a BCN. Verizon indicated that this exclusion applied to LIBD orders. Verizon stated that because such orders do not generate a confirmation notification, Verizon's metric algorithm will not include them in metric results (because Verizon selects orders using the PCN date).³¹⁵

The Guidelines indicate that Verizon should report resale and UNE product results for the OR-4-11 through OR-4-15 sub-metrics. However, the Guidelines also state that the product for OR-4-11 is CLEC aggregate EDI orders. Verizon reports a CLEC aggregate EDI result, which Liberty believes is appropriate and consistent with the products it reports for the other OR-4 sub-metrics. Liberty believes that Verizon should seek a clarification to update the Guidelines to remove the

³¹³ Response to Data Request #565.

³¹⁴ Verizon provided the Verizon NMP Ordering System Design Document in response to Data Request #17.

³¹⁵ Response to Data Request #564 (clarification).

conflicting product designation language. Verizon acknowledged that a clarification was required.³¹⁶

Liberty examined the algorithms that Verizon uses to calculate the OR-4-11 measure. To calculate the denominator for the measure, Verizon counts the number of PON versions with a PCN date/time within the reporting month. To calculate the numerator, Verizon counts the number of miss indicators for all PON versions identified in the denominator. As noted earlier, the notifiers must be from NetLink for Verizon to count the order as not missed.

Liberty concluded that Verizon's method for calculating this measure does not conform to the Guidelines.

To verify whether Verizon's algorithm was otherwise accurate, Liberty recalculated the CLEC aggregate result for OR-4-11 for resale and UNE products combined for September 2003 using the LSR Order Fact table that Verizon provided.³¹⁷ Liberty replicated Verizon's denominator, as well as the overall result.

OR-4-16 – % Provisioning Completion Notifiers sent within 1 Business Day

The OR-4-16 measure focuses on the percentage of orders that have completed in the service order processor for which Verizon sends a PCN within one business day.

Liberty examined the logic that Verizon uses to assign a value to the make/miss indicator for OR-4-16. If the interval between the work completion date from WFA and the PCN date/time is less than or equal to one business day, Verizon considers the order a make.³¹⁸ Liberty examined the indicator and determined that Verizon defined it correctly.

Liberty examined the algorithm that Verizon uses to calculate the OR-4-16 measure. To calculate the denominator for the measure, Verizon counts the number of PON versions with a PCN date/time within the reporting month. To calculate the numerator, Verizon counts the number of make indicators for all PON versions identified in the denominator. As noted earlier, the notifiers must be from NetLink for Verizon to count the order as not missed.

As discussed above, Verizon uses the PCN date/time, rather than the SOP completion date/time, to select orders to be included in the measure. Liberty concluded that Verizon's method for calculating this measure does not conform to the Guidelines.

To verify if Verizon's algorithm was otherwise accurate, Liberty recalculated the CLEC aggregate result for OR-4-16 for resale and UNE products combined for September 2003 using

³¹⁶ Response to Data Request #566 (clarification).

³¹⁷ Response to Data Request #261.

³¹⁸ Verizon provided the Verizon NMP Ordering System Design Document in response to Data Request #17.

the LSR Order Fact table that Verizon provided.³¹⁹ Liberty replicated Verizon's denominator, as well as the overall result.

OR-4-17 – % Billing Completion Notifiers sent within 2 Business Days

The OR-4-17 measure focuses on the percentage of orders that have completed in the service order processor for which Verizon sends a BCN within two business days.

Liberty examined the logic that Verizon uses to assign a value to the make/miss indicator for OR-4-17. If the interval between the SOP completion date and the BCN date/time is less than or equal to two business days, Verizon considers the order a make.³²⁰ However, if there is no SOP completion date/time, Verizon uses the work completion date from WFA as a proxy. Liberty examined the indicator and determined that Verizon defined it correctly.

As discussed above, Verizon uses the PCN date, rather than the SOP completion date, to select the relevant orders to include in the OR-4-17 measure for the reporting month. If a PON does not have a SOP completion date, Verizon should exclude the order from the measure. Using the suggested method, Verizon would not have to resort to using a proxy date to calculate the make/miss indicator for the numerator.

Liberty examined the algorithm that Verizon uses to calculate the OR-4-17 measure. To calculate the denominator for the measure, Verizon counts the number of PON versions with a PCN date/time within the reporting month. To calculate the numerator, Verizon counts the number of make indicators for all PON versions identified in the denominator. As noted earlier, the notifiers must be from NetLink for Verizon to count the order as not missed.

Because Verizon uses the PCN date/time, rather than the SOP completion date/time, to select orders to be included in the measure, Liberty concluded that Verizon's method for calculating this measure does not conform to the Guidelines.

To verify if Verizon's algorithm was otherwise accurate, Liberty recalculated the CLEC aggregate result for OR-4-17 for resale and UNE products combined for September 2003 using the LSR Order Fact table that Verizon provided.³²¹ Liberty replicated Verizon's denominator, as well as the overall result.

³¹⁹ Response to Data Request #261.

³²⁰ Verizon provided the Verizon NMP Ordering System Design Document in response to Data Request #17.

³²¹ Response to Data Request #261.

3. Findings and Recommendations

Verizon does not use the correct completion date to select the orders it reports in the OR-4-11, OR-4-16, and OR-4-17 measures.

The Guidelines for the OR-4 metrics define the denominator for these measures as the number of SOP completed orders during the reporting period. Verizon uses the PCN date/time, rather than the SOP completion date/time, to select the orders it includes in the measures for a given reporting month. The PCN represents the date that Verizon sent the work completion notice to the CLEC as recorded in NetLink, not the date that Verizon completed the order in the SOP. Using a data field other than the SOP completion timestamp for these measures is not consistent with the language in the Guidelines. Liberty therefore recommends that Verizon change its method for calculating these measures. Liberty also recommends that Verizon seek a modification to the Guidelines to exclude orders with no SOP completion date/time from the measure.

Furthermore, Liberty recommends that Verizon modify the method it uses to extract the LSR Order Fact table data from the NMP warehouse, since its current method does not ensure that it reports all SOP completed orders.

In cases where an order does not have a SOP completion date/time, Verizon uses the work completion date from WFA as a proxy to calculate the make/miss indicators for the OR-4-11 and OR-4-17 measures. Verizon should exclude orders without a SOP completion date/time from the measures; this would make Verizon's use of a proxy to calculate the indicators unnecessary. Verizon should therefore modify its calculation of these indicators to remove the use of a proxy.

Alternatively, Verizon should seek a modification to the Guidelines to reflect its current approach of using the PCN rather than SOP completion date, to select orders to be included in the reporting month.

The Guidelines for OR-4 contain obsolete language.

The Guidelines state that Verizon should exclude orders that it receives manually, through the Web GUI, and through the VAN EDI system. Verizon indicated that the VAN EDI system no longer exists. Liberty therefore recommends that Verizon seek a modification to the Guidelines to remove this reference.

The Guidelines indicate that the products for the OR-4-11 through OR-4-15 sub-metrics are resale and UNE. At the same time, the Guidelines list the product for OR-4-11 as CLEC aggregate EDI orders, which is consistent with the other two OR-4 sub-metrics that Verizon reports in Virginia, OR-4-16 and OR-4-17. Liberty believes that Verizon should seek a clarification to the Guidelines to remove the OR-4-11 through OR-4-15 product reference.

F. OR-5, Percent Flow-Through

1. Background

The metrics within OR-5 report the percentage of orders that Verizon receives through the electronic ordering interfaces (EDI and Web GUI) and processes directly to the legacy SOP without any manual intervention. The Guidelines define flow-through orders as those service orders that require no action by a Verizon service representative to type an order into the SOP.

Within the OR-5 measure group, there are two sub-metrics. OR-5-01 measures the percentage of total orders that flow-through, and OR-5-03 measures the percentage of flow-through achieved for all flow-through eligible orders. Verizon reports separate results for resale and UNE products for both sub-metrics. The Guidelines list the following exclusions for OR-5 in addition to the standard exclusion for Verizon affiliate data:

- Verizon test orders
- VADI orders
- Special project PONs
- For OR-5-03, orders not eligible to flow-through, and orders with CLEC input errors.

Verizon reports all of the OR-5 sub-metrics on a statewide basis in aggregate for all CLECs. The standard for OR-5-03 is 95 percent; there is no standard for OR-5-01. The Guidelines provide the following formulas for the OR-5 sub-metrics:

OR-5-01: % Flow-Through – Total

(Sum of all orders that flow-through for the specified product)/(Total number of LSR records (orders) for the specified product)

OR-5-03: % Flow-Through Achieved

(Number of flow-through eligible orders that flow-through for the specified product)/(Number of flow-through eligible orders)

Both of the OR-5 sub-metrics are relevant to Verizon's PAP. During the July and August 2003 reporting months, Verizon did not incur any penalties associated with this measure.³²²

³²² Responses to Data Requests #198 and #203 (July and August 2003 C2C Reports).

2. Analysis and Evaluation

OR-5-01 – % Flow Through – Total

The OR-5-01 sub-metric measures the percentage of valid orders for all UNE and resale products that Verizon receives as LSRs through the electronic ordering interfaces and processes directly to the SOP without manual intervention.

The key data fields in the LSR Order Fact table used to calculate these measures are CLEC ID, PON, PON version, confirmation date/time, process flow category, order type (resale or UNE), test account flag, and the OR-5 exclusion indicator. Verizon uses the OR-5 exclusion indicator to flag special projects, based on a look-up table of such projects that it maintains in NMP.³²³

Liberty examined the algorithms that Verizon uses to calculate the OR-5-01 measure. Verizon excludes manual orders by selecting only those orders that it receives via Web GUI or EDI. Verizon excludes test orders and Verizon affiliate data in the same fashion as discussed under the OR-1 measures. Verizon also excludes orders associated with the former GTE territory in Virginia as discussed under OR-1.

To calculate the denominator for OR-5-01, Verizon counts all LSRs that it receives electronically that also have a confirmation date within the reporting month. Specifically, Verizon counts all version of a given PON for which it sent a confirmation during the reporting month. To calculate the numerator, Verizon counts the number of the PON versions that actually flowed through.³²⁴ Verizon calculates results for this measure separately for resale and UNE products.

The Guidelines do not specify how Verizon should define the reporting month for this sub-metric. Verizon uses the confirmation date to select the relevant orders for the numerator and denominator each month. This is an appropriate approach, because it ensures that Verizon reports all relevant PONs. For example, an order that Verizon received on September 28th but did not confirm until October 2nd will be included in October results. The Guidelines also do not explicitly state that Verizon should exclude rejected orders (which may or may not flow through). Verizon interprets the Guidelines term “valid” to mean confirmed, and excludes any PON versions that it rejected. Liberty believes that Verizon’s interpretation is reasonable, but recommends that Verizon seek a clarification to the Guidelines to make this exclusion explicit.

Liberty concluded that Verizon’s method for calculating this measure conforms to the Guidelines.

Liberty recalculated the CLEC aggregate result for OR-5-01-3000 (UNE products) for September 2003 using the LSR Order Fact table that Verizon provided.³²⁵ Liberty replicated Verizon’s denominator, as well as the overall result.

³²³ Verizon provided LSR Order Fact data table field descriptions in response to Data Request #20.

³²⁴ Verizon selects PON versions with a process flow category value of 1, which means that the order achieved flow through. There are no ASRs reflected in the numerator, since none are eligible to or do flow through.

³²⁵ Response to Data Request #261.

OR-5-03 – % Flow Through Achieved

The OR-5-03 sub-metric measures the percentage of orders Verizon receives electronically that are eligible, and that actually do, flow through to the service order processor without manual intervention. Verizon maintains a list of the types of orders that are eligible to flow through on its wholesale website.³²⁶

As with the OR-5-01 measure, Verizon interprets the Guidelines term “valid” to mean confirmed. As such, Verizon reports only confirmed orders in the OR-5-03 measure. Liberty believes that Verizon’s interpretation is reasonable, but recommends that Verizon seek a clarification to the Guidelines to make this exclusion explicit.

Verizon’s method for calculating the OR-5-03 measure involves a series of processing steps. When Liberty audited this measure in New Jersey, Verizon has outsourced the majority of those steps to Austin Computers (ACE). Verizon subsequently developed its own in-house application called Decision Support Systems (DSS) to perform the processing that ACE previously performed. Verizon ran the ACE and DSS systems in parallel for a couple of months and compared the output files to confirm that they were identical. Verizon began calculating results with DSS beginning with the July data month.³²⁷

Verizon sends an Error file to DSS daily from Request Manager containing error codes and error messages associated with LSR orders that did not flow through the previous day. Verizon indicated that its system creates the error message when the order does not flow through, which may be a different (earlier) day than when the order is ultimately confirmed.³²⁸ Verizon maintains a table of system error codes and messages (the CAT table). In most cases, Verizon has already categorized the error message as one of four types of errors:

- Category 1 – The order was incorrectly labeled as flow through eligible although the order type is not designed to flow through
- Category 2 – The order could not flow through because of CLEC input error on the LSR
- Category 3 – The order could not flow through because of a Verizon system error
- Category 4 – The order did not flow through for “other Verizon” errors, a catch all for any error type that does not fit into one of the other three error categories.

Verizon indicated that the master Error file in DSS contains error messages from the current month and from two prior months, because an order can fail to flow through long before Verizon confirms it.³²⁹

³²⁶ As indicated in Appendix H, Verizon maintains a list of orders that flow through on website address at http://128.11.40.241/east/business_rules/master.htm.

³²⁷ Interview #18, November 25, 2003. Metric Change Control No. 10038 reported the change from ACE to DSS.

³²⁸ Interview #18, November 25, 2003.

³²⁹ Interview #18, November 25, 2003.

If, during processing, DSS encounters an error code that is not in the CAT table, it assigns the order a category value of zero. DSS returns all such orders to Verizon's OR-5-03 metric specialists for review. Verizon indicated that in September, it reviewed approximately ten errors per week for Virginia orders. The specialists research and classify each error, and then enter the appropriate category designation using an on-line DSS screen.³³⁰

Verizon also loads information from the ordering data in NMP into a New Records file on a weekly and monthly basis.³³¹ Verizon includes records that have a receipt date, confirmation date, rejection date, PCN date, or BCN date within the relevant period.³³² Before Verizon merges the Error and New Records files together to match each PON version that did not flow through with an error message, it initializes a forced flow indicator value for each PON version that it confirmed. Verizon includes orders with a flow through indicator values of "F" (flowed through) and "Y" (did not flow through because of a Verizon error) in the denominator of the measure, and those with a value of "F" in the numerator.

Verizon initially sets the forced flow indicator value for each confirmed PON version that flowed through to "F." Verizon sets the indicator to "N" for all other confirmed orders, such as manual orders or orders for products not designed to flow through.³³³ Verizon changes the forced flow indicator value for some orders after the DSS process merges the two files. Verizon assigns a blank forced flow indicator value to certain orders (specifically, those that it did not confirm during the reporting month, PARTS orders, special project PONs, and affiliate and test CLEC orders).³³⁴ As such, Verizon's algorithms do not include these orders in reported results.

DSS "bashes" the New Records and Error files together to match each PON version that did not flow through with an error message, joining the data by state code, CLEC ID, PON, and PON version. Verizon recently discovered that it had failed to include the LSR number among the fields that it uses to match PON versions and error messages. Verizon issued Metric Change Control No. 10584, and expects to implement the correction for the February 2004 data month. Verizon indicated that the error had a negligible effect on reported results.³³⁵

Verizon indicated that in some cases DSS cannot match an LSR that did not flow through with an error from the Error file.³³⁶ Verizon indicated that NMP captures these LSRs in an internal OR-5-03 issues report. The OR-5-03 metric specialists manually review these LSRs and assign the order a forced flow through indicator value of "Y." Verizon's metric algorithm includes such an order in the denominator but not the numerator of the measure, and Verizon counts it as a miss. Verizon indicated it typically reviews approximately 25 such LSRs per week in Virginia.³³⁷

³³⁰ Response to Data Request #601.

³³¹ In response to Data Request #604 (clarification), Verizon explained that it produces the New Records file from the Ordering Fact data mart, which is a dynamic data mart that does include former GTE data. Verizon creates the static data mart that it uses to calculate the metrics, LSR Order Fact, from the Ordering Fact data mart, at which time it excludes former GTE records.

³³² Clarification responses to Data Requests #603, #604, #605, #608, and #657.

³³³ Interview #18, November 25, 2003.

³³⁴ Response to Data Request #602.

³³⁵ Response to Data Request #847.

³³⁶ Interview #18, November 25, 2003.

³³⁷ Response to Data Request #600.

If the DSS process matches a PON version with an error message in category 1 or 2 (incorrectly labeled as flow-through but was not, or did not flow through because of a CLEC error), it changes the forced flow indicator value for that PON version to "N." Verizon therefore excludes these orders from the metric. If the DSS process matches a PON version with an error message in category 3 or 4 (Verizon system error or other Verizon error), it changes the forced flow indicator value for that PON version to "Y."

Verizon merges the two files together on a weekly and monthly basis.³³⁸ The DSS process then moves the information on the PON versions into the Flow-through Fact data table.³³⁹

Liberty tested the accuracy of the processing steps by reviewing selected data. Liberty selected 25 PON versions with a forced flow indicator value of "Y" or "N" from the Flow-through Fact data table that Verizon used to calculate the results for September 2003. Liberty asked Verizon to provide the error code, error message, and error category that DSS matched with each record to support the assignment of the forced flow indicator value.³⁴⁰ Liberty found that Verizon had correctly assigned the forced flow through indicator for these 25 PON versions based upon the error codes and error messages associated with the order.

Liberty concluded that Verizon's processing of this metric is consistent with the Guidelines.

The Flow-through Fact data table that Verizon uses to calculate the measure contains all records that Verizon loaded within the reporting month.³⁴¹ The Guidelines do not specify how Verizon should define the reporting month for this measure. Verizon includes all orders that it confirmed during the month in reported results.³⁴² Liberty recommends that Verizon seek a clarification to the Guidelines to make this convention clear.

The key data fields in the Flow-through Fact data table used to calculate these measures are CLEC ID, DM entry date, order type (resale and UNE), and forced flow indicator.

Liberty examined how Verizon applied the exclusions set forth in the Guidelines. Liberty concluded that Verizon is correctly applying these exclusions. Verizon does not assign a forced flow indicator value to orders associated with Verizon affiliates, test CLEC IDs, and special project orders, and Verizon's metric algorithm does not include them in reported results.³⁴³ Verizon stated that orders associated with the former GTE territory in Virginia have a state code of "VG." Verizon calculates and groups results separately by state code, and does not include these "VG" orders in Virginia results.³⁴⁴

³³⁸ Response to Data Request #608.

³³⁹ Clarification responses to Data Requests #603, #604, #605, #608, and #657.

³⁴⁰ Data Request #655.

³⁴¹ Clarification responses to Data Requests #603, #604, #605, #608, and #657.

³⁴² Response to Data Request #612.

³⁴³ Responses to Data Requests #602, #611, and #656.

³⁴⁴ Response to Data Request #604 (clarification).

The Guidelines indicate that Verizon should exclude orders with CLEC input errors. Verizon excludes such orders because it includes only orders that it confirmed. The Guidelines also state that Verizon should exclude from OR-5-03 orders that are not eligible to flow through. Verizon correctly excludes most orders that are not eligible to flow through, specifically, those that were not eligible to flow through and did not flow through (because it does not include those with a forced flow indicator value of "N" in the measure). Liberty asked Verizon to clarify how it treated a PON that did flow through, though it was not eligible. Verizon clarified that it assigns the forced flow indicator value of "F" based on whether the order flowed through, not whether it was eligible to flow through.³⁴⁵ When Liberty audited this measure in New Jersey, Verizon stated that in certain instances its flow through eligibility look-up table was incorrect, and an order flowed through even though it appeared not to be eligible to do so. Liberty concluded that Verizon was properly applying this exclusion, because it does exclude orders that are not eligible to flow-through and includes those that did flow through despite Verizon's incorrect identification of the order as not flow-through eligible.

Liberty examined the algorithms that Verizon uses to calculate the OR-5-03 measure. To calculate the denominator for OR-5-03, Verizon counts all confirmed PON versions that flowed through or were eligible to flow through.³⁴⁶ To calculate the numerator, Verizon counts the number of the PON versions that actually flowed through.³⁴⁷ Verizon calculates results for this measure separately for resale and UNE products.

Liberty concluded that Verizon's method for calculating this measure conforms to the Guidelines.³⁴⁸

Liberty recalculated the CLEC aggregate result for OR-5-03-3000 (the UNE product group) for September 2003 using the Flow-through Fact table that Verizon provided.³⁴⁹ Liberty replicated Verizon's denominator, as well as the overall result.

3. Findings and Recommendations

The Guidelines do not specify how Verizon should define the reporting month for the OR-5 metrics.

Verizon uses the confirmation date to select the orders to be included in the OR-5-01 measure for a given reporting month. For OR-5-03, Verizon also uses the confirmation date. This approach is appropriate. Liberty recommends that Verizon seek clarification to the Guidelines regarding the basis for selecting the orders for these measures.

³⁴⁵ Response to Data Request #610.

³⁴⁶ Verizon selects all PON versions with a forced flow indicator value of "F" and "Y."

³⁴⁷ Verizon selects PON versions with a forced flow indicator value of "F."

³⁴⁸ Liberty found that the metric algorithm that Verizon provided for OR-5-03-2000 (resale) was incorrect because it selected UNE rather than resale products. In response to Data Request #743, Verizon clarified that it had a problem with how it produced the June 2003 CMAs and that the actual production algorithm was correct.

³⁴⁹ Response to Data Request #261.

The Guidelines for OR-5 are unclear.

The Guidelines do not explicitly state that Verizon should exclude rejected orders from the OR-5 metrics. Verizon interprets the Guidelines term "valid" to mean confirmed, and excludes any PON versions that it rejected. Liberty believes that Verizon's interpretation is reasonable, but recommends that Verizon seek a clarification to the Guidelines to make this exclusion explicit.

G. OR-6, Order Accuracy

1. Background

The three sub-metrics within OR-6 report Verizon's order accuracy, as measured by the percentage of error-free service orders (OR-6-01), the percentage of LSRCs resent due to Verizon error (OR-6-03), and the percentage accuracy of directory listing orders (OR-6-04). The Guidelines for OR-6-01 indicate that Verizon uses a manual audit process to select a random sample of approximately 400 orders each for resale, UNE-L/complex/LNP, and UNE-P product groups (20 orders randomly sampled each business day). The Guidelines require Verizon to compare specified fields on the latest version of the LSR to the completed Verizon service order. For OR-6-04, the Guidelines indicate that Verizon select a statistically valid random sample of approximately 400 stand-alone Directory Listing orders and 400 other Directory Listing orders (orders other than stand-alone) each reporting month from Request Manager (20 orders of each type per business day).

The exclusions listed for the OR-6 measures are flow-through orders and VADI orders, as well as Verizon affiliate data. Verizon reports OR-6 results for all CLECS in aggregate. Verizon reports OR-6-03 and OR-6-04 on a statewide basis. For OR-6-01, however, Verizon reports combined results for the District of Columbia, Maryland, Virginia, and West Virginia. For OR-6-01, the standard is 95 percent, and for OR-6-04, the standard is 98 percent. For OR-6-03, the standard is not more than 5 percent of LSRCs resent due to Verizon error.

The Guidelines provide the following formulas for the OR-6 sub-metrics:

OR-6-01: % Service Order Accuracy

(Number of orders sampled minus orders with Verizon errors for the specified product)/(Number of orders sampled for the specified product)

OR-6-03: % Accuracy – LSRC

(Number of LSRCs resent due to Verizon error)/(Number of LSRCs)

OR-6-04: % Accuracy – Directory Listing

(Number of orders sampled for Directory Listings minus orders with errors)/(Number of orders sampled)

The OR-6-03 sub-metric is relevant to Verizon's PAP. During the July and August 2003 reporting months, Verizon did not incur any penalties associated with this measure.³⁵⁰

2. Analysis and Evaluation

OR-6-01 – % Service Order Accuracy

OR-6-01 measures the percentage of service orders that Verizon completed without errors. Verizon compares required fields on the latest version of the CLEC LSR to the completed Verizon service order for accuracy.

Verizon uses a partially mechanized and partially manual audit process to review approximately 1,200 randomly sampled orders each month (400 resale, 400 UNE-P, and 400 UNE-L orders). Verizon has a random sampling procedure within NMP that it uses to select a sample of LSRs each business day. Since Liberty audited this measure in New Jersey, Verizon implemented several changes that increase the mechanized checks performed by NMP.³⁵¹ Verizon also implemented changes to its sampling process to ensure that it retrieves the appropriate number of LSRs each month.³⁵² To select LSRs on a given day, Verizon uses the daily feed from Request Manager containing the orders for which Verizon issued a BCN the previous day. Verizon uses the NMP random sample generator to select 20 resale, 20 UNE-P, and 20 UNE-L orders each business day from this population of LSRs, after filtering out LSRs that have any of the following characteristics:³⁵³

- Flowed through to the SOP without manual intervention
- Verizon affiliate (including VADI) order
- Test CLEC order
- Order related to the former GTE territory in Virginia
- PARTS order
- Cancelled order.³⁵⁴

Verizon selects orders from Virginia, Maryland, West Virginia, and the District of Columbia, because Verizon reports a combined result for this measure.³⁵⁵ Verizon also selects an additional 20 orders of each product type that it places in a reserve pool. If Verizon does not meet its quota

³⁵⁰ Responses to Data Requests #198 and #203 (July and August 2003 C2C Reports).

³⁵¹ Verizon implemented Metric Change Control No. CCNJ2003-08181 in May, Metric Change Control No. 10038 in July, and Metric Change Control No. 10048 in October in several states including Virginia. Verizon has several other change controls scheduled, for example, Metric Change Control Nos. 10032, 10576, and 10479.

³⁵² Metric Change Control No. CCNJ-20003-08177.

³⁵³ Response to Data Request #518.

³⁵⁴ Verizon excludes cancelled LSRs because they do not have completed service orders.

³⁵⁵ Interview #25, December 12, 2003 and response to Data Request #703.

of 400 LSRs at month's end, it selects additional LSRs from the reserve pool to make up for any shortfall.³⁵⁶

Verizon often generates more than one service order for a given LSR. NMP retrieves from Request Manager the relevant service order numbers that relate to each selected sample LSR. NMP then retrieves from Verizon's SOP information completed wholesale service orders of type T, N, or C associated with the LSR.³⁵⁷ Until September 2003, Verizon selected only the first completed wholesale service order that met the criteria. Verizon recently implemented a process improvement requiring that it retrieve information on all associated service orders.³⁵⁸ This latest change took effect with the October 2003 data month. Beginning in October, Verizon included each associated service order that it retrieves in the metric, and thus reported a larger number of service orders in its denominator for the metric.³⁵⁹

NMP performs a mechanized matching process between the sample LSRs and the associated service orders.³⁶⁰ Each business day, Verizon feeds the sample LSRs and associated service orders into a GUI tool that it built in the NMP system. This tool, known as NMP GUI, displays the results of the automated checks on the key service order fields that Verizon uses to determine order accuracy. Appendix M to the Guidelines sets forth the specific fields that Verizon must compare:

- Billed Telephone Number
- RSID or AECN
- PON Number
- Telephone Number (if applicable)
- Ported Telephone Number (if applicable)
- Circuit ID (if applicable)
- Directory Listing Information (if included)
- E911 Listing Information (if changing and appropriate)
- Features (for resale, UNE-P, and switching orders)
- Due Date.

The NMP GUI system provides a screen display showing the results of its comparison of these fields for each of the selected PONs, one screen per PON. For every PON included in the sample, the NMP GUI report has two boxes for each of the key fields that the system examined. One box represents the field on the LSR and the other box represents the comparable field on the service order. The system will use the following conventions to report the results of the mechanized analysis:³⁶¹

³⁵⁶ Interview #19, November 18, 2003. Verizon also indicated that it could have a shortfall because it did not always have 20 orders for a given product each day.

³⁵⁷ Interview #19, November 18, 2003, and response to Data Request #518.

³⁵⁸ Metric Change Control No. 10039.

³⁵⁹ Responses to Data Requests #613 and #689.

³⁶⁰ Response to Data Request #615.

³⁶¹ Interview #25, December 12, 2003.

- A zero – zero combination indicates that both LSR and service orders fields are null, i.e. there is nothing to match or NMP could not perform a mechanized match
- A number (usually a 1)³⁶² – zero combination indicates a match between the LSR and the service order
- A zero – any number (usually a 1) combination indicates a mismatch between the LSR and the service order.

Of ten items that Verizon compares between the LSR and service order, Verizon indicated that it must still manually verify two, telephone number and features.³⁶³ Verizon has two metric specialists who review LSRs and service orders in the NMP GUI on a daily basis for OR-6-01, one of whom focuses on orders for the Verizon South states. The metric specialist reviews for accuracy all of the fields that the NMP GUI system indicated were null or mismatched. The metric specialist knows which of the “null” fields are required for each order type, researches these fields, and scores the field manually. If the metric specialist finds that the system incorrectly classified a field, he or she will manually adjust the system scoring directly on the GUI screen.

While the metric specialist focuses on investigating null and mismatched field, he or she also reviews many of the “match” combinations as well. Verizon explained that when it adds new mechanized matching functionality in NMP, the specialist typically reviews most of the matches for several months to ensure that NMP is doing the comparison properly. After the specialist is confident that NMP is executing the new mechanized comparison properly for a given field, the specialist will still occasionally sample the field.³⁶⁴

The objective of Verizon's review is to ensure that the CLEC received exactly what it ordered, and not that the service order exactly matches the LSR. In some cases, a system mismatch does not mean that an order was incorrect. For example, the CLEC could use two different Uniform Service Order Codes (USOCs) on its LSR to order two features for its customer, but the Verizon service order could use a different single USOC that will provision the same two features. Although this situation would appear as a mismatch in the NMP GUI, it is not an inaccurate service order. In such a case, the metric specialist would revise the scoring for this field on the NMP GUI screen.

After the metric specialist completes her review of the null and mismatch fields and makes required changes to the NMP GUI screen, the reviewer scores the overall order. The specialist assigns a match indicator value of “Y” to the order if all fields on the service order were accurate; otherwise, the specialist assigns an “N.” The specialist then marks the PON as complete and sends the NMP GUI screen back to NMP.

Liberty found that the metric specialist also marks certain orders with an exclusion indicator, and Verizon excludes these from the measure in its metric algorithms. Verizon stated that the specialist assigns an exclusion indicator value of “Y” to an order that flowed through and should

³⁶² The LSR field will contain numbers greater than one for values such as features and listings.

³⁶³ Interview #25, December 12, 2003.

³⁶⁴ Interview #25, December 12, 2003.

not be included in the OR-6-01 measure.³⁶⁵ Verizon explained further that it in some cases NMP assigned a flow-through indicator designating that the order did not flow through, when in fact it actually did.³⁶⁶ As such, the metric specialist has to flag the order to exclude it from the sample.³⁶⁷ Verizon indicated that the problem with the flow-through indicator has since been resolved, effective with the June 2003 data month.³⁶⁸ Verizon indicated that it also used the exclusion indicator to exclude orders that the CLEC cancelled.³⁶⁹

Liberty observed Verizon's daily NMP GUI review process. Liberty found that the person performing this work was very knowledgeable about her job and the wholesale services and products offered by Verizon. The specialist demonstrated the process Verizon uses to review the fields relevant to various resale and UNE product orders, and demonstrated the process for fields that the NMP initially scored as null, match, and mismatched. During one review, the metric specialist identified a service order error. Verizon indicated that it reports errors it uncovers during the process to the NMC to determine the root cause. The team leaders in the NMC use the results of the audit to work on potential problems with individual representatives.³⁷⁰

The Guidelines indicate that Verizon should sample "approximately" 400 LSRs for each product type per month. Liberty found that Verizon has reported something less than 400 service orders per month during the audit period. For example, in September 2003, Verizon reported results for 383 resale orders, 358 UNE-L orders, and 394 UNE-P orders. Verizon indicated that during some months there was not enough time to bring the sample up to the required level using the reserve pool. Verizon also saw a greater than normal shortfall because it had to manually exclude selected LSRs that flowed through.³⁷¹ However, for the October 2003 data month, Verizon reported more than 400 orders for each of the three product categories.³⁷² Liberty is satisfied that Verizon will be able to report at least 400 orders for each product group because it has begun to extract and compare all relevant wholesale orders for each LSR.

To create the Accuracy data table that Verizon uses to calculate the OR-6-01 results, Verizon extracts records from NMP that have an "activity date" within the reporting month. The activity date is the date that Verizon sampled the LSR. The key data fields in the Accuracy data table are activity date, product type (*i.e.*, resale, UNE-L, or UNE-P), match indicator, and exclusion indicator. As noted above, the metric specialist sets the match indicator and exclusion indicator in the NMP GUI.

³⁶⁵ Response to Data Request #616 (clarification).

³⁶⁶ In response to Data Request #731, Verizon explained that its system sometimes generates a "check and correct" error message during flow-through processing, which requires manual intervention by the NMC representative. Verizon stated that in some cases an LSR successfully continues flow-through processing after the error message, but Request Manager marks these orders as non flow-through. Verizon stated that it updated the logic in Request Manager to mark such LSRs as having achieved flow-through. Verizon added that the error had no effect on the OR-5-03 metric because these are CLEC-caused errors, which Verizon excludes from the results.

³⁶⁷ Interview #25, December 12, 2003.

³⁶⁸ Response to Data Request #731.

³⁶⁹ In its response to Data Request #732 (clarification), Verizon stated that a CLEC receives a PCN (to record that the CLEC initiated the cancellation and to record the date the cancellation is effective) and a BCN when it supplements an order to cancel it. A cancelled order is not a valid sample order for OR-6.

³⁷⁰ Interview #25, December 12, 2003.

³⁷¹ Interview #25, December 12, 2003.

³⁷² Response to Data Request #689.

Liberty examined how Verizon applied the exclusions set forth in the Guidelines. Verizon excludes test orders, Verizon affiliate (including VADI) orders, and flow through orders in the sample filtering process. Verizon also uses the exclusion indicator to designate orders that appeared not to flow through but actually did, and excludes these from results in its metric algorithms.

Liberty examined the algorithms that Verizon uses to calculate the OR-6-01 measure. To calculate the denominator, Verizon counts the number of service orders with an activity date during the reporting month. To calculate the numerator, Verizon counts the number of service orders with a match indicator of "Y." Verizon uses the same logic in its algorithm for each product group, and reports results separately by product type.

Liberty concluded that Verizon's method for calculating this measure conforms to the Guidelines.

Liberty recalculated the CLEC aggregate result for OR-6-01-2000 (resale) for September 2003 using the Accuracy data table that Verizon provided.³⁷³ Liberty replicated Verizon's denominator, as well as the overall result.

OR-6-03 – % Accuracy – LSRC

The OR-6-03 sub-metric measures the percentage of LSRCs Verizon sent during the month that it resent due to its own error. Appendix M of the Guidelines lists a short-term approach for calculating this measure based on a manual sample, and a long-term approach that Verizon should implement once it has the automated capability to calculate the result for all LSRCs. Verizon confirmed that it uses the long-term approach and agreed that it should seek a clarification to the Guidelines appendices to remove the language regarding the short-term approach.³⁷⁴

Verizon's process to determine whether an order qualifies for inclusion in the OR-6-03 metric is strictly dependent on manual input. The Verizon NMC resends confirmations to the CLEC using the Request Manager GUI. Whenever the Verizon NMC representative sends a duplicate confirmation, the representative populates an "EC Version" field in the GUI to indicate why he or she resent the confirmation. A value of "E" in the third character of this field means that Verizon had to resend the confirmation due to its own error.

Verizon sends information to NMP from Request Manager on each confirmation that it sends. NMP calculates a confirmation counter field to designate the number of total confirmations that Verizon sent on a given PON version. NMP also calculates a Verizon resend counter field based on the EC Version field from Request Manager to designate the number of total confirmations that it resent due to its own error.

³⁷³ Response to Data Request #261.

³⁷⁴ Interview #19, November 18, 2003.

Liberty did not audit the process that the NMC service representatives use to populate the EC Version field. However, it is important to note that any misclassification of this field by the NMP service representatives will lead to a misrepresentation of Verizon's performance on the OR-6-03 metric.

The key data fields in the LSR Order Fact table that Verizon uses to calculate this measure are CLEC ID, PON, PON version, confirmation date/time, process flow category, order type (resale or UNE), test account flag, confirmation counter, and Verizon resend counter.

Liberty examined how Verizon applied the exclusions set forth in the Guidelines. Verizon excludes test orders, Verizon affiliate data, and orders associated with the former GTE territory in Virginia in the same fashion as discussed under the OR-1 measures. Verizon excludes flow through orders using the process flow category field.³⁷⁵

Liberty examined the algorithms that Verizon uses to calculate the OR-6-03 measure. To calculate the denominator, Verizon sums the confirmation counters for all PON versions that it confirmed during the reporting month. To calculate the numerator, Verizon sums the Verizon resend counters for all PON versions identified in the denominator. Verizon uses separate algorithms to calculate results for each of the three product groups.

Liberty concluded that Verizon's method for calculating this measure conforms to the Guidelines.³⁷⁶

Liberty recalculated the CLEC aggregate result for OR-6-03-2000 (resale) for September 2003 using the LSR Order Fact table that Verizon provided.³⁷⁷ Liberty replicated Verizon's denominator, as well as the overall result. Liberty also recalculated the CLEC aggregate result for OR-6-03-3331 (UNE-L/complex/LNP). Liberty replicated Verizon's denominator, as well as the overall result.

OR-6-04 – % Accuracy – Directory Listing

OR-6-04 measures the percentage of directory listing service orders that Verizon completed without errors. Verizon compares required fields on the latest version of the CLEC LSR to the completed Verizon service order for accuracy.

The Guidelines indicate that Verizon should sample approximately 400 stand-alone directory listing orders and 400 other directory listing orders each month. Unlike OR-6-01, Verizon selects orders from Virginia only, because Verizon reports a state-specific result for this measure.³⁷⁸ Verizon indicated that it uses a similar random sampling process for OR-6-04 and OR-6-01.

³⁷⁵ Verizon selects all orders with a process flow category greater than 1.

³⁷⁶ Liberty found that the algorithm for OR-6-03-3331 that Verizon provided had two numerators and two denominators and appeared incorrect. In response to Data Request #641, Verizon confirmed that it had a mapping error in producing the June 2003 CMAs and that the production code for this measure was correct.

³⁷⁷ Response to Data Requests #261.

³⁷⁸ Response to Data Request #703.

However, Verizon selects only those LSRs that have BCN completed on which there was directory listing activity.³⁷⁹

After selecting CLEC LSRs, NMP then retrieves information on all completed wholesale service order of type T, N, C, F, or R associated with the LSR from Verizon's SOP.³⁸⁰

NMP performs a mechanized matching process between the sample LSRs and the associated service orders. Appendix M to the Guidelines sets forth the specific fields that Verizon must compare for directory listing orders:

- Listing Activity (new, change)
- Alpha Numeric Listing Identifier Code
- Record Type
- Listing Type
- Listed Telephone Number
- Listed Name, Last Name
- Listed Name, First Name
- Address Indicator
- Listed Address House Number Suffix
- Listed Address Street Directional
- Listed Address Street Name
- Listed Address Thoroughfare
- Listed Address Street Suffix
- Listed Address Locality
- Yellow Page Heading.

As discussed under OR-6-01, Verizon feeds the sample LSRs and associated service orders to the NMP GUI, and the metric specialist reviews the null and mismatch fields and makes required changes to the NMP GUI screen. Verizon has two metric specialists who review LSRs and service orders in the NMP GUI on a daily basis for OR-6-04, one of whom focuses on orders for the Verizon South states. Verizon stated that not all fields are relevant for each directory listing order. The specialist assigns a match indicator value of "Y" to the order if all fields on the service order were accurate; otherwise, the specialist assigns a "N." The specialist then marks the PON as complete and sends the NMP GUI screen back to NMP.

As discussed under OR-6-01, the metric specialist also marks certain orders with an exclusion indicator, and Verizon excludes these from the measure in its metric algorithms. In particular, the specialist assigns an exclusion indicator value of "Y" to an order that flowed through but NMP

³⁷⁹ Interview #19 (continued), November 25, 2003. In response to Data Request #742, Verizon indicated that it identified stand-alone directory listing orders as those with a request type of "JB" or an activity code of "J," and that non-stand-alone directory listing orders can be all other request types and activity codes.

³⁸⁰ Interview #19 (continued), November 25, 2003, and response to Data Request #617.

had incorrectly designated it as a non flow-through order.³⁸¹ Verizon also indicated that, on rare occasions, the specialist may also assign an exclusion indicator value of "Y" to a service order not actually related to the sampled LSR.³⁸²

As with the OR-6-01 measure, Verizon has implemented improvements to the mechanized matching process for the OR-6-04 measure, and has scheduled further enhancements.³⁸³ Liberty observed Verizon's daily NMP GUI review process. The metric specialist demonstrated the process Verizon uses to review the fields relevant to both stand-alone and other directory listing orders, and demonstrated the process for fields that NMP initially scored as null and mismatched. Verizon indicated that it typically does not review fields that NMP indicates are matches because it considers the NMP process to be highly reliable for OR-6-04.³⁸⁴

To create the Directory Listing Accuracy data table that Verizon uses to calculate the OR-6-04 results, Verizon extracts records from NMP that have an activity date (the date Verizon samples the LSR) within the reporting month. The key data fields in the Directory Listing Accuracy data table are activity date, product type (*i.e.*, stand-alone directory listing order or other directory listing order),³⁸⁵ match indicator, and exclusion indicator. As discussed under OR-6-01, Verizon's metric specialist sets the match indicator and exclusion indicator in the NMP GUI.

Liberty asked Verizon to clarify that it was including only the service orders that have directory listing activity in the measure, rather than all service orders associated with the sampled LSR. Verizon stated that it retrieves and examines only those service orders associated with the sampled LSRs that have directory listing activity.³⁸⁶

Liberty examined how Verizon applied the exclusions set forth in the Guidelines. Verizon excludes test orders, Verizon affiliate (including VADI) orders, and flow through orders in the sample filtering process. Verizon also uses the exclusion indicator to designate orders that appeared not to flow through but actually did, and excludes these from results in its metric algorithms.

Liberty examined the algorithms that Verizon uses to calculate the OR-6-04 measure. To calculate the denominator, Verizon counts the number of service orders with an activity date during the reporting month. To calculate the numerator, Verizon counts the number of service orders with a match indicator of "Y." Verizon uses the same logic in its algorithm for each product group, and reports results separately by product type.

³⁸¹ In its response to Data Request #732 (clarification), Verizon indicated that it also eliminated orders that the CLEC supplemented to cancel.

³⁸² Response to Data Request #616 (clarification).

³⁸³ Verizon implemented Metric Change Control No. 10133 in July. Verizon recently completed Metric Change Control No. 10531 for the December 2003 data month, whereby Verizon would update the "LALOC" table enabling the matching process to recognize valid abbreviations for states and cities.

³⁸⁴ Interview #25, December 12, 2003.

³⁸⁵ In response to Data Request #618 (clarification), Verizon indicated that the description for this field in the Directory Listing Accuracy data field description document was incorrect. The correct values for product type are "O" for other directory listing orders and "S" for stand-alone directory listing orders.

³⁸⁶ Response to Data Request #733.

Liberty concluded that Verizon's method for calculating this measure conforms to the Guidelines.

Liberty recalculated the CLEC aggregate result for OR-6-04 for September 2003 for the stand-alone directory listing order group using the Directory Listing Accuracy data table that Verizon provided.³⁸⁷ Liberty replicated Verizon's denominator, as well as the overall result. Liberty also recalculated the CLEC aggregate result for OR-6-04 for September 2003 for the other directory listing order group. Liberty replicated Verizon's denominator, as well as the overall result.

3. Findings and Recommendations

Appendix M to the Guidelines contains obsolete language regarding OR-6-03.

Appendix M of the Guidelines lists a short-term approach and long-term approach for calculating this measure. Verizon uses the long-term approach and confirmed that the reference to a short-term approach was unnecessary. Liberty recommends that Verizon seek a clarification to the Guidelines appendices to remove the language regarding the short-term approach.

H. OR-7, Percent Order Confirmations/Rejects Sent Within Three Business Days

1. Background

The OR-7 measure reports Verizon's performance in issuing a confirmation or rejection on a LSR within three business days of receiving it. Verizon reports results for the one sub-metric within OR-7 separately by resale, UNE-P, and UNE-L product groups.

The exclusions that apply to OR-7 in addition to the standard exclusion for Verizon affiliate data are:

- Cancelled orders
- LSRs supplemented prior to confirmation or rejection
- Edit rejects not eligible for confirmation or rejection
- Special project PONs
- Test IDs.

Verizon reports the OR-7 sub-metric on a statewide basis by individual and aggregate CLECs. The standard for OR-7-01 is 95 percent.

The Guidelines provide the following formula for the OR-7 sub-metric:

³⁸⁷ Response to Data Request #261.

OR-7-01: % Order Confirmations/Rejects Sent within Three Business Days

(Total LSR confirmations and/or rejections sent within three business days of LSR submission)/(Total number of LSRs received during the reporting period)

The OR-7 measure is not included in Verizon's PAP.

2. Analysis and Evaluation

The Guidelines indicate that Verizon should consider the notifier as having been "sent" when Verizon's NetLink system sends the confirmation or rejection, following any translation and encryption. Verizon uses the NetLink timestamp consistent with this definition.³⁸⁸

Verizon selects all orders that it receives as the relevant population for the measure. The key data fields in the LSR Order Fact table for the OR-7 measure are the CLEC ID, PON, PON version, receipt date/time, order type (*i.e.*, resale, UNE-P, or UNE-L), confirmation type, OR-7 exclusion indicator, test account flag, and on-time indicator. Verizon uses the confirmation type field to select certain types of PON versions that it excludes from the OR-7 metric. Verizon uses the OR-7 exclusion indicator to flag special projects, based on a look-up table of such projects that it maintains in NMP.³⁸⁹

Verizon's NMP system assigns the on-time indicator a value of "Y" if the difference between the receipt date/time and the confirmation or rejection date/time is three business days or less. Liberty reviewed the assignment of the on-time indicator and found that NMP calculated it correctly.³⁹⁰

Liberty concluded that Verizon's definitions for the key data fields used to calculate the metrics are consistent with the Guidelines.

Liberty examined how Verizon applied the exclusions set forth in the Guidelines. Verizon excludes test orders, Verizon affiliate data, and orders associated with the former GTE territory in Virginia in the same fashion as discussed under the OR-1 measures. Verizon excludes special project PONs in its metric algorithm by using the OR-7 exclusion indicator.

The Guidelines state that Verizon should exclude from the measure edit-rejects that would not be eligible for confirmation or rejection. Verizon indicated that orders it rejects during basic front-end edits never get to the service order processor or to NMP. Therefore, Verizon includes no such orders in the OR-7 results.

³⁸⁸ Response to Data Request #529. Verizon added that if the CLEC's system is down, the timestamp represents Verizon's first attempt to send the notifier.

³⁸⁹ Verizon provided LSR Order Fact data table field descriptions in response to Data Request #20.

³⁹⁰ Liberty learned during its audit in New Jersey that in cases when Verizon issues a confirmation after a rejection on the same PON version, Verizon would recalculate the on-time indicator using the confirmation date.

The Guidelines require that Verizon exclude cancelled orders. Request Manager assigns a confirmation type value of "N" to any PON version that is a CLEC supplement to cancel the order. The system also assigns a value of "S" to any PON version cancelled at Verizon's request.³⁹¹ Verizon's algorithm excludes any PON version marked as a cancellation from the metrics. However, to the extent that Verizon confirms or rejects an earlier version of the PON, Verizon appropriately counts it in the results.

The Guidelines also state that Verizon should exclude LSRs that CLECs supplemented prior to confirmation or rejection. Verizon does not necessarily send a confirmation or rejection for every PON version submitted. If, for example, a CLEC submits three versions of a PON prior to the time Verizon confirms the order, Verizon will send the confirmation on the latest version, and will not confirm or reject the first two. The NMP system assigns a confirmation type value of "Z" to any PON versions that Verizon never confirms or rejects, and Verizon's algorithm excludes these versions from the measure.³⁹² Liberty checked several of the PON versions that were marked in this fashion and found that Verizon properly assigned the confirmation type value.

Liberty examined the algorithms that Verizon uses to calculate the OR-7-01 measure. To calculate the denominator for the measure, Verizon counts the number of PON versions that it received during the reporting month, excluding those consistent with the Guidelines. To calculate the numerator, Verizon counts the number of PON versions identified in the denominator that have rejections or confirmations within three business days of receipt.³⁹³ Verizon uses separate algorithms to calculate results for each of the three product groups.

Liberty concluded that Verizon's method for calculating this measure conforms to the Guidelines.

Liberty recalculated the CLEC aggregate result for OR-7-01-3140 (UNE-P) for September 2003 using the LSR Order Fact table that Verizon provided.³⁹⁴ Liberty replicated Verizon's reported denominator, as well as the overall result.

3. Findings and Recommendations

Liberty has no findings for this metric.

³⁹¹ Verizon provided LSR Order Fact data table field descriptions in response to Data Request #20. Liberty learned during the New Jersey audit that Verizon assigned an "S" to the confirmation type field when an order had been in jeopardy/query status over thirty days with no response from the CLEC. The Guidelines do not address Verizon initiated cancelled orders, but since Verizon does not receive these LSRs in the reporting period, they are not eligible for Verizon to count in the denominator. There were no LSRs with a confirmation type of "S" in the September 2003 data.

³⁹² Response to Data Request #530.

³⁹³ Verizon counts the number of records that have an on-time indicator of "Y."

³⁹⁴ Response to Data Request #261.

I. OR-8, Acknowledgement Timeliness

1. Background

The OR-8 measure reports Verizon's performance in acknowledging LSRs within two hours. The Guidelines state that the time interval begins when Verizon receives the LSR and ends when Verizon sends an acknowledgement. This metric applies only to LSRs that CLECs submit via EDI. As such, the Guidelines exclude orders submitted by CLECs via the Web GUI interface and any other orders not submitted electronically. The Guidelines also specify that Verizon exclude test CLEC and Verizon affiliate data from CLEC aggregate results.

Verizon reports OR-8-01, the only metric in OR-8, on a statewide basis by individual and aggregate CLECs. Verizon reports results for the one sub-metric within OR-8 separately by resale and UNE product groups. The standard for OR-8-01 is 95 percent.

The Guidelines provide the following formula for the OR-8 sub-metric:

OR-8-01: % Acknowledgements On Time

(Number of LSR acknowledgements sent within two hours of LSR receipt)/(Total number of LSR acknowledgements)

The OR-8 measure is not included in Verizon's PAP.

2. Analysis and Evaluation

Verizon's NetLink system is its interface for receiving EDI LSR orders. The NetLink system maintains order status files and captures timestamps for various activities associated with EDI orders such as receipt, acknowledgement, and confirmation. The NetLink system sends an electronic acknowledgement to the CLEC that a file has met basic edits with valid and complete data and that Verizon will process it.

Verizon's NetStatus system extracts and formats LSR timestamp information from EDI/NetLink, and provides daily files to NMP for storage in the NMP warehouse.³⁹⁵ To calculate the metrics, Verizon selects the acknowledgement records from the NMP warehouse that had either a receipt date or an acknowledgement date within the reporting month, and places those records into the Order Acknowledgement table used by Verizon's metrics algorithm.³⁹⁶

Under the Guidelines, Verizon should consider the acknowledgement as having been "sent" when Verizon's NetLink system sends an acknowledgement, following any translation and encryption of the acknowledgement. Verizon uses the NetLink timestamp consistent with this

³⁹⁵ Interview #3, October 23, 2003 and response to Data Request #18.

³⁹⁶ Interview #3, October 23, 2003.

definition.³⁹⁷ Although the Guidelines do not specify a definition, Verizon considers an LSR has having been “received” when Verizon’s NetLink system receives it, prior to any decryption, parsing, and translation.³⁹⁸

During its audit of the OR-8 and OR-9 measures in New Jersey, Liberty learned Verizon does not send NetLink acknowledgement data to NMP for an EDI file unless the PON version passes Request Manager’s front-end edits and is then rejected or confirmed. Also, in certain instances, a CLEC may issue a supplement to a PON version before the prior one could pass the Request Manager front-end edits. In such cases, Verizon would not record an acknowledgement for the first PON, since it did not actually reject or confirm the order.³⁹⁹ Verizon’s treatment is consistent with the Guidelines, which state that an electronic acknowledgement indicates that the file has met basic edits with valid and complete data and that Verizon will process it. This indicates that processing by Request Manager is required.

The key data fields in the Order Acknowledgement table are the CLEC ID, PON, PON version, receipt date/time, acknowledgement date/time, order type (*i.e.*, resale or UNE), and on-time indicator. Verizon’s NMP system assigns the on-time indicator a value of “Y” if the difference between the receipt date/time and the acknowledgement date/time is two hours or less.⁴⁰⁰ Liberty reviewed the assignment of the on-time indicator and found that Verizon determined it correctly.

Liberty examined how Verizon applied the exclusions set forth in the Guidelines. Verizon indicated that it excluded Verizon affiliate data and test CLEC orders through the use of a look-up table in NMP, and does not include such orders in the Order Acknowledgement data table.⁴⁰¹ Verizon includes in the measure only acknowledgements for orders that CLECs submit via EDI, and thus appropriately excludes Web GUI and any other LSR orders not submitted electronically. Within NMP, Verizon excludes orders associated with the former GTE territory from the Order Acknowledgement data table, thus correctly excluding these orders from results.⁴⁰²

Liberty examined the algorithm that Verizon uses to calculate the OR-8-01 measure. To calculate the denominator for the measure, Verizon counts the number of PON versions for which it sent an acknowledgement during the reporting month. To calculate the numerator, Verizon counts the number of these acknowledgements that it sent within two hours of receiving the LSR.⁴⁰³ Verizon calculates product group-specific results within the same algorithm and reports them separately.

Liberty concluded that Verizon’s method for calculating this measure conforms to the Guidelines.

³⁹⁷ Response to Data Request #521. Verizon added that if the CLEC’s system is down, the timestamp represents Verizon’s first attempt to send the notifier.

³⁹⁸ Response to Data Request #521.

³⁹⁹ Response to Data Request #522.

⁴⁰⁰ Order Acknowledgement data mart field definition document provided to Liberty prior to Interview #3, October 23, 2003.

⁴⁰¹ Response to Data Request #523 (clarification).

⁴⁰² Response to Data Request #695.

⁴⁰³ Verizon counts the number of PON versions that have an on-time indicator of “Y.”

Liberty recalculated the CLEC aggregate result for OR-8-01-3000 (the UNE product group) for September 2003 using the Order Acknowledgement table that Verizon provided.⁴⁰⁴ Liberty replicated Verizon's reported denominator, as well as the overall result.

3. Findings and Recommendations

Liberty has no findings for this metric.

J. OR-9, Order Acknowledgement Completeness

1. Background

The OR-9 measure reports Verizon's performance in acknowledging LSRs the same day that the CLECs sent them. This metric applies only to LSRs that CLECs submit via EDI. Under the Guidelines, Verizon should treat LSRs that it receives after 10:00 p.m. as if it received them the following day. The Guidelines indicate that Verizon does not acknowledge orders with invalid or incomplete data.

The Guidelines list the following exclusions for OR-9 in addition to the standard exclusions for Verizon affiliate and test CLEC data:

- Orders submitted by the Web GUI interface
- Orders not submitted electronically
- Orders in unreadable files.

Verizon reports OR-9-01, the only metric in OR-9, on a statewide basis by individual and aggregate CLECs. Verizon reports results for OR-9 separately by resale and UNE product groups. The standard for OR-9-01 is 99 percent.

The Guidelines provide the following formula for the OR-9 sub-metric:

OR-9-01: % Acknowledgement Completeness

(Number of acknowledgements sent the same day the LSR was received)/(Total number of LSRs received)

The OR-9 measure is not included in Verizon's PAP.

⁴⁰⁴ Response to Data Request #261.

2. Analysis and Evaluation

As discussed under OR-8, Verizon's NetStatus system extracts and formats LSR timestamp information from EDI/NetLink, and provides daily files to NMP for storage in the NMP warehouse. To calculate the metrics, Verizon selects the acknowledgement records from the NMP warehouse that have either a receipt date or an acknowledgement date within a given month, and places those records into the Order Acknowledgement table used by Verizon's metrics algorithm. Liberty found that Verizon typically acknowledges the LSR within minutes of receipt.

Under the Guidelines, Verizon should consider the acknowledgement as having been "sent" when Verizon's NetLink system sends an acknowledgement, following any translation and encryption of the acknowledgement. Verizon uses the NetLink timestamp consistent with this definition.⁴⁰⁵ Although the Guidelines do not specify a definition, Verizon considers an LSR as having been "received" when Verizon's NetLink system receives it, prior to any decryption, parsing, and translation.⁴⁰⁶

The Guidelines state that orders that fail basic front-end edits should be included in the denominator. As discussed under OR-8, Verizon does not send NetLink acknowledgement data to NMP for an EDI file unless the PON version passes Request Manager front-end edits and is then rejected or confirmed.⁴⁰⁷ Therefore, Verizon does not include acknowledgments on orders that fail edits in Request Manager in the measure. The Guidelines also state that Verizon does not acknowledge orders with invalid or incomplete data. This language does not comport with Verizon's practice. Verizon indicated that the NetLink system sends a negative acknowledgement to the CLEC if an order fails basic front-end edits as defined by NetLink (which are not as strict as those in Request Manager).⁴⁰⁸ Verizon would not send acknowledgement data on such an order to NMP (because it would never be confirmed or rejected), and therefore Verizon would not include the order in this measure.

Liberty believes that the language in the Guidelines is somewhat confusing on this issue. While Verizon's approach is reasonable and consistent with its approach for OR-8, it is not consistent with the wording in the Guidelines. Liberty recommends that Verizon seek a modification to the Guidelines to specify that it excludes EDI file acknowledgments associated with files that do not pass Request Manager's front-end edits, as well as those PON versions that it does not confirm or reject. Liberty also recommends that Verizon seek to either remove the language stating that it does not send an acknowledgement on orders with invalid or incomplete data, or clarify that it sends a negative acknowledgement in these instances though they are not included in the measure.

The key data fields in the Order Acknowledgement table are the CLEC ID, PON, PON version, receipt date/time, acknowledgement date/time, order type, and on-time indicator. Verizon's NMP

⁴⁰⁵ Response to Data Request #521. Verizon added that if the CLEC's system is down, the timestamp represents Verizon's first attempt to send the notifier.

⁴⁰⁶ Response to Data Request #521.

⁴⁰⁷ Response to Data Request #524.

⁴⁰⁸ Response to Data Request #524.

system assigns the on-time indicator a value of "Y" if Verizon sent the acknowledgement on the same day as it received the LSR. Liberty reviewed the assignment of the on-time indicator and found that Verizon determined it correctly. Consistent with the Guidelines, Verizon measures on-time performance for LSRs that it receives after 10:00 p.m. as though Verizon received them the following day.⁴⁰⁹

Liberty examined how Verizon applied the exclusions set forth in the Guidelines. Verizon indicated that it excluded Verizon affiliate data and test CLEC orders through the use of a look-up table in NMP, and such orders are not included in the Order Acknowledgement data table.⁴¹⁰ Verizon includes in the measure only acknowledgements for orders that CLECs submit via EDI, and thus appropriately excludes Web GUI and any other LSR orders not submitted electronically. Within NMP, Verizon excludes orders associated with the former GTE territory from the Order Acknowledgement data table, thus correctly excluding these orders from results.⁴¹¹

The Guidelines state that Verizon should exclude orders in unreadable files from the measure. Verizon indicated it cannot determine information on orders in unreadable files, and therefore does not include any information on those orders in the Order Acknowledgement data table it uses in calculating the measure.⁴¹²

Liberty examined the algorithm that Verizon uses to calculate the OR-9-01 measure. To calculate the denominator for the measure, Verizon counts the number of PON versions that it received during the reporting month. To calculate the numerator, Verizon counts the number of these PON versions for which it sent an acknowledgement the same day as it received the LSR.⁴¹³ Verizon calculates product group-specific results within the same algorithm and reports them separately.

Liberty concluded that Verizon's method for calculating this measure conforms to the Guidelines, but that the Guidelines require clarification.

Liberty recalculated the CLEC aggregate result for OR-9-01-2000 (resale products) for September 2003 using the Order Acknowledgement table that Verizon provided.⁴¹⁴ Liberty replicated Verizon's reported denominator, as well as the overall result.

⁴⁰⁹ Responses to Data Requests #525 and #531.

⁴¹⁰ Response to Data Request #523 (clarification).

⁴¹¹ Response to Data Request #695.

⁴¹² Response to Data Request #21.

⁴¹³ Verizon counts the number of PON versions that have an on-time indicator of "Y."

⁴¹⁴ Response to Data Request #261.

3. Findings and Recommendations

Verizon's method for calculating OR-9 is not consistent with the Guidelines.

The Guidelines state that orders that fail basic front-end edits should be included in the denominator; however, Verizon does not include orders that fail edits in Request Manager in the measure. As discussed under OR-8, Verizon does not send NetLink acknowledgement data to NMP for an EDI file unless the PON version passes Request Manager's front-end edits and is then rejected or confirmed. Liberty believes that Verizon's approach is reasonable, and recommends that Verizon seek a clarification to the Guidelines to specify that it should exclude PON versions in EDI files that do not pass Request Manager front-end edits, and that it should exclude PON versions that it does not confirm or reject.

The Guidelines also state that Verizon does not acknowledge orders with invalid or incomplete data. Verizon does send a negative acknowledgement to the CLEC if an order fails basic front-end edits as defined by NetLink, but Verizon does not include such negative acknowledgements in OR-9 calculations. Liberty recommends that Verizon seek a clarification to the Guidelines to remove this language.

K. OR-10, PON Notifier Exception Resolution Timeliness

1. Background

The metrics within OR-10 report Verizon's performance in resolving NetLink EDI PON Notifier Exceptions within the specified time frame (*i.e.*, three or ten business days). The Guidelines specify that Verizon measure the resolution interval from the time it receives a completed PON Notifier Exception trouble ticket template at the WCCC until Verizon resolves the exception. The Guidelines list the possible resolutions to a PON Notifier Exception:

- Verizon sends, or resends, the requested notifier or higher notifier; however, if the notifier can not be sent due to CLEC system availability or capacity, Verizon should consider the notifier resolved when it attempts to resend the notifier (as demonstrated in Verizon's log files)
- Verizon requests that the CLEC resubmit the PON if no Verizon notifiers had been generated
- Verizon determines, upon investigation, that the next action is a CLEC action and that Verizon has sent or resent the notifier for the action required
- Verizon has completed work that will allow the PON to proceed to the next step in the business process and has sent the appropriate notifier to the CLEC
- Verizon notifies the CLEC that it did not meet the interval for providing the notification and provides the current status of the PON.

The Guidelines indicate that Verizon should treat any PON Notifier Exceptions that it receives after 5:00 p.m. as if it received them the next day. The exclusions that apply to OR-10 in addition to the standard exclusions for Verizon affiliate and test CLEC data are:

- Non-EDI/NetLink PON Exception Notifier trouble tickets
- VADI from CLEC aggregate results
- Any request for notifier for orders due/complete more than 30 business days old
- Orders for products/services not designed to produce the requested notifier (e.g., LIBD).

Verizon reports the OR-10 sub-metrics on a statewide basis by individual and aggregate CLECs. Verizon also reports VADI results separately for commission viewing only. The standard for OR-10-01 is 95 percent and the standard for OR-10-02 is 99 percent.

The Guidelines provide the following formulas for the OR-10 sub-metrics:

OR-10-01: % of PON Exceptions Resolved within Three Business Days

(Number of PON Notifier Exceptions resolved within three business days)/(Total number of PON Notifier Exceptions resolved in the WCCC in the reporting month less resolved PON Notifier Exceptions that were included as unresolved PON Notifier Exceptions in the previous month's denominator for metric OR-10-02)

OR-10-02: % of PON Exceptions Resolved within Ten Business Days

(Number of PON Notifier Exceptions resolved within ten business days)/(Total number of PON Notifier Exceptions resolved in the WCCC in the reporting month plus unresolved PON Notifier Exceptions greater than ten business days)

Both OR-10 sub-metrics are relevant to Verizon's PAP. For the July and August 2003 reporting months, Verizon incurred \$117,154 of penalties related to this measure.⁴¹⁵

2. Analysis and Evaluation

The OR-10 metrics measure the percentage of EDI NetLink PON notifier exceptions that Verizon resolved within either three or ten business days from receipt. Verizon instituted the PON exception process for CLECs in 2000 for cases in which the CLEC expects a notifier (acknowledgment, order confirmation, PCN, or BCN) but had not received it. Verizon indicated that many CLECs automatically issue a PON notifier exception if they do not receive the notifier within the allowed interval. For example, if the allowed interval for a confirmation is 24 hours, the CLEC's system may automatically generate a PON trouble ticket five minutes later.⁴¹⁶

Verizon currently offers two methods for CLECs to submit PON notifier exceptions. The CLEC may call the Wholesale Customer Care Center (WCCC) to receive a trouble ticket number. The CLEC may then submit to Verizon, via e-mail, an Excel spreadsheet containing a list of PONs

⁴¹⁵ Responses to Data Requests #198 and #203 (July and August 2003 C2C Reports).

⁴¹⁶ Interview #3, October 23, 2003.

and the notifier that it considers late or missing for each PON. Verizon then loads the information into its PON Shop application. Verizon indicated that the WCCC is the Verizon organization that usually handles system-related troubles and user interface problems. The WCCC does not investigate PON exceptions, but only supplies the trouble ticket number.⁴¹⁷

Verizon also recently implemented a self-service option for PON notifier exceptions so that the CLEC does not have to call into the WCCC. A CLEC may access a self-service component of Verizon's website, which provides a screen for the CLEC to enter its PON information. The Verizon system will send a message back to the CLEC confirming the submission and providing it with a trouble ticket number. Verizon's website interface then sends the information to the PON Shop application.⁴¹⁸

The PON Shop system handles trouble tickets on EDI and Web GUI PONs. In many cases, the PON Shop system can investigate a PON automatically. The system looks for the most current version of the order to determine, for example, whether Verizon had already sent the notifier, or whether no notifier is due. If, for example, Verizon had already sent the notifier, the PON Shop system will update the status of the PON on the trouble ticket spreadsheet to indicate that Verizon sent the notifier. In that case, the PON Shop application sends a message to Request Manager to resend the notifier as needed.⁴¹⁹ Verizon indicated that it marks such resent confirmations in its ordering data so that these are counted again in certain metrics (such as OR-1 calculation of confirmations resent at CLEC request).⁴²⁰

In some cases, the PON Shop system cannot analyze the PON automatically, and the PON will flow to the NMC personnel, who will investigate it further. For example, the PON Shop application may find that a notifier is due on a given PON, but that Verizon did not create the notifier. The NMC personnel would investigate that PON. Verizon indicated that in some cases, the service order might be missing information so that it could not close (and therefore Verizon did not send a notifier) or that Verizon created the notifier but did not send it through NetLink. The NMC representative would work the order to eventually clear the issue and send the notification as required.⁴²¹

The PON Shop application updates the status of the PONs on each trouble ticket spreadsheet daily to show, for example, that the PON is under investigation, or that Verizon took a specific action and considers the PON resolved. Verizon either posts the information on the self-service interface or updates the trouble ticket spreadsheet and sends it back to the CLEC via e-mail. Examples of the 16 valid status types include i) "busflow," which means that Verizon's NMC is still working the order and Verizon will create notifiers in the normal course of production; ii) "confirmed," which means the order passed edits and will be provisioned; and iii) "resend," which means that Verizon could not locate the order and the CLEC should resend it.⁴²²

⁴¹⁷ Interview #20, November 12, 2003.

⁴¹⁸ Interview #20, November 12, 2003.

⁴¹⁹ Response to Data Request #471.

⁴²⁰ Interview #20, November 12, 2003.

⁴²¹ Interview #20, November 12, 2003.

⁴²² Response to Data Request #472.

Once Verizon takes the required action and posts a resolution on a given PON, it considers that PON resolved. This treatment is consistent with the Guidelines, which state that Verizon should consider a PON notifier exception resolved after Verizon takes the required action.

Verizon resolves each PON individually, and the trouble ticket will remain open until the last PON is resolved. Verizon indicated that the OR-10 metric measures resolved PON notifier exceptions, and does relate to whether the trouble ticket itself is closed.⁴²³

Verizon sends information on PON exception notifiers monthly from its PON Shop system to NMP.⁴²⁴ This file contains information on all PONs that CLECs reported during the month or that Verizon resolved during the month. It also contains information on PONs that CLECs reported in a prior month that either Verizon resolved in the reporting month or that remain unresolved.⁴²⁵ Verizon places this information in the Exception Order Fact table used by Verizon's metrics algorithm.⁴²⁶

The key data fields relevant for the OR-10 measures in the Exception Order Fact table are the CLEC ID, PON, version, trouble ticket number, business receipt date, resolved date, days open counter, days open prior month counter, and metric exclusion indicator. The business receipt date is the business date that the CLEC submitted the trouble ticket, and the resolved date is the date that Verizon resolved the individual PON on a given ticket. The days-open counter is the number of business days between business receipt date and resolved date. The days-open-prior-month counter is the number of business days that the PON was open at the end of the prior month. NPM sets the metric exclusion indicator to "R" for VADI orders using a look-up table.⁴²⁷ Liberty reviewed how Verizon calculated the day counter fields and found that it did so correctly.

The Guidelines state that Verizon should consider PON notifier exceptions it receives after 5:00 p.m. as if it received them the next business day. Verizon indicated that it reflects this convention in the business receipt date.⁴²⁸ In most cases, the business receipt date is the same date that Verizon received the notifier, but it is the next business day if Verizon received the notifier after 5:00 p.m. The Guidelines indicate that Verizon should send CLEC notification via a daily file every day by 5:00 p.m. Verizon indicated that the PON Shop application sends the CLEC a daily follow-up file detailing all PONs that are open or that Verizon resolved since it sent the last daily follow-up file.⁴²⁹

The Guidelines also indicate that, for purposes of the metric, the CLEC must submit a trouble ticket concerning an acknowledgement notifier within five business days of the PON send date. The CLEC must also submit trouble tickets for confirmations within 30 business days of the PON send date, and tickets for PCNs and BCNs within 30 business days of the PON confirmed due date. Verizon does not send information to NMP for certain trouble tickets in the following

⁴²³ Response to Data Request #632.

⁴²⁴ Interview #20, November 25, 2003.

⁴²⁵ Response to Data Request #627.

⁴²⁶ Response to Data Request #320.

⁴²⁷ Response to Data Request #628.

⁴²⁸ Response to Data Request #626.

⁴²⁹ Response to Data Request #630.

cases: i) for an acknowledgement notifier, if the CLEC submitted the ticket more than five business days after Verizon received the LSR, ii) for a confirmation notifier, if the CLEC submitted the ticket more than 30 business days after Verizon received the LSR, and iii) for a PCN or BCN notifier, if the CLEC submitted the ticket more than 30 days after the confirmed due date.⁴³⁰ Verizon is thus correctly implementing the language of the Guidelines.

The Guidelines contain language that is inconsistent with Verizon's process for handling PON notifier exceptions. The definition of the denominators for the OR-10 measures indicated that the PON notifier exceptions are resolved in the WCCC. As noted above, Verizon resolves trouble tickets either automatically within PON Shop or at the NMC, not at the WCCC. The Guidelines indicate that the elapsed time begins with receipt at the WCCC of a completed ticket. CLECs call the WCCC to receive a trouble ticket number, but submit the trouble ticket via e-mail. CLECs can now also submit trouble tickets using a self-service interface on Verizon's website. Also, the Guidelines indicate that Verizon should provide a notification file to the CLEC every day by 5:00 p.m. For CLECs that use the self-service interface, Verizon posts the status of the trouble tickets on the website. Liberty recommends that Verizon seek modifications to the language in the Guidelines to comport with its present process for this measure.

Liberty asked Verizon about the separate reporting requirements for VADI stated in the Guidelines. Verizon indicated that it was no longer required to report these results separately, since VADI was no longer in place as a separate entity during September.⁴³¹ Verizon stated that VADI still uses the PON exception process, but that VADI was now part of retail.⁴³² Liberty recommends that Verizon seek a modification to the Guidelines to remove this requirement.

Liberty examined how Verizon applied the exclusions for this measure. Verizon indicated that it applied the exclusions for the measure within the PON Shop application. Verizon does not send information to NMP for trouble tickets associated with test CLEC IDs, Verizon affiliates, LSRs for the former GTE territory in Virginia, and LSRs not submitted via EDI (*i.e.*, those submitted via the Web GUI).⁴³³

The Guidelines require that Verizon exclude VADI trouble tickets from CLEC aggregate results. Verizon designates VADI PONs using the metric exclusion indicator, thereby excluding them from results in its metric algorithms. The Guidelines also indicate that Verizon should exclude orders for products and services not designed to produce the requested notifier. Verizon stated that it does not exclude any orders, because all LSRs should produce the requested notifier.⁴³⁴ The Guidelines state that Verizon should exclude trouble tickets for orders due or orders completed for more than 30 business days. Verizon does not send information to NMP for trouble tickets when the CLEC submitted the ticket more than 30 business days after Verizon sent the BCN after the conformed due date.⁴³⁵

⁴³⁰ Response to Data Request #628.

⁴³¹ In response to Data Request #599, Verizon stated that it ceased reporting VADI results in Virginia in December 2001. Because Verizon implemented the OR-10 measure in the June 2002 data month, it never reported VADI results for OR-10.

⁴³² Interview #20, November 12, 2003.

⁴³³ Responses to Data Requests #625 (original and clarification) and #628.

⁴³⁴ Response to Data Request #633.

⁴³⁵ Response to Data Request #628.

Beginning with the June 2003 data month, Verizon mechanized the calculation of the OR-10 sub-metrics within NMP.⁴³⁶ Previously, Verizon calculated the results in the PON Shop application and sent results to the NMP reporting system.⁴³⁷

Liberty reviewed the metric algorithms that Verizon uses to calculate the OR-10 results. The OR-10-01 sub-metric measures the number of PON exception notifiers that Verizon resolved within three business days. The Guidelines indicate that the denominator should include PONs that Verizon resolved within the month, but exclude those that Verizon included as unresolved in the denominator of OR-10-02 in the prior reporting month. To calculate the denominator, Verizon selects all PON versions that had a resolved date within the reporting month, but excludes those that were open more than ten days at the end of the previous month.⁴³⁸ To calculate the numerator, Verizon counts the number of PONs identified in the denominator that were open three business days or less.⁴³⁹ Verizon reports the same result under resale and UNE product groups in its performance report.

The OR-10-02 sub-metric measures the number of PON exception notifiers that Verizon resolved within ten business days. The Guidelines indicate that the denominator should include PONs that Verizon resolved within the month, and also include any PONs that remained unresolved after ten business days. To calculate the denominator, Verizon selects all PON versions that had a resolved date within the reporting month and all unresolved PON versions that had a days-open counter value greater than ten. To calculate the numerator, Verizon counts the number of PONs identified in the denominator that were open ten business days or less.⁴⁴⁰ Verizon reports the same result under resale and UNE product groups in its performance report.

Liberty concluded that Verizon's method for calculating this measure conforms to the Guidelines.

Liberty recalculated the CLEC aggregate results for OR-10-01 and OR-10-02 for September 2003 using the Exception Order Fact table that Verizon provided.⁴⁴¹ Liberty replicated Verizon's reported denominator for OR-10-01, as well as the overall result. Liberty also replicated Verizon's reported denominator for OR-10-02, as well as the overall result.

⁴³⁶ Interview #21, November 12, 2003.

⁴³⁷ Response to Data Request #631.

⁴³⁸ Verizon excludes resolved PONs that had a days-open-prior-month counter value greater than ten.

⁴³⁹ Verizon selects those PON versions with a days-open counter value of three or less.

⁴⁴⁰ Verizon selects those PON versions with a days-open counter value of ten or less.

⁴⁴¹ Response to Data Request #261.

3. Findings and Recommendations

The Guidelines for OR-10 are unclear regarding Verizon's method of processing PON notifier exceptions.

The Guidelines contain language that is inconsistent with Verizon's process for handling PON notifier exceptions. The definition of the denominators for the OR-10 measures indicated that the PON notifier exceptions are resolved in the WCCC. Verizon resolves trouble tickets either automatically within PON Shop or at the NMC, not at the WCCC. The Guidelines indicate that the elapsed time begins with receipt at the WCCC of a completed ticket. CLECs call the WCCC to receive a trouble ticket number, but submit the trouble ticket via e-mail. CLECs can now also submit trouble tickets using a self-service interface on Verizon's website. The Guidelines indicate that Verizon should provide a notification file to the CLEC every day by 5:00 p.m. For CLECs that use the self-service interface, Verizon posts the status of the trouble tickets on the website. Liberty recommends that Verizon seek modifications to the language in the Guidelines to comport with its present process for this measure.

Verizon indicated that it was no longer required to report OR-10 results for VADI, because VADI is no longer in place as a separate entity. Liberty recommends that Verizon seek a modification to the Guidelines to remove this requirement.

V. Provisioning Performance Measures

A. Background Information and Summary of Findings

The PR measures report on various aspects of Verizon's provisioning process, including timeliness, quality, and completeness. The Guidelines list a total of nine provisioning measures; however, Verizon only reports on seven measures and 37 sub-metrics in Virginia. The measures in this domain report:

- Average interval offered
- Orders completed in a specified number of days
- Missed appointments
- Missed commitments due to facility reasons
- Installation quality
- Open orders in hold status
- Hot cut performance.

The PAP focuses on the following six provisioning measures and 16 sub-metrics:

- PR-3-01, PR-3-03, and PR-3-10
- PR-4-01, PR-4-02, PR-4-04, PR-4-05, PR-4-07, PR-4-14, and PR-4-15
- PR-5-01 and PR-5-02
- PR-6-01 and PR-6-02
- PR-8-01
- PR-9-01.

The PAP identifies all of these PR sub-metrics, except PR-3-03 and PR-3-10, as Critical Measures.

This first section of this chapter contains a summary of Liberty's findings and recommendations. The following sections on each of the PR measures contain more specific findings and recommendations. In addition, this first section provides: i) overview descriptions of Verizon's provisioning process and provisioning metric data to assist the reader in understanding the metric write-ups that follow, and ii) Liberty's assessment of some generic aspects of Verizon's PR metric calculation process.

1. Summary of Liberty's Findings for the PR Domain

Liberty found the overall quality of Verizon's processes in the PR domain to be not as good as other performance measure areas. During the course of this audit, Verizon issued many change control notices that affected the PR metrics. Despite the considerable number of corrections that Verizon made as a result of the change controls, Liberty still found numerous algorithm problems during its analysis. This is an indication of the lack of stability of these measures.

Liberty replicated the results for all of the PR sub-metrics it attempted to recalculate for the September 2003 data month. Liberty found that Verizon is generally following the Guidelines by correctly applying exclusions and by properly defining the logic and data fields it uses to calculate the denominators and numerators in the PR metric calculations. Throughout this audit Liberty found the Verizon personnel assigned to work with Liberty on the provisioning metrics to be knowledgeable and cooperative. Verizon has been responsive to Liberty's requests for data and interviews, but that response has been slow.

Liberty found that most of Verizon's documentation for the provisioning domain was comprehensive, and covered the provisioning source systems, data flows from the source systems to the NMP warehouse, the data files that Verizon extracts from NMP to calculate the metrics, as well as definitions of data fields and methods for applying exclusions. However, Liberty subsequently had to issue data requests to clarify certain areas that Verizon did not present in a clear or complete fashion in the documentation, or that Verizon documented incorrectly.

Even though Liberty was auditing results for the September 2003 data month, Verizon provided only the June 2003 version of its CMAs. Because Verizon had implemented many change controls after June, Liberty had to issue numerous data requests to learn what was contained in the algorithms that Verizon actually used for the September 2003 data month. Also, Liberty had to replicate more metric results than it planned in order to substantiate that the September 2003 algorithms were indeed correct.

In addition to being out of date, Verizon provided CMAs that were incorrect because of problems Verizon had in mapping its metric production code in NMP into the June 2003 CMA document. Liberty found many cases in which the algorithms that Verizon provided appeared to be incorrect. When Liberty notified Verizon of these issues, however, Verizon clarified that Liberty had received the wrong algorithms (*i.e.*, something different from the code Verizon actually used to calculate the metrics). Liberty had to issue numerous data requests to substantiate that these were errors in how Verizon prepared the June 2003 CMAs, rather than errors in the algorithms themselves.⁴⁴² Verizon's inability to provide current and correct CMAs made the audit more time consuming than planned. Liberty recommends that Verizon publish clear, up to date, and accurate CMAs that the Commission or CLECs could use to replicate Verizon's results.

Liberty learned during the audit that the PR domain is the only domain in which Verizon has separate algorithms for Virginia, West Virginia, Maryland, and the District of Columbia. Some of the issues that Liberty identified during the Virginia audit may well apply to other states, but some may not. The fact that Verizon has to maintain different CMAs for these states may explain why the PR domain is not as robust as the others, and why Verizon continues to have problems with this domain. Liberty found that Verizon's algorithms for Virginia were not standardized across product groups and measures as much as they could be, and contained logic that was either unnecessary or redundant, which makes the programming code more difficult to debug and maintain.

⁴⁴² See, for example, Data Requests #660, #664, #665, #669, #825, #830, #831, #858, and #870.

In the "Findings and Recommendations" sections below for each of the provisioning metrics, Liberty identified the problems it discovered with Verizon's processes. In many of these findings, Liberty found that Verizon's method was reasonable but that Verizon should seek a clarification to the Guidelines to make clear the process it is following. In other instances, Liberty found that Verizon needed to change its methods for making exclusions or calculations to be consistent with the Guidelines. Other of Liberty's findings involved algorithm issues and cases where Verizon failed to define either key variables or product groups correctly.

Verizon transitioned PR from the Service Order Results Database (SORD) metric system to the NMP system effective with the reported results for November 2002. Verizon still calculates one metric, PR-4-14, outside of NMP.

2. Verizon's Provisioning Process

As part of its audit of Verizon's procedures for processing the PR performance measures, Liberty obtained an overview of Verizon's business processes and the systems that generate data used for the measures. Liberty reviewed how Verizon captures the raw data and whether it collects and reports all relevant data. Liberty also sought to identify whether there were any significant opportunities for inaccuracies in source data.

Verizon has three service centers that are responsible for handling provisioning activity for Virginia orders. The Regional Resold Services Center (RRSC) is responsible for coordinating provisioning for resale and UNE-P orders. The Regional CLEC Control Center (RCCC) is responsible for coordinating provisioning of UNE hot cut and UNE new loop orders. The CLEC Loop Provisioning Center (CLPC) handles more complex loop orders such as UNE Line Sharing, Line Splitting, and UNE specials.⁴⁴³ Verizon also has numerous field centers for dispatch work.

CLECs submit requests for services to Verizon through Local Service Requests (LSRs) and Access Service Requests (ASRs). CLECs order all resale products, and most UNE products, via LSRs. CLECs order interconnection trunks, Interoffice Facility (IOF), Enhanced Extended Loops (EELs), and UNE DS0, DS1, and DS3 facilities via ASRs.⁴⁴⁴ CLECs assign their own purchase order number (PON) to orders, and can supplement or cancel orders using a different version number for the same PON. An LSR or ASR can require more than one service order for Verizon to provision the order. For example, Verizon may need to create a "D" disconnect service order and a "N" new service order to provision a hot cut order.

The Verizon service order processor (SOP) for Virginia LSR orders, *expressTRAK*, generates one or more service orders for a given CLEC PON once Verizon has confirmed the PON. Some LSR orders can flow through directly to *expressTRAK*, while others require manual input by a

⁴⁴³ During Interview #4 on November 6, 2003, Verizon stated that the CLPC group would be merging with the RCCC.

⁴⁴⁴ In some instances, CLECs can order UNE DS0 facilities through an LSR. In response to Data Request #822, Verizon stated that CLECs can order two types of DS1 products, platform PRI-ISDN and UNE-P T1, using LSRs.

Verizon National Market Center (NMC) representative before expressTRAK can create the required service orders. On the retail side, Verizon's representatives enter retail service orders directly into expressTRAK and the Service Order Administration Control System (SOACS).⁴⁴⁵

Verizon's Request Manager system keeps track of all wholesale service orders related to a given LSR PON. All systems downstream from expressTRAK process information on the service order level. The Verizon Service Order Analysis and Control (SOAC) system acts as the provisioning system "coordinator" for LSR-related service orders, and creates and distributes message to all affected provisioning systems in order to complete the provisioning process.⁴⁴⁶

The Work Force Administration (WFA) system coordinates and tracks all of the activities associated with a service order. The WFA system provides mechanized and automatic processing of the tasks required during installation of special services, message, carrier, and non-design (POTS) circuits and services. Every order other than record changes must go through the WFA system. The Work Force Administration-Dispatch Out (WFA-DO) system is a subset of the WFA system that Verizon uses for scheduling and tracking provisioning of service orders that require outside technicians to perform the tasks. The Work Force Administration-Control (WFA-C) system is a subset of WFA that Verizon uses to track activity on complex orders.

Verizon uses the Memory Administration for Recent Change History (MARCH) system to format switch translations and send a message to turn on dial tone or to add, delete, or change features on a telephone line. Verizon uses the Loop Facilities Assignment and Control Systems (LFACS) to inventory, maintain, and assign outside plant local loop facilities. For example, SOAC would send a request to LFACS for the assignment of facilities on new lines. The SWITCH system inventories, maintains, and assigns central office facilities, such as those that connect the outside plant to the central office switch. The Trunk Inventory Record Keeping System (TIRKS) maintains the inventory of interoffice transmission facilities, trunking facilities, and special services and interoffice trunking circuits, and is the primary support system for processing those facilities and services.⁴⁴⁷ The SOAC system interfaces with the WFA, MARCH, LFACS, TIRKS, and SWITCH systems as necessary depending upon the product that the CLEC has ordered.

For ASR orders, Verizon NMC personnel create one or more service orders in the Access Service Order Processor (ASOP) system for a given PON. Verizon's Exchange Access Control and Tracking System (EXACT) keeps track of all service orders related to a given ASR PON. The ASOP system acts as the provisioning system coordinator for ASR service orders, and sends messages to various downstream provisioning systems used during the provisioning process. ASOP interfaces with LFACS, TIRKS, and WFA.⁴⁴⁸

⁴⁴⁵ In response to Data Request #318, Verizon indicated that it was still using SOACS for retail orders and a few wholesale accounts. In response to Data Request #33, Verizon indicated that it was phasing out SOACS, and expects to retire the system in the first quarter of 2004.

⁴⁴⁶ Response to Data Request #318. SOAC and SOACS are two different systems.

⁴⁴⁷ Response to Data Request #31.

⁴⁴⁸ During the New Jersey audit, Verizon clarified that TIRKS, which inventories fiber cable, is typically used to provision service for DS1 and above products, however, when only copper facilities are available, LFACS performs the inventory function.

The Local Service Management System (LSMS) is the interface between Verizon's Number Portability Administration Center (NPAC) Service Management System (SMS) and the CLEC's Element Management System. The LSMS system maintains CLEC local number portability (LNP) data.

After it creates the service order, Verizon's provisioning systems can often process non-dispatched orders automatically, although in some cases an order drops out for manual handling by Verizon service center technicians. In most cases, the WFA system can close out these orders automatically and assign a work completion date once it has received an indication that the other provisioning systems have completed required functions. After WFA completes the service order, it sends the work completion date to the SOP system.⁴⁴⁹ If Verizon completed the non-dispatched order after the due date, however, the order typically falls out for manual handling.

Whenever Verizon completes an order late, the WFA system requires that Verizon assign a missed appointment code ("MAC code") to the order. Verizon uses a variety of MAC codes, listed in Appendix B of the Guidelines, which it divides into two primary categories, i) customer-caused and ii) Verizon-caused missed appointments. Reasons for customer-missed appointments include no access, the customer was not ready, and the customer requested either a later or earlier appointment date prior to the original due date. Reasons for Verizon-missed appointments include not enough Verizon technicians available to complete work on a given day, an assigned cable facility was bad, and the central office could not complete its work by the due date. Verizon also has a MAC code of "EO" denoting "Engineering – Other" that is not included in Appendix B. Verizon indicated that it was not current practice in Virginia to use this code.⁴⁵⁰ However, since Verizon uses logic involving this code in some of its metric algorithms, Liberty recommends that Verizon seek a clarification to Appendix B to include and define this MAC code, and to indicate in which states it is used.

For most late non-dispatched orders, the service center technicians enter a MAC code to close out the order. Verizon assigns relatively few MAC codes automatically in WFA. Verizon does not process "R" or records orders through WFA; it processes these orders automatically and the SOP assigns the work completion date.

For dispatched service orders, Verizon schedules the dispatch through the WFA-DO system. After a Verizon field technician completes the required work, he or she closes out the order using the Intelligent Field Access System (IFAS), a hand-held field data collection device. IFAS prompts the technician for certain information about the order through a series of questions. IFAS then sends information on the order to WFA either remotely or through a dial-up connection. WFA then uses the technician's answers to assign such data fields on the order as the MAC code and the work completion date. In some cases a field technician needs assistance to close out an order, and a technician in the provisioning service center actually closes out the order. The WFA system can complete a dispatched order, although in some cases the service center technician assigns the work completion date and any required MAC code.

⁴⁴⁹ Verizon refers to the date that the WFA system sends the work completion to SOP as the "SPIT date."

⁴⁵⁰ Clarification response to Data Request #836.

Although at times WFA assigns the MAC code for late orders, in most cases Verizon's provisioning technicians are responsible for assigning them. Liberty inquired whether Verizon had an internal quality process to validate that it assigned proper MAC codes. Verizon indicated that its specialists perform checks on a regular basis for the correct code. If the specialist identifies an incorrect MAC code, he or she provides feedback to the appropriate center supervisor so that Verizon can address training issues. Supervisors in the centers also perform periodic quality reviews that include checking the accuracy of MAC codes.⁴⁵¹

Verizon also stated that its internal audit group performed an audit of provisioning in the Mid-Atlantic and Potomac regions and issued a report in November 2003. The scope of the audit included a review of missed appointments and the accuracy of MAC codes. Liberty reviewed the relevant portions of Verizon's audit report. Verizon's auditors had selected samples of provisioning appointments in several different geographic areas, two of which were the District of Columbia and northern Virginia. Verizon used some of the samples to determine the sufficiency of the narratives submitted by Verizon's field technicians and others to determine the accuracy of the MAC codes assigned by the technicians.⁴⁵² The audit concluded that the technician's narratives needed improvement and that there was some evidence of MAC coding errors that would have an impact on regulatory reporting (such as a missed appointment assigned a customer MAC code when Verizon actually caused the miss).⁴⁵³

Verizon's auditors recommended that Verizon improve the sufficiency of the narratives and the accuracy of the MAC codes. Liberty recommends that Verizon follow-up on this audit to determine whether it realized the improvement.

3. Verizon's Provisioning Metric Data

Liberty reviewed the process by which Verizon extracts data from its legacy source systems and sends them to the NMP data warehouse. Liberty also reviewed the process by which Verizon extracts data from the NMP warehouse and creates the data tables that its metrics algorithms use to process results each month.

Verizon accumulates selected data from provisioning source systems in its NMP data warehouse. Verizon sends information to NMP daily from the service order processors, expressTRAK, SOACS, and ASOP, as well as from LSMS, EXACT, and WFA-DO. Verizon sends information to NMP from TIRKS on a weekly and monthly basis, from MARCH on a weekly basis, and from WFA-C on a daily and monthly basis.⁴⁵⁴

Verizon performs a series of transformations on the data from the legacy system files to organize them into the NMP database structure, but Verizon leaves the source data unaltered. During these processing steps, Verizon performs basic error checks on key fields. Any records that fail basic

⁴⁵¹ Response to Data Request #454.

⁴⁵² Verizon sampled 16 narratives in the District of Columbia and 36 in northern Virginia. Verizon sampled 25 MAC codes in both areas.

⁴⁵³ Meeting to review Verizon Provisioning Operations Audit Report, February 17, 2004.

⁴⁵⁴ Interview #4, November 6, 2003, and response to Data Request #772.

error checks fall to error files. The business owners of the data review these error files and incorporate any valid records back into the NMP warehouse.

To calculate the PR-1 through PR-8 metrics each month, Verizon extracts selected information from the NMP warehouse into data marts, or tables. In addition to fundamental information such as the state, CLEC, service order number, and product, these tables contain certain derived values such as the appointment interval and completion interval. It also calculates indicator fields such as those for dispatch orders, test CLEC, and suspend-and-restore orders.

Each month, Verizon creates the LSR Service Order Fact table, which it uses in calculating most of the PR metrics. Verizon selects completed service orders to be included in the LSR Service Order Fact table for a given month by extracting from the NMP warehouse/data marts any service orders that have a CRIS completion date within the reporting month. The CRIS completion date is the date that the billing for the last service order associated with a given PON completed in either expressTRAK or Verizon's Customer Record Information System (CRIS) billing system (for some remaining retail orders and ASR-related service orders).⁴⁵⁵ Verizon stated that it uses the CRIS completion date rather than the SOP completion date because it views billing as the last step in the process, beyond which the service order is closed and nothing more can occur.⁴⁵⁶ Because there may be a lag from work completion to billing completion, Verizon would report some completed orders in, for example, October rather than September. However, Liberty concluded that Verizon will eventually report all completed service orders and that Verizon's approach is reasonable if not ideal. Verizon also includes in the LSR Service Order Fact table cancelled or pending service orders in NMP that have a status date within the reporting month. The status date for LSR-related service orders is the date that Verizon sent the information from the source systems to NMP.

Verizon creates an ASR Service Order Fact table that it uses to calculate trunk and specials product group results for certain PR sub-metrics. Verizon selects records to be included in the ASR Service Order Fact table for a given month by extracting from the NMP warehouse/data marts any service orders that have a status date within the reporting month. The status date changes whenever there is a change in the status of an order, *e.g.*, from pending to complete. Verizon stated that there could be multiple versions of the service order in NMP, but that it extracts the relevant information on the latest version.⁴⁵⁷

Verizon also creates an LNP Service Order Fact table that it uses for the PR-4-07 sub-metric. Verizon selects records for a given month by extracting from the NMP warehouse/data mart any LNP-only service orders that have a CRIS completion date within the reporting month.⁴⁵⁸

For the PR-9 hot cut metrics, Verizon captures data in its Wholesale Performance Tracking System (WPTS), which is an overlay to the WFA-C system.

⁴⁵⁵ Response to Data Request #773. Verizon still refers to the billing completion date as the CRIS date, even though most of the information now comes from expressTRAK.

⁴⁵⁶ Interview #4, November 6, 2003.

⁴⁵⁷ Interview #4, November 6, 2003.

⁴⁵⁸ Interview #4, November 6, 2003.

When Liberty audited the PR domain in New Jersey, Liberty compared key data fields in the LSR Service Order Fact table to Verizon's ordering source data. Liberty found that the data between the source records and the fact table were generally consistent, and that Verizon was able to provide a logical explanation for any discrepancies between these data sources. Given that it found no problems, Liberty did not repeat this exercise in Virginia.

When Liberty audited the PR domain in New Jersey, Verizon had found that it was excluding service orders from provisioning data because it had erroneously identified them as duplicate orders when they were not. During the Virginia audit, Verizon explained that the problem was unique to the SOP for New Jersey, and did not occur for Virginia.⁴⁵⁹

Liberty identified a problem with Verizon's method for determining to which territory, Bell Atlantic or GTE, a service order relates. As a result, Verizon may report certain service orders in provisioning results that should not be, and vice versa. Liberty believes that the problem will also affect results in the ordering domain.

For example, Liberty found that Verizon had included three trunk service orders in the PR metric results but had excluded the ASRs (PONs) associated with these service orders from the ordering metrics. Verizon had labeled the trunk orders as related to the former GTE territory in the ordering domain (and therefore excluded them from results), and the associated service orders as related to the former Bell Atlantic territory in the provisioning domain. Verizon explained that it uses a different field in the provisioning domain to identify former GTE service orders than it uses to identify orders in the ordering domain.⁴⁶⁰ The inconsistencies occurred in both directions. Liberty found that of the 13 service orders Verizon labeled as related to the former GTE territory in the provisioning domain (and thus excluded from results), six corresponded to ASRs that Verizon labeled as related to the former Bell Atlantic territory in the ordering domain.

Liberty did some limited testing to determine if the same problem might exist with LSR-related service orders. Verizon told Liberty that it excluded LSRs associated with the former GTE territory within NMP, and as such the orders did not appear in the data tables that Verizon used to calculate ordering metric results.⁴⁶¹ Liberty found that Verizon labeled approximately 80 service orders in September 2003 as related to the former GTE territory in the provisioning domain but labeled the PONs to which they corresponded as related to the former Bell Atlantic territory in the ordering domain (because the orders were included in the ordering data table).⁴⁶² Liberty was not able to investigate whether the problem occurred in the opposite direction for LSRs because it did not have access to the ordering records that Verizon excluded as GTE-related orders.

⁴⁵⁹ Interview #4, November 6, 2003. Verizon explained that the SOP in New Jersey had a very short cycle time for reusing service order numbers. The problem reportedly did not exist with expressTRAK because Verizon had more digits in the service order number and the problems associated with short cycle times did not occur.

⁴⁶⁰ Written response to Interview Request #40, February 25, 2004.

⁴⁶¹ Response to Data Request #317 (clarification).

⁴⁶² Liberty found that all of the service orders related to VADI, and Verizon would exclude them from wholesale results regardless of the former territory designation.

Liberty recommends that Verizon more fully investigate the nature and extent of the problem with discrepancies in the former territory designation between the ordering and provisioning domains. Liberty recommends that Verizon implement necessary changes to ensure that it correctly labels orders and their associated service orders.

4. General Review of Verizon's Metric Calculation Process

Liberty's audit included an examination of the key data fields used by Verizon to calculate the PR metrics to determine if they were consistent with the Guidelines. Liberty assessed whether Verizon correctly calculated any logic flags and any fields derived from source data. Liberty also analyzed whether Verizon adequately implemented the exclusions set forth in the Guidelines for each measure.

In most cases, Liberty found that Verizon had appropriately defined and calculated key fields. Verizon generally implements the Guidelines exclusions properly. However, Liberty noted certain instances in which Verizon should seek clarifications to the language of the Guidelines to reflect how it is applying these exclusions, or to reflect additional exclusions that it makes.

Liberty reviewed the programming algorithms that Verizon uses to calculate the PR measures to determine if they produced results that were accurately defined and consistent with the Guidelines. As part of its analysis, Liberty examined how Verizon defined the numerator and denominator of the measures to determine that no orders would go unreported. Verizon uses a separate algorithm to calculate each product group result for the PR metrics, and Liberty reviewed these to determine if it calculated the result correctly and in a manner consistent with the Guidelines. Liberty recalculated the CLEC aggregate and Verizon retail parity results for various sub-metrics as an additional check on the reliability of Verizon's results.

Common Data Fields

There are certain key data fields that Verizon uses to calculate the majority of the PR metrics. Verizon uses data in the LSR Service Order Fact table for the majority of the PR metrics. Some of the key data fields in the LSR Service Order Fact table are CLEC ID, provider type, service order type (e.g., N, T, or C), order status (e.g., completed or cancelled), original due date, original appointment code, work completion date, global exclusion indicator, exclusion indicator, report period, CISR MAC, and dispatch indicator.

There are similar key data fields in the ASR Service Order Fact table. Both the ASR and LSR Service Order Fact tables contain numerous data fields (such as service class, product indicator, product type, and loop indicator) that Verizon uses to identify and select the products that it reports in the various product group sub-metric results.

Verizon uses the provider type field to identify whether the service order is retail, resale, or UNE.⁴⁶³ Verizon derives this field in NMP by evaluating the inward and outward seller fields of the service order. The possible values for the outward and inward sellers are P (public coin), R (resale), C or A (UNE), and 1 (retail).

Verizon uses the report period field in its metric algorithms to select completed service orders associated with LSRs to be included in the reporting month for the PR-1 through PR-8 metrics. Verizon sets the report period field in NMP as the current month if the CRIS completion date (the date the billing for the last service order for a given PON completed in the Verizon billing system) is within the reporting month.

The original due date and original appointment code are two important data fields for Verizon's calculation of several PR metrics.⁴⁶⁴ Verizon uses the original due date to calculate the appointment and completion interval, and uses the original appointment code to exclude specific orders from certain PR metrics. As part of the ordering process, CLECs specify a desired due date for their order. If the CLEC's desired due date is consistent with the standard interval for the requested product and activity as specified in the Product Interval Guide,⁴⁶⁵ Verizon will confirm that date as the original due date on the order, and in most cases assign the order a "W" original appointment code, which indicates that the CLEC accepted Verizon's offered due date. For products that require a dispatch (such as new UNE-Ls or resale POTS), CLECs use the due date availability function in Verizon's pre-ordering system to determine the "green light date," *i.e.*, next available appointment date, for that product. If the CLEC selects this next available date, Verizon will confirm that date as the original due date on the order and in most cases assign the order a "W" original appointment code.

Verizon stated that it assigns an original appointment code of "K" to R, D, and F orders.⁴⁶⁶ Verizon uses other original appointment codes such as "X" to indicate that the customer requested a due date that was later than Verizon's standard or offered due date. Verizon assigns an order an original appointment code of "W" if the appointment interval is equal to or less than the standard for the product. Verizon assigns a code of "S" to indicate that the customer requested a due date that was earlier than the standard only if the customer also submits an expedite request.⁴⁶⁷ Verizon indicated that its Request Manager or Request Broker systems assign the original appointment code for flow-through LSR orders.⁴⁶⁸ Verizon's policy for assigning an original appointment code is the same regardless of whether the order flows through or an NMC representative handles the order, which is the case for non-flow through LSRs and all ASRs. Verizon uses the same original appointment codes for its retail orders, but the code reflects the due date choice of the retail customer rather than the CLEC.

⁴⁶³ Verizon provided the LSR Service Order Fact data mart field definition document in response to Data Request #39. Verizon also uses the provider designation of "COIN" in some states.

⁴⁶⁴ Appendix B to the Guidelines defines the valid original appointment codes, which are W, X, S, M, R, K, Y, and Z.

⁴⁶⁵ Verizon has three Product Interval Guides on its wholesale website: Resale, UNE, and UNE-P.

⁴⁶⁶ Interview #4, November 6, 2003.

⁴⁶⁷ Response to Data Request #455.

⁴⁶⁸ Response to Data Request #455. Request Broker is Verizon's automated order generation system.

When the Product Interval Guide lists the interval for a product as “negotiated,” Verizon processes the order through its NMC. The Verizon policy is to assign an original appointment type code of “X” to such orders, regardless of whether the CLEC accepted the offered due date.⁴⁶⁹ This treatment means that Verizon excludes such orders from certain PR metrics (such as PR-1 and PR-3). Verizon reflects this interpretation for the “X” appointment type code in its metrics documentation for ASR-related service orders, but not for LSR-related service orders.⁴⁷⁰

Verizon’s Product Interval Guides each state that the term “negotiated” refers to the internal Verizon negotiation done within various provisioning organizations, and not negotiation with the CLEC. During the New Jersey audit, Verizon indicated that such orders typically involve a large volume of lines, which is why it negotiates a due date with the CLEC. Because of the extended intervals typically associated with such negotiated orders, this exclusion is reasonable, but not contained in the Guidelines.⁴⁷¹ Liberty recommends that Verizon seek a clarification to the Guidelines to allow Verizon to exclude these orders from PR-1 and PR-3.

Verizon also acknowledged that the Verizon web-site references for the Product Interval Guides contained in footnotes in the Guidelines for PR-1 and PR-3 were out of date. Verizon indicated that it had received approval to modify them in the New York Commission order of October 2003.⁴⁷²

During the New Jersey audit, Liberty found that a large number of LSR-related service orders had no original appointment code. During the Virginia audit, Verizon stated that blank original appointment codes should not be an issue.⁴⁷³ Verizon acknowledged that the original appointment code could be blank for retail orders that went through the SOACS system, or for orders that the NMC handled manually if the representative failed to enter the code.⁴⁷⁴ Because the original appointment code field is an important variable in many of the PR metrics, Liberty reviewed this data field in the September 2003 LSR Service Order Fact table data that Verizon provided.⁴⁷⁵ Liberty found 21 D (disconnect) and R (record) wholesale service orders and 662 D, R, and C (change) retail service orders that contained a null value in this field.⁴⁷⁶ Liberty asked Verizon to explain why these orders had no original appointment code. Verizon stated that all but two orders were from its SOACS systems, which does not require appointment type codes on D or R orders. Verizon stated that two of the orders (the C orders) were from its ASOP system that it issued prior to December 2001, and that it did not use appointment type codes on ASOP orders prior to that time.⁴⁷⁷ Generally, Verizon does not report D and R orders in its PR metrics, and therefore the lack of an original appointment code for these orders will have no effect on most

⁴⁶⁹ Interview #4, November 6, 2003.

⁴⁷⁰ Verizon provided LSR Service Order Fact and ASR Service Order Fact table field descriptions in response to Data Request #39.

⁴⁷¹ During the New Jersey audit, Verizon clarified that the orders with a “negotiated” interval are different from those that it treats as special projects.

⁴⁷² Response to Data Request #892.

⁴⁷³ Interview #4, November 6, 2003.

⁴⁷⁴ Interview #4, November 6, 2003.

⁴⁷⁵ Response to Data Request #262.

⁴⁷⁶ The September LSR Service Order Fact data table contained 332,073 completed or cancelled retail orders and 97,024 completed or cancelled wholesale orders.

⁴⁷⁷ Responses to Data Requests #794 and #795.

reported results.⁴⁷⁸ Verizon reports disconnect orders in PR-1-12, but its algorithms do not use the original appointment code in the logic.

Liberty also found that Verizon did not assign an original appointment code to approximately ten percent of its non-trunk ASR-related service orders.⁴⁷⁹ Verizon calculates a “W-coded” indicator field that it uses to identify ASR-related service orders for UNE specials, IOF, and EEL products for which the customer selected either the standard offered interval or an interval shorter than the standard interval. NMP sets the W-coded indicator field to “Y” if the original appointment code is “W,” “S,” or blank.⁴⁸⁰ For the PR-1 and PR-3 metrics, Verizon should exclude service orders for which the customer selects a due date greater than the standard interval. Verizon uses the W-coded indicator field to accomplish this exclusion for PR-1, *i.e.*, its algorithms select orders with a W-coded indicator of “N.”⁴⁸¹

Verizon explained that an ASR-related service order could have a blank appointment code in certain circumstances, such as when the order completed in WFA but not in ASOP.⁴⁸² Verizon treats orders with no original appointment codes as though the customer selected the standard interval or a shorter interval, even though that may not be the case. Stated differently, Verizon includes orders in the PR-1 measures that have a blank original appointment code, even if the customer requested an interval greater than the standard. The lack of an original appointment code means that Verizon’s algorithms may treat the orders incorrectly. Liberty recommends that Verizon implement a business process to manually review and assign a correct original appointment to such orders so that it treats them appropriately in the PR-1 metrics.

To derive the application interval, which it uses in the PR-1 metric, Verizon calculates the difference in business days between the submission date of the LSR or ASR (or in some cases the application date on the service order) and the original due date.⁴⁸³ The original due date is the date that Verizon gave the CLEC when confirming the order.⁴⁸⁴ The application date is the date recorded on the service order in the SOP, which in nearly all cases is the same as the submission date when Verizon received the valid LSR or ASR.⁴⁸⁵

When calculating the application interval, Verizon usually uses the submission date. This process ensures that Verizon accurately calculates the interval even if the NMC representative made a typographical mistake in the application date entered on the service order. Therefore, when the application date is less than or equal to the submission date, Verizon uses the submission date to

⁴⁷⁸ Verizon does include R orders that are resale “as is” migrations in results, however Verizon does not use the original appointment code in its algorithm logic.

⁴⁷⁹ Liberty found that of the 379 non-trunk service orders in the September ASR Service Order Fact table, 45 had a blank appointment code.

⁴⁸⁰ Verizon provided ASR Service Order Fact table field descriptions in response to Data Request #39.

⁴⁸¹ The exclusion also applies to PR-3, however Verizon does not report any products ordered via ASRs for this metric.

⁴⁸² Response to Data Request #796.

⁴⁸³ In the ASR Service Order Fact table field description document that Verizon provided in response to Data Request #39, it states that Verizon uses the WFA provisioning due date for ASR-related service orders and, if this field is blank, it used the due date on the order.

⁴⁸⁴ Interview #33, January 19, 2004.

⁴⁸⁵ Interview #33, January 19, 2004.

calculate the interval. NMP also checks if the application date is later than the submission date. In certain cases, Verizon discovers a problem with an order after it has already created the service order, such as an incorrect channel facility assignment. In such cases, Verizon cancels the original service order, and Verizon creates a new one after the CLEC resubmits a corrected order. On the correct service order, Verizon will use the application date of the new service order to calculate the interval (rather than the submission date of the original incorrect LSR).⁴⁸⁶

To derive the completion interval for LSR-related service orders, which it uses in the PR-3 metric, Verizon calculates the difference in business days between the submission date of the order (or in some cases the application date on the service order) and the work completion date.⁴⁸⁷ The work completion date represents the point that Verizon completed provisioning as recorded in WFA.⁴⁸⁸ NMP performs the same series of checks on the submission and application date for the completion interval as it does for the application interval.

Under the Guidelines for PR-1 and PR-3, Verizon should consider all orders that it receives after 5:00 p.m. as if it had received them the next business day. The cut-off time for a CLEC order should be the same as that for a retail order. Verizon indicated that its representatives follow the cut-off times in the Product Interval Guide when assigning due dates for retail orders.⁴⁸⁹ Verizon indicated that for resale "as is" migrations, where the submission date and the original due date are the same, Verizon does not apply the 5:00 p.m. logic.⁴⁹⁰

Verizon found that it was not properly applying the after 5:00 p.m. rule for VADI Line Sharing orders, which constitute the retail parity standard for certain PR-1 and PR-3 measures. Verizon issued Metric Change Control No. 10288 to resolve this issue effective with the October 2003 data month. Verizon explained to Liberty that the problem was in its NMP spooling procedure, and provided the programming changes that it made.⁴⁹¹ Liberty was satisfied that Verizon corrected the problem.

Liberty reviewed with Verizon the NMP procedure that Verizon uses to calculate the application and completion intervals for LSR-related service orders. Verizon explained the programming logic that it uses to identify orders that it received after 5:00 p.m., and it takes this timing into account when calculating the intervals. Verizon also explained the programming logic that it uses to account for weekends and holidays when calculating the intervals.⁴⁹² Liberty was satisfied that Verizon's procedure was accurate. Liberty also examined how Verizon calculated the application and completion intervals for a sample of ASR-related service orders, and found that Verizon calculates them properly.

Many of the PR metrics report results for dispatched and non-dispatched orders separately. In most measures, Verizon reports only completed orders, but for PR-1, Verizon reports both

⁴⁸⁶ Interview #33, January 19, 2004.

⁴⁸⁷ Interview #33, January 19, 2004.

⁴⁸⁸ Interview #33, January 19, 2004.

⁴⁸⁹ Interview #33, January 19, 2004.

⁴⁹⁰ Response to Data Request #42.

⁴⁹¹ Response to Data Request #790.

⁴⁹² Interview #33, January 19, 2004.

completed and cancelled orders. For LSR-related service orders, Verizon calculates a dispatch indicator in NMP. NMP sets the indicator to “Y” if the number of times that Verizon dispatched a technician, as recorded in WFA-DO, is greater than zero. Alternatively, NMP checks the “order completed by” field in WFA, which the field technician populates.⁴⁹³ For cancelled orders, the dispatch indicator generally remains set at its default value of “N,” regardless of whether the order would have involved a dispatch had it been completed.

Verizon acknowledged this problem, and stated that in some cases it uses logic involving the inward line count field to identify whether the cancelled order would have involved a dispatch. Verizon stated that it does so to improve the delineation of dispatched/non-dispatched orders where it can.⁴⁹⁴ Verizon uses this logic only in certain product group algorithms, specifically resale 2-Wire Digital, UNE 2-Wire Digital, and UNE xDSL. While the dispatch indicator field is more likely to be correct for these products, it is not a reliable field for cancelled LSR-related service orders for other products. The problem affects the resale POTS, UNE POTS, UNE Line Sharing, and UNE Line Splitting product groups in PR-1-01 through PR-1-05, in which Verizon reports dispatched and non-dispatched orders separately. Liberty recommends that Verizon seek a clarification to the PR-1 Guidelines to explain that it categorizes all cancelled orders for all product types except resale 2-Wire Digital, UNE 2-Wire Digital, and UNE 2-Wire xDSL as non-dispatched, regardless of whether the order would have involved a dispatch had it been completed.⁴⁹⁵ Verizon subsequently stated that it planned to add the inward line count logic to other product group algorithms.⁴⁹⁶ In that case, Verizon should seek a clarification that reflects its current practice.

For ASR-related service orders, Verizon sets the dispatch indicator to “Y” if the number of times that Verizon dispatched a technician, as recorded in WFA-DO, is greater than zero.⁴⁹⁷ As such, the dispatch indicator for cancelled ASR-related service orders will be “N,” because Verizon never dispatched a technician. The dispatch indicator for ASR-related service orders is therefore also not a reliable field for cancelled orders. However, Verizon does not report separate results for dispatched and non-dispatched orders for the products that CLECs order via ASRs (*i.e.*, specials and trunks) in PR-1, but only total orders. Therefore, the incorrect dispatch indicator for cancelled ASR-related service orders has no effect on reported results.

Common Exclusions

Liberty examined how Verizon applied the exclusions in the Guidelines. Many of those exclusions are common to most of the PR metrics. Liberty discusses exclusions specific to individual metrics in later report sections under each metric. Liberty discusses the exclusions for

⁴⁹³ Verizon provided the LSR Service Order Fact table field descriptions in response to Data Request #39.

⁴⁹⁴ Interview #33, January 19, 2004.

⁴⁹⁵ Verizon reports both completed and cancelled orders in the PR-5-04 measure, but it reports total orders and therefore the distinction between dispatched and non-dispatched orders is unnecessary.

⁴⁹⁶ In its written response to Interview #33 dated February 23, 2004, Verizon stated that it planned to add the logic to the POTS algorithms. In its comments on Liberty's Draft Report, Verizon indicated that it may add the logic to the Line Sharing and Line Splitting product groups as well.

⁴⁹⁷ Verizon provided ASR Service Order Fact table field descriptions in response to Data Request #39. In response to Data Request #799, Verizon stated that all products ordered via ASR require a dispatch.

PR-6 and PR-9 in those sections of the report because Verizon does not calculate these measures entirely within the PR NMP domain.⁴⁹⁸

The Guidelines require that Verizon exclude test orders from all PR metrics except PR-6. The Guidelines also require that Verizon exclude data for its affiliates, including VADI, from CLEC reported results. For LSR-related service orders, Verizon excludes test orders by a logic step in its algorithms that screens out records that have a test account flag, which NMP determines on the basis of a look-up table of test CLEC IDs.⁴⁹⁹ For LSR-related service orders, Verizon excludes Verizon affiliate orders by a logic step in its algorithms that screens out records that have a Verizon affiliate account flag, which NMP determines on the basis of a look-up table of Verizon affiliate IDs. Verizon also excludes orders with CLEC IDs associated with VADI from wholesale results using a logic step in its metric algorithms.⁵⁰⁰

For ASR-related service orders, Verizon calculates each sub-metric result by CLEC ID and by exclusion indicator (which NMP sets to "Y" for test CLEC orders on the basis of a look-up table). Verizon then aggregates the sub-results accordingly in the NMP reporting system to produce the CLEC aggregate result by excluding VADI, Verizon affiliate, and test CLEC IDs results.⁵⁰¹

Verizon excludes Verizon affiliate and VADI orders from all wholesale results and excludes Verizon affiliate orders from all retail results except the retail parity for CLEC trunks, which are inter-exchange carrier Feature Group-D (IXC FGD) trunks.⁵⁰² Verizon includes orders from both unaffiliated long-distance suppliers (some of which also are CLECs) and from Verizon affiliates in its retail parity result for IX/FGD trunks. Liberty recommends that Verizon seek a clarification to the Guidelines to indicate that it does not exclude Verizon affiliate data from the retail parity standard for trunks, and that it includes data from unaffiliated suppliers in this result.

Although not specified in the Guidelines, Verizon excludes service orders associated with the former GTE territory in Virginia from reported results. Verizon stated that expressTRAK determines the former Virginia territory to which the order belongs (*i.e.*, "GTE," "CON" or "BOC") using a look-up table, and sends this legacy organization value to NMP. Verizon added that its SOACS system only handles "BOC" orders and assigns a value of "BOC" to all orders that it handles.⁵⁰³ Verizon uses a logic step in its metric algorithms to exclude service orders with a legacy organization value of "CON" or "GTE" from reported results. For ASR orders, Verizon calculates a territory indicator in NMP. Verizon then excludes from reported results orders with a territory indicator value of "GTE" and includes those with a value of "BA."⁵⁰⁴

⁴⁹⁸ Verizon uses data from the maintenance and repair domain for the PR-9-08 metric and for the numerators of the PR-6 metrics.

⁴⁹⁹ Verizon provided LSR Service Order Fact table field descriptions in response to Data Request #39.

⁵⁰⁰ Verizon's retail algorithms do not explicitly exclude VADI orders. In response to Data Request #818, Verizon explained that its retail algorithms include VADI orders in results only if VADI orders the product. VADI only orders xDSL products, and Verizon reports a VADI Line Sharing result as the parity for wholesale xDSL products.

⁵⁰¹ Verizon provided ASR Service Order Fact table field descriptions in response to Data Request #39, and Interview #33, January 19, 2004.

⁵⁰² Clarification response to Data Request #863.

⁵⁰³ Response to Data Request #457.

⁵⁰⁴ Verizon provided ASR Service Order Fact table field descriptions in response to Data Request #39.

The Guidelines require that Verizon exclude disconnect orders from PR-1 through PR-5 and PR-8, except for the specific sub-metric that deals exclusively with disconnect orders (*i.e.*, PR-1-12). Verizon excludes disconnects from the metrics by a logic step in its algorithms that selects only N, T, and C LSR-related service orders or ASR-related service orders with activity types of N or C (thus excluding D and F disconnect orders).⁵⁰⁵ For LSR-related service orders, Verizon applies another logic step that screens out change orders that have a disconnect flag. NMP sets the disconnect flag to “Y” for C orders that have outward activity but no inward activity.⁵⁰⁶ Verizon issues a service order for a disconnection on a C order when it, for example, must disconnect one or more auxiliary lines or circuits while the main billing account remains in service.

Liberty found that Verizon did not include this C-disconnect logic step consistently across all LSR-related product groups and to both wholesale and retail orders, and asked Verizon to explain. Verizon stated that it did not need to check for disconnects on C orders for those measures on which it reported by line number on the order such as PR-3 and PR-6, but that otherwise, such orders should be excluded from all product groups for the PR metrics.⁵⁰⁷ Verizon explained that it defined line number on a service order as the sum of the inward line count and the “to” line count, and Verizon’s metric algorithm would not include these disconnects on C orders in PR-3 and PR-6 because the sum would be zero.⁵⁰⁸

Liberty found that Verizon includes the logic step to exclude disconnects on C orders where required. However Verizon later stated that it planned to issue a change control to add the logic step to three specific sub-metrics.⁵⁰⁹ Liberty believes that the change is unnecessary, because these sub-metrics report by line number on the order.

For all PR measures except PR-6, the Guidelines require that Verizon exclude additional segments on orders. Verizon indicated that it does not have segmented orders in Virginia.⁵¹⁰ Liberty therefore recommends that Verizon request a change to the Guidelines to remove this non-applicable exclusion.

For the PR-1 through PR-8 (except PR-6) metrics, the Guidelines require that Verizon exclude administrative orders from the measures. The glossary to the Guidelines defines administrative orders as those orders completed by Verizon for administrative purposes and not at the request of a CLEC or end-user; such orders include administrative orders for Verizon official lines. Verizon assigns an exclusion indicator field value of “Y” within NMP for LSR-related service orders that

⁵⁰⁵ Verizon includes LSR-related R (record) orders only if they pertain to resale “as is” migrations.

⁵⁰⁶ Interview #33, January 19, 2004.

⁵⁰⁷ Response to Data Request #820. Verizon added that the exclusion would not apply to those metrics that report disconnects, *i.e.*, PR-1-12.

⁵⁰⁸ Interview #33, January 19, 2004.

⁵⁰⁹ Written response to Interview Request #33 dated February 25, 2004. Verizon stated that it planned to add the logic to PR1-03-2110, PR-1-04-2100, and PR-1-05-2100. Liberty found that several PR-1-03 through PR-1-05 algorithms for other products also do not include the C-disconnect logic step, but Verizon did not include these in the change control.

⁵¹⁰ Interview #4, November 6, 2003.

it designated as administrative.⁵¹¹ Verizon then excludes orders with an exclusion indicator of “Y” by a logic step in its metric algorithms.

The Guidelines also require that Verizon exclude suspend for non-payment and associated restore (“snip-and-restore”) orders from PR-1 through PR-5 and PR-8. Verizon excludes snip-and-restore orders in its algorithms for retail results using a snip-and-restore indicator, which NMP derives on the basis of a snip-and-restore type field recorded in the SOP.⁵¹² Liberty found that Verizon excluded roughly 20 percent of its retail service orders as non-payment snip-and-restore orders in the September 2003 data month.⁵¹³

Liberty found that Verizon did not, however, exclude snip-and-restore orders from its wholesale results from PR-1 through PR-5 and PR-8. Verizon stated that it removed the exclusion for suspend and restore orders from its wholesale algorithms effective with the March 2003 data month.⁵¹⁴ Verizon stated that the New York Guidelines contain the word “retail” as part of the snip-and-restore exclusion in PR-1 (but for no other measure), and that it failed to include the word “retail” in the Virginia Guidelines for PR-1 due to an administrative error. Verizon indicated that it proposed a clarification to the New York Carrier Working Group to add the word “retail” to the PR-3, PR-4, PR-5, and PR-8 Guidelines.⁵¹⁵ Nonetheless, Verizon is not in compliance with the Virginia Guidelines as written. Liberty recommends that Verizon either exclude snip-and-restore orders from both wholesale and retail, or seek a clarification to the Guidelines to make it consistent with its practice for this exclusion.

Verizon indicated that it does not have snip-and-restore service orders related to ASRs, and that the only type of administrative orders that occur on the ASR side are record change orders.⁵¹⁶ NMP excludes administrative orders (*i.e.*, record orders) from the ASR Service Order Fact data table in NMP, and they are therefore not included in reported results.⁵¹⁷

Verizon performs additional steps for LSR-related service orders to identify other administrative orders and disconnect orders not otherwise identified by the disconnect flag and exclusion indicator fields. For the PR-1 through PR-8 metrics, Verizon calculates a global exclusion indicator within NMP, which is set to “Y” for any of the following orders:⁵¹⁸

- Disconnect orders issued as a companion to migration orders
- Duplicate orders on Line Sharing orders that are related only to billing
- Records with blank service order numbers

⁵¹¹ Interview #33, January 19, 2004. Verizon assigns resale and UNE orders, as well as retail Line Sharing orders, an exclusion indicator value of “Y” if they have i) a non-blank administrative flag value (as designated in the SOP), ii) an LSR number beginning with “ZZ” (which Verizon stated indicates a Verizon-initiated administrative order), or iii) a blank purchase order number (which Verizon stated also indicates a Verizon-initiated administrative order).

⁵¹² Verizon provided LSR Service Order Fact table field descriptions in response to Data Request #39.

⁵¹³ In contrast, roughly 1.5 percent of September 2003 wholesale orders were non-payment snip-and-restore orders.

⁵¹⁴ Response to Data Request #798.

⁵¹⁵ Clarification response to Data Request #798. Verizon also stated that the Carrier Working Group reached consensus that Verizon should exclude suspend-and-restore orders from both retail and wholesale results.

⁵¹⁶ Response to Data Request #461.

⁵¹⁷ Interview #4, November 6, 2003.

⁵¹⁸ Written response to Interview Request #33 dated February 12, 2004.

- Packet at Remove Terminal Service (PARTS) orders
- Corporate services (Verizon requests for company telecommunications services)
- Directory listing, advertising, and special billing orders
- Orders with null segments⁵¹⁹
- UNE Integrated Services Digital Network Primary Rate Interface (ISDN PRI) port service orders
- Verizon-generated disconnect orders for the data portion of Line Sharing orders.⁵²⁰

Verizon then excludes orders with a global exclusion indicator of “Y” by a logic step in its metric algorithms.

As part of the global exclusion, Verizon eliminates orders from the measures that are not specified in the Guidelines, *i.e.*, billing-only orders related to Line Sharing orders, invalid orders (those with no service order number), PARTS orders, corporate orders, and directory listing, advertising, and special billing orders. For Line Sharing requests, Verizon creates two service orders, a retail service order for provisioning the Line Sharing, and a wholesale service order to bill the DLEC for the DSL services. Verizon includes only the retail provisioning order in CLEC results.⁵²¹ Verizon considers PARTS orders to be an interstate access service not covered by the Guidelines, and excludes all PARTS orders from PR metrics. Verizon also stated that it excludes ISDN PRI port services orders because these orders do not fit into any of the product groups for the PR metrics.⁵²² These additional exclusions are reasonable, but the Guidelines do not specify them. Liberty therefore recommends that Verizon seek clarification to the Guidelines.

For resale migrations, Verizon creates a disconnect order as a companion to the migration order establishing the reseller on the account. Verizon excludes this migration disconnect order through the global exclusion indicator. The PR-1-12 sub-metric reports only on disconnections. Because Verizon excludes these migration disconnect orders through a global exclusion, it omits them from the PR-1-12 results. Verizon stated that it believed the exclusion was appropriate for PR-1-12 because these are internally generated orders that Verizon considers to be administrative in nature.⁵²³ This convention is reasonable, but Verizon should seek a clarification to the Guidelines to make this explicit for PR-1-12.

The Guidelines require that Verizon exclude orders with negative or invalid (*e.g.*, greater than 200 business days) appointment or completion intervals from the PR-1 and PR-3 metrics. Verizon calculates the appointment and completion intervals within NMP. Verizon checks for valid completion and appointment intervals in its metrics algorithms for LSR-related service orders by selecting only those orders with intervals greater than or equal to zero and less than or

⁵¹⁹ As noted previously, Verizon does not have segmented orders in Virginia.

⁵²⁰ In response to Data Request #460, Verizon explained that it implemented Metric Change Control No. 10103 beginning with the July 2003 data month to remove these orders, which begin with an LSRN of “A” and end with “ZZ.” Verizon stated that these orders are Verizon-generated orders to remove the billing for the xDSL service when the retail customer disconnects the POTS line.

⁵²¹ Response to Data Request #463. Verizon clarified that the retail service order is a “C” order and the wholesale orders is a “N” order. Verizon considers the N order to be a duplicate order for billing purposes only.

⁵²² Interview #33, January 19, 2004.

⁵²³ Interview #4, November 6, 2003.

equal to 200. For ASR-related service orders, Verizon excludes orders with intervals greater than 200 business days in its metric algorithms. Verizon stated that NMP populates the interval field in the ASR Service Order Fact data table with a blank if the interval is negative (for example, if the due date is earlier than the submission date).⁵²⁴ Verizon's metric algorithms then exclude ASR-related service orders with blank intervals. Liberty has concluded that Verizon correctly applies this exclusion.

For the PR-1 and PR-3 metrics, the Guidelines require that Verizon exclude certain service orders if the orders require manual loop qualification. This exclusion applies to 2-Wire Digital, 2-Wire xDSL loop, 2-Wire xDSL Line Sharing, and 2-Wire xDSL Line Splitting products. The Guidelines define such orders as those that have a "R" (for required) in the loop qualification field on the LSR. Verizon calculates a qualification indicator field in NMP. NMP sets the indicator to "Y" if the LSR had a "R" in the loop qualification field, and Verizon then excludes orders with a "Y" in the indicator from the product results for these sub-metrics.⁵²⁵ Verizon does not have the equivalent designation for retail orders (except VADI), however, and therefore excludes no retail orders for this reason.

As discussed in the chapter on the ordering metrics, Verizon's ordering process automatically sends LSRs with an "R" in the loop qualification field through an automated loop qualification process. If the order passes through the automated process successfully, it will flow through to the SOP. If the order does not pass through the automated process successfully, Verizon's system routes the order to a representative in the NMC, who sends the order to Verizon engineering for loop qualification. Verizon excludes both those orders that require manual qualification and those that been qualified during the automated process. Liberty recommends that Verizon seek a clarification to the Guidelines on this issue.

Verizon also stated that it did not require manual loop qualifications on disconnect orders. Verizon therefore interprets the exclusion in the Guidelines for manual loop qualifications to apply to all orders except disconnects.⁵²⁶ Liberty believes this convention is acceptable and that Verizon should seek a clarification to the Guidelines to make this explicit for PR-1-12, which measures disconnections.

Liberty found that Verizon did not consistently apply the exclusion for manual loop qualification. For example, Verizon's PR-1-01 and PR-1-02 algorithms for the resale 2-Wire Digital product group do not contain a logic step to check for orders that required a manual loop qualification, nor does Verizon's PR-1-01 algorithm for the UNE 2-Wire Digital product group. Verizon explained that the resale 2-Wire product group does not require the logic step because Verizon performs manual loop qualifications on loops, and these products are ISDN circuits. Verizon also stated that the PR-1-01 algorithm for UNE 2-Wire Digital product does not require the logic step because the measure reports non-dispatched orders, and Verizon does not perform a manual loop qualification on orders that do not require a dispatch.⁵²⁷ Liberty recommends that Verizon seek a clarification to the PR-1 and PR-3 Guidelines to make clear for which resale and

⁵²⁴ Response to Data Request #823.

⁵²⁵ Verizon provided LSR Service Order Fact table field descriptions in response to Data Request #39.

⁵²⁶ Interview #4, November 6, 2003.

⁵²⁷ Response to Data Request #810.

UNE products, and for what types of orders (*i.e.*, dispatched or non-dispatched) this exclusion is relevant.

Verizon determines a governing MAC code, referred to by Verizon as the “CISR MAC,” that it uses to apply certain exclusions in the Guidelines for LSR-related service orders. Verizon derives the CISR MAC in NMP to identify whether the delay in completing the order on time was due to end-user or Verizon reasons. A service order may have more than one MAC code, because CLECs can supplement the order to change due dates and Verizon may reschedule due dates if one party or the other misses the appointment. If all (or the only) MAC codes on an order are due to the customer, then NMP will set the CISR MAC as the first customer MAC code, and if all (or the only) MAC codes are due to Verizon, then NMP sets the CISR MAC as the first Verizon MAC code.⁵²⁸ In almost all cases, if a service order has a combination of codes, then NMP sets the CISR MAC as the first Verizon MAC code.⁵²⁹ For ASR-related service orders, Verizon calculates a “customer-not-ready” indicator. Verizon stated that the customer-not-ready indicator was similar to the CISR MAC, and represents the primary reason it missed the order.⁵³⁰

Although not specified in the Guidelines, Verizon excludes orders from the federal government from many of its retail results for the PR metrics.⁵³¹ Verizon considers such orders administrative in nature. This interpretation is reasonable, but Verizon should seek a clarification to the Guidelines to make this explicit. Verizon found that it was not excluding federal administrative orders from certain metrics, and issued two change controls to correct the error in certain PR-4, PR-5, and PR-8 algorithms.⁵³² However, Liberty found that the logic was missing from many other PR retail algorithms, and that the logic was incorrectly included in some wholesale algorithms.⁵³³ Verizon stated that it had no federal orders in Virginia for the July, August, and September 2003 data months, and that there was therefore no impact on reported results from the missing code.⁵³⁴ Liberty recommends that Verizon correct its PR retail algorithms to include the logic where it is missing, and to remove the unnecessary code from its wholesale algorithms. Verizon stated that it would issue two change controls to correct the errors.⁵³⁵

The Guidelines state that Verizon may exclude service orders associated with special projects from certain PR metrics (*i.e.*, PR-1, PR-3, and PR-6) consistent with Appendix S. At certain times, a CLEC requests that Verizon handle certain orders in a special manner outside of the normal process, such as when a CLEC submits a large number of orders that it wants Verizon to track separately. Verizon maintains a look-up table within NMP, which lists the PONs and

⁵²⁸ Interview #33, January 19, 2004.

⁵²⁹ Interview #33, January 19, 2004.

⁵³⁰ Response to Data Request #855.

⁵³¹ Verizon excludes orders with a sales code of 915T and 916T that also have an S preceding the data in the related order field.

⁵³² Metric Change Control No. 10105, completed for the July 2003 data month, and Metric Change Control No. 10363, completed for the November 2003 data month.

⁵³³ For example, Liberty found that the code was missing from 19 of the PR-1 retail algorithms and nine of the PR-3 retail algorithms, and that the code was incorrectly included in five UNE algorithms in PR-1 and PR-3.

⁵³⁴ Responses to Data Requests #762 and #778. Verizon stated that the exclusion did not apply to PR-6 because these orders have no inward lines and Verizon would not count them in PR-6 because it measures total lines in the denominator.

⁵³⁵ In response to Data Request #762, Verizon stated that it planned to issue Metric Change Control No. 10670 to correct the coding for retail and No. 10672 to remove the code from wholesale.

product types it is to exclude for a given CLEC. For LSR-related service orders, Verizon derives a project indicator field in NMP based on the look-up table, and excludes service orders related to special projects by a logic step in its wholesale metric algorithms.⁵³⁶ For ASR-related service orders, Verizon excludes service orders associated with special projects using an exclusion indicator field that it calculates on the basis of a look-up table. Verizon calculates and groups results by exclusion indicator, and includes only those with an exclusion indicator value of "N" in reported results.⁵³⁷

Liberty initially found that Verizon appropriately included the logic steps to exclude special project PONs in its PR-1 and PR-3 algorithms, but not the denominator of its PR-6 algorithms.⁵³⁸ Verizon clarified that it did not add the logic to exclude special projects from PR-6 until August 2003 (and thus the logic was not contained in the June version of the CMAs that Liberty reviewed). Verizon added that it did not have any special projects PONs that it excluded from PR-6 before that time, and therefore the omission had no effect on reported results.⁵³⁹

Verizon Metric Conventions

During its review, Liberty identified some common practices that affect many of the PR measures. Verizon includes N, T, and C LSR-related service orders in the PR metrics, and typically excludes R, D, and F order types from the PR metrics with a few exceptions. Verizon reports D and F type orders in the PR-1-12 metric. Verizon includes R orders in the metrics only when they are for resale "as is" migrations. For products ordered via ASRs, Verizon includes only orders with N and C activity (and D activity for PR-1-12).⁵⁴⁰ Verizon also excludes all dark fiber orders from the PR metrics.

Verizon always uses the original due date as the measuring point for appointment intervals for PR-1. If the CLEC supplements the order, Verizon counts the first interval towards the metrics. For example, if the CLEC calls before the due date to reschedule (and supplements the original order), Verizon still measures its PR-1 performance for the service order from the original due date.⁵⁴¹

For certain PR results for 2-Wire xDSL Line Sharing and Line Splitting products, the Guidelines specify a standard of parity with VADI. Verizon refers to VADI as Data Services Network Operations (DSNO). DSNO was Verizon's separate retail entity for xDSL service. Internet Service Providers (ISPs) place xDSL service orders with DSNO, which then places orders for UNE 2-Wire xDSL products with Verizon's wholesale group through the same interface

⁵³⁶ Responses to Data Requests #109 and #458.

⁵³⁷ Clarification response to Data Request #797.

⁵³⁸ Verizon calculates the numerator of the PR-6 metrics using M&R data, and Verizon correctly included the logic in the numerator.

⁵³⁹ Response to Data Request #850.

⁵⁴⁰ Interview #4, November 6, 2003. Verizon clarified that only "as is" resale migrations are R service orders; "as specified" migrations are C service orders.

⁵⁴¹ Interview #33, January 19, 2004.

available to CLECs.⁵⁴² Verizon stated that it had eliminated DSNO as a separate subsidiary, and that it carries out VADI functions within the Verizon retail organization. Verizon uses the same methods and procedures, and still processes VADI-like orders through the same CLEC interfaces. Therefore, Verizon still treats the data for these products the same way for metric purposes.⁵⁴³

Verizon believes that a change to the Guidelines is not necessary at this time, because the Glossary defines VADI as “either the separate data affiliate or the office or division within Verizon that provides retail xDSL services.” Verizon indicated that a change could be required in the future, however. Verizon stated that as of June 2004, the FCC would not require Verizon to submit VADI orders as if they were CLEC orders. Verizon also added that it would be in the midst of phasing out the Line Sharing product.⁵⁴⁴

To calculate the VADI Line Sharing parity result, Verizon selects orders associated with VADI CLEC IDs (*e.g.*, BNK, BAN) in its metric algorithms. Verizon does not explicitly exclude VADI orders from its other retail product group results; however, DSNO orders only Line Sharing.⁵⁴⁵

The Guidelines contain a Retail Analog Compare Table that lists the retail result that Verizon should report as the parity comparison for each product group. A footnote to the table indicates that Verizon should exclude feature changes on ISDN PRI no-dispatch orders from retail DS1 results. Verizon correctly accomplished this exclusion using logic steps in its metric algorithms that exclude non-dispatch ISDN PRI features.⁵⁴⁶ Verizon stated that the glossary to the Guidelines require that Verizon include retail requests for access services in its retail specials product group results.⁵⁴⁷ Verizon confirmed that it includes special access requests in retail for all specials product groups.⁵⁴⁸

Liberty found that Verizon did not define the CLEC trunk product group consistently across the PR metrics. Verizon includes both CLEC trunks and reciprocal trunks in the CLEC trunk product group in PR-4, PR-6, and PR-8, although only the Guidelines for PR-4 explicitly state that Verizon should include reciprocal trunks. For PR-1 and PR-5, Verizon defines this product group to include only CLEC trunks. Verizon stated that it was appropriate to include reciprocal trunks in PR-6 and PR-8, but acknowledged that the Guidelines do not contain this language. Verizon stated that it is not appropriate to include reciprocal trunks in PR-1 or PR-5 because Verizon, not the CLEC, initiates reciprocal trunk requests.⁵⁴⁹ While Verizon's approach may or may not be reasonable, the Guidelines do not entirely support it. Liberty recommends that Verizon seek a clarification to the Guidelines for PR-1, PR-5, PR-6, and PR-8 to explicitly state which types of trunks it includes or excludes in the CLEC trunk product group.

⁵⁴² In response to Data Request #801, Verizon explained that the retail result represents the time it takes for Verizon to complete the provisioning to DSNO.

⁵⁴³ Interview #22, November 26, 2003.

⁵⁴⁴ Interview #22, November 26, 2003.

⁵⁴⁵ Response to Data Request #848.

⁵⁴⁶ Response to Data Request #808.

⁵⁴⁷ Interview #4, November 6, 2003.

⁵⁴⁸ Response to Data Request #807.

⁵⁴⁹ Response to Data Request #869.

Similarly, Liberty found that Verizon did not define its UNE POTS product groups consistently across the PR metrics, and excluded hot cuts in many cases even though the Guidelines did not list them as exclusions. The PR-3 metric is the only provisioning metric that contains the exclusion for “coordinated cut-over Unbundled Network Elements such as loops or number portability orders.” Verizon uses a hot cut indicator from the SOP to identify service orders for hot cuts that it includes in PR-3-08 UNE hot cut loops and excludes from the PR-3 UNE POTS platform and UNE POTS new loop product groups in its metric algorithms.

Verizon sets the hot cut indicator to “Y” if the service order has a frame due time and a related service order. These conditions apply to CLEC-to-CLEC migrations as well as Verizon-to-CLEC hot cut orders.⁵⁵⁰ Verizon stated that it planned to remove CLEC-to-CLEC hot cut orders from PR-3-08 metric results, because the Guidelines glossary defines a coordinated cutover as a hot cut from Verizon to the CLEC, and Verizon incorrectly included both types of orders in reported results. Stated differently, Verizon uses the hot cut indicator to select orders for PR-3-08, and, because the indicator will be “Y” for both Verizon-to-CLEC and CLEC-to-CLEC hot cuts, Verizon incorrectly includes the latter. Verizon issued Metric Change Control No. 10266, but has not yet corrected the error. Verizon limited the scope of this change control notice to PR-3-08. Liberty believes that Verizon has defined the extent of the problem too narrowly. Because Verizon has defined “hot cuts,” *i.e.*, the hot cut indicator, too broadly, it incorrectly includes CLEC-to-CLEC hot cuts in PR-3-08 but also incorrectly excludes them from the other PR-3 UNE POTS product groups, because for these product groups Verizon selects order where the hot cut indicator is “N.”⁵⁵¹

Verizon should define the PR-3-08 UNE hot cut loop product group to include only Verizon-to-CLEC hot cuts. Verizon should also define the PR-3 UNE POTS loop new and POTS platform product groups in such a way as to exclude only Verizon-to-CLEC hot cuts, and not CLEC-to-CLEC migrations.

Verizon also excludes Verizon-to-CLEC coordinated cut-overs and CLEC-to-CLEC migrations from most of the UNE POTS product groups in the measures other than PR-3, because it uses the hot cut indicator equals “N” condition to select relevant orders. The Guidelines list no exclusion for coordinated cut-overs in any measure except PR-3. Verizon therefore incorrectly excludes not only Verizon-to-CLEC hot cuts but also CLEC-to-CLEC migrations from the following product groups: i) POTS platform (PR-1, and PR-3 through PR-6); ii) POTS loop (PR-1 and PR-5); iii) POTS new loop (PR-3 and PR-4); and iv) POTS total (PR-4 and PR-8).⁵⁵²

Verizon correctly includes both Verizon-to-CLEC hot cuts and CLEC-to-CLEC migrations in the POTS (including complex) product group for PR-1-12, the POTS loop total (dispatch and non-dispatch) product group in PR-6-01 and PR-6-03, and the POTS loop total product group for

⁵⁵⁰ Response to Data Request #781.

⁵⁵¹ Liberty recommends in the PR-3 section that Verizon seek a modification to the Guidelines to indicate that the PR-3 hot cut exclusion does not apply to PR-3-08. If it did, Verizon would report no results for this measure.

⁵⁵² Verizon completed Metric Change Control No. 10546 in December 2003, with which it incorrectly added the hot cut indicator equal to “N” logic to the PR-5-04-3112 algorithm.

PR-5-04 (but not PR-5-01 or PR-5-02).⁵⁵³ However, because Verizon uses the hot cut indicator equals “Y” logic to select relevant orders, Verizon incorrectly includes CLEC-to-CLEC migrations in the POTS loop hot cut product group in PR-6-02.

Liberty recognizes that the POTS loop new products group would not otherwise contain Verizon-to-CLEC hot cuts or CLEC-to-CLEC migrations, and therefore the error has no effect on reported results, which may also be true with some other UNE POTS product groups. In those cases, Verizon should revise its algorithms for these measures to remove the unnecessary coding. The POTS platform group should, however, include CLEC-to-CLEC migrations, which Verizon currently excludes.⁵⁵⁴ The POTS total and POTS loop product groups should include hot cuts and Verizon is therefore incorrectly reporting results for these measures and product groups. Liberty therefore recommends that Verizon either correct its algorithms for these measures or seek clarifications to the Guidelines to define the product groups in the same way that Verizon does in its algorithms.⁵⁵⁵

As noted above, Verizon includes resale “as is” migration orders in its resale product groups (POTS, 2-Wire Digital, and specials). Liberty found a recurring error in many of Verizon’s PR-4, PR-5, PR-6, and PR-8 algorithms for the resale product groups. Verizon includes a logic step in these algorithms that select orders with original appointment codes of M, R, W, X, C, or S. Verizon assigns resale “as is” migrations (which are record orders) an original appointment code of “K.” As such, Verizon’s algorithms effectively exclude the “as is” migrations from results.

In nearly all of its algorithms for the resale products for PR-4-01 through PR-4-03, PR-4-05, and PR-4-08, Verizon effectively excludes “as is” migrations from both the numerator and denominator.⁵⁵⁶ Verizon also uses the incorrect logic in the resale product groups for PR-4-04, but the error has no effect because all “as is” resale migrations are non-dispatch, and would therefore never be included in the denominator or numerator of this dispatch metric. Similarly, Verizon uses the incorrect logic to select resale “as is” migrations in the resale product groups for PR-5-01 and PR-5-02, but the error has no effect because these are dispatch metrics. Liberty found that Verizon used the incorrect logic in all of its resale product algorithms for the PR-6-01 and PR-6-03 measures, and for several of the product results for the PR-8-01 and PR-8-02 metrics.⁵⁵⁷ Verizon acknowledged that the current logic excludes “as is” migrations.⁵⁵⁸

⁵⁵³ In response to Data Request #853, Verizon stated that it had added language to the New York Guidelines for PR-6 to clarify that the UNE POTS loop total product group included UNE-L hot cuts for PR-6-01 and PR-6-03 only. Verizon stated that hot cut loops are included in the PR-6 metric because the activity can produce trouble reports.

⁵⁵⁴ Response to Data Request #672.

⁵⁵⁵ In response to Data Request #816, Verizon stated that the most recent New York Guidelines clarify in the glossary that Verizon should not include hot cuts in the UNE POTS loop total product group for all PR metrics except PR-6-01 and PR-6-03. Verizon’s current approach is, however, not consistent with the current Virginia Guidelines.

⁵⁵⁶ Liberty found that Verizon used the correct logic in a few places, specifically, the denominator of PR-4-03-2100, PR-4-05-2100, and PR-4-05-2341, and the numerator and denominator of PR-4-08-2341.

⁵⁵⁷ Liberty found that Verizon used the incorrect logic in PR-8-01-2200 and PR-8-02-2200 (resale specials) and PR-8-02-2341 (resale 2-Wire Digital).

⁵⁵⁸ Response to Data Request #840.

Liberty recommends that Verizon correct the logic in its PR-4-01 through PR-4-03, PR-4-05, PR-4-08, PR-6-01, PR-6-03, PR-8-01, and PR-8-02 algorithms to include these migrations in the denominator and numerator as appropriate. Liberty also recommends that Verizon remove the unnecessary code for “as is” migrations from its algorithms for PR-4-04, PR-5-01, and PR-5-02.

Verizon Change Controls

Verizon issued a large number of change controls during the audit period, some of which it completed prior the September 2003 data month, which was the focus of Liberty's recalculation efforts. Because Verizon provided only the June 2003 version of its CMAs for Virginia, Liberty could validate the appropriateness of many of the changes only through a series of data requests. Liberty discusses some of the changes that affect several PR metrics here, and certain changes that affected specific metrics in later sections of the report.

For the PR-1 through PR-8 metrics, Verizon had code in its UNE Line Splitting algorithms that incorrectly included retail Line Sharing orders. Verizon issued Metric Change Control No. 10130 and corrected the error beginning with the July 2003 data month. Liberty asked Verizon to describe the changes that it made to its programming logic.⁵⁵⁹ Verizon explained that it removed the code that selected retail orders and retained the code that selected UNE Line Splitting orders, which corrected the problem. However, Liberty found that Verizon introduced an error into one of the algorithms, PR-1-01-3345, because it incorrectly removed the logic step that excluded Verizon affiliate data. Liberty recommends that Verizon correct its algorithm for this measure.

Verizon found that it was not including the correct product sub-categories for ASR-related service orders for the Total Specials product group in its PR-4 and PR-8 metrics. Verizon issued Metric Change Control No. 10216 and corrected this error effective with the September 2003 data month. Verizon explained that it added logic to include orders with a product type of “other.”⁵⁶⁰ Liberty believes that this programming change corrected the problem.

Verizon recently changed the standard interval for resale (POTS, specials and 2-Wire) “as is” migrations to the same day.⁵⁶¹ Verizon issued Metric Change Control No. 10317 to modify the logic that it uses in its PR-1 and PR-3 resale algorithms to include these migration orders in results while excluding those for which the customer requested an interval greater than the standard.⁵⁶² Verizon made the change effective with the October 2003 data month. Liberty reviewed the programming changes and found that Verizon changed the logic in such a way as to

⁵⁵⁹ Responses to Data Requests #470 and #844.

⁵⁶⁰ Response to Data Request #779. Verizon also confirmed that it corrected an error in its PR-4-03 algorithm that incorrectly included IOF orders in the UNE specials product group.

⁵⁶¹ Interview #4, November 6, 2003. In its revised response to Data Request #775, Verizon stated that the same day interval also applied to UNE POTS platform.

⁵⁶² In response to Data Request #821, Verizon clarified that all resale “as is” migrations are non-dispatch. Verizon stated that as part of the change control it planned to remove superfluous code for resale “as is” migrations from certain dispatch sub-metrics, such as PR-4-04, PR-5-01, and PR-5-02. In response to Data Request #849, Verizon clarified that it did not change the PR-4-01 algorithms as part of the change control, although Verizon had identified them as affected metrics.

correctly include all resale "as is" migrations in PR-1 and PR-3 results as long as the customer requested the standard interval.⁵⁶³

Verizon found that its system recognized UNE-P ISDN orders as both UNE 2-Wire Digital orders and POTS platform orders, and that it was reporting these orders in both product groups. Verizon issued Metric Change Control No. 10398 to remove these orders from its POTS total product group algorithms for the PR-4, PR-5, and PR-8 metrics.⁵⁶⁴ Verizon completed the change effective with the August 2003 data month. Liberty asked Verizon to describe the changes that it made to its programming logic. Liberty reviewed the programming changes and found that they would correct the problem.⁵⁶⁵

Verizon found that it was not correctly identifying the Line Splitting CLEC on Line Splitting orders for the PR-1 through PR-8 metrics, and issued Metric Change Control No. 10477, which it completed for the August 2003 data month. Verizon clarified that the error did not affect CLEC aggregate results, because although Verizon did not identify the CLEC that ordered the service correctly, it did correctly identify the order as Line Splitting.⁵⁶⁶

Verizon found that its metric algorithms for the UNE 2-Wire xDSL Line Sharing product group for PR-1 through PR-8 were incorrect because they included Line Splitting as well as Line Sharing orders. Verizon issued a change control and corrected the problem effective with the October 2003 data month.⁵⁶⁷ Liberty requested that Verizon provide the programming changes that it made. Verizon explained that it removed the code that selected UNE Line Splitting orders, and retained the code that selected retail Line Sharing orders.⁵⁶⁸ Liberty was satisfied that Verizon's changes corrected the problem.

Verizon changed the standard interval for residential non-dispatch cut-through orders, which are orders where a customer already has facilities but is only ordering a new line. Previously, Verizon completed an order the next day if it received a CLEC order by noon. Verizon removed the noon constraint, so that Verizon will now complete a cut-through order the next day regardless of when it received the order.⁵⁶⁹ This change affects resale POTS and UNE POTS platform product results for PR-1 and PR-3. Verizon issued Metric Change Control No. 10139 to modify the field it uses to identify, and exclude from the PR-1 and PR-3 metrics, those orders for which the customer requested an interval greater than the standard.⁵⁷⁰ Verizon completed its changes effective with the August 2003 data month.⁵⁷¹ Liberty reviewed the programming changes and concluded that they were appropriate.

⁵⁶³ Clarification responses to Data Requests #777 and #871.

⁵⁶⁴ During Interview #4, November 6, 2003, Verizon stated that it had previously removed these orders from specific UNE platform product group results under a separate change control.

⁵⁶⁵ Response to Data Request #787.

⁵⁶⁶ Response to Data Request #462.

⁵⁶⁷ Metric Change Control No. 10329.

⁵⁶⁸ Response to Data Request #788.

⁵⁶⁹ Interview #4, November 6, 2003.

⁵⁷⁰ Verizon typically uses the original appointment code to identify orders with intervals greater than the standard.

⁵⁷¹ Response to Data Request #784 and written clarification response to Interview Request #37 dated January 23, 2004.

5. Findings and Recommendations

The following findings relate to the PR domain in general. Liberty includes additional findings in the specific PR metric discussions that follow.

Verizon's documentation for the PR measures is not accurate and complete.

Liberty found that while much of the documentation that it received for its use in this audit was satisfactory, the CMAs were not. Verizon provided Liberty with the June 2003 CMAs, even though Liberty was auditing July-September results and Verizon had implemented a number of change controls between June and September. Verizon was unable to provide Liberty with a version of the CMAs updated for the September 2003 data month. As a result, Liberty had to issue many data requests to learn what the September 2003 algorithms contained. Also, Liberty found many cases in which the algorithms initially appeared incorrect; however, Verizon later clarified that the error was in the mapping of the production code to the June 2003 CMA document. Liberty never received complete PR business rules that Verizon could attest to being accurate. Liberty recommends that Verizon publish clear, accurate, and current CMAs that the Commission or CLECs could use to replicate Verizon's results.

Verizon does not correctly distinguish between the former Bell Atlantic and GTE territories on orders and associated service orders.

Verizon's method for determining the territory, Bell Atlantic or GTE, to which a service order relates causes it to report some service orders in provisioning results that should not be, and vice versa. The problem also affects results in the ordering domain.

Liberty found that Verizon labeled three trunk service orders as related to the former Bell Atlantic territory (and therefore included them in provisioning results), but labeled the associated ASRs as related to the former GTE territory (and therefore excluded the ASRs from ordering results). Verizon uses a different field in the provisioning domain to identify former GTE service orders than it uses to identify former GTE orders in the ordering domain. The inconsistencies occurred in both directions. Liberty found that of the 13 service orders Verizon labeled as related to the former GTE territory in the provisioning domain (and thus excluded from results), six corresponded to ASRs that Verizon labeled as related to the former Bell Atlantic territory in the ordering domain.

Liberty did some testing to determine if the same problem might exist with LSR-related service orders. Liberty found that Verizon labeled approximately 80 service orders in September 2003 as related to the former GTE territory in the provisioning domain but labeled the PONs to which they corresponded as related to the former Bell Atlantic territory in the ordering domain. Liberty recommends that Verizon fully investigate the nature and extent of the problem with discrepancies in the former territory designation between the ordering and provisioning domains. Liberty recommends that Verizon implement necessary changes to ensure that it correctly labels orders and the associated service orders.

Verizon treats the majority of cancelled LSR-related service orders as non-dispatched orders for PR-1, regardless of whether the order would have involved a dispatch if completed.

Verizon uses a dispatch indicator for LSR-related service orders that is not reliable for a large portion of cancelled orders. In PR-1, Verizon reports both completed and cancelled orders. For LSR-related service orders, Verizon calculates a dispatch indicator in NMP that it uses in its metric algorithms. For cancelled orders, the dispatch indicator generally remains set at its default value of "N," regardless of whether the order would have involved a dispatch had it been completed.

For resale 2-Wire Digital, UNE 2-Wire Digital, and UNE xDSL orders, however, Verizon uses logic involving the inward line count field to identify whether the cancelled order would have required a dispatch. Verizon noted that it does so to improve the delineation of dispatched/non-dispatched orders where possible. The dispatch indicator remains an unreliable field for cancelled LSR-related service orders for other products, specifically resale POTS, UNE POTS, UNE Line Sharing, and UNE Line Splitting. The problem affects PR-1-01 through PR-1-05, in which Verizon reports dispatched and non-dispatched orders separately. Liberty recommends that Verizon seek a clarification to the PR-1 Guidelines to explain that it categorizes all cancelled orders for all product types except resale 2-Wire Digital, UNE 2-Wire Digital, and UNE 2-Wire xDSL as non-dispatched, regardless of whether the order would have involved a dispatch had it been completed. Verizon subsequently stated that it planned to add the inward line count logic to other product group algorithms. In that case, Verizon should seek a clarification that reflects its current practice.

Verizon makes certain general exclusions to the PR metrics that the Guidelines do not reflect, and adopts conventions for other exclusions that are inconsistent with the Guidelines.

Verizon makes several exclusions to the PR metrics that, while appropriate, the Guidelines do not reflect. Verizon should request a change to the Guidelines to explicitly list these exclusions, including:

- Orders for products listed as having a "negotiated" interval in the Product Interval Guide, which Verizon assigns an "X" original appointment code (PR-1 and PR-3 only)
- Order types associated with the global exclusion indicator, including billing-only orders associated with Line Share activity, Verizon-generated disconnect orders for the data portion of Line Sharing orders or as a companion to migration orders, PARTS orders, UNE ISDN PRI port service orders, corporate orders, invalid orders with no service order numbers, and directory listing, advertising, and special billing orders
- Orders that require loop qualification, but were qualified automatically by Verizon's system (PR-1 and PR-3 only)

- Companion disconnect orders to migration orders, which Verizon considers administrative (PR-1-12 only)
- Federal government orders, which Verizon considers administrative.

While Verizon adopted the federal government order exclusion, it did not apply that exclusion uniformly to all PR metrics. Verizon found that it was not excluding federal administrative orders from certain metrics, and issued change controls to correct the error in certain PR-4, PR-5, and PR-8 algorithms. Liberty found that the logic was missing from many other PR retail algorithms, and that the logic was incorrectly included in some wholesale algorithms. Liberty recommends that Verizon include this exclusion correctly in all of its retail algorithms, and remove it from wholesale algorithms. Verizon stated that it would issue change controls to correct the errors.

The Guidelines for PR-1 and PR-3 require that Verizon exclude orders for certain products requiring manual loop qualifications. Verizon does not require loop qualification for disconnect orders, and therefore does not apply this exclusion for disconnections. This convention is reasonable but Verizon should seek clarification to the Guidelines to make this explicit for PR-1-12, which measures disconnections.

Liberty found that Verizon did not consistently apply the exclusion for manual loop qualification. Verizon explained that the exclusion did not apply for the resale 2-Wire product group because Verizon performs manual loop qualifications on loops, and these products are ISDN circuits. Verizon also explained that the exclusion did not apply for the non-dispatch UNE 2-Wire Digital product group because Verizon does not perform a manual loop qualification on orders that did not require a dispatch. Liberty recommends that Verizon seek a clarification to the PR-1 and PR-3 Guidelines to make clear for which resale and UNE products, and for what types of orders (*i.e.*, dispatched or non-dispatched) this exclusion is relevant.

Verizon should also seek a clarification to remove the “additional segments on orders” exclusion in the Guidelines, as it does not apply to the Virginia order process.

Verizon has a significant number of ASR-related service orders with a missing original appointment code; this may cause Verizon to treat them incorrectly in the calculation of PR metrics.

Liberty found that Verizon did not assign an original appointment code to roughly ten percent of the non-trunk ASR-related service orders. Verizon explained that an order could have a blank appointment code in certain circumstances, such as when the order completed in WFA but not in ASOP. Verizon's algorithms treat orders with no original appointment codes as though the customer selected the standard interval or a shorter interval, even though that may not be the case. Stated differently, Verizon includes orders in the PR-1 measures that have a blank original appointment code, even if the customer requested an interval greater than the standard. The lack of an original appointment code means that Verizon's algorithms may treat the orders incorrectly. Liberty recommends that Verizon implement a business process to manually review

and assign a correct original appointment to such orders so that Verizon treats them appropriately in the PR-1 metrics.

Verizon does not exclude snip-and-restore orders from its wholesale metric results for PR-1 through PR-5 and PR-8.

Liberty found that Verizon did not exclude snip-and-restore orders from its wholesale results for the PR-1 through PR-5 and PR-8 metrics. Verizon stated that it removed the exclusion for suspend and restore orders from its wholesale algorithms effective with the March 2003 data month. Verizon indicated that it proposed a clarification to the New York Carrier Working Group to add the word "retail" to the Guidelines. Nonetheless, Verizon is not in compliance with the Virginia Guidelines as written. Liberty recommends that Verizon seek a clarification to the Guidelines to make it consistent with its practice for this exclusion.

The Guidelines need clarification regarding Verizon's definition for the CLEC trunk product group and the retail parity standard for this product group.

Liberty found that Verizon did not define the CLEC trunk product group consistently across the PR metrics. Verizon includes both CLEC trunks and reciprocal trunks in the CLEC trunk product group in PR-4, PR-6, and PR-8, although only the Guidelines for PR-4 explicitly state that Verizon should include reciprocal trunks. For PR-1 and PR-5, Verizon defines this product group to include only CLEC trunks. While Verizon's approach could be reasonable, the Guidelines do not entirely support it. Liberty recommends that Verizon seek a clarification to the Guidelines for PR-1, PR-5, PR-6, and PR-8 to explicitly state which types of trunks it includes or excludes in the CLEC trunk product group.

Verizon excludes Verizon affiliate and VADI orders from all wholesale results and excludes Verizon affiliate orders from all retail results except the retail parity for CLEC trunks, which are inter-exchange carrier Feature Group-D (IXC FGD) trunks. Verizon includes orders from both unaffiliated long-distance suppliers (some of which also are CLECs) and from Verizon affiliates in its retail parity result for IXF/FGD trunks. Liberty recommends that Verizon seek a clarification to the Guidelines to indicate that it does not exclude Verizon affiliate data from the retail parity standard for trunks, and that it includes data from unaffiliated suppliers in this result.

Verizon incorrectly defines many of the UNE POTS product groups for the PR metrics.

Liberty found that Verizon did not define its UNE POTS product groups consistently across the PR metrics, and excluded hot cuts in many cases even though the Guidelines do not list them as exclusions for any measure except PR-3. Verizon uses a hot cut indicator value of "Y" to indicate both Verizon-to-CLEC hot cuts and CLEC-to-CLEC migrations. Verizon uses this field to either include or exclude both types of orders from the various UNE POTS product groups in the PR metrics.

Verizon recently issued a change control notice indicating that it incorrectly included CLEC-to-CLEC migrations in the PR-3-08 hot cut loop product result. In addition to the error in the PR-3-08 UNE hot cuts product group, Liberty found that Verizon incorrectly includes CLEC-to-CLEC migrations in the POTS loop hot cut product group in PR-6-02. Verizon also incorrectly excludes both hot cuts and CLEC-to-CLEC migrations from the POTS platform, POTS loop, POTS loop new, and POTS total product groups. Liberty recognizes that the error may have no effect on reported results for certain product groups such as POTS loop new, but in such cases Verizon should revise its algorithms to remove the unnecessary coding. The POTS total and POTS loop product groups, on the other hand, should include hot cuts and Verizon is therefore reporting results for these measures and product groups incorrectly. Liberty recommends that Verizon either correct its algorithms for these measures or seek clarifications to the Guidelines to define the product groups in the same way that Verizon does in its algorithms.

Appendix B to the Guidelines needs clarification.

Verizon uses logic in some of its metric algorithms that refer to a MAC code of "EO," denoting "Engineering – Other." Verizon indicated that it did not currently use this code in Virginia; however, because Verizon uses logic involving this code in some of its metric algorithms, Liberty recommends that Verizon seek a clarification to Appendix B to include and define this MAC code, and to indicate the states in which it is used.

Verizon incorrectly excludes resale "as is" migrations from resale product group results in PR-4, PR-6, and PR-8.

Verizon includes resale "as is" migration orders in its resale product groups (POTS, 2-Wire Digital, and specials). However, Liberty found a recurring error in many of Verizon's PR-4, PR-5, PR-6, and PR-8 algorithms for the resale product groups. Verizon includes a logic step in these algorithms that select orders with original appointment codes of M, R, W, X, C, or S. Verizon assigns resale "as is" migrations (which are record orders) an original appointment code of "K." As such, Verizon's algorithms effectively exclude the "as is" migrations from results. Verizon subsequently acknowledged the error.

The error affects nearly all of Verizon's algorithms for the resale products for PR-4-01 through PR-4-03, PR-4-05, and PR-4-08. The error occurs in the PR-4-04, PR-5-01, and PR-5-02 metrics, but it has no effect because all "as is" resale migrations are non-dispatch, and would therefore never be included in the denominator or numerator of these dispatch metrics. Liberty found that Verizon used the incorrect logic in all of its resale product algorithms for the PR-6-01 and PR-6-03 measures, and for several of the product results for the PR-8-01 and PR-8-02 metrics. Liberty recommends that Verizon correct the logic in the affected PR-4, PR-6, and PR-8 algorithms to include these migrations in the denominator and numerator as appropriate. Liberty also recommends that Verizon remove the unnecessary code for "as is" migrations from its algorithms for PR-4-04, PR-5-01, and PR-5-02.

Verizon's algorithm for PR-1-01-3345 contains an error, and does not exclude Verizon affiliate orders.

Verizon recently completed a change control to amend its programming code for the UNE Line Splitting product group in the PR-1 through PR-8 metrics. During this change, Verizon incorrectly omitted the logic statement that excludes Verizon affiliate data from the PR-1-01-3345 result. Liberty recommends that Verizon correct its algorithm for this measure.

B. PR-1, Average Interval Offered

1. Background

The metrics within PR-1 report on the average interval offered by Verizon for completed and cancelled orders. Verizon reports ten PR-1 sub-metrics in Virginia. The Guidelines define the average interval offered as the number of business days between the order application date (the date that Verizon receives a valid service request) and the committed due date (the appointment date). For trunks, Verizon should calculate this metric from the receipt of a clean ASR to the due date on the firm order commitment (FOC). The Verizon web site contains specific intervals offered, also referred to as standard intervals, for the various products and services. Under the Guidelines, Verizon should report cancelled orders in the month during which the cancellation occurs.

The Guidelines define "complex orders" as orders for 2-Wire Digital Services (ISDN), 2-Wire xDSL loops, and 2-Wire xDSL Line Sharing and Line Splitting. The Guidelines define "Specials orders" as orders on all designed services, including high capacity (DS1 and DS3), ISDN PRI, 4-Wire xDSL services, digital services, and private lines or foreign served services (foreign exchange service). Verizon reports results for Enhanced Extended Loops (EELs) and Inter-Office Facilities (IOFs) separately.

The PR-1 sub-metrics report on distinct products types as detailed in the table below:

Sub-Metric	Resale	UNE	Trunks
PR-1-01	<ul style="list-style-type: none"> • POTS – Residence • POTS – Business • 2-Wire Digital Services 	<ul style="list-style-type: none"> • POTS – Platform • 2-Wire Digital Services • 2-Wire xDSL Loops • 2-Wire xDSL Line Sharing • 2-Wire xDSL Line Splitting 	
PR-1-02	<ul style="list-style-type: none"> • 2-Wire Digital Services 	<ul style="list-style-type: none"> • 2-Wire Digital Services • 2-Wire xDSL Loops • 2-Wire xDSL Line Sharing • 2-Wire xDSL Line Splitting 	
PR-1-03	<ul style="list-style-type: none"> • POTS – Residence • POTS – Business 	<ul style="list-style-type: none"> • POTS – Platform • POTS – Loop 	
PR-1-04 and PR-1-05	<ul style="list-style-type: none"> • POTS – Total 	<ul style="list-style-type: none"> • POTS – Platform • POTS – Loop 	
PR-1-06	<ul style="list-style-type: none"> • DS0 	<ul style="list-style-type: none"> • DS0 	

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PR-1-07	• DS1	• DS1	
PR-1-08	• DS3	• DS3	
PR-1-09		• IOF • EEL – Backbone • EEL – Loop	• Interconnection Trunks (192 or fewer trunks) • CLEC Trunks (more than 192 trunks and unforecasted trunks)
PR-1-12	• POTS (including Complex) • Specials	• POTS (including Complex) • Specials	

The Guidelines list the following exclusions from the PR-1 calculations in addition to the standard exclusion for Verizon affiliate data:

- Verizon test orders
- Orders for which the customer requested due date is beyond the standard available appointment interval
- Orders with invalid intervals (*e.g.*, negative or over 200 business days)
- Verizon administrative orders
- Additional segments on orders
- Orders suspended for non-payment and associated restore orders
- Orders that have been neither completed nor cancelled
- Special project PONS
- Orders requiring manual loop qualification.

The Guidelines also require the exclusion of disconnect orders from all PR-1 sub-metrics except PR-1-12.

Verizon reports all of the PR-1 sub-metrics on a statewide basis for individual and aggregate CLECs, and for Verizon retail. Verizon reports separate VADI results for DSL metrics only. The standard for PR-1-01 and PR-1-02, except for UNE 2-Wire xDSL Line Sharing, UNE 2-Wire xDSL Line Splitting, and UNE 2-Wire xDSL Loops, is parity with Verizon retail. The standard for UNE 2-Wire xDSL Line Sharing and UNE 2-Wire xDSL Line Splitting is parity with VADI; there is no standard for UNE 2-Wire xDSL Loops. The standard for PR-1-03, PR-1-04, PR-1-05, PR-1-06, PR-1-07, PR-1-08, PR-1-09, and PR-1-12 is parity with retail, except for PR-1-09 UNE IOF, UNE EEL-Backbone, and UNE EEL-Loop products, which have no standard.

The Guidelines provide the following formulas for the PR-1 sub-metrics:

PR-1-01: Average Interval Offered – Total No Dispatch

(Sum of committed due date minus the application date for orders without an outside dispatch by product group)/(Number of orders without an outside dispatch by product group)

PR-1-02: Average Interval Offered – Total Dispatch

(Sum of committed due date minus the application date for orders with an outside dispatch by product group)/(Number of orders with an outside dispatch by product group)

PR-1-03: Average Interval Offered – Dispatch One to Five Lines

(Sum of committed due date minus the application date for POTS orders with an outside dispatch by product group for orders with one to five lines)/(Number of POTS orders with an outside dispatch by product group for orders with one to five lines)

PR-1-04: Average Interval Offered – Dispatch Six to Nine Lines

(Sum of committed due date minus the application date for POTS orders with an outside dispatch by product group for orders with six to nine lines)/(Number of POTS orders with an outside dispatch by product group for orders with six to nine lines)

PR-1-05: Average Interval Offered – Dispatch \geq Ten Lines

(Sum of committed due date minus the application date for POTS orders with an outside dispatch by product group for orders with ten or more lines)/(Number of POTS orders with an outside dispatch by product group for orders with ten or more lines)

PR-1-06: Average Interval Offered – Specials DS0

(Sum of committed due date minus the application date for Special Services orders for DS0 services)/(Number of Special Services orders for DS0 services)

PR-1-07: Average Interval Offered – Specials DS1

(Sum of committed due date minus the application date for Special Services orders for DS1 services)/(Number of Special Services orders for DS1 services)

PR-1-08: Average Interval Offered – Specials DS3

(Sum of committed due date minus the application date for Special Services orders for DS3 services)/(Number of Special Services orders for DS3 services)

PR-1-09: Average Interval Offered – Total

(Sum of committed due date minus the application date for orders by product group)/(Number of orders by product group)

PR-1-12: Average Interval Offered – Disconnects

(Sum of committed due date minus the application date for disconnect orders by product group)/(Number of orders by product group)

The PR-1 measure is not included in Verizon's PAP.

2. Analysis and Evaluation

The sub-metrics within PR-1 report Verizon's average appointment or "offered" interval for dispatched and non-dispatched service orders.

Verizon includes N, T, and C LSR-related service orders (and service orders with N and C activity for product that CLECs order via ASRs) in all PR-1 sub-metrics (except PR-1-12). Verizon also includes R (record) service orders associated with "as is" resale migrations in its resale POTS, 2-Wire Digital, and specials products groups.⁵⁷² Because such migrations do not involve a dispatch, Verizon includes them in resale results that measure non-dispatched orders.

Under the Guidelines, specials orders include all designed circuits, 4-Wire circuits (including ISDN PRI and 4-Wire xDSL services), and all DS0, DS1, and DS3 circuits. Verizon reports EEO and IOF products separately.

As discussed in the introductory section, Verizon excludes both Verizon-to-CLEC hot cuts and CLEC-to-CLEC migrations from the UNE POTS platform and UNE POTS loop product groups, even though the Guidelines contain no such exclusion for PR-1.

Liberty examined how Verizon applied the exclusions set forth in the Guidelines. Verizon excludes test orders, administrative orders, orders with invalid intervals, and special project PONs. As noted previously, Verizon correctly excludes suspend for non-payment and associated restore orders from retail, but it does not exclude them from wholesale results. Verizon excludes affiliate data from CLEC results, and excludes disconnect orders from the all the PR-1 sub-metrics except PR-1-12. For certain 2-Wire Digital and 2-Wire xDSL products, Verizon excludes orders requiring manual loop qualification. For a discussion of these exclusions, refer to the introductory section of this chapter.

The Guidelines state that Verizon should exclude orders that are not completed or cancelled. Verizon selects only service orders with a cancelled or completed status in its metric algorithms, and therefore correctly applies this exclusion. Verizon includes those LSR-related service orders with a report period value (CRIS completion date) during the reporting month.⁵⁷³ For ASR-related service orders, Verizon includes orders with a status of cancelled or completed that have

⁵⁷² As Liberty learned during the New Jersey audit, Verizon provisions "as specified" resale migrations via C orders, and includes these in the metric results in the given resale product group.

⁵⁷³ Verizon bases the report period on the CRIS completion date for completed orders. In response to Data Request #837, Verizon clarified that for cancelled orders it uses the date that the CLEC cancelled the order to determine the report period. Pending orders do not have a report period value for the current month and so Verizon would not include them in results.

a status date (which changes whenever there is a change in the status, *e.g.*, from pending to complete, of an order) during the reporting month.

The Guidelines also require that Verizon exclude orders for which the customer requested a due date that is greater than the standard available appointment interval. Verizon accomplishes this exclusion in different ways, depending upon the product. For many of the product groups, Verizon selects orders that have a “S” and “W” original appointment code, which indicates that the customer accepted the offered interval for the product or requested a due date earlier than the standard interval and also submitted an expedite request.⁵⁷⁴ This method is consistent with the Guidelines, because it excludes orders for which the customer requested a later due date. For UNE and retail 2-Wire Digital, 2-Wire xDSL loops, 2-Wire xDSL Line Sharing, and 2-Wire xDSL Line Splitting, Verizon calculates an inclusion indicator field within NMP. Verizon sets the value of the indicator to “Y” if the appointment interval is the same as or shorter than the standard interval, based on a look-up table containing standard intervals and product types.⁵⁷⁵ Liberty concluded that Verizon correctly applies this exclusion for these products.

As discussed in the introductory section, Verizon changed the interval for “as is” migrations in the resale POTS, 2-Wire Digital, and specials product groups to the same day, and changed its wholesale algorithms for these products beginning with the October 2003 data month. Also in the introductory section, Liberty discussed the fact that Verizon’s dispatch indicator for LSR-related cancelled service orders is not accurate in most cases.

For each of the PR-1 measures, Verizon uses a separate algorithm to calculate the result for each product group, as well as a separate algorithm for retail and wholesale results. Verizon uses the LSR Service Order Fact table data for almost all product group results except trunks, EELs, and IOF, for which Verizon uses the ASR Service Order Fact table data. Verizon uses both ASR and LSR Service Order Fact table data to calculate results for UNE specials.

Liberty found that Verizon’s algorithms excluded specific orders (those with PONs beginning with “NAS”) from certain PR-1 wholesale UNE product results.⁵⁷⁶ Verizon explained that it had included code in its algorithms in 2002 to exclude a special project PON in Virginia and that, because it now excludes special projects using separate logic, the code is redundant and no longer necessary.⁵⁷⁷ Liberty recommends that Verizon revise its algorithms for the PR-1 product groups that still contain this code.

PR-1-01 – Average Interval Offered – Total No Dispatch

Verizon includes only non-dispatched orders in PR-1-01 results.

⁵⁷⁴ These products include retail and resale POTS, UNE POTS platform, and UNE POTS loop; resale and retail 2-Wire Digital; and resale, retail, and UNE specials. For ASR-related service orders for products such as DS1, DS3, EELs, and IOF, Verizon includes orders if the original appointment code is blank, “W,” or “S.”

⁵⁷⁵ Response to Data Request #763.

⁵⁷⁶ For example, Liberty found this code in Verizon’s UNE product algorithms for PR-1-01 and PR-1-02-3345, and in PR-1-06-3210.

⁵⁷⁷ Response to Data Request #761.

Liberty examined the algorithms that Verizon uses to calculate the PR-1-01 measures. To calculate the denominator for the measure, Verizon counts the number of non-dispatched completed and cancelled service orders for the given product group. To calculate the numerator for PR-1-01, Verizon sums the appointment intervals for all service orders identified in the denominator.

Liberty recalculated the CLEC aggregate result for PR-1-01-3345 (the UNE xDSL Line Splitting product group) for September 2003 using the LSR Service Order Fact table that Verizon provided.⁵⁷⁸ Liberty replicated Verizon's denominator, as well as the overall result. Liberty also recalculated the retail parity result, which is VADI Line Sharing. Liberty replicated Verizon's denominator, as well as the overall result.

In addition, Liberty recalculated the CLEC aggregate result for PR-1-01-2120, the resale POTS total non-dispatch product group for September 2003. Liberty was initially unable to replicate Verizon's wholesale result; however, Liberty did replicate Verizon's retail result.⁵⁷⁹ Verizon later clarified that it had added additional programming logic to the wholesale algorithm regarding the change to the standard interval for residential non-dispatch cut-through orders.⁵⁸⁰ Liberty recalculated the wholesale result with this change and replicated Verizon's result.

Verizon found that it did not include a check for invalid and negative intervals in its algorithm for the PR-1-01-3140 (UNE POTS platform) sub-metric. Verizon issued Metric Change Control No. 10277 and corrected the problem effective the September 2003 data month.

PR-1-02 – Average Interval Offered – Total Dispatch

Verizon uses the same definitions for these product groups that it uses for PR-1-01 results, except that it selects dispatched orders rather than non-dispatched ones.

Liberty examined the algorithms that Verizon uses to calculate the PR-1-02 measures. To calculate the denominator for the measure, Verizon counts the number of dispatched cancelled and completed service orders for the given product group. To calculate the numerator for PR-1-02, Verizon sums the appointment intervals for all service orders identified in the denominator.

Liberty recalculated the CLEC aggregate result for PR-1-02-3341 (the UNE 2-Wire Digital services product group) for September 2003 using the LSR Service Order Fact table that Verizon provided.⁵⁸¹ Liberty replicated Verizon's denominator, as well as the overall result. Liberty also recalculated the Verizon retail parity result for this product group. Liberty replicated Verizon's denominator, as well as the overall result.

⁵⁷⁸ Response to Data Request #262.

⁵⁷⁹ Verizon reported a denominator of 87,674 and a result of 1.33 days, and Liberty's result was identical.

⁵⁸⁰ Written clarification response to Interview Request #37 dated January 23, 2004.

⁵⁸¹ Response to Data Request #262.

**PR-1-03 – Average Interval Offered – Dispatch One to Five Lines,
PR-1-04 – Average Interval Offered – Dispatch Six to Nine Lines, and
PR-1-05 – Average Interval Offered – Dispatch ³ Ten Lines**

The PR-1-03, PR-1-04, and PR-1-05 sub-metrics are related, and report on dispatched POTS orders by varying order size (*i.e.*, number of lines).

Verizon uses essentially the same definitions for the resale residential and business POTS and UNE POTS platform product groups that it uses for PR-1-01, except that it selects dispatched orders rather than non-dispatched ones. For resale and retail POTS total product groups for PR-1-04 and PR-1-05, Verizon uses the sum of the POTS residential and business product groups. Verizon also reports a UNE POTS loop product group result for PR-1-03 through PR-1-05. Verizon calculates a line counter field in NMP that it uses to select service orders by size in its metric algorithms. Verizon derives the line counter value by summing the number of inward lines and the number of “to” lines on the service order.⁵⁸²

Liberty examined the algorithms that Verizon uses to calculate the PR-1-03, PR-1-04, and PR-1-05 measures. To calculate the denominator for the measures, Verizon counts the number of dispatched cancelled and completed service orders for the given product group (by appropriate number of lines). To calculate the numerators for PR-1-03, PR-1-04, and PR-1-05, Verizon sums the appointment intervals for all service orders identified in the denominator.

**PR-1-06 – Average Interval Offered – Specials DS0,
PR-1-07 – Average Interval Offered – Specials DS1, and
PR-1-08 – Average Interval Offered – Specials DS3**

Verizon reports average interval offered results for retail, resale, and UNE DS0, DS1, and DS3 specials in three separate sub-metrics in PR-1. Verizon reports both dispatched and non-dispatched orders in these measures.

Liberty examined the algorithms that Verizon uses to calculate these results. To calculate the denominator for the measure, Verizon counts the number of cancelled and completed service orders for the given product group. To calculate the numerator, Verizon sums the appointment intervals for all service orders identified in the denominator.

CLECs order UNE DS1 and DS3 facilities via ASRs and DS0 products other than EELs via LSRs. Verizon excludes DS0 EEL orders from PR-1-06 because it reports those separately under PR-1-09.⁵⁸³

In its algorithm for UNE DS1 specials, Verizon includes a module to select LSR-related service orders. Verizon initially told Liberty that CLECs do not currently order these products via LSRs.

⁵⁸² Verizon provided LSR Service Order Fact table field descriptions in response to Data Request #39.

⁵⁸³ Verizon issued Metric Change Control No. 10416 to remove DS0 EELs from PR-1-06 effective with the October 2003 data month. In response to Data Request #782, Verizon stated that there was no impact on reported results because it had no results for ASR-related DS0 (EEL) orders.

However, Verizon later clarified that CLEC orders two types of DS1 on an LRS, platform ISDN PRI and UNE-P T1, both of which are very low volume.⁵⁸⁴ CLECs order most of the DS1 services using an ASR.

Liberty found that Verizon included a logic step in its DS1 retail parity algorithm that excluded ISDN features changes, consistent with the footnote in the retail analog compare table in the Guidelines.⁵⁸⁵

PR-1-09 – Average Interval Offered – Total

Verizon reports average interval offered results for UNE IOF, EEL Backbone, EEL Loop, and trunks in PR-1-09. Verizon reports both dispatched and non-dispatched orders in these measures.

Verizon defines the CLEC trunk product groups in a similar fashion as in the ordering domain for the OR-1 measure, except that it does not include disconnect orders. The first product group includes service orders related to ASRs for 192 or fewer forecasted augment trunks. The second group includes service orders related to ASRs for 192 or more trunks, un-forecasted trunks, and projects.⁵⁸⁶

The Guidelines state that the average interval offered for trunks is the average number of business days between the date that Verizon receives a clean ASR (application date) and the due date it committed to on the FOC (appointment date). The Guidelines also state that the trunk metric measures service orders that Verizon completed between the measured dates.

Liberty examined the algorithms that Verizon uses to calculate these results. To calculate the denominator for the measure, Verizon counts the number of cancelled and completed service orders for the given product group. To calculate the numerator for the measure, Verizon sums the appointment intervals for all service orders identified in the denominator.

Liberty recalculated the CLEC aggregate result for PR-1-09-5020 (the less than 192 forecasted trunks product group) for September 2003 using the ASR Service Order Fact table that Verizon provided.⁵⁸⁷ Liberty replicated Verizon's denominator, as well as the overall result. Liberty also recalculated the Verizon retail parity result for this product group. Liberty replicated Verizon's denominator, as well as the overall result.

In addition, Liberty recalculated the CLEC aggregate result for PR-1-09-3512 (the EEL loop product group) for September 2003. Liberty replicated Verizon's denominator, as well as the overall result.

⁵⁸⁴ Response to Data Request #822.

⁵⁸⁵ Response to Data Request #824.

⁵⁸⁶ The glossary to the Guidelines defines projects as any CLEC-designated request for a new trunk group, an augment for more than 384 trunks, complex (E911 or directory assistance) requests, or requests out of the ordinary requiring special coordination, such as rearrangements.

⁵⁸⁷ Response to Data Request #262. Liberty initially found that Verizon's algorithm for the trunk product was incorrect. In response to Data Request #864, Verizon clarified that it had a mapping error when it produced the CMA for this measure, and that the production code was correct.

PR-1-12 – Average Interval Offered – Disconnects

Verizon reports PR-1-12 resale and UNE results for the POTS (including complex) and specials product groups. The Guidelines define complex orders as those including 2-Wire Digital services (ISDN), 2-Wire xDSL loops, and 2-Wire xDSL Line Sharing and Line Splitting. The retail parity for the specials product group is retail specials. The retail parity for the POTS including complex group is POTS Total (All), which the glossary to the Guidelines defines as business and residential simple POTS plus ISDN Basic Rate Interface (BRI), complex.

Liberty found that Verizon's programming logic for the POTS product groups in PR-1-12 was confusing, primarily because Verizon had unnecessary or redundant code in some of the algorithms.⁵⁸⁸ Verizon's metric algorithm includes POTS, 2-Wire Digital, and xDSL orders in the UNE POTS and complex product group. Verizon stated that it includes Line Sharing disconnect orders in retail POTS because Verizon provides the POTS service, and that it counts Line Splitting disconnect orders as UNE POTS because Verizon receives these orders from the CLEC providing the POTS service.⁵⁸⁹ Verizon's algorithms for the resale POTS and complex product group and the retail POTS Total (All) product group select POTS, 2-Wire Digital, and xDSL products. Liberty recommends that Verizon seek a clarification to the Guidelines to make explicit the types of orders it includes in each product group. Liberty also recommends that Verizon clean up its algorithms for these products.

For all product groups, Verizon includes in the PR-1-12 measure all D and F orders.⁵⁹⁰ For LSR-related service orders, Verizon applies another logic step in its algorithms that also selects change orders that have a disconnect flag. NMP sets the disconnect flag to "Y" for C orders that have outward activity but no inward activity. This treatment is reasonable but not specified in the Guidelines definition for the denominator of this measure. Liberty recommends that Verizon seek a clarification to the Guidelines regarding the disconnect orders that it includes in the measure.

Verizon stated that the standard interval for D, F, and C disconnect orders for POTS and complex orders is the same day. Verizon stated that the interval for specials varies by the product and number of lines to be disconnected, and can range from the same day to six days. Verizon generally assigns an original appointment code of "K" to D and F orders (unless they are administrative orders, in which case Verizon assigns a code of "Y").⁵⁹¹ As such, Verizon is unable to apply the Guidelines exclusion regarding orders where the customer requested a later date than the offered interval for these orders, *i.e.*, orders with an original appointment code of "X." Verizon can, however, check the original appointment code for disconnects on C orders.⁵⁹²

⁵⁸⁸ For example, Verizon's algorithm for the resale POTS and complex product group includes orders for xDSL products, although there is no such product for resale.

⁵⁸⁹ Response to Data Request #880.

⁵⁹⁰ Verizon includes ASR-related service orders with "D" activity.

⁵⁹¹ Interview #4, November 6, 2003.

⁵⁹² Liberty found that Verizon's algorithm for resale specials included a logic step to exclude C-disconnect orders with an original appointment code of "K." In response to Data Request #884, Verizon explained that the code was

Verizon's approach is reasonable given its business practices; however, it is not in compliance with the Guidelines. Liberty recommends that Verizon seek a clarification to the Guidelines to indicate that this exclusion applies to only C disconnection orders, and not D or F disconnection orders, for the PR-1-12 measure.

Liberty found that Verizon did not always exclude administrative orders from the PR-1-12 metric results. In some algorithms, Verizon correctly excluded D and F administrative orders (*i.e.*, those with an original appointment code of "Y"). In others, Verizon did not exclude administrative D and F orders. Verizon acknowledged that its programming code was not consistent, and noted that the error had no effect on reported results because it had no D or F administrative orders during the July to September 2003 period.⁵⁹³ Liberty recommends that Verizon correct its PR-1-12 algorithms to properly exclude administrative orders from all product group results.

As noted in the introductory section, Verizon creates a disconnect order as a companion to a resale migration order establishing the reseller on the account. Because Verizon excludes these migration disconnect orders through a global exclusion, it omits them from the PR-1-12 results.

Liberty examined the algorithms that Verizon uses to calculate the PR-1-12 measure. To calculate the denominator, Verizon counts the number of cancelled and completed service orders for the given product group. To calculate the numerator, Verizon sums the appointment intervals for all service orders identified in the denominator.

Liberty found that Verizon had an error in its algorithm for the retail parity POTS Total (All) measure. Verizon excludes disconnections on C orders where the customer requested an interval shorter than the standard, which is not an exclusion for PR-1. Verizon explained that the standard interval for these orders is the same day, and therefore the error has no impact on metric results (because there would be no orders with an interval shorter than same day).⁵⁹⁴ However Liberty also found the same logic in Verizon's PR-1-12 algorithms for the resale specials, retail specials, and UNE POTS and complex product groups, which ostensibly do not all have a same-day standard interval. Liberty recommends that Verizon correct its algorithms to cease excluding orders where the customer requested an interval shorter than the standard.

Verizon found that it did not properly include ASR disconnect orders in the UNE specials product group results for PR-1-12, and issued Metric Change Control No. 10352 to correct the problem.⁵⁹⁵ Verizon implemented the change effective with the September 2003 data month. Liberty asked Verizon to provide the programming changes that it made. Liberty reviewed these changes and found that they corrected the problem.⁵⁹⁶

unnecessary, because C-disconnect orders only have original appointment codes of M, W, S, or X. Verizon indicated that it would issue a change control to remove the unnecessary code.

⁵⁹³ Response to Data Request #890. Verizon also stated that it planned to issue a change control to correct the code.

⁵⁹⁴ Response to Data Request #883.

⁵⁹⁵ Verizon designates disconnect orders in ASOP with an original appointment code of "K" and its algorithm does not select orders with this code.

⁵⁹⁶ Response to Data Request #783.

C. PR-3, Completed within Specified Number of Days (1-5 Lines)

1. Background

The PR-3 measure reports on Verizon's ability to complete orders with five or fewer lines within a specified time frame. Verizon reports six PR-3 sub-metrics in Virginia.

Under the Guidelines, Verizon should calculate the completion interval as the number of business days from the application date, when Verizon receives a valid service request, to the date that Verizon completes work on the order. Verizon should treat any order received after 5:00 p.m. as if it received the order on the following business day. Verizon's web site contains specific intervals offered for the various products and services.

The PR-3 sub-metrics report on distinct products types as detailed in the table below:

Sub-Metric	Resale	UNE
PR-3-01	• POTS – Total	• POTS – Platform
PR-3-03		• 2-Wire xDSL Line Sharing • 2-Wire xDSL Line Splitting
PR-3-06 and PR-3-09	• POTS – Total	• POTS – Platform • Loop – New
PR-3-08		• Hot Cut Loops
PR-3-10		• 2-Wire xDSL Loops • 2-Wire Digital Loops

The Guidelines list the following exclusions from the PR-3 calculations in addition to the standard exclusion for Verizon affiliate data:

- Verizon test orders
- Disconnect orders
- Orders for which the customer requested due date is beyond the standard available appointment interval
- Orders with invalid intervals
- Verizon administrative orders
- Additional segments on orders
- Orders that are not complete
- Orders suspended for non-payment and associated restore orders
- Orders that are completed late due to end-user or CLEC caused delay
- Coordinated cut-over UNEs such as loops or number portability orders
- Special project PONs
- Orders for 2-Wire Digital, 2-Wire xDSL Loop, 2-Wire xDSL Line Sharing, and 2-Wire xDSL Line Splitting missed due to facility reasons

- For PR-3-03 and PR-3-10 2-Wire Digital and 2-Wire xDSL Loop, and for PR-3-03 2-Wire xDSL Line Sharing and 2-Wire xDSL Line Splitting, orders that require a manual loop qualification.

Verizon reports all of the PR-3 sub-metrics on a statewide basis for individual and aggregate CLECs, and for Verizon retail. The standard for PR-3-01, PR-3-06, and PR-3-09 is parity with retail. The standard for PR-3-03 is 95 percent within the lesser of three business days or parity with VADI. The standard for PR-3-08 is 95 percent. For sub-metric PR-3-10, the standard for UNE 2-Wire xDSL Loops is 95 percent, while the standard for UNE 2-Wire Digital Loops is parity with retail.

The Guidelines provide the following formulas for the PR-3 sub-metrics:

PR-3-01: % Completed in One Day One to Five Lines – No Dispatch

(Number of no dispatch POTS orders with one to five lines where the completion date minus application date is one or fewer days)/(Number of no dispatch POTS orders with one to five lines)

PR-3-03: % Completed in Three Days One to Five Lines – No Dispatch

(Number of no dispatch POTS orders with five or fewer lines where the completion date minus application date is three or fewer days)/(Number of no dispatch POTS orders with one to five lines)

PR-3-06: % Completed in Three Days One to Five Lines – Dispatch

(Number of dispatch POTS orders with one to five lines where the completion date minus application date is three or fewer days)/(Number of dispatch POTS orders with one to five lines)

PR-3-08: % Completed in Five Days One to Five Lines – No Dispatch

(Number of no dispatch POTS orders with one to five lines where the which completion date minus application date is five or fewer days)/(Number of no dispatch POTS orders with one to five lines)

PR-3-09: % Completed in Five Days One to Five Lines – Dispatch

(Number of dispatch POTS orders with one to five lines where the completion date minus application date is five or fewer days)/(Number of dispatch POTS orders with one to five lines)

PR-3-10: % Completed in Six Days One to Five Lines – Total

(Number of orders, by specified product, with one to five lines where the completion date minus application date is six or fewer days)/(Number of orders, by product type, with one to five lines)

Three of the PR-3 sub-metrics are relevant to Verizon's PAP. For the July and August 2003 reporting months, Verizon incurred a \$10,275 penalty related to this measure.⁵⁹⁷

2. Analysis and Evaluation

The PR-3 sub-metrics report Verizon's performance in completing dispatched and non-dispatched service orders for one to five lines within a specified number of days. As discussed in more detail in the introductory section, Verizon calculates the completion interval as the difference between the application date and the work completion date.

Verizon generally defines the product groups for PR-3 in the same way that it defines them for PR-1. However, Liberty found that Verizon defined the UNE POTS platform product group in PR-3 to include both platform and "other" products, which is different from how Verizon defined this product group for other PR metrics.⁵⁹⁸ Verizon confirmed that the UNE POTS platform product group should contain only platform products, and stated that it planned to issue a change control to remove the unnecessary code. Verizon indicated that the error had no impact on reported results.⁵⁹⁹

Verizon also reports two other product groups, UNE POTS new loops and UNE hot cut loops, in PR-3. For the UNE POTS new loop product group, Verizon includes UNE-L orders as long as there is at least one inward line on the order, which indicates a new loop.

Liberty examined how Verizon applied the exclusions set forth in the Guidelines. Verizon excludes test orders, administrative orders, disconnect orders, special project PONs, and orders with invalid intervals. As noted previously, Verizon correctly excludes suspend for non-payment and associated restore orders from retail but does not exclude them from wholesale results. Verizon excludes affiliate data from CLEC results. For certain 2-Wire Digital and 2-Wire xDSL products, Verizon excludes orders requiring manual loop qualification. For a discussion of these exclusions, refer to the introductory section of this chapter.

The Guidelines require that Verizon report only completed orders in PR-3. Verizon accomplishes this exclusion by including only those LSR-related service orders with a report period value (the month in which the CRIS completion date for the order falls) during the reporting month.

The Guidelines also require that Verizon exclude orders for which the customer requested a due date that is greater than the standard available appointment interval. As noted in PR-1, Verizon accomplishes this exclusion correctly.

⁵⁹⁷ Responses to Data Requests #198 and #203 (July and August 2003 C2C Reports).

⁵⁹⁸ Verizon selects orders with a Product Indicator value of 5 and 9 in its PR-3 calculations; however, it selects only those with a value of 5 for this product group for other PR metrics.

⁵⁹⁹ Responses to Data Requests #826 and #835.

The Guidelines for PR-3 state that Verizon should exclude coordinated cut-over unbundled network elements such as loops or number portability orders. Liberty recommends that Verizon seek a modification to the Guidelines to indicate that this exclusion does not apply to the UNE hot cut loop result in PR-3-08. If it did, Verizon would report no results for this measure.

As discussed in the introductory section, Verizon recently issued a change control notice because it found it was including CLEC-to-CLEC migrations in the PR-3-08 UNE hot cut loop product group results. Liberty also found that Verizon was incorrectly excluding both Verizon-to-CLEC hot cuts and CLEC-to-CLEC migrations from the UNE POTS platform and UNE POTS new loop product groups.

The Guidelines require that Verizon exclude orders that it completes late due to any end-user or CLEC-caused delay. Verizon calculates a subscriber delay indicator field in NMP, which it uses to exclude orders that Verizon completes late that also had a CLEC or subscriber-related delay. NMP sets this subscriber delay indicator to "Y" if the order had a delay due to CLEC or subscriber reasons (*e.g.*, no access, customer not ready, customer requested a later due date, or subscriber CLEC problem MAC codes).⁶⁰⁰ Verizon does not, however, set the indicator to "Y" if the CLEC or subscriber requests an earlier appointment date prior to the due date.⁶⁰¹ Verizon evaluates each service order once regarding a missed completion date, regardless of how many times Verizon misses any subsequent due date.⁶⁰²

The Guidelines state that Verizon should exclude from 2-Wire Digital, 2-Wire xDSL loop, and 2-Wire xDSL Line Sharing and Line Splitting product results any orders missed due to facility reasons. This exclusion therefore affects only PR-3-03 and PR-3-10. Verizon calculates a facilities-miss indicator in NMP, which its metric algorithms use to exclude such orders from results. NMP assigns this indicator a "Y" if either (a) the CISR MAC (*i.e.*, the first Verizon MAC code) for the order was a Verizon MAC code for bad cable facilities or other Verizon facilities reasons, including a failure to assign a cable pair by the due date (*i.e.*, "CF" or "CA"), or (b) there was a facility delay (*i.e.*, a MAC code of "CF") on the order during its life cycle as recorded in the SOP.⁶⁰³ Verizon therefore accurately applies this exclusion by excluding orders with a facility delay.⁶⁰⁴

For the PR-3 sub-metrics, Verizon uses a separate algorithm to calculate the result for each product group, as well as retail and wholesale results. Verizon uses the LSR Service Order Fact table data for all product group results.

Liberty initially found a problem with Verizon's algorithms for resale and retail POTS for PR-3-06 and PR-3-09. Verizon selects non-dispatched, rather than dispatched, orders in the

⁶⁰⁰ Verizon excludes orders with a subscriber delay, regardless of whether the order also had a Verizon-caused MAC code.

⁶⁰¹ Verizon provided LSR Service Order Fact table field descriptions in response to Data Request #39.

⁶⁰² Response to Data Request #827.

⁶⁰³ Response to Data Request #828. Also, Verizon provided LSR Service Order Fact table field descriptions in response to Data Request #39.

⁶⁰⁴ Liberty found that Verizon used different programming logic to implement this inclusion in its PR-3-03 and PR-3-10 algorithms. In response to Data Request #829, Verizon confirmed that some of the code was superfluous but had no impact on the metric results. Verizon indicated that it would issue a change control to clean up the coding.

denominator for these measures. Verizon subsequently explained that the algorithms were correct, and that the version of the algorithms that Verizon provided to Liberty contained a mapping error.⁶⁰⁵

Liberty found an error in Verizon's algorithm for PR-3-08-3111 (UNE POTS hot cuts). Verizon excludes orders with a negative or invalid appointment interval, rather than completion interval, in the denominator and denominator. Verizon agreed that its algorithm should check completion rather than appointment intervals, and explained that the error had no effect on reported results for July through September 2003.⁶⁰⁶ Liberty recommends that Verizon correct the error in its algorithms.

Liberty initially found that Verizon's PR-3-06-3140 and PR-3-09-3140 algorithms (UNE POTS platform) contained an error. Verizon's algorithms appeared to select orders completed within three or five days in the denominator, rather than selecting orders with valid intervals (*i.e.*, non-negative and not greater than 200). Verizon explained that the production versions of the algorithms were correct, but the CMAs that Verizon provided to Liberty were not due to mapping errors.⁶⁰⁷

Verizon recently found a coding error in its retail parity result for PR-3-03 UNE Line Sharing and Line Splitting. Verizon issued Metric Change Control No. 10109 and corrected the error effective with the July 2003 data month.⁶⁰⁸

For this measure group, Liberty focused its analysis on the three PR-3 measures that are included in Verizon's PAP, PR-3-01, PR-3-03, and PR-3-10.

PR-3-01 – Percentage Completed in 1 Day One to Five Lines – No Dispatch

Verizon reports PR-3-01 results for retail and resale POTS total and for UNE POTS platform. Verizon includes only non-dispatched completed orders in PR-3-01 results.

Liberty examined the algorithms that Verizon uses to calculate the PR-3-01 measure. To calculate the denominator for the measure, Verizon counts the number of non-dispatched completed POTS service orders with one to five lines. To calculate the numerator, Verizon counts the number of orders identified in the denominator that have a completion interval of one or fewer days.

Liberty recalculated the CLEC aggregate result for PR-3-01-2100 (the resale POTS non-dispatch product group) for September 2003 using the LSR Service Order Fact table that Verizon provided.⁶⁰⁹ Liberty was initially unable to replicate Verizon's wholesale result, but it did

⁶⁰⁵ Responses to Data Requests ##825 and 830.

⁶⁰⁶ Response to Data Request #832.

⁶⁰⁷ Responses to Data Requests #831 and #833.

⁶⁰⁸ Verizon found that it had not included a logic step to select orders with one to five lines.

⁶⁰⁹ Response to Data Request #262.

replicate Verizon's retail result.⁶¹⁰ Verizon later clarified that it had added additional programming logic to the wholesale algorithm regarding the change to the standard interval for residential non-dispatch cut-through orders.⁶¹¹ Liberty recalculated the wholesale result with this change and replicated Verizon's result.

PR-3-03 – Percentage Completed in Three Days One to Five Lines – No Dispatch

Verizon reports PR-3-03 results for UNE 2-Wire xDSL Line Sharing and Line Splitting products and for VADI. Verizon includes only non-dispatched completed orders in PR-3-03 results. Verizon excludes orders it missed due to facilities reasons.

Liberty examined the algorithms that Verizon uses to calculate the PR-3-03 measure. To calculate the denominator for the measure, Verizon counts the number of non-dispatched completed service orders with one to five lines for the specific product group. To calculate the numerator, Verizon counts the number of orders identified in the denominator that have a completion interval of three or fewer days.

PR-3-10 – Percentage Completed in Six Days One to Five Lines – Total

Verizon reports PR-3-10 results for UNE and retail 2-Wire Digital and for UNE 2-Wire xDSL loops. Verizon includes both dispatched and non-dispatched completed orders in PR-3-10 results. Verizon excludes orders it missed due to facilities reasons.

Liberty examined the algorithms that Verizon uses to calculate the PR-3-10 measure. To calculate the denominator for the measure, Verizon counts the number of completed service orders with one to five lines for the specific product group. To calculate the numerator, Verizon counts the number of orders identified in the denominator that have a completion interval of six or fewer days.

Verizon found an error in its algorithm for the PR-3-10 2-Wire Digital retail result and issued Metric Change Control No. 10107, which it completed for the July 2003 data month.⁶¹² Liberty asked Verizon to provide the programming changes that it made.⁶¹³ Liberty found that the algorithm is now correct.

Verizon found that it had been including coordinated cut-overs from ISDN to UNE 2-Wire xDSL loops in its PR-3-10 UNE 2-Wire xDSL results. Verizon stated that the Guidelines require that it exclude coordinated cut-overs, which the Glossary defines as Verizon-to-CLEC hot cuts, from

⁶¹⁰ Verizon reported a denominator of 68,621 and a result of 68.40 percent, and Liberty's result was identical.

⁶¹¹ Written clarification response to Interview Request #37, dated January 23, 2004.

⁶¹² Verizon found that the numerator was missing a check for 1 to 5 lines, facility miss, or appointment type code, and the denominator was missing a check for subscriber delay.

⁶¹³ Data Request #469.

the measure. Verizon issued Metric Change Control No. 10302 and completed the change effective with the September 2003 data month. Verizon indicated that it added a logic step to exclude orders that had a hot cut indicator value of "N."⁶¹⁴ As discussed in the introductory section of this chapter, the hot cut indicator designates both Verizon-to-CLEC hot cuts and CLEC-to-CLEC migrations. With this change control, Verizon has correctly begun to exclude coordinated cut-overs, but now incorrectly excludes CLEC-to-CLEC migrations. Verizon has therefore incorrectly defined this product group, and should modify its algorithm to cease excluding CLEC-to-CLEC migrations from the UNE 2-Wire xDSL loop product group in PR-3-10.

D. Findings and Recommendations, PR-1 and PR-3

Verizon's metric algorithms for PR-1 and PR-3 contain errors.

Verizon has a number of errors in its metrics algorithms, specifically:

- Verizon has an error in its PR-1-12 algorithms for the retail parity POTS Total (All), resale specials, retail specials, and UNE POTS and complex product groups. Verizon excludes disconnections on orders where the customer requested an interval shorter than the standard, which is not a listed exclusion for PR-1.
- Verizon does not consistently exclude administrative orders from all PR-1-12 results. In some algorithms, Verizon correctly excludes D and F administrative orders (*i.e.*, those with an original appointment code of "Y"), but in others it does not.
- Verizon defined the UNE POTS platform product group in PR-3 to include both platform and "other" products, when it should include only platform products.
- Verizon's algorithm for PR-3-08-3111 (UNE POTS hot cuts) excludes orders with a negative or invalid appointment interval, rather than completion interval, in the numerator and denominator.
- Verizon incorrectly excludes CLEC-to-CLEC migrations, which are not coordinated cut-overs according to the glossary to the Guidelines, from its UNE 2-Wire xDSL loop product group result for PR-3-10.

Some of the errors affected reported results during the audit period and others did not. Verizon should correct its algorithms, and identify and correct instances where similar errors occur.

Liberty also found that Verizon's algorithms excluded specific orders (those with PONs beginning with "NAS") from certain PR-1 wholesale UNE product results. Verizon explained that this was redundant code for the special project PON exclusion. Verizon should revise its algorithms to remove this unnecessary code.

⁶¹⁴ Response to Data Request #785.

The Guidelines do not specify some of the conventions that Verizon has adopted for calculating the PR-1 and PR-3 metrics.

Verizon includes in the PR-1-12 measure LSR-related D and F service orders and ASR-related service orders with D activity. Verizon also includes LSR-related C orders that have a disconnect flag, *i.e.*, that have outward activity but no inward activity. This treatment is reasonable but not specified in the Guidelines definition for the denominator of this measure. Liberty recommends that Verizon seek a clarification to the Guidelines regarding the disconnect orders that it includes in the measure.

Verizon assigns an original appointment code of "K" to D and F disconnect orders, and therefore Verizon is unable to apply the Guidelines exclusion regarding orders for which the customer requested a later date than the offered interval for this sub-metric ("X" coded orders). Verizon can, however, check the original appointment code for disconnects on C orders. Verizon's approach is reasonable given its business practices, but it is not in compliance with the Guidelines. Liberty recommends that Verizon seek a clarification to the Guidelines to indicate that it applies this exclusion to only C disconnection orders, and not D or F disconnection orders, for the PR-1-12 measure.

Liberty found that Verizon's programming logic for the POTS product groups in PR-1-12 was confusing, primarily because Verizon had unnecessary or redundant code in some of the algorithms. Verizon's metric algorithm for the UNE POTS and complex product group selects POTS, 2-Wire Digital, and xDSL orders. Verizon stated that it includes Line Sharing disconnect orders in retail POTS because Verizon provides the POTS service, and that it counts Line Splitting disconnect orders as UNE POTS because Verizon receives these orders from the CLEC providing the POTS service. Verizon's algorithms for the resale POTS and complex and retail POTS Total (All) product groups select POTS, 2-Wire Digital, and xDSL products. Liberty recommends that Verizon seek a clarification to the Guidelines to make explicit the types of orders it includes in each product group. Liberty also recommends that Verizon remove the superfluous code from its algorithms for these products.

The Guidelines for PR-3 state that Verizon should exclude coordinated cut-over unbundled network elements such as loops or number portability orders. Liberty recommends that Verizon seek a modification to the Guidelines to indicate that this exclusion does not apply to the UNE hot cut loop result in PR-3-08. If it did, Verizon would report no results for this measure.

E. PR-4, Missed Appointments

1. Background

The PR-4 measure reports on the percentage of orders that Verizon completed after the commitment date. Verizon reports nine PR-4 sub-metrics in Virginia.

The PR-4 sub-metrics report results for distinct product groups, and focus on different causes for the missed appointment (either Verizon or the CLEC). Sub-metrics PR-4-01, PR-4-03 through

PR-4-05, and PR-4-08 measure the percentage of missed appointments, while sub-metric PR-4-02 measures the average number of delay days. PR-4-07, PR-4-14, and PR-4-15 measure percentage on-time completion. Under the Guidelines, PR-4-15 includes orders that Verizon completed in the report month that were Customer Not Ready (CNR).

PR-4-07 focuses on Verizon's on time performance for LNP orders. The Guidelines define LNP orders (consisting of a trigger order and a disconnect order) as on time when Verizon has the trigger in place one business day before the disconnect due date and completes the disconnect on or after 11:59 p.m. on the due date. Under the Guidelines, Verizon should consider telephone numbers that it disconnects early at customer request as met. Also, Verizon should not score as missed orders where the trigger is in place before the number is ported but less than one business day before the disconnect due date.

The PR-4 sub-metrics report on distinct products types as detailed in the table below:

Sub-Metric	Resale	UNE	Trunks⁶¹⁵
PR-4-01	<ul style="list-style-type: none"> • DS0 • DS1 • DS3 • Specials Other 	<ul style="list-style-type: none"> • DS0 • DS1 • DS3 • Specials Other • EEL • IOF 	
PR-4-02 and PR-4-03	<ul style="list-style-type: none"> • POTS – Total • 2-Wire Digital Services • Specials Total 	<ul style="list-style-type: none"> • POTS – Total • 2-Wire Digital Services • Specials Total • 2-Wire xDSL Loops • 2-Wire xDSL Line Sharing • 2-Wire xDSL Line Splitting • EEL • IOF 	<ul style="list-style-type: none"> • CLEC Trunks
PR-4-04	<ul style="list-style-type: none"> • POTS – Total • 2-Wire Digital Services 	<ul style="list-style-type: none"> • POTS – Platform • Loop – New • 2-Wire Digital Services • 2-Wire xDSL Loops • 2-Wire xDSL Line Sharing • 2-Wire xDSL Line Splitting 	
PR-4-05	<ul style="list-style-type: none"> • POTS – Total • 2-Wire Digital Services 	<ul style="list-style-type: none"> • POTS – Platform • 2-Wire Digital Services • 2-Wire xDSL Line Sharing • 2-Wire xDSL Line Splitting 	
PR-4-07		<ul style="list-style-type: none"> • LNP 	
PR-4-08	<ul style="list-style-type: none"> • 2-Wire Digital Services • Specials 	<ul style="list-style-type: none"> • 2-Wire Digital Services • Specials • 2-Wire xDSL Loops 	
PR-4-14		<ul style="list-style-type: none"> • 2-Wire xDSL Loops 	
PR-4-15			<ul style="list-style-type: none"> • CLEC Trunks

⁶¹⁵ The Guidelines specify that Verizon include reciprocal trunks from Verizon to CLEC in its definition of trunks.

The Guidelines list the following exclusions from the PR-4 calculations in addition to the standard exclusion for Verizon affiliate data:

- Verizon test orders
- Disconnect orders
- Verizon administrative orders
- Additional segments on orders
- Orders that are not completed
- Orders suspended for non-payment and associated restore orders
- LNP orders without office equipment that do not have a trigger order
- For PR-4-04 and PR-4-14 2-Wire Digital Services, 2-Wire xDSL Loop, 2-Wire xDSL Line Sharing, and 2-Wire xDSL Line Splitting, orders missed for facility reasons.

Verizon reports all of the PR-4 sub-metrics on a statewide basis for individual and aggregate CLECs, and for Verizon retail. The standard for PR-4-01, PR-4-02, PR-4-04, and PR-4-05 is parity with retail, with certain exceptions. The standard for PR-4-02, PR-4-04, and PR-4-05 UNE 2-Wire xDSL Line Sharing and UNE 2-Wire xDSL Line Splitting products is parity with VADI. The standard for PR-4-04 UNE 2-Wire xDSL loops is five percent or less. There is no standard for PR-4-02, PR-4-03, or PR-4-08. The standard for PR-4-07, PR-4-14, and PR-4-15 is 95 percent.

The Guidelines provide the following formulas for the PR-4 sub-metrics:

PR-4-01: % Missed Appointment – Verizon – Total

(Number of orders where the order completion date is greater than the order due date due to Verizon reason for a product groups)/(Total number of orders completed for a product group)

PR-4-02: Average Delay Days – Total

(Sum of the completion date minus the due date for orders/trunks, missed due to Verizon reason for a product group)/(Number of order/trunks missed due to Verizon reasons for a product group)

PR-4-03: % Missed Appointment – Customer

(Number of orders/trunks where the order completion date is greater than the order due date due to customer reasons for a product group)/(Number of orders/trunks completed for a product group)

PR-4-04: % Missed Appointment – Verizon – Dispatch

(Number of dispatch orders where the order completion date is greater than the order due date due to Verizon reasons for a product group)/(Number of dispatch orders completed for a product group)

PR-4-05: % Missed Appointment – Verizon – No Dispatch

(Number of no dispatch orders where the order completion date is greater than the order due date due to Verizon reasons for a product group)/(Number of no dispatch orders completed for a product group)

PR-4-07: % On Time Performance – LNP Only

(Number of LNP orders, consisting of both a trigger order and an associated disconnect order, where the port trigger is completed one business day before the due date and the retail disconnect is completed on or after 11:59 p.m. of the due date)/(Number of LNP orders completed)

PR-4-08: % Missed Appointment – Customer – Due to Late Order Confirmation

(Number of orders where the order completion date is greater than the order due date due to customer reasons, specifically for late order confirmation, for a product group)/(Number of orders completed for a product group)

PR-4-14: % Completed On Time – 2-Wire xDSL Loops

(Number of orders completed on or before the due date)/(Number of completed orders minus any orders delayed for customer reasons)

PR-4-15: % On Time Provisioning – Trunks

(Number of trunks where the order completion date is less than or equal to the order due date)/(Number of trunks completed within the month)

Seven of the PR-4 sub-metrics are relevant to Verizon's PAP. For the July and August 2003 reporting months, Verizon incurred a \$1,795 penalty related to this measure.⁶¹⁶

2. Analysis and Evaluation

The nine measures within PR-4 report Verizon's performance regarding missed appointments across a broad number of categories and product groups. Five of the PR-4 metrics measure the percentage of appointments missed for Verizon or customer reasons. PR-4-02 measures the average delay days associated with appointments missed for Verizon reasons. There are three PR-4 sub-metrics that measure on time performance, PR-4-07, PR-4-14, and PR-4-15. The one

⁶¹⁶ Responses to Data Requests #198 and #203 (July and August 2003 C2C Reports).

result in PR-4-07 focuses on percentage on time performance for LNP-only service orders. The PR-4-14 measure focuses on the percentage on time performance for UNE 2-Wire xDSL orders, and the PR-4-15 measure focuses on trunks.

For those sub-metrics that measure percentage missed appointments, Verizon includes all completed service orders as the relevant population of orders for these measures. For PR-4-02, Verizon includes all completed service orders missed for Verizon reasons as the relevant population for the measure. To select late orders for the numerator of those PR-4 sub-metrics that measure percentage of missed appointments, Verizon evaluates whether the completion date was later than the due date. Depending upon the sub-metric, Verizon further refines these orders for various criteria such as whether the miss was due to a Verizon or a customer reason, involved a dispatch, or was late due to a late order confirmation.

Verizon defines the product groups in PR-4 in the same fashion as it did for PR-1 and PR-3. As discussed in the introductory section, Verizon incorrectly excludes Verizon-to-CLEC hot cuts and CLEC-to-CLEC migrations from the POTS platform, POTS total, and POTS new loop product groups. Verizon also includes certain R (record) service orders associated with "as is" resale migrations in its resale POTS, 2-Wire Digital, and specials products groups. These migrations do not involve a dispatch. As discussed in the introductory section, Liberty found an error in Verizon's algorithms for many of the PR-4 resale product groups, in which Verizon effectively excludes "as is" migrations from reported results.

For the UNE specials total product group, Verizon excludes IOF and EEL products because it reports these separately. Verizon also reports two new product groups, resale specials other and UNE specials other, that it did not report in PR-1 and PR-3. Verizon defines these as non-DS0, DS1, and DS3 specials orders.

Verizon defines the CLEC trunk product group to include both CLEC trunks and reciprocal trunks, consistent with the definition in the Guidelines.

Liberty examined how Verizon applied the exclusions set forth in the Guidelines. Verizon excludes test orders, administrative orders, and disconnect orders. As noted previously, Verizon correctly excludes suspend for non-payment and associated restore orders from retail but does not exclude them from wholesale results. Verizon excludes affiliate data from CLEC results. For a discussion of these exclusions, refer to the introductory section of this chapter.

The Guidelines require that Verizon report only completed orders in PR-4. Verizon accomplishes this exclusion by including only those LSR-related service orders with a report period value (the month in which the CRIS completion date for the order falls) during the reporting month. For ASR-related service orders, Verizon selects orders with a status of complete that have a status date (which changes whenever there is a change in the status of an order, such as from pending to complete) during the reporting month.

The Guidelines state that Verizon should exclude LNP orders without office equipment that do not have a trigger order. This exclusion applies only to PR-4-07. Verizon should seek a clarification to the Guidelines to indicate that this exclusion relates to PR-4-07 only.

The Guidelines state that Verizon should exclude from PR-4-04 and PR-4-14 results for 2-Wire Digital and 2-Wire xDSL loop, Line Sharing, and Line Splitting any orders missed due to facility reasons. As discussed in PR-3, Verizon calculates a facilities-miss indicator in NMP, which its metric algorithms use to exclude such orders from results.

For those PR-4 metrics that measure appointments missed for Verizon reasons, Verizon does not explicitly exclude LSR-related service orders with CLEC-caused delay, but rather selects orders for the numerator on the basis of whether Verizon reasons caused the miss. Verizon ultimately measures its performance against any revised due date, not the original due date. To calculate the numerator for the percentage missed appointment measures, Verizon first selects orders that are potential misses, *i.e.*, orders where the completion date is later than the original due date, and evaluates them further to determine cause. Verizon uses the CISR MAC field and selects those orders that were not on time due to company reasons (*i.e.*, a CISR MAC code beginning with "C"). As discussed in the introductory section, if a LSR-related service order has a combination of MAC codes, then NMP sets the CISR MAC as the first Verizon-caused miss. If all MAC codes on an order are customer-caused, however, Verizon sets the CISR MAC to a customer-caused code.⁶¹⁷ For example, when a CLEC supplements an order to change the due date, Verizon assigns a customer-caused MAC code to the order along with a subsequent due date. In this case, the completion date will be later than the original due date. If Verizon met the revised due date, *i.e.*, if the only MAC code on the order is a subscriber-caused one, then Verizon would not consider the order as missed due to Verizon reasons. If Verizon misses the subsequent due date, however, Verizon also assigns a company-caused MAC code to the order, NMP sets the CISR MAC as company-caused, and Verizon treats the order as a miss. If the CLEC supplements the order multiple times and Verizon misses any of the due dates, Verizon treats the order as a miss. Verizon counts the service order once, and scores at most one missed appointment per order.

Verizon treats certain infrequent cases in which it missed the order due date as an exception to the rule. Verizon calculates the number of days by which it completed the LSR-related service order late due to company reasons, and excludes any order with a Verizon-caused CISR MAC code if the number of days by which the company missed the order was zero. For example, if a Verizon technician gets sick on the due date, Verizon would assign a company-caused MAC code to the order. However, Verizon may schedule a different technician later in the day, and the customer may not be available. In that case, Verizon would then assign the order a customer-caused MAC code. If Verizon completes the order the next day, then the number of days by which the company missed the order would be zero, and Verizon would exclude the order from the numerator of the Verizon-miss metrics (and exclude it from both numerator and denominator for PR-4-02). Verizon scores an order as late for Verizon reasons only if there is at least one full day of company delay. Liberty does not believe the Guidelines anticipated such infrequent situations. This convention is reasonable, although it is inconsistent with the Guidelines. Verizon should either cease using this interpretation, or seek a clarification to the Guidelines to recognize such cases.

⁶¹⁷ Verizon uses the customer-caused CISR MAC designation to select orders for the numerators of the PR-4-03 and PR-4-08 sub-metrics, which measure the percentage of missed appointments for customer reasons.

Verizon interprets the PR-4-03 metric as measuring orders that were late primarily because of the customer, *i.e.*, the CISR MAC is a customer MAC code, and there are no company delays on the order.⁶¹⁸ Therefore, Verizon should count a late order in the numerator of PR-4-01 or PR-4-03, but not both. Liberty found, however, that Verizon did not implement this interpretation consistently across PR-4-03 product results. For some product groups in PR-4-03, Verizon incorrectly counts orders with a customer-caused delay although the order also had a Verizon-caused delay.⁶¹⁹ Stated differently, Verizon could be reporting the same order in both PR-4-01 and PR-4-03. Verizon acknowledged that it used incorrect coding to identify customer-caused misses and indicated that it planned to issue a change control to correct the error.⁶²⁰

For products that CLECs order via ASR, Verizon calculates a customer-not-ready indicator in NMP, which its metric algorithms use to select orders for the numerator of the PR-4 measures on the basis of whether customer or Verizon reasons caused the missed order. Verizon stated that a customer-not-ready indicator of “Y” for ASR-related service orders is consistent with a customer CISR MAC for LSR-related service orders.⁶²¹

For each of the PR-4 measures, Verizon uses a separate algorithm to calculate the result for each product group, as well as a separate algorithm for retail and wholesale results. Verizon uses the LSR Service Order Fact table data for almost all product group results except trunks, EELs and IOF, for which Verizon uses the ASR Service Order Fact table data. Verizon uses both ASR and LSR Service Order Fact table data to calculate results for UNE specials.

Liberty focused its detailed examination on the sub-metrics that are included in Verizon's PAP, PR-4-01, PR-4-02, PR-4-04, PR-4-05, PR-4-07, PR-4-14, and PR-4-15.

PR-4-01 – Percentage Missed Appointment – Verizon – Total and PR-4-02 – Average Delay Days – Total

Verizon includes both dispatched and non-dispatched completed orders in PR-4-01 and PR-4-02. Verizon calculates delay days as the number of days that the order was completed beyond any revised due date for Verizon reasons. Verizon does not include EEL (DS0) products in its UNE specials other and UNE specials total product groups because it reports EEL products separately.

Liberty examined the algorithms that Verizon uses to calculate the PR-4-01 measure. To calculate the denominator for the measure, Verizon counts the number completed service orders for the given product group. To calculate the numerator for PR-4-01, Verizon counts the number of service orders identified in the denominator that were late for Verizon reasons.

Liberty examined the algorithms that Verizon uses to calculate the PR-4-02 measure. To calculate the denominator for the measure, Verizon counts the number service orders that were

⁶¹⁸ Responses to Data Requests #901 and #902.

⁶¹⁹ Verizon's algorithms for the following product groups are incorrect: resale POTS, resale specials, UNE 2-wire Digital, UNE xDSL Loops, UNE Line Splitting, and UNE POTS.

⁶²⁰ Responses to Data Requests #901 and #902.

⁶²¹ Response to Data Request #902.

completed late due to Verizon reasons for the given product group. To calculate the numerator for PR-4-02, Verizon sums the number of delay days associated with the service orders it identified in the denominator.

Liberty recalculated the PR-4-01 CLEC aggregate result for the UNE EEL product group for September 2003 using the ASR Service Order Fact table that Verizon provided.⁶²² For PR-4-01-3510, percentage missed appointments, Liberty replicated Verizon's denominator, as well as the overall result.

Liberty also recalculated the PR-4-02 CLEC aggregate result for the UNE EEL product group for September 2003 using the ASR Service Order Fact table that Verizon provided.⁶²³ For PR-4-02-3510, average delay days, Liberty replicated Verizon's denominator, as well as the overall result.

Verizon found that it incorrectly included a test for dispatch in the numerator of the PR-4-01-2210 (resale DS0) algorithm. Verizon's reported result for September is therefore incorrect. Verizon subsequently issued Metric Change Control No. 10519 and corrected the problem effective with the November 2003 data month. Liberty found an additional error with this algorithm, in that the numerator did not contain the check for a missed appointment (*i.e.*, whether the completion date was later than the due date) nor did it contain a check for a Verizon-caused miss. Liberty recommends that Verizon correct the algorithm for this measure. Verizon acknowledged the error and stated that it had no effect on reported results. Verizon indicated that it would open a change control to correct the problem.⁶²⁴

Liberty found that six of the ten PR-4-01 algorithms contained the same error, in which Verizon selected orders with a facility delay over 15 days in the numerator, rather than selecting orders completed late for Verizon reasons.⁶²⁵ Verizon acknowledged the error, and stated that the error had no effect on reported results for the July through September 2003 period.⁶²⁶ Liberty recommends that Verizon correct its algorithms for these product groups.⁶²⁷

Verizon's algorithms for the retail comparison for eight of the ten PR-4-01 product groups contain code that selects resale migrations. Verizon clarified that this code was unnecessary for retail, and that it did not affect metric results.⁶²⁸ Liberty recommends that Verizon remove the superfluous coding from its retail algorithms for this measure.

⁶²² Response to Data Request #262.

⁶²³ Response to Data Request #262.

⁶²⁴ Response to Data Request #845.

⁶²⁵ Liberty found the error in PR-4-01-2213, -2214, -3210, -3211, -3213, and -3214.

⁶²⁶ Clarification response to Data Request #846.

⁶²⁷ Liberty found the same error in the LSR module in PR-4-01-3510 and -3530, but Verizon clarified in response to Data Request #846 that there was no LSR module for these metrics, and that the CMAs were incorrect.

⁶²⁸ Response to Data Request #857.

**PR-4-04 – Percentage Missed Appointment – Verizon – Dispatch and
PR-4-05 – Percentage Missed Appointment – Verizon – No Dispatch**

Verizon reports only dispatched orders in PR-4-04 and reports only non-dispatched orders in PR-4-05. Consistent with the Guidelines, Verizon correctly excludes Verizon-caused missed appointments from PR-4-04 for the 2-Wire Digital and 2-Wire xDSL product group results if the reason was a lack of facilities.

Liberty examined the algorithms that Verizon uses to calculate the PR-4-04 and PR-4-05 measures. To calculate the denominator for the PR-4-04 and PR-4-05 measures, Verizon counts the number of dispatched or non-dispatched completed service orders for the given product group. To calculate the numerator, Verizon counts the number of service orders identified in the denominator that were late for Verizon reasons.

Liberty recalculated the PR-4-04 CLEC aggregate result for PR-4-04-3140 (the UNE POTS platform dispatch product group) for September 2003 using the LSR Service Order Fact table that Verizon provided.⁶²⁹ Liberty replicated Verizon's denominator as well as the overall result. Liberty also recalculated Verizon retail parity result for this product group (POTS total – dispatch). Liberty replicated Verizon's denominator as well as the overall result.

In addition, Liberty recalculated the PR-4-05 CLEC aggregate result for PR-4-05-3140 (the UNE POTS platform non-dispatch product group) for September 2003 using the LSR Service Order Fact table that Verizon provided.⁶³⁰ Liberty replicated Verizon's denominator and the overall result. Liberty replicated the denominator of Verizon's retail parity result (POTS total non-dispatch) as well as the reported result.

Verizon found that it either failed to include a dispatch indicator or included a test for both dispatch and non-dispatch orders in two UNE 2-Wire Digital PR-4 algorithms, specifically PR-4-04-3341 and PR-4-05-3341. Verizon issued Metric Change Control No. 10476, but did not complete the correction until November 2003.⁶³¹ As such, Verizon's reported results for this product group for September are incorrect.

PR-4-07 – Percentage On Time Performance – LNP Only

The Guidelines define the PR-4-07 measure as the percentage of all LNP orders (including both the trigger and the associated retail disconnect orders) where the trigger is in place one business day before the disconnect due date and Verizon completes the disconnection on or after 11:59 p.m. of the due date. The measure applies to LNP-only orders, and reports the percentage of LNP (retail disconnect) orders completed in translation on or after the date and time on the order. The Guidelines state that Verizon should consider telephone numbers that it disconnects early at the customer's request as met. The Guidelines also state that Verizon should not score as missed

⁶²⁹ Response to Data Request #262.

⁶³⁰ Response to Data Request #262.

⁶³¹ In response to Data Request #789, Verizon confirmed that the error only affects the wholesale algorithms. In its comments on Liberty's Draft Report, Verizon indicated that it completed the change control.

trigger orders for which the trigger is in place less than one business day prior to the due date but before the CLEC ports the number.

Verizon creates a separate data source, the LNP Service Order Fact table, to calculate this sub-metric, because Verizon uses additional information (not found in expressTRAK) from the LSMS and MARCH systems that it does not use for other kinds of orders. Both the MARCH and LSMS systems capture information at the telephone number level. Verizon selects completed service orders to include in the measure for the reporting month by the CRIS completion date (billing completion date) for the order.⁶³² This creates a lag in reporting because the CRIS completion date is typically later than actual work completion. However, Verizon will eventually report all orders.

Verizon uses two data fields from the MARCH system to identify LNP-only activity relevant for this measure. Verizon selects order that have a "Y" in the LNP-out field (which indicates that the port option for an LNP transaction is taken off the line in the Verizon switch) and a designation of "out" in the PKT field (which is assigned when the line is removed from the Verizon switch).

CLECs submit an LSR to request LNP on one or more telephone numbers. The SOP generates a service order for placement of the trigger and a retail service order to disconnect the line from the switch. The SOAC system sends a message to Verizon's MARCH system telling it to set up a trigger within the Verizon switch and identifying when Verizon should do it. When the switch actually accepts a trigger being set, the MARCH system records the "accepted" date and time. The MARCH system records trigger messages, the date and time that the LSMS system notified it that the CLEC ported the telephone number, and the date and time that Verizon updated the switch.⁶³³ Verizon indicated that at times some of these orders do fall out for manual handling.

Verizon indicated that it typically puts the trigger in place one day before the due date. However, in some cases, the CLEC may want it to be later, such as when it requests that Verizon expedite the order. After Verizon has placed the trigger on the switch, the CLEC ports the number to its own system at its own convenience, using Verizon's LSMS system. The LSMS system records when the CLEC actually activates the port. In most cases, the CLEC accomplishes this porting on the due date. Once the CLEC has activated the port, Verizon processes the disconnection on the switch on or after 11:59 p.m. on the due date.⁶³⁴

Verizon reviews its performance in two separate provisioning functions to determine the results for the measure, *i.e.*, setting the trigger and disconnecting the line from the switch. Verizon must perform both the trigger and the disconnect correctly on time for it to count the order as met. Verizon does the scoring of the orders at the telephone number level, and then aggregates these back up to the service order level. Verizon has to meet the dates and times for all telephone

⁶³² Verizon's metric algorithm selects orders with an Activity Date within the reporting month. The LNP Service Order Fact data mart field definition document provided in response to Data Request #39 defines the Activity Date as the same as the CRIS date.

⁶³³ Interview #35, January 14, 2004.

⁶³⁴ During Interview #35 on January 14, 2004, Verizon confirmed that its process for Virginia was the same as that which Liberty examined during the New Jersey audit.

numbers for it to consider the order as met; if Verizon misses one, it counts the entire service order as missed.

Verizon performs scoring of each telephone number on the service order within NMP. NMP checks whether the MARCH system put the trigger in place before the CLEC activated the port, and if so, assigns this portion of the order as met. NMP then evaluates the disconnection portion. First, NMP checks whether Verizon disconnected the line from the switch on or after the frame due time (which Verizon sets as 11:59 p.m.). If Verizon disconnected it early, NMP performs an additional check and, as long as Verizon disconnects the line from the switch after the CLEC activates the port, NMP assigns the disconnection portion of the order as met.⁶³⁵ NMP calculates a metric met flag, which is set to "Y" only if it determines that Verizon met all telephone numbers on a service order.⁶³⁶

Verizon indicated that before it extracts data from NMP for the LNP Service Order Fact table, its operations and regulatory support personnel review the data because in some cases NMP does not score orders correctly. Verizon cited as an example cases in which the CLEC requests an early disconnect. The automated scoring procedure may show the disconnection as missed because Verizon completed it early. Verizon's policy is that as long as it can document the request (such as a note in WFA), it will change the scoring in such cases to met.

Liberty reviewed how Verizon applied the PR-4 exclusions to this measure. Verizon excludes affiliate data in the same way that it does for other PR measures, and excludes test orders using an exclusion indicator that it calculates within NMP, similar to the one in the LSR and ASR Service Order Fact tables. Verizon excludes administrative orders from PR-4-07, consistent with the Guidelines.⁶³⁷ Because the LNP-only orders involve disconnects, the Guidelines exclusion for disconnect orders is contradictory. Verizon also stated that the exclusion for suspend and restore orders is also not relevant for PR-4-07, because denials for non-payment are not a part of LNP service.⁶³⁸ Verizon should seek a modification to the Guidelines to indicate that these two exclusions are not applicable to PR-4-07.

The Guidelines also state that Verizon should exclude LNP orders without office equipment that do not have a trigger order. Verizon indicated that these are direct inward dialing (DID) trunk orders.⁶³⁹ Verizon stated that such DID service orders are typically on an LSR by themselves, and Verizon excludes them from the measure. However, in some cases, such as when a CLEC is moving a large customer, an LSR may contain LNP-only requests for both regular telephone numbers and for DID trunks. In this case, Verizon excludes the entire order because some of the lines do not have a trigger. Liberty believes that this approach is reasonable, but that Verizon should seek a clarification to the Guidelines to make clear that it excludes service orders if some portion involves lines without office equipment.

⁶³⁵ Verizon provided the LNP Spooling Procedure document prior to Interview #4.

⁶³⁶ Interview #35, January 14, 2004.

⁶³⁷ During the New Jersey audit, Verizon stated that it excluded administrative orders and during Interview #35 on January 14, 2004, Verizon confirmed that it used the same approach to calculate results in Virginia.

⁶³⁸ Interview #35, January 14, 2004.

⁶³⁹ Interview #35, January 14, 2004. DID is a feature that allows stations served by Private Branch Exchange (PBX) or Centrex to be dialed directly rather than having to go through a switchboard.

Liberty examined the algorithm that Verizon uses to calculate the PR-4-07 measure. To calculate the denominator for the measure, Verizon counts the number LNP-only orders with a CRIS completion date during the reporting month. To calculate the numerator, Verizon counts the number of service orders identified in the denominator that it classified as met.

Liberty recalculated the PR-4-07 result for September using the LNP Service Order Fact table that Verizon provided.⁶⁴⁰ Liberty replicated Verizon's denominator, as well as the overall result.

PR-4-14 – Percentage On Time – 2-Wire xDSL Loops

The PR-4-14 sub-metric measures the percentage of UNE 2-Wire xDSL loops that Verizon completes on time. The Guidelines specify that Verizon should consider the order completed on time if:

- For CLECs that timely provide serial numbers, Verizon completes the service order on the due date and provides a serial number, or
- For CLECs that do not timely provide serial numbers, Verizon completes the service order on the due date.

Because it requires information that is not contained in the LSR Service Order Fact table data, Verizon extracts information on all UNE 2-Wire xDSL loop service orders completed in the reporting month from the WFA-DO system. Unlike many of the PR metrics, Verizon uses the work completion date in WFA to select orders included in the metric, rather than the CRIS completion date. Verizon performs a series of steps in a stand-alone application outside of NMP to produce the metric results, and then converts the results into an ASCII file that it sends to the NMP reporting system.⁶⁴¹

When Verizon conducts interactive testing with the CLEC on these orders, its field technicians typically record a serial number, which is the confirmation number that the CLEC receives after it accepts the work. Under the Guidelines, the serial number is relevant to the measure only if the CLEC participates in field testing. After Verizon extracts information on completed orders from WFA-DO, it copies the information into a database application created specifically for this metric. Verizon metric specialists review WFA-DO logs and comment fields to find the serial number for each order. The database application prompts the metric specialist to copy the serial number, or to provide a reason code for why he or she was unable to do so (such as being unable to find a serial number in the log).

After the Verizon specialists complete the research on all competed orders, Verizon executes a macro that calculates whether the order was met or missed and creates a scored orders file. Verizon initially classifies any order that Verizon completed late as missed. Verizon then performs additional logic steps on the subset of missed orders to determine whether they should be included or excluded from the metric. Under the Guidelines, Verizon reclassifies any missed

⁶⁴⁰ Response to Data Request #262.

⁶⁴¹ During Interview #35 on January 14, 2004, Verizon confirmed that it used the same process in the Potomac states that it did for New Jersey.

order as excluded, rather than missed, if the reason for the missed due date was a customer MAC code or a Verizon facilities reason, both of which Verizon excludes from PR-4-14.⁶⁴²

The macro initially scores all orders completed on time as met. Next, the macro uses a look-up table to determine if the CLEC participates in interactive testing. For the subset of met orders submitted by CLECs who participate in testing, Verizon must perform additional logic steps to determine if it provided a serial number during testing. Verizon examines this subset of orders to locate a serial number. If Verizon cannot locate a serial number for the order, it reclassifies the order as "YNS," which denotes that the order was met but had no serial number.⁶⁴³

To calculate the denominator for the metric, Verizon counts the number of orders that it classified as met, met but had no serial number, and missed (and excludes those classified as excluded). To calculate the numerator for the metric, Verizon counts the number of met orders.

As for other PR-4 metrics, Verizon evaluates its performance on the basis of any revised due date for the order. Verizon will score the order as met as long as it completed the work by the revised due date and, if relevant, provided the serial number. If Verizon misses a due date for customer reasons or a Verizon facilities delay, Verizon excludes the order. Verizon stated that it does not exclude an order that had a facility delay if it resolves the issue and completes the order on time. Verizon also does not exclude an order for which the customer changed the due date unless it missed the revised due date due to a customer reason.⁶⁴⁴

Verizon reports the measure in the Virginia performance reports as "% Completed On Time with serial number." Verizon confirmed that it reports results for orders with and without the serial number, and indicated that this was a mistake in the report format.⁶⁴⁵ Liberty recommends that Verizon update its report format to remove the "with serial number" phrase.

Liberty recalculated the PR-4-14 result for September 2003 using the scored orders file that Verizon provided.⁶⁴⁶ Liberty replicated Verizon's denominator, as well as the overall result.

PR-4-15 –On Time Provisioning – Trunks

The PR-4-15 sub-metric measures the percentage of trunks that Verizon completes on or before the order due date. Consistent with the Guidelines, Verizon includes both CLEC trunks and reciprocal trunks in the measure. Verizon reports completed trunk orders on the basis of the provisioning status date, which is the date that it posts the order as complete in WFA.⁶⁴⁷

⁶⁴² During Interview #35 on January 14, 2004, Verizon confirmed that the macro performed the same steps that Liberty reviewed during the New Jersey audit.

⁶⁴³ In response to Data Request #842, Verizon stated that there are certain circumstances in which it is impossible for it to obtain a serial number for a participating CLEC. Verizon counts the order as met without a serial number if, for example, the CLEC's test system is down, there is no answer at the CLEC, or the order involved a single-end test.

⁶⁴⁴ Interview #35, January 14, 2004.

⁶⁴⁵ Interview #35, January 14, 2004.

⁶⁴⁶ Material provided for Interview #35, January 14, 2004.

⁶⁴⁷ Response to Data Request #859.

The definition section for the PR-4 Guidelines state that the PR-4-15 metric “includes orders that were Customer Not Ready (CNR), and were completed in the report month.” Verizon interprets this language to mean that it should include completed orders with a customer-caused delay in the denominator. Verizon also interprets the language to mean that it should count orders with a customer-caused delay as “on time” in the numerator.⁶⁴⁸ Liberty believes that the language in the Guidelines is confusing on this issue. Verizon’s interpretation is reasonable, but not clearly supported by the Guidelines. Liberty therefore recommends that Verizon seek a clarification to the Guidelines to make its interpretation of this measure clear.

Liberty examined the algorithm that Verizon uses to calculate the PR-4-15 measure. To calculate the denominator for the measure, Verizon counts the number of service orders it completed during the reporting month. Verizon calculates the numerator as the number of orders that Verizon either completed before the provisioning due date, or that had a CNR delay.

Liberty recalculated the PR-4-15-5000 denominator for September 2003 using the ASR Service Order Fact table that Verizon provided.⁶⁴⁹ Using Verizon’s interpretation for the measure, Liberty replicated Verizon’s denominator, as well as the overall result.

F. PR-5, Facility Missed Orders

1. Background

The four sub-metrics within PR-5 report on orders that Verizon missed due to a lack of facilities. The PR-5-04 sub-metrics measure orders that the CLEC cancelled five days after the due date. The Guidelines note that the probable reason for such cancellations is a lack of Verizon facilities.

The PR-5 sub-metrics report on distinct products types as detailed in the table below:

Sub-Metric	Resale	UNE	CLEC Trunks
PR-5-01 and PR-5-02	<ul style="list-style-type: none"> • POTS – Total • 2-Wire Digital Services • Specials 	<ul style="list-style-type: none"> • POTS – Platform • POTS – Loop Total • 2-Wire Digital Services • Specials • 2-Wire xDSL Loops • 2-Wire xDSL Line Sharing • 2-Wire xDSL Line Splitting 	<ul style="list-style-type: none"> • CLEC Trunks
PR-5-03			<ul style="list-style-type: none"> • CLEC Trunks
PR-5-04		<ul style="list-style-type: none"> • POTS – Loop Total • 2-Wire Digital Services • 2-Wire xDSL Loops • Specials 	

⁶⁴⁸ Response to Data Request #858. Verizon also provide a correct copy of the PR-4-15 algorithm, because the one that Verizon provided in the June CMAs was incorrect.

⁶⁴⁹ Response to Data Request #262.

The Guidelines list the following exclusions from the PR-5 calculations in addition to the standard exclusion of Verizon affiliate data:

- Verizon test orders
- Disconnect orders
- Verizon administrative orders
- Additional segments on orders
- Orders suspended for non-payment and associated restore orders
- For PR-5-01 through PR-5-03, orders that are not complete
- For PR-5-04, orders missed or delayed due to customer reasons.

Verizon reports all of the PR-5 sub-metrics on a statewide basis for individual and aggregate CLECs, and for Verizon retail. The standard for PR-5-01 and PR-5-02 is parity with retail, except for UNE 2-Wire xDSL Line Sharing and UNE 2-Wire xDSL Line Splitting, which have a standard of parity with VADI. The standard for PR-5-03 is parity with retail. There is no standard for PR-5-04; stakeholders use this sub-metric for diagnostic purposes only.

The Guidelines provide the following formulas for the PR-5 sub-metrics:

PR-5-01: % Missed Appointment – Verizon – Facilities

(Number of trunks/dispatched orders where the order completion date is greater than the order due date due to Verizon facility reasons for a product group)/(Number of trunks/dispatched orders completed for a product group)

PR-5-02: % Orders Held for Facilities for More than 15 Days

(Number of trunks/dispatch orders where the completion date minus the due date is more than 15 days for Company facility reasons, for a product group)/(Number of trunks/dispatched orders completed for a product group)

PR-5-03: % Orders Held for Facilities for More than 60 Days

(Number of trunks where the completion date minus the due date is more than 60 days for Company facility reasons for a product group)/(Number of trunks completed for a product group)

PR-5-04: % Orders Cancelled More than Five Days After Due Date – Due to Facilities

(Number of cancelled orders cancelled five or more business days after the due date, excluding those orders that missed due to customer reasons)/(Number of orders completed or cancelled for the product group within the report month)

Two of the PR-5 sub-metrics are relevant to Verizon's PAP. During the July and August 2003 reporting months, Verizon did not incur any penalties associated with this measure.⁶⁵⁰

2. Analysis and Evaluation

PR-5-01 measures the percentage of missed appointments on dispatched orders due to lack of Verizon facilities. The PR-5-02 and PR-5-03 sub-metrics measure the percentage of dispatched orders that Verizon completed after the due date by more than 15 days and more than 60 days, respectively, due to lack of Verizon facilities. PR-5-04 measures the percentage of orders cancelled five or more business days after the due date, excluding those orders missed due to customer reasons.

Verizon interprets the PR-5-04 measure to reflect the percentage of orders cancelled due to facilities reasons. Neither the description of the PR-5-04 measure nor that of the numerator of the measure indicates that Verizon should count only cancelled orders with a Verizon facility delay. The definition for the PR-5 metrics notes that "the likely reason for such cancellations included in PR-5-04 would be due to a lack of facilities." Liberty interprets this language to mean that Verizon should count in the numerator all cancelled orders otherwise meeting the criteria of the numerator, both those with and without a facility delay, although most of the orders will likely involve a facility delay.

Liberty recognizes that although the Guidelines are somewhat unclear on this issue, Verizon's interpretation is a reasonable one. Liberty recommends that Verizon seek necessary clarifications to the Guidelines to make clear that it should include only orders cancelled due to facility reasons in the numerator of PR-5-04.

Verizon used two different methods in its PR-5-01 and PR-5-02 algorithms to identify the LSR-related service orders missed due to Verizon facilities reasons. In almost all cases, Verizon selects orders with certain CISR MAC codes (*i.e.*, "CA" and "CF") that indicate bad cable facilities or other Verizon facilities reasons, including a failure to assign a cable pair by the due date. By using the CISR MAC code, Verizon limits the orders in the numerator of the PR-5-01 and PR-5-02 metrics to those in which the first Verizon-caused MAC code was for facilities reasons. For example, if Verizon caused a delay on the order for non-facilities reasons first, and then caused a later delay due to facilities reason, Verizon would not count the order in the numerator, since the CISR MAC code (which Verizon defines as the first Verizon MAC code) would not be "CA" or "CF."

This differs from how Verizon applies the exclusion for orders "missed due to facilities reasons" in PR-3 and PR-4. In those metrics, Verizon uses the facilities-miss indicator, which NMP sets to "Y" if the CISR MAC is "CA" or "CF" or if there was a facility delay on the order during its life cycle as recorded in the SOP. Verizon uses the facilities-miss indicator logic in PR-5-01 and PR-5-02 for the UNE 2-Wire xDSL Line Splitting product group only. Verizon also uses the facilities-miss indicator logic for PR-5-04 to select orders that involved a facility delay.

⁶⁵⁰ Responses to Data Requests #198 and #203 (July and August 2003 C2C Reports).

Verizon acknowledged that the logic should be the same for PR-3, PR-4, and PR-5, and that it should use the facilities-miss indicator rather than the CISR MAC.⁶⁵¹ Verizon also indicated that the error had no effect on reported results for PR-5-01 and PR-5-02 for the July through September 2003 period.⁶⁵² Liberty recommends that Verizon correct its algorithms for all PR-5-01 and PR-5-02 algorithms (except UNE 2-Wire xDSL Line Splitting) to use the facilities-miss logic.

For ASR-related service orders reported in PR-5-01 through PR-5-03, Verizon calculates a facility indicator value in NMP, and selects orders with a facility indicator value of "Y" in the metric algorithms. Verizon stated that it derives the facility indicator using the ASR equivalent of the CISR MAC.⁶⁵³ Verizon should therefore modify the facility indicator for ASR-related service orders to be consistent with the facilities-miss indicator for LSR-related service orders, *i.e.*, to capture instances of facility delay at any time during the life of the order.

Verizon defines the product groups for PR-5 in the same way that it defines them for PR-1 through PR-4. However, unlike PR-4, Verizon includes both EEL and IOF products in the UNE specials product group for PR-5, because it does not report these separately. As discussed in the introductory section, Verizon incorrectly excludes Verizon-to-CLEC hot cuts and CLEC-to-CLEC migrations from the POTS platform as well as from the POTS loop total product group for PR-5-01 and PR-5-02, but not PR-5-04.

As discussed in the introductory section, Liberty found an error in Verizon's algorithms for many of the resale product groups in PR-5. The error has no effect on reported results in PR-5, however, because all "as is" resale migrations are non-dispatch, and would therefore never be included in the denominator or numerator for these dispatch metrics.

Verizon defines the CLEC trunk product group to include only CLEC trunks (and not reciprocal trunks).

Liberty examined how Verizon applied the exclusions set forth in the Guidelines. Verizon excludes test orders, administrative orders, and disconnect orders. As noted previously, Verizon correctly excludes suspend for non-payment and associated restore orders from retail but does not exclude them from wholesale results. Verizon excludes affiliate data from CLEC results. For a discussion of these exclusions, refer to the introductory section of this chapter. The Guidelines require that Verizon report only completed orders in PR-5-01 through PR-5-03. As discussed in PR-4, Verizon accurately applies this exclusion.

For each of the PR-5 measures, Verizon uses a separate algorithm to calculate the result for each product group, as well as a separate algorithm for retail and wholesale results. Verizon uses the LSR Service Order Fact table data for almost all product group results except trunks, for which

⁶⁵¹ Response to Data Request #878.

⁶⁵² Response to Data Request #879.

⁶⁵³ Response to Data Request #861.

Verizon uses the ASR Service Order Fact table data. Verizon uses both ASR and LSR Service Order Fact table data to calculate results for UNE specials.⁶⁵⁴

PR-5-01 – Percentage Missed Appointment – Verizon – Facilities

Liberty examined the algorithms that Verizon uses to calculate the PR-5-01 measure. To calculate the denominator for the measure, Verizon counts the number of completed service orders for the given product group. To calculate the numerator for PR-5-01, Verizon counts the number of service orders it identified in the denominator that were late due to Verizon facility reasons.

To determine which LSR-related service orders were late for Verizon facility reasons, Verizon first selects orders that are potential misses, *i.e.*, orders where the completion date is later than the original due date, and evaluates them further to determine cause. Verizon uses the CISR MAC field and selects those orders that were not on time due to Verizon facility reasons (*i.e.*, a CISR MAC code of “CA” or “CF”).⁶⁵⁵ As discussed in PR-4, Verizon calculates the number of days by which it missed the order due to company reasons, and includes an order in the numerator of PR-5-01 if the number of days by which the company missed the order was greater than zero. For ASR-related service orders, Verizon selects orders that it completed after the provisioning due date that have a facility indicator value of “Y.”

PR-5-02 – Percentage Orders Held for Facilities > 15 Days and PR-5-03 – Percentage Orders Held for Facilities > 60 Days

Verizon reports PR-5-02 results for the same product groups that it reports for PR-5-01, and reports PR-5-03 for CLEC trunks only. Verizon reports completed trunk orders based on the provisioning status date, which is the date that it posts the order as complete in WFA.⁶⁵⁶

Liberty examined the algorithms that Verizon uses to calculate the PR-5-02 and PR-5-03 measures. To calculate the denominator for the measures, Verizon counts the number of completed service orders for the given product group. To calculate the numerator for PR-5-02, Verizon counts the number of service orders delayed more than 15 days due to Verizon facility reasons that it identified in the denominator. To calculate the numerator for PR-5-03, Verizon counts the number of service orders delayed more than 60 days for Verizon facility reasons that it identified in the denominator.

To determine which LSR-related service orders were late due to Verizon facility reasons for PR-5-02, Verizon first selects orders that are potential misses, *i.e.*, orders where the completion date

⁶⁵⁴ Liberty found that Verizon's June 2003 CMAs for PR-5-01-3112 and PR-5-02-3112 (UNE POTS loop total) included a module that selected ASR-related service orders, which was clearly incorrect. In response to Data Request #860, Verizon confirmed that the production code does not contain the ASR module and that this was a CMA production issue.

⁶⁵⁵ As discussed above, Verizon's approach is incorrect for all product groups except UNE 2-Wire Line Splitting, where it correctly uses the facilities-miss indicator.

⁶⁵⁶ Response to Data Request #859.

is later than the original due date by at least 15 calendar days, and evaluates them further to determine cause. Verizon selects those orders not on time due to facility reasons (*i.e.*, a CISR MAC code of "CA" or "CF").⁶⁵⁷ Verizon then calculates the number of calendar days by which it missed the order due to company reasons, and includes an order in the numerator of PR-5-02 if that number is greater than 15. Verizon calculates the number of days by which it missed the order for all reasons, not just those related to facilities.⁶⁵⁸ Stated differently, Verizon interprets the definition of the PR-5-02 numerator, *i.e.*, orders "completed more than 15 days after the commitment date due to lack of Verizon facilities," as the number of orders that Verizon completed more than 15 days after the due date that also had a Verizon facility issue as the first delay on the order.

For ASR-related service orders for PR-5-02 and PR-5-03, Verizon selects orders that it completed 15 or more days or 60 or more days, respectively, after the provisioning due date that have a facility indicator value of "Y."

Liberty recalculated the PR-5-03-5000 CLEC aggregate result for September 2003 using the ASR Service Order Fact table that Verizon provided.⁶⁵⁹ Liberty replicated Verizon's denominator, as well as the overall result. Liberty also recalculated Verizon's parity result (IXC FGD trunks), and replicated Verizon's denominator, as well as the overall result.

Verizon found that its PR-5-02 algorithms for the retail comparison for the UNE 2-Wire xDSL, Line Sharing and Line Splitting product groups were incorrect. Verizon issued Metric Change Control No. 10219 and corrected the problem effective the September 2003 data month.⁶⁶⁰

PR-5-04 – Percentage Orders Cancelled More than Five Days After Due Date – Due to Facilities

The PR-5-04 measure reports the percentage of orders cancelled more the five days after the due date due to Verizon facilities reasons. The Guidelines list as an additional exclusion for PR-5-04 orders missed or delayed due to customer reasons. Verizon calculates a subscriber delay indicator field in NMP, which its metric algorithms use to exclude orders that it completes late due to any CLEC-related delay. This subscriber delay indicator is set to "Y" if there was a delay associated with the order due to CLEC reasons (*e.g.*, no access, customer not ready, customer requested a later due date, or subscriber CLEC problem). Verizon does not, however, set the indicator to "Y" if the CLEC or subscriber requests an earlier appointment date prior to the due date.⁶⁶¹ Verizon applies this exclusion to both the numerator and denominator of the measure.

The Guidelines define the denominator of the PR-5-04 measure as the number of orders completed or cancelled in the reporting month. The numerator is the number of cancelled orders

⁶⁵⁷ As discussed above, Verizon's approach is incorrect for all product groups except UNE 2-Wire Line Splitting, where it correctly uses the facilities-miss indicator.

⁶⁵⁸ Response to Data Request #862.

⁶⁵⁹ Response to Data Request #262.

⁶⁶⁰ Verizon's algorithms were missing a dispatch indicator in the numerator. Verizon also issued Metric Change Control No. 10476, which covered the same issue.

⁶⁶¹ Verizon provided LSR Service Order Fact table field descriptions in response to Data Request #39.

cancelled five or more business days after the due date, excluding any orders missed due to customer reasons.

Liberty examined the algorithms that Verizon uses to calculate the PR-5-04 measure. To calculate the denominator, Verizon counts the number service orders that it completed or cancelled during the reporting month for the given product group, excluding those that had a CLEC-related delay. To calculate the numerator, Verizon counts the number of service orders it identified in the denominator that were missed for Verizon facility reasons, had no CLEC-related delay, and were cancelled more than five days after the original due date.

As discussed above, Verizon uses the facilities-miss indicator to select orders for the numerator. Verizon also calculates a cancellation delay indicator interval as the difference between the original due date for the order and the cancellation date.⁶⁶²

Liberty found that Verizon's algorithm for the UNE specials product group, PR-5-04-3200, is incorrect. The approach that Verizon uses to implement the "orders missed or delayed due to customer reasons" exclusion for ASR-related service orders for specials is incorrect and different from its method for LSR-related service orders. For ASR-related service orders, Verizon excludes the order if it had only customer-related misses or delays, *i.e.*, no Verizon misses. For LSR-related service orders for specials, Verizon excludes orders that had a customer-related miss at any time during the life of the order, *i.e.*, the order may also have Verizon misses.⁶⁶³ Liberty recommends that Verizon correct its algorithm for this measure.

Verizon found that its algorithm for PR-5-04-3112, the UNE POTS loop product group, was incorrect. Verizon issued Metric Change Control No. 10106 and corrected the problem effective the August 2003 data month.⁶⁶⁴ Liberty asked Verizon to provide the programming changes that it made. Liberty reviewed the changes and found that they will correct the problem.⁶⁶⁵ Verizon later found that it did not exclude hot cuts from the PR-5-04-3112 POTS loop total product group result. Verizon issued Metric Change Control No. 10546, and made a change to exclude orders with a hot cut indicator value of "N" effective with the December 2003 data month. As discussed in the introductory section of this chapter, Liberty believes that Verizon has incorrectly excluded both hot cuts and CLEC-to-CLEC migrations.

Liberty found that Verizon's algorithm for the UNE 2-Wire Digital product group, PR-5-04-3341, contained an error. Verizon selects orders with a CLEC-caused delay, rather than those without a CLEC-caused delay, in the numerator of the measure. Verizon confirmed that it had an error in the algorithm, and stated that it would issue a change control to correct the problem.⁶⁶⁶

⁶⁶² Verizon provided LSR Service Order Fact data mart field definition document in response to Data Request #39.

⁶⁶³ Response to Data Request #939. Verizon also confirmed that the June CMA for this measure that it had provided was incorrect due to a mapping problem, and provided Liberty with the correct algorithm.

⁶⁶⁴ Verizon's algorithm selected 2-wire digital orders rather than POTS orders.

⁶⁶⁵ Response to Data Request #786.

⁶⁶⁶ Response to Data Request #865.

G. Findings and Recommendations for PR-4 and PR-5

Verizon has adopted conventions for calculating the PR-4 and PR-5 metrics that are either not included or inconsistent with the Guidelines.

Verizon had adopted certain conventions for calculating PR-4 and PR-5 results that are either not documented in the Guidelines or, in some cases, in conflict with the Guidelines. For PR-4 and PR-5, Verizon does not consider the order missed for Verizon reasons unless there was at least one full day of company delay. Verizon should seek to clarify the Guidelines with respect to this practice.

Verizon interprets the language in the PR-4 Guidelines regarding PR-4-15 to mean that Verizon should include completed orders with a customer-caused delay in the denominator, and count these orders as “on time” in the numerator. Liberty believes that the language in the Guidelines is confusing on this issue. Verizon’s interpretation is reasonable, but not wholly supported by the Guidelines. Liberty recommends that Verizon seek a clarification to the Guidelines to make its interpretation for this measure explicit.

Verizon interprets the PR-5-04 measure to reflect the percentage of orders cancelled due to facilities reasons. The definition for the PR-5 metric, however, notes that “the likely reason for such cancellations included in PR-5-04 would be due to a lack of facilities.” Liberty interprets this language to mean that all cancelled orders otherwise meeting the criteria of the numerator (*i.e.*, both those with a facility delay and without) should be included in the numerator, although most of the orders will likely involve a facility delay. Liberty recognizes that the Guidelines are somewhat unclear on this issue, and that Verizon’s interpretation is a reasonable one. Liberty recommends that Verizon seek necessary clarifications to the Guidelines to make clear that it should include only orders cancelled due to facility reasons in the numerator.

The exclusion in PR-4 for LNP orders that do not have office equipment applies only to PR-4-07. Verizon should seek a clarification to make this explicit. Also, in cases where a service order includes both regular telephone numbers and DID trunks, Verizon excludes the entire order because some of the lines do not have a trigger. This approach is reasonable but Verizon should seek a clarification to the Guidelines to make clear that it excludes service orders if some portion involves lines without office equipment.

Verizon measures its performance in completing both the trigger and disconnect portion of LNP orders for PR-4-07 and therefore the general PR-4 exclusion for disconnect orders does not apply to PR-4-07. Also, Verizon stated that the exclusion for suspend and restore orders does not apply to PR-4-07, because denials for non-payment are not a part of LNP service. Verizon should seek a modification to the Guidelines to indicate that these two exclusions are not applicable to PR-4-07.

Verizon’s metric algorithms for PR-4 and PR-5 contain errors.

Several of Verizon’s algorithms for the PR-4 and PR-5 measures contain errors:

- Liberty found that six of the ten PR-4-01 algorithms contained the same error. Specifically, to calculate the numerator, Verizon selects orders with a facility delay over 15 days, rather than orders completed late for Verizon reasons.
- Liberty found that Verizon's algorithm for PR-4-01-2210 (resale DS0) did not contain the check for a missed appointment (*i.e.*, whether the completion date was later than the due date) nor did it contain a check for a Verizon-caused miss.
- Liberty found that for some product groups in PR-4-03, Verizon incorrectly counts orders with a customer-caused delay in the numerator although these orders also have a Verizon-caused delay.
- Liberty found that nearly all of Verizon's PR-5-01, PR-5-02, and PR-5-03 algorithms for products that CLECs order by both LSRs and ASRs contain incorrect logic to select the orders that Verizon missed due to facilities reasons.
- Liberty found that Verizon's algorithm for PR-5-04-3200 (UNE specials) is incorrect. Verizon excludes only those ASR-related service orders with customer-caused delays but no Verizon delays. This is different from its treatment for LSR-related service orders.
- Liberty found that Verizon's algorithm for PR-5-04-3341 (the UNE 2-Wire Digital product group) contained an error. Verizon selects orders with a CLEC-caused delay, rather than those without a CLEC-caused delay, in the numerator of the measure.

Liberty also found that Verizon's algorithms for the retail comparison for eight of the ten PR-4-01 product groups contain code that selects resale migrations. Although this code is unnecessary for retail and did not affect metric results, Verizon should revise its retail algorithms for this measure to remove the superfluous coding.

In addition, Verizon found that it either failed to include a dispatch indicator or included a test for both dispatch and non-dispatch orders in two UNE 2-Wire Digital PR-4 algorithms, specifically PR-4-04-3341 and PR-4-05-3341. Verizon issued a change control, but did not complete it until November 2003. As such, Verizon's reported results for this product group for September 2003 were incorrect.

H. PR-6, Installation Quality

1. Background

The three sub-metrics within PR-6 report on the percentage of lines/circuits/trunks that Verizon installed where a reported trouble was found in the network within 30 days (and within seven days for POTS services) of order completion.

The Guidelines specify that Verizon reflect only certain reported troubles in the PR-6-01 and PR-6-02 measures, *i.e.*, troubles with disposition codes for Drop Wire (03), Cable (04), and Central Office (05). Verizon's disposition code 05 troubles should also contain translation troubles

closed automatically via SERVICE⁶⁶⁷ by the CLEC. The PR-6-03 sub-metric focuses on reported troubles where Verizon found no problem within the network, *i.e.*, those with disposition codes of 07, 08, and 09 for Found OK (FOK) and Test OK (TOK), and those with disposition codes of 12 and 13 for customer premise equipment (CPE).

The PR-6 sub-metrics report on distinct products types as detailed in the table below:

Sub-Metric	Resale	UNE	CLEC Trunks
PR-6-01 and PR-6-03	<ul style="list-style-type: none"> • POTS – Total • 2-Wire Digital Services (ISDN) • Specials 	<ul style="list-style-type: none"> • POTS – Platform • POTS – Loop Total • Specials • 2-Wire Digital Loops • 2-Wire xDSL Loops • 2-Wire xDSL Line Sharing • 2-Wire xDSL Line Splitting 	<ul style="list-style-type: none"> • CLEC Trunks
PR-6-02		<ul style="list-style-type: none"> • POTS – Loop Hot Cut 	

The Guidelines list the following exclusions from the PR-6 calculations in addition to the standard exclusion for Verizon affiliate data:

- Subsequent trouble reports (additional customer calls while the trouble is pending)
- Troubles closed due to customer action
- Troubles reported by Verizon employees in the course of performing preventative maintenance, where no customer has reported a trouble
- Special project PONs.

Verizon reports all of the PR-6 sub-metrics on a statewide basis for individual and aggregate CLECs, and for Verizon retail. The standard for PR-6-01 is parity with retail for found troubles, except for UNE 2-Wire xDSL Line Sharing and UNE 2-Wire xDSL Line Splitting, which have a standard of parity with VADI. The standard for PR-6-02 is two percent. There is no standard for PR-6-03. The Guidelines provide the following formulas for the PR-6 sub-metrics:

PR-6-01: % Installation Troubles Reported Within 30 Days

(Number of Central Office and outside plant loop (disposition codes 03, 04, and 05) troubles with installation activity within 30 days of the trouble report)/(Total lines installed in the calendar month)

PR-6-02: % Installation Troubles Reported Within Seven Days (POTS hot cut loops only)

(Number of Central Office and outside plant loop (disposition codes 03, 04, and 05) troubles with installation activity within seven days of the trouble report)/(Total lines installed in the calendar month)

⁶⁶⁷ In response to Data Request #48, Verizon clarified that SERVICE is a system used by Verizon's Regional CLEC Maintenance Center (RCMC) to evaluate whether a CLEC ordered a vertical feature and whether the feature exists in the central office switch translations.

PR-6-03: % Installation Troubles Reported Within Thirty Days – FOK/TOK/CPE

*(Number of Not Found, Test OK and CPE troubles with installation activity
within 30 days of the trouble report)/(Total lines installed in the calendar month)*

Two of the PR-6 sub-metrics are relevant to Verizon's PAP. For the July and August 2003 reporting months, Verizon incurred a \$23,832 penalty related to this measure.⁶⁶⁸

2. Analysis and Evaluation

The PR-6 measures focus on troubles found on the Verizon network within 30 days (PR-6-01 and PR-6-03) or within seven days (PR-6-02) of service order completion. The Guidelines define the denominator as the sum of the lines that Verizon provisioned during the month, and not the number of orders as with other PR measures. Verizon uses data from the PR domain for the denominator of the PR-6 measures, and data from the MR domain for the numerator of the PR-6 measures.

Verizon defines the product groups for the denominator of PR-6 in the same way that it defines them for PR-1 through PR-5. Verizon includes both EEL and IOF products in the UNE specials product group for PR-6, because it does not report these separately. As discussed in the introductory section, Verizon incorrectly excludes Verizon-to-CLEC hot cuts and CLEC-to-CLEC migrations from the POTS platform product group. Verizon defines the product group UNE POTS loop total in the same way that it does for PR-5-04, and does not exclude hot cuts in PR-6 (even though it reports these orders separately in PR-6-02). Verizon also incorrectly includes CLEC-to-CLEC migrations in the POTS loop hot cut product group in PR-6-02.

Verizon indicated that it changed its programming logic for the UNE POTS Platform product group effective with the September 2003 reporting month. Verizon ceased including UNE POTS "other" products in this group.⁶⁶⁹

Verizon includes both CLEC and reciprocal trunks in the CLEC trunk product group.⁶⁷⁰ As discussed in the introductory section, Verizon has an error in all of its algorithms for the PR-6 resale product groups because it defines the denominator in such a way as to effectively exclude "as is" migrations from the POTS, 2-Wire Digital and specials product groups.

Verizon excludes test CLECs, Verizon affiliate IDs, and VADI (from wholesale only) from the numerator, consistent with the general exclusions set forth in the Guidelines. The Guidelines for PR-6 list four exclusions, only one of which, special projects, relates to the denominator of the

⁶⁶⁸ Responses to Data Requests #198 and #203 (July and August 2003 C2C Reports).

⁶⁶⁹ Response to Data Request #659. As of the September data month, Verizon converted PR-6-01-3121 and PR-6-03-3121 to PR-6-01-3140 and PR-6-03-3140.

⁶⁷⁰ Response to Data Request #668. Verizon stated that reciprocal trunks are outbound trunk service from Verizon that carries originating Verizon customer traffic to the CLEC. Verizon includes these in the denominator of the PR-6-01 and PR-6-03 metric because the definition refers to total lines installed in the month.

measures. Liberty examined the other exclusions that Verizon applied to the denominator of the PR-6 measures. Verizon excludes disconnect orders and uses the global exclusion indicator field to exclude other types of orders (such as PARTS). Verizon does not exclude snip-and-restore orders from either retail or wholesale. Verizon explained that it does not exclude these orders because this type of request can generate maintenance calls.⁶⁷¹ Verizon also excludes administrative orders, but more narrowly defines administrative orders for PR-6.⁶⁷² Stated differently, Verizon includes certain administrative orders in the denominator of PR-6 that it excludes in other measures. These exclusions are reasonable but not listed in the Guidelines for PR-6. Liberty recommends that Verizon seek a modification to the Guidelines to make explicit the exclusions it applies to the denominator of the measures, including the more narrow definition for administrative orders that it applies to PR-6.

The one exclusion relevant to the PR domain that is included in the Guidelines is the one for special project PONs. As discussed in the introductory section, Verizon excludes special project PONs from the numerator and denominator in its wholesale algorithms. Liberty also found that Verizon included the logic to check for special project PONs in the numerator of its retail parity results for PR-6. Verizon confirmed that the code was unnecessary.⁶⁷³ Liberty therefore recommends that Verizon revise its PR-6 retail algorithms.

Verizon excludes orders/troubles associated with the former GTE territory in Virginia from both the numerator and denominator of the PR-6 sub-metrics.

Verizon does not define the product groups for the numerator of the PR-6 measures in the same way that it defines the product groups in the denominator. Verizon includes products in the residential and business classes of service in the denominator of most product groups, but includes residential, business, and public (coin) classes in the numerator for the same product groups.⁶⁷⁴ Verizon stated that the glossary to the Guidelines for POTS total indicates that Verizon should include the public class of service in maintenance (class of service 08, 09, and 19), but offered no explanation for other product groups. Verizon stated that there were otherwise no other differences in product group definitions.⁶⁷⁵ There is therefore a mismatch between the relevant population of orders in the denominator and those to which the trouble tickets relate in the numerator for most products. Verizon should either change its approach or explicitly explain the process in the Guidelines for the PR-6 metric.

Liberty found that there is also an inherent bias in the PR-6 measure that makes Verizon's retail performance generally appear worse than its wholesale performance. The PR-6 denominator reflects the number of lines that Verizon installed during the month. The PR-6 numerator reflects troubles associated with installation type orders, which may or may not involve a line. A larger proportion of CLEC orders involve line activity than do retail orders. For example, change orders

⁶⁷¹ Response to Data Request #852.

⁶⁷² Responses to Data Requests #851 and #875. Verizon uses the exclusion indicator in other PR measures to exclude orders that had an administrative indicator assigned by the SOP, had a blank PON, or had an LSRN beginning with "ZZ." Verizon excludes administrative orders meeting only the first two conditions in PR-6.

⁶⁷³ Response to Data Request #874.

⁶⁷⁴ Clarification response to Data Request #876. This affects resale POTS and 2-Wire Digital products, as well as UNE POTS loop, POTS platform, 2-Wire Digital, xDSL loops, Line Sharing, and Line Splitting.

⁶⁷⁵ Response to Data Request #876.

may involve adding switch services or wiring, but no line activity. Verizon does not count such change orders in the denominator of PR-6 (*i.e.*, the number of installed lines is zero), but counts any troubles associated with such change orders in the numerator.⁶⁷⁶ Verizon retail customers order more stand-alone switch services than do CLECs.⁶⁷⁷ Therefore Verizon's retail parity result will generally reflect more troubles per installed lines than the wholesale result. Verizon's treatment, however, is consistent with the definition of the measure in the Guidelines.

Verizon adopted certain conventions to identify the trouble reports that are relevant to the PR-6 sub-metrics. The Guidelines do not indicate how Verizon should define the reporting month for the numerator of the PR-6 measures. Verizon includes a trouble report in the numerator if it closed the ticket during the reporting month. This convention is acceptable but Verizon should seek a clarification to the Guidelines to make it clear.

Verizon interprets an installation trouble to be only the first trouble that occurs within the seven-day or 30-day window. If Verizon receives another trouble report, it considers this a repeat trouble, rather than a separate installation trouble.⁶⁷⁸ Liberty believes that this exclusion is reasonable but not specified in the Guidelines. Verizon should seek a clarification to the Guidelines to make this clear.

Verizon also counts only reported troubles that it closes within the seven-day or 30-day window. Verizon stated that it must wait until it closes the trouble ticket to know that it found the trouble and to identify the disposition code to which it closed the trouble.⁶⁷⁹ A reader can interpret the Guidelines to mean any troubles reported within seven or 30 days that Verizon ultimately closes to one of the relevant disposition codes. Liberty believes that Verizon's interpretation of the measures is reasonable, but that the Guidelines are not clear on this issue. Liberty recommends that Verizon seek a clarification to the Guidelines to make its interpretation explicit.

To determine the numerator for PR-6-01, PR-6-02, and PR-6-03, Verizon uses the NMP Maintenance and Repair (M&R) Trouble Fact data table.⁶⁸⁰ Some of the key data fields in the M&R Trouble Fact data table are CLEC ID, state code, install report 30-day indicator, repeat report 30-day indicator, hot cut indicator, test account flag, exclude-by-Final Status (FST) indicator, corporate telephone indicator, administrative repeat flag, disposition code, product indicator, provider, service level code, and class of service indicator. The source systems for the data in this table include the Loop Maintenance Operations System (LMOS) and WFA.

⁶⁷⁶ As an example, Liberty found that there were 43,195 UNE POTS platform orders in September that otherwise met the criteria for the denominator of PR-6-01-3140; these orders involved a total of 45,099 installed lines. Verizon had 187,404 retail POTS orders that otherwise met the criteria for the denominator; these orders involved a total of only 149,358 lines.

⁶⁷⁷ Response to Data Request #905.

⁶⁷⁸ Interview #23, December 2, 2003. Verizon opened Metric Change Control No. 10391 to correct an NMP programming error that affected June and July 2003 data months. Verizon's programming identified all troubles after an installation as "I-coded," rather than the first trouble after an installation. Verizon made the correction effective with the August 2003 data month, and will score only the first trouble after an installation as an "I-code" ticket.

⁶⁷⁹ Response to Data Request #671.

⁶⁸⁰ Verizon also uses the M&R Trouble Fact Specials data table for resale and UNE specials, and the data fields are similar to those in the M&R Trouble Fact data table.

Verizon uses the test account flag to indicate test CLEC and Verizon affiliate troubles. Verizon uses an exclude-by-FST indicator value of "Y" to indicate trouble tickets that the Regional CLEC Maintenance Center (RCMC) flagged as having an error (discussed in more detail in the M&R chapter) in the final status process. Verizon uses an administrative repeat flag value of "Y" to indicate that the trouble was cleared but not closed before an additional trouble report came in.

The Guidelines list as exclusions subsequent reports and troubles reported by Verizon employees in the course of performing preventative maintenance, where no customer has reported a trouble. Verizon indicated that it excludes subsequent reports from the metric because it includes only closed troubles in the metrics.⁶⁸¹ Verizon includes only category one reports, *i.e.*, customer direct and customer referred troubles, in reported results. Verizon stated that it therefore accurately excludes troubles reported by Verizon employees.⁶⁸²

The Guidelines also list troubles closed due to customer action as a valid exclusion for the PR-6 metrics. Consistent with the Guidelines, Verizon excludes troubles closed due to customer action (which have a disposition code of 06) from the PR-6-01 and PR-6-02 measures by limiting the trouble tickets it includes in the measures to those with a disposition code of 03 (drop wire trouble), 04 (trouble found on the cable facilities), and 05 (trouble found within the central office). Verizon excludes troubles closed due to customer action from the PR-6-03 measure by limiting the trouble tickets it includes in the measure to those with a disposition code of 07, 08, 09 (Found OK/Test OK) and 12 and 13 (Customer Provided Equipment). Verizon therefore correctly applies this exclusion.

Verizon excludes test CLECs and Verizon affiliate IDs from the numerator, consistent with the Guidelines. Verizon also makes exclusions to the numerator of the PR-6 measures that the Guidelines do not list. Verizon excludes test CLECs and Verizon affiliate IDs. Verizon excludes repeat trouble reports on the same line, trouble reports on test accounts, and trouble reports on corporate telephone services. Additionally, Verizon excludes troubles on which the RCMC indicated that the ticket contained an error (*i.e.*, those troubles with an exclude-by-FST indicator equal to "Y"). These exclusions are reasonable but Verizon should request a modification to the Guidelines to make them explicit for the numerator of the measures.

Verizon determines the install report 30-day indicator and repeat report 30-day indicator in NMP. NMP compares service orders that Verizon has completed with trouble ticket information that NMP receives from LMOS or WFA. Verizon sets the 30-day install report indicator to "Y" if Verizon closed a trouble report on a circuit within 30 days of installation completion. Verizon sets the 30-day repeat report indicator to "Y" if Verizon had a repeat trouble on a circuit within 30 days of the closing of the last trouble on that circuit. Verizon defines the installation and repeat troubles in such a way that they are mutually exclusive. That is, Verizon considers the first trouble after installation to be an installation trouble if Verizon closed it within 30 days of the installation. Verizon considers any later troubles to be repeat troubles even if Verizon closed them within 30 days of the installation. Verizon's metric algorithms for PR-6-01 and PR-6-03

⁶⁸¹ Interview #23, December 2, 2003.

⁶⁸² Response to Data Request #673.

select trouble reports for the numerator that have an install report 30-day indicator of “Y” and a repeat report 30-day indicator of “N.”

Liberty found that the logic Verizon uses to determine the install report 30-day indicator and repeat report 30-day indicator is faulty. Verizon can receive a trouble on a line prior to the time it completes an installation on that line, and receive a second trouble after it completes the service order but within 30 days of the first trouble. In such a case, Verizon’s programming logic incorrectly identifies the second trouble as a repeat trouble rather than an installation trouble.⁶⁸³ As a result, Verizon incorrectly excludes some trouble reports from the numerator of the PR-6-01 and PR-6-03 metrics for all product groups. Liberty recommends that Verizon correct its logic for these indicators. Verizon acknowledged the problem and stated that it planned to issue a change control to correct the error.⁶⁸⁴

Verizon has implemented a series of change controls related to the numerator of the PR-6 metrics. Verizon found that in cases where it updated information on troubles, the update did not carry to the NMP logic that Verizon used to identify repeater and installation-related troubles. Verizon issued Metric Change Control No. 10388 and corrected the problem effective with the August 2003 data month.

Verizon found that its LMOS reclamation process reclassifies and updates some retail, resale, and UNE-P troubles on the basis of CLEC ID and Uniform Service Order Code (USOC). Verizon issued Metric Change Control No. 10508 to cease using provisioning data because the USOC update caused it to improperly classify some troubles. Verizon began using M&R data instead of provisioning data for the reclamation process effective with the October 2003 data month.

Verizon uses a hot cut indicator field to select the relevant trouble tickets to include in the PR-6-02 results.⁶⁸⁵ Verizon executes a procedure in NMP that matches the area codes and circuit IDs associated with completed hot cuts with those from the M&R trouble ticket data in the NMP warehouse. Verizon recently opened Metric Change Control No. 10370, effective with the August 2003 data month, to add the area code to the matching procedure. Verizon had found that its procedure incorrectly identified trouble tickets as related to hot cuts when it used only the circuit ID, because this field is not unique across all states. If there is a match, NMP populates the hot cut indicator field in the M&R data with a “Y.” However, Verizon sets this field to “Y” only if it closed the trouble ticket within seven days of the hot cut.⁶⁸⁶

For each of the PR-6 measures, Verizon uses a separate algorithm to calculate the result for each product group, as well as a separate algorithm for retail and wholesale results. Verizon uses the LSR Service Order Fact table data for almost all denominator product group results except trunks, for which Verizon uses the ASR Service Order Fact table data. Verizon uses both ASR and LSR Service Order Fact table data to calculate denominator results for UNE specials. To calculate the numerator of the PR-6 measures, Verizon uses M&R Trouble Fact data table.

⁶⁸³ This error also affects M&R measures, and Liberty discusses the issue in more detail in the M&R chapter.

⁶⁸⁴ Response to Data Request #791 (clarification).

⁶⁸⁵ Verizon also uses this indicator for the PR-9-08 metric.

⁶⁸⁶ Interview #23, December 2, 2003.

The retail analog table in the Guidelines indicates that the retail parity product for the UNE POTS loop total, 2-Wire xDSL loop, and 2-Wire Digital products is retail POTS dispatched. Verizon clarified that the June 2003 CMAs for the retail result that it provided to Liberty were incorrect, and that its production code accurately included only dispatched orders in the numerator and denominator.⁶⁸⁷

PR-6-01 – Percentage Installation Troubles Reported within 30 Days and

PR-6-03 – Percentage Installation Troubles Reported within 30 Days – FOK/TOK/CPE

The PR-6-01 metric reports the percentage of lines/circuits/trunks installed on which Verizon found a trouble in its network within 30 days of order completion. According to the Guidelines, Verizon should include troubles with the disposition codes 03, 04, and 05 in the PR-6 metric.

The PR-6-03 metric reports on the percentage of lines/circuits/trunks installed on which Verizon found a trouble outside of its network within 30 days of order completion. According to the Guidelines, Verizon should include troubles with the disposition code 07, 08, and 09 (Found OK/Test OK) and disposition code 12 and 13 (customer premises equipment) in the PR-6-03 metric.

Liberty examined the algorithms that Verizon uses to calculate the PR-6-01 and PR-6-03 measures. To calculate the denominator of these measures, Verizon counts the number of lines associated with orders that it completed (*i.e.*, had a CRIS completion date) during the reporting month. To calculate the numerator for PR-6-01, Verizon counts the number of trouble tickets closed within 30 days of installation completion closed to disposition codes of 03, 04, or 05. To calculate the numerator for PR-6-03, Verizon counts the number of trouble tickets closed within 30 days of installation completion closed to disposition codes 07, 08, 09, 12, or 13.

Liberty recalculated the CLEC aggregate results for the UNE POTS platform product group for both the PR-6-01 and PR-6-03 measures for September 2003 using the LSR Service Order Fact and M&R Trouble Fact data tables that Verizon provided.⁶⁸⁸ For PR-6-01-3140, percent installation troubles reported within 30 days of installation, Liberty replicated Verizon's denominator, as well as the overall result. For PR-6-03-3140, percent installation troubles reported within 30 days of installation FOK/TOK/CPE, Liberty replicated Verizon's denominator, as well as the overall result.

Liberty also recalculated the retail results for the PR-6-01 measure. Liberty replicated Verizon's denominator, as well as the overall result.

⁶⁸⁷ Response to Data Request #658.

⁶⁸⁸ Responses to Data Requests #262 and #263.

Liberty initially identified an error in Verizon's PR-6-01 algorithm for the UNE POTS loop total group, however, Verizon indicated that the inclusion of an extra denominator was a mapping error in how it prepared the June 2003 CMAs.⁶⁸⁹

PR-6-02 – Percentage Installation Troubles Reported within 7 Days

The PR-6-02 metric focuses solely on UNE POTS hot cut loops on which Verizon found a trouble in its network within seven days of order completion. According to the Guidelines, Verizon should include only troubles with the disposition codes 03, 04, and 05 in the PR-6-02 metric.

Liberty examined the algorithm that Verizon uses to calculate the PR-6-02 measure. To calculate the denominator of the measure, Verizon counts the number of lines associated with UNE hot cut loop orders that it completed (*i.e.*, had a CRIS completion date) during the reporting month. To calculate the numerator for PR-6-02, Verizon counts the number of trouble tickets closed within seven days of installation completion on a hot cut that Verizon closed to disposition codes of 03, 04, or 05.

3. Findings and Recommendations

Verizon makes exclusions to the PR-6 metrics that the Guidelines do not list.

Verizon makes several exclusions to the PR-6 metrics that are appropriate but not listed in the Guidelines. Verizon should request a change to the Guidelines to explicitly incorporate these exclusions, including:

- Verizon-initiated orders that are customer-affecting, but not customer-requested, from the denominator of the measure
- Disconnect and administrative orders (including those with a blank PON) from the denominator
- Orders associated with the global exclusion indicator (such as PARTS) from the denominator
- Repeat trouble reports on the same line from the numerator
- Trouble reports on corporate telephone services from the numerator.
- Trouble reports excluded as having an error in the final status process by the RCMC.

Verizon also excludes special project PONs in its retail parity results for PR-6, which is unnecessary. Liberty recommends that Verizon revise its PR-6 retail algorithms.

⁶⁸⁹ Response to Data Request #660.

Verizon does not define the product groups in the numerator and denominator of the PR-6 measures in the same way.

Verizon does not define the product groups for the numerator of the PR-6 measures in the same way that it defines the product groups in the denominator. Verizon includes products in the residential and business classes of service in the denominator of most product groups, but residential, business, and public (coin) classes in the numerator for these same product groups. Verizon stated that the glossary to the Guidelines for POTS total product indicates that Verizon should include the public class of service in maintenance (class of service 08, 09, and 19), but offered no explanation for other product groups. For most products, there is therefore a mismatch between the relevant population of orders in the denominator and those orders in the numerator to which the trouble tickets relate. Verizon should either change its approach or seek Guideline clarifications.

Verizon has adopted certain conventions for the PR-6 measures that the Guidelines do not support.

Verizon includes a trouble report in the numerator if it closed the ticket during the reporting month. This convention is acceptable but Verizon should seek a clarification to the Guidelines to make this point clear.

Verizon interprets an installation trouble to be only the first trouble that occurs within the seven-day or 30-day window. If Verizon receives another trouble report, it considers this a repeat trouble, rather than a separate installation trouble. This exclusion is reasonable but not specified in the Guidelines. Verizon should seek a clarification to the Guidelines to make this clear.

Verizon also counts in the numerator only reported troubles that it closes within the seven-day or 30-day window. Verizon stated that it must wait until it closes the trouble ticket to know that it found the trouble and to which disposition code it closed the trouble. The Guidelines could mean any troubles reported within seven or 30 days that Verizon ultimately closes to one of the relevant disposition codes. Verizon's interpretation of the measures is reasonable, however, the Guidelines are not clear on this issue. Liberty recommends that Verizon seek a clarification to the Guidelines to make its interpretation explicit.

Verizon incorrectly excludes some trouble tickets from the numerator of the PR-6-01 and PR-6-03 measures.

Verizon can receive a trouble ticket on a line prior to the time it completes an installation on that line, and receive a second trouble after it completes the service order but within 30 days of the first trouble. In such a case, Verizon's programming logic incorrectly identifies the second trouble as a repeat trouble rather than an installation trouble, and Verizon incorrectly excludes the second trouble report from the numerator of PR-6-01 or PR-6-03. Liberty recommends that Verizon correct its programming logic. Verizon acknowledged the problem and stated that it planned to issue a change control to correct the error.

I. PR-8, Open Orders in a Hold Status

1. Background

The two sub-metrics within PR-8 report on the percentage of open orders that, at the end of the reporting period, have been in a hold status for 30 or 90 days. According to the Guidelines, an open order is a valid order that Verizon has not completed or cancelled. The Guidelines define open orders in a hold status to include a) open orders that have passed the originally committed completion date due to Verizon reasons, and b) open orders for which Verizon has not assigned a completion date due to Verizon reasons.

The Guidelines specify that Verizon measure the 30- and 90-day intervals for open orders that have passed the originally committed completion date starting from the originally committed completion date. Verizon should measure intervals for those orders that it did not assign a completion date starting from the application date.

The PR-8 sub-metrics report on distinct products types as detailed in the table below:

Sub-Metric	Resale	UNE	Trunks
PR-8-01 and PR-8-02	<ul style="list-style-type: none"> • POTS – Total • 2-Wire Digital Services • Specials 	<ul style="list-style-type: none"> • POTS – Total • 2-Wire Digital Services • Specials • 2-Wire xDSL Loops • 2-Wire xDSL Line Sharing • 2-Wire xDSL Line Splitting • EEL • IOF 	<ul style="list-style-type: none"> • CLEC Trunks

The Guidelines list the following exclusions from the PR-8 calculations in addition to the standard exclusion for Verizon affiliate data:

- Verizon test orders
- Disconnect orders
- Verizon administrative orders
- Additional segments on orders
- Orders that are completed or cancelled
- Orders suspended for non-payment and associated restore orders
- Orders that have passed the committed completion date, or whose completion has been delayed, due to CLEC or end-user delay, including Verizon requests for cancellation
- Orders that, at the request of the CLEC or retail customer, Verizon has not assigned a completion date.

Verizon reports all of the PR-8 sub-metrics on a statewide basis for individual and aggregate CLECs, and for Verizon retail. The standard for both PR-8-01 and PR-8-02 is parity with retail,

except for UNE 2-Wire xDSL Line Sharing and UNE 2-Wire xDSL Line Splitting products, which have a standard of parity with VADI.

The Guidelines provide the following formulas for the PR-8 sub-metrics:

PR-8-01: % Open Orders in a Hold Status for More than 30 Days

(Number of open orders that, at the close of the reporting period, have been in a hold status for more than 30 days)/(Total number of orders completed in the reporting period)

PR-8-02: % Open Orders in a Hold Status for More than 90 Days

(Number of open orders that, at the close of the reporting period, have been in a hold status for more than 90 days)/(Total number of orders completed in the reporting period)

One of the PR-8 sub-metrics is relevant to Verizon's PAP. During the July and August 2003 reporting months, Verizon did not incur any penalties associated with this measure.⁶⁹⁰

2. Analysis and Evaluation

The two sub-metrics within PR-8 report the percentage of open orders that have been in a hold status for more than 30 or 90 calendar days as of the end of the month, compared to the total number orders that Verizon completed in that month.

Verizon defines the product groups in PR-8 in the same way that it does for other PR measures. As noted in the introductory section, Verizon has an error in some of its PR-8 algorithms for the resale product groups because it effectively excludes service orders associated with "as is" resale migrations.

For the UNE specials total product group, Verizon excludes IOF and EEL products because it reports these separately. As discussed in the introductory section, Verizon incorrectly excludes Verizon-to-CLEC hot cuts and CLEC-to-CLEC migrations from the POTS total product group.

Verizon defines the CLEC trunk product group to include both CLEC trunks and reciprocal trunks.

Liberty examined how Verizon applied the exclusions set forth in the Guidelines. Verizon excludes test orders, administrative orders, and disconnect orders. As noted previously, Verizon correctly excludes suspend for non-payment and associated restore orders from retail but does not exclude them from wholesale results. Verizon excludes affiliate data from CLEC results. For a discussion of these exclusions, refer to the introductory section of this chapter.

⁶⁹⁰ Responses to Data Requests #198 and #203 (July and August 2003 C2C Reports).

The Guidelines require that Verizon exclude orders that are complete or cancelled. The wording of this exclusion is confusing, because Verizon reports completed orders in the denominator and pending orders (*i.e.*, not completed or cancelled) in the numerator. Verizon should seek a clarification to the Guidelines to indicate that this exclusion applies to the numerator only. For the numerator, Verizon selects only those orders with a status of “pending,” and therefore correctly applies this exclusion.

The Guidelines require that Verizon exclude orders that have passed the committed completion date or have a delayed completion date due to CLEC or end-user delay, including Verizon requests for cancellation. As discussed previously, Verizon calculates a subscriber delay indicator field in NMP, which its metric algorithms use to exclude orders that are late due to any CLEC-related delay. Verizon sets this subscriber delay indicator to “Y” if there was a delay associated with the order due to CLEC reasons (*e.g.*, no access, customer not ready, customer requested a later due date, or subscriber CLEC problem). Verizon does not, however, set the indicator to “Y” if the CLEC or subscriber requests an earlier appointment date prior to the due date.⁶⁹¹ Verizon applies this exclusion to the numerator of the measure only.⁶⁹² This convention is reasonable; however, Verizon should seek a clarification to the Guidelines to indicate that this exclusion applies only to the numerator.

The Guidelines require that Verizon exclude orders that, at the request of the CLEC or Verizon retail customer, have not been assigned a completion date. Verizon interprets this exclusion to mean orders that have no committed completion date, *i.e.*, original due date. Verizon excludes any order that has not been assigned a completion date at the request of the customer by using the subscriber delay indicator (because such orders will have a customer-related MAC code).⁶⁹³ Verizon also applies this exclusion to the numerator of the measure only. This convention is reasonable but Verizon should seek a clarification to the Guidelines to make it explicit.

For each of the PR-8 measures, Verizon uses a separate algorithm to calculate the result for each product group, as well as a separate algorithm for retail and wholesale results. Verizon uses the LSR Service Order Fact table data for almost all product group results except trunks, EELs, and IOF, for which Verizon uses the ASR Service Order Fact table data. Verizon uses both ASR and LSR Service Order Fact table data to calculate results for UNE specials.

Verizon found that it was counting trunk service orders as complete even if there were trunks on the order still pending. Verizon issued Metric Change Control No. 10117, and subsequently explained that the problem was in the algorithm used by NMP to calculate the metric.⁶⁹⁴ Verizon corrected the problem effective with the August 2003 data month.⁶⁹⁵

⁶⁹¹ In response to Data Request #940, Verizon clarified that it uses the customer-not-ready indicator field for ASR-related service orders. Verizon stated that the logic it uses for ASR and LSR-related orders is the same, and that its algorithms select for the numerator those pending orders that are still open due to company reasons.

⁶⁹² Response to Data Request #866.

⁶⁹³ Clarification response to Data Request #868.

⁶⁹⁴ In response to Data Request #780, Verizon explained that it had counted trunk orders as completed because it counted completions at a sub-order level (circuit layout order) for each trunk instead of at the service order level.

⁶⁹⁵ In its written response to Interview Request #39 dated January 28, 2004, Verizon clarified that it completed the change for the August data month.

**PR-8-01 – Percent Open Orders in a Hold Status > 30 Days and
PR-8-02 – Percent Open Orders in a Hold Status > 90 Days**

Liberty examined the algorithms that Verizon uses to calculate the PR-8-01 and PR-8-02 measures. To calculate the denominator for the measures, Verizon counts the number of completed service orders for the given product group. To calculate the numerator for PR-8-01, Verizon counts the number of service orders pending more than 30 days as of the end of the reporting month that have no CLEC-caused delay. To calculate the numerator for PR-8-02, Verizon counts the number of service orders pending for more than 90 days as of the end of the reporting month that have no CLEC-caused delay.

Liberty recalculated the PR-8-01 CLEC aggregate result for the CLEC trunk product group for September 2003 using the ASR Service Order Fact table that Verizon provided.⁶⁹⁶ For PR-8-01-5000, Liberty was initially unable to replicate Verizon's denominator, and Verizon explained that it had made a change to the algorithm.⁶⁹⁷ Liberty subsequently recalculated the CLEC aggregate result for PR-8-01 and replicated Verizon's denominator and reported result.

Liberty found that Verizon did not have a necessary logic step in its algorithms for the resale POTS product group for PR-8-01 and PR-8-02, and therefore incorrectly included administrative orders in the numerator. Liberty recommends that Verizon correct its algorithms. Verizon subsequently confirmed the error and indicated that it would issue a change control to correct the code.⁶⁹⁸

3. Findings and Recommendations

The exclusions in the Guidelines for PR-8 are unclear.

The Guidelines require that Verizon exclude orders that are complete or cancelled. The wording of this exclusion is confusing, because Verizon reports completed orders in the denominator and pending orders (*i.e.*, not completed or cancelled) in the numerator. Verizon should seek a clarification to the Guidelines to indicate that this exclusion applies to the numerator only.

The Guidelines require that Verizon exclude orders that have passed the committed completion date or have a delayed completion date due to CLEC or end-user delay, including Verizon requests for cancellation. The Guidelines also require that Verizon exclude orders that, at the request of the CLEC or Verizon retail customer, have not been assigned a completion date. Verizon applies these two exclusions to the numerator of the measure only. This convention is

⁶⁹⁶ Response to Data Request #262.

⁶⁹⁷ In its written response to Interview Request #39, dated January 28, 2004, Verizon clarified that it implemented Metric Change Control No. 10117 effective with the August 2003 data month.

⁶⁹⁸ Response to Data Request #867. Liberty found that Verizon did not include a check for the original appointment code in the numerator, and therefore included administrative orders.

reasonable; however, Verizon should seek a clarification to the Guidelines to indicate that these exclusions apply only to the numerator.

Verizon's PR-8 algorithms for the resale POTS product group for PR-8 are incorrect.

Liberty found that Verizon failed to include a necessary logic step in its algorithms for the resale POTS product group for PR-8-01 and PR-8-02, and incorrectly included administrative orders in the numerator. Liberty recommends that Verizon correct its algorithms. Verizon subsequently confirmed the error and indicated that it would issue a change control to correct the program code.

J. PR-9, Hot Cut Loops

1. Background

The PR-9 measure reports the timeliness of Verizon's performance for UNE hot cut loops. Verizon reports three PR-9 sub-metrics in Virginia.

The Guidelines consider a hot cut to be complete when the following occurs:

- Work is done at the appointed Frame Due Time (FDT) as noted on the LSRC or the work is done at a time mutually agreed upon by the CLEC
- The time is either within the prescribed interval in the Guidelines, or it is a mutually accepted interval agreed upon by Verizon and the CLEC.

The Guidelines define the cut-over window, the amount of time from start to completion of physical cut-over of the lines, on the basis of the number of lines in the order as follows:

- 1 to 9 lines – 1 hour
- 10 to 49 lines – 2 hours
- 50 to 99 lines – 3 hours
- 100 to 199 lines – 4 hours
- 200 or more lines – 8 hours.

If an Integrated Digital Loop Carrier (IDLC) is involved in the hot cut, a four-hour window (8:00 a.m. to 12:00 Noon or 1:00 p.m. to 5:00 p.m.) applies to the start time.⁶⁹⁹ This is only applicable if Verizon notified the CLEC by 2:30 p.m. Eastern time two days before the due date that the service was on IDLC.

Similarly, the Guidelines consider a hot cut to be "missed" when one of the following occurs:

⁶⁹⁹ During the New Jersey audit, Verizon told Liberty that, on an IDLC order, the loop and switch are integrated and Verizon has to first move the CLEC onto copper facilities or a universal DLC. Verizon does this work in the field, requiring a dispatch.

- A premature disconnect is called into the 1-877-HotCuts number.
- Verizon did not complete the work due to a Verizon reason (*e.g.*, late turn-up or due date pushed out due to Verizon action).

The Guidelines list the following exclusions from the PR-9 calculations in addition to the standard Guidelines exclusion for Verizon affiliate data:

- Verizon test orders
- Verizon administrative orders
- Additional segments on orders
- Orders that are not complete
- Hot cuts performed by Verizon, when the order has been cancelled by the CLEC before the start of the hot cut window
- For PR-9-02, early cuts not reported by the CLEC to the 877-HotCuts line.

Verizon reports all of the PR-9 sub-metrics on a statewide basis for individual and aggregate CLECs. The standard for PR-9-01 is 95 percent. The standard for PR-9-02 is not more than 1 percent of lines cut early. There is no standard for PR-9-08.

The Guidelines provide the following formulas for the PR-9 sub-metrics:

PR-9-01: % On Time Performance – Hot Cut

(Number of coordinated loop hot cut orders, with or without number portability, completed within the commitment window, as scheduled on the order, on the due date)/(Number of coordinated loop hot cut orders completed)

PR-9-02: % Early Cuts – Lines

(Number of coordinated loop hot cut orders, with or without number portability, cut before the frame due time (FDT) or cut before the mutually agreed upon time between Verizon and the CLEC)/(Number of hot cut lines completed)

PR-9-08: Average Duration of Service Disruption

(The sum of the trouble clear date and time minus the trouble receipt date and time for Central Office and loop troubles with disposition codes 03, 04, or 05 for hot cut installation troubles reported within seven days)/(Number of Central Office and loop troubles with disposition codes 03, 04, or 05 for hot cut installation troubles reported within seven days)

Only PR-9-01 is relevant to Verizon's PAP. For the July and August 2003 reporting months, Verizon incurred \$803 of penalties related to this measure.⁷⁰⁰

⁷⁰⁰ Responses to Data Requests #198 and #203 (July and August 2003 C2C Reports).

2. Analysis and Evaluation

Liberty examined Verizon's methods for processing hot cut orders in Virginia, and found that they were essentially the same as those used for New Jersey.⁷⁰¹ Verizon's Regional CLEC Coordination Center (RCCC) in Hunt Valley, Maryland handles hot cut orders for Virginia. The RCCC hot cut coordinators use a web-based system, the Wholesale Performance Tracking System (WPTS), to process and record information on hot cut orders. WPTS is an overlay to the Work Force Administration - Control (WFA-C) system, and is a tool for i) tracking orders, ii) collecting data on orders, and iii) communicating interactively with the CLEC and Verizon frame technicians during the hot cut process. Information from WFA-C routinely updates WPTS on hot cut orders, and WFA-C records on the OSS Log any information entered into WPTS. Verizon handles all hot cut orders through the WFA-C and WPTS systems.

The CLEC specifies the FDT on the LSR, and Verizon indicated that it was not its policy to solicit alternative FDTs. Under its business process, Verizon notifies the CLEC prior to the cut that it is ready to proceed at the appointed FDT. At this time, Verizon also verifies that the CLEC is prepared to continue. When the cut is complete, Verizon notifies the CLEC, either via phone or electronically through WPTS. The RCCC coordinator records the date and time of i) the CLEC's approval to continue, ii) the completion of the cut by the frame technician, and iii) the turn-up of the completed order to the CLEC.⁷⁰²

The coordinator records information on the order on a WPTS screen during the hot cut session. If the CLEC is interactive with WPTS, it can simply click buttons on the screen to indicate approval to continue, acceptance of the order, etc., and it will receive electronic notification of a completed cut. If the CLEC is not interactive on WPTS, a RCCC coordinator has to "act for" the CLEC on the WPTS system. After getting a confirmation over the phone, the coordinator can click the appropriate CLEC response button, which then prompts for a comment (such as the name of the CLEC person contacted regarding the turn-up). The Verizon frame technician working the order is also usually interactive on WPTS, and clicks a button to indicate that the cut was completed. In some cases, however, the RCCC coordinator has to get the information over the phone and act as the frame technician by clicking the WPTS button regarding completion. The WPTS system automatically provides the time stamping for each step in the process, and updates this information to the WFA-C OSS Log.

If Verizon completed the order outside the cut-over window (defined as the interval from FDT to turn-up time⁷⁰³), the WPTS system prompts the coordinator for a reason why Verizon missed the order. Verizon uses a three-character missed function code (MFC) to indicate the reason for any missed order. The first letter of the MFC indicates the party responsible for the delay. Verizon uses a "C" to indicate the CLEC, and a variety of other letters to indicate Verizon organizations

⁷⁰¹ Interview #5, October 3, 2003.

⁷⁰² Interview #5, October 3, 2003. Verizon confirmed that its practice for recording data on Virginia orders is the same as that for New Jersey.

⁷⁰³ Verizon confirmed that it is not doing acceptance testing, but that it uses the turn-up time as the end point for calculating whether it completed the order within the cut-over window.

or functions (such as the central office or complex design center). The last two characters of the MFC are numeric and indicate the reason for delay (such as defective facilities/translations).⁷⁰⁴ If Verizon misses the cut-over window, the RCCC coordinator selects an MFC from a list of possible codes provided in a drop down menu in WPTS.⁷⁰⁵

In some cases, the RCCC coordinators enter an MFC of "O01" to indicate that Verizon did not actually miss the order. Verizon explained that there are instances in which the RCCC coordinator gets behind in entering the data on an order (such as when the WPTS system is down and the coordinator is working in WFA-C or on paper) and the coordinator could not get the completion time-stamped promptly by WPTS. There are also instances in which the CLEC may request that Verizon push the start time out by an hour or more. In these cases, Verizon does not require the CLEC to go back and supplement the order, but simply tries to accommodate the CLEC. In such cases, the order may show as having completed late based on the original FDT. If RCCC coordinators use the O01 MFC code, however, Verizon requires them to enter sufficient explanatory comments in the WPTS system.⁷⁰⁶ In such cases, as long as Verizon completed the hot cut order within the allotted number of hours (measured from actual start to finish), it would not count the order as missed.

The hot cut metrics reporting team, also located in Hunt Valley, Maryland, is responsible for preparing the information used to calculate the PR-9-01 and PR-9-02 metrics. Verizon has downsized the metrics team since Liberty's audit of the New Jersey metrics. While the majority of the work completed by the metrics team remains the same as it was for New Jersey, there have been some changes to the calculation of these metrics. Previously, the metrics team calculated PR-9-01 and PR-9-02 results manually, and sent the results to NMP for reporting purposes. Beginning with the June 2003 data month, the metrics team no longer manually calculates reported results, but instead sends a file containing information on hot cut orders completed during the month to NMP.⁷⁰⁷ Verizon extracts the relevant data for the reporting month from NMP into a data mart, the HotCuts Fact filing mart, on the basis of the order completion date.⁷⁰⁸ Verizon then uses these data to calculate the metric results within NMP.

The metric specialist reviews every completed order to determine met or missed status. Each day, the metric specialist executes a query through WPTS for hot cut orders completed the previous day, and copies data on these orders into an Excel spreadsheet.⁷⁰⁹ The output from the query includes a link to the OSS Log for each order. The specialist adds information to certain

⁷⁰⁴ Response to Data Request #112.

⁷⁰⁵ Liberty learned during its audit of the New Jersey metrics that Verizon also records jeopardy (JEP) codes in the OSS Log during the life of the order. Verizon uses the JEP codes internally to record which step in the process (such as a late LSR) was ultimately responsible for it missing the due date, but Verizon does not use JEP codes in its calculation of the metrics.

⁷⁰⁶ Interview #5, October 3, 2003. Verizon confirmed that its practice in Virginia for using the O01 MFC code was the same as that in New Jersey.

⁷⁰⁷ Interview #5, October 3, 2003, and response to Data Request #292 (supplemental).

⁷⁰⁸ Response to Data Request #291.

⁷⁰⁹ During Interview #13, October 17, 2003, Verizon indicated that the specialist also removed any orders associated with the former GTE territory (designed with a CILLI code ending in "XA") and moved these orders to a separate Order Detail file. Verizon reports only those orders associated with the former Bell Atlantic territory under the Virginia Guidelines.

data fields, such as “Met” code, district, and comments. As Liberty learned in New Jersey, the metric specialist also translates the information in the ISLC field to a “Y” or “N” to indicate if the order is IDLC.⁷¹⁰ The metric specialist compiles these daily WPTS queries into an Order Detail file, which NMP ultimately receives and uses in the monthly metrics calculation. The metric specialist also executes separate queries from WPTS for information on orders due for completion the following day, and uses the results to help verify that Verizon captured all completed orders for the month and to investigate any discrepancies.⁷¹¹ The metric specialist uses a separate query of WPTS to verify that Verizon included all completed orders in the Order Detail file, and runs a macro at month-end to ensure that there are no duplicate order numbers in the file.

Each day, the metric specialist reviews the completed orders and enters information as appropriate on the Excel spreadsheet. When Liberty conducted the audit of these measures in New Jersey, the metric specialist reviewed the OSS Log and determined the turn-up date and time (those data are not included as part of the initial completed order query) for each order, and entered them into the spreadsheet. Beginning with the September 2003 data month, the specialist no longer enters the turn-up times in the Order Detail file.⁷¹² Verizon indicated that the information was not necessary for it to determine a missed order because the system prompts for an MFC code if the order is late. Therefore, the metric specialist reviews each order to determine the appropriateness of the assigned MFC code and adds comments on the orders into the spreadsheet as required.

The MFC field in the Order Detail file represents the one assigned by the metrics team, and the “MFC Used” field represents the one assigned initially by the coordinator. The MFC code assigned by the metrics team is the one that Verizon uses for the purposes of the metric calculation. The metrics team has the “last say” on the MFC code, and if it changes the code, Verizon requires that the RCCC coordinators go back and change the code in WFA-C.⁷¹³ After updating the information on each order in the Order Detail file, the metric specialist scores the order as met or missed. If there is no MFC, or if the order was late for CLEC reasons, Verizon enters a “Y” in the “Met” field; otherwise, Verizon scores the order as a “N.”

The WPTS query of completed orders also flags orders that have a turn-up time before the FDT with an asterisk in the Order Detail file. Verizon considers such orders as having been cut early (since they were finished before they should have begun), and therefore misses under PR-9-01. Such orders differ from those with premature disconnects that CLEC called into the HotCut number (which are identified by the MFC of “D12”). Verizon noted that its normal procedure was to obtain an approval to proceed from the CLEC 15 minutes before the FDT, and that the RCCC coordinator would then give the frame technician authorization to proceed with the cut at

⁷¹⁰ If the field indicates that all or some lines are IDLC, then Verizon changes the field to “Y,” but if the designation is all copper or universal, then Verizon changes the field to “N.”

⁷¹¹ For example, if a CLEC cancels an order close to the due date, an order may appear on the list of orders due to be completed the next day, but not on the list of completed orders for that same day.

⁷¹² Interview #13, October 17, 2003.

⁷¹³ Interview #5, October 3, 2003. Verizon confirmed that it has the same practice in Virginia as it had in New Jersey.

the FDT.⁷¹⁴ Liberty believes that Verizon's practice to identify instances of early cuts is satisfactory.

Verizon uses the review by the metrics team of the hot cut orders, and the MFC codes specifically, as quality control. Proper interpretation of the OSS Log is dependent upon the level of experience of the specialist, rather than on written documentation. Liberty had noted during the New Jersey audit that Verizon's documentation of hot cut data reporting and training for the metric specialist was out of date and incomplete. Verizon updated its documentation, which it subsequently provided to Liberty.⁷¹⁵ Although updated, the documentation still lacks more definite explanations and illustrative examples regarding the metric specialist's role of interpreting OSS Log information, assigning the governing MFC code, and scoring the order as met or missed.

As a further quality control measure, the RCCC supervisors audit four orders per month for each coordinator; one aspect of those audits pertains to the use of MFC codes. The manager of the metrics area also samples ten orders per month (from all Mid-Atlantic state orders worked at the center) to determine the accuracy of scoring by the metric specialist. The metric specialist also produces a daily miss report covering any orders that Verizon misses on a given day. The metrics team circulates the report to the relevant departments, and the department responsible for the miss has a chance to respond if it believes that the specialist has inappropriately assigned the responsibility for the missed order. The daily miss report also highlights any cases in which the MFC code set by the metric specialist differs from the one initially assigned by the RCCC coordinator. Verizon uses this report as a training tool for coordinators. During Liberty's audit in New Jersey, Verizon indicated that it was rare for the metrics team to change a miss code from a customer to a Verizon reason, or vice versa; typically, the team would change the department or group within Verizon to which it assigned the miss (*i.e.*, the first character of the MFC code). Verizon's process for interpreting OSS Log information to determine whether it met or missed an order is acceptable but not adequately documented. The metrics team has an adequate, albeit for the most part manual, process in place to ensure that it ultimately scores orders correctly. Verizon has adequate controls in place to verify that it includes all orders in the metric for a reporting month.

Liberty reviewed whether Verizon's definitions for key data fields were consistent with the Guidelines. Verizon interprets the language in the PR-9-01 definition about "disconnected early" to mean an early cut. When looking at the OSS Log, the metric specialist can see when the frame technician called back to indicate that the work was done; therefore, the specialist can tell if the loop was cut early, *i.e.*, before the FDT. Verizon considers early cuts as misses for PR-9-01, even if it completed the order on time. One exception, set out in the training documentation for the RCCC metric specialist, deals with IDLC orders. If a dispatch technician arrives earlier than the beginning of the four-hour window, the RCCC coordinator contacts the CLEC to advise that the dispatch technician is on site. The coordinator is not supposed to solicit an early hot cut. However, if the CLEC asks to proceed with the hot cut early, the coordinator may proceed with the hot cut. The documentation states that it is important for the RCCC coordinator to note in the OSS Log that the CLEC requested Verizon to proceed with the cut, because, with this

⁷¹⁴ Interview #13, October 17, 2003.

⁷¹⁵ Response to Data Request #111.

documentation, Verizon would not consider the cut a miss as long as Verizon completed it within the four-hour window.⁷¹⁶

According to Verizon, the language in the PR-9-01 definition about “orders cancelled during or after a defective cut due to Verizon reasons” being considered not met refers to a situation that does not actually happen. Verizon considers this language to be in conflict with the definition for the denominator of PR-9-01, which measures completed orders. According to Verizon, the CLEC cannot cancel the order after the cut has started, since it has to give approval to proceed in the first place. Verizon cannot cancel an order after it has worked the order and the CLEC has accepted it. If, for example, the CLEC wanted Verizon to move the customer back to Verizon, then the CLEC would have to issue another order for a “throwback” to Verizon. Verizon does not cancel the initial order, but rather completes it, includes it in the measure, and considers it met as long as it completed the order within the allotted cut-over window.⁷¹⁷ Also, if the cut were defective, Verizon would reschedule the cut and, once completed, count the order as a miss.⁷¹⁸ Verizon cited a situation involving IDLC orders in particular. It is Verizon’s practice to dispatch a technician the day before the due date to verify dial tone on new facilities (copper or universal) for these orders. If Verizon finds the facilities are defective, and cannot not fix the facilities and complete the order during the IDLC window, Verizon would score the completed order as missed. Similarly, if Verizon found it had no alternative facilities, it would offer the CLEC the option of either canceling the order or rescheduling the order for a future date when facilities will be available.⁷¹⁹ If the CLEC chose to cancel the order in this situation, Verizon would not count the order as missed, because it only includes completed orders in the measure.

The Guidelines also specify that premature disconnects called into the 877-HotCuts number are to be considered missed orders. Verizon indicated that premature disconnects happen primarily when the CLEC changes the due date on the order. Although Verizon typically notifies all departments about the change, in some cases Verizon could throw the translation based on the associated disconnect order, which would take the customer out of service.⁷²⁰ In that case, the customer typically calls the CLEC, and the CLEC would call the 877-HotCuts line. When a CLEC call to the 877-HotCuts number proves to be an early disconnect, the RCCC enters the call into its Premature Disconnect database, and takes over fixing the problem and restoring service to the end user customer. Verizon requires that the coordinator enter an MFC code of “D12” for such an order to indicate a premature disconnect. Thus, when the order is actually completed, the metric specialist will be able to determine that there was a premature disconnect, even though the order may have actually completed on time. In this case, Verizon would score the order as a miss. Verizon indicated that its metric specialist cross checks the orders in the Premature Disconnect database with the orders in the Order Detail file to ensure that the same orders are contained in both places.⁷²¹

⁷¹⁶ Response to Data Request #111.

⁷¹⁷ Interview #5, October 3, 2003.

⁷¹⁸ Response to Data Request #246.

⁷¹⁹ Response to Data Request #246.

⁷²⁰ Interview #5, October 3, 2003.

⁷²¹ Interview #5, October 3, 2003.

Liberty concluded that Verizon's record keeping and definitions for key data fields for PR-9-01 and PR-9-02 are consistent with the Guidelines. However, Liberty recommends that Verizon seek a revision to the Guidelines to remove the language regarding "orders cancelled during or after a defective cut due to Verizon reasons." Liberty agrees that counting cancelled orders as misses is not consistent with the denominator for PR-9-01, nor is it consistent with the Guidelines exclusion regarding orders that are not complete.

Liberty reviewed how Verizon makes the exclusions specified in the Guidelines. Verizon excludes test CLEC orders and Verizon affiliate data as part of the daily query of WPTS on the basis of a look-up table of test and affiliate CLEC IDs. Verizon's metric specialist double checks for these exclusions by reviewing the CLEC IDs to make sure Verizon does not count those with affiliate or test IDs.⁷²² Verizon includes only completed orders in the measure, and thus appropriately makes the exclusion for orders that are not complete. Verizon excludes administrative orders through the WPTS queries, which look only for CLEC hot cut orders (which always involve two service orders that are related).⁷²³ As noted in the introduction section, the exclusion for additional segments on an order does not apply in Virginia.

Verizon should exclude orders associated with the former GTE territory in Virginia from reported results. Verizon's metric specialist removes any orders associated with the former GTE territory (designed with a CILLI code ending in "XA") from the Virginia Order Detail file and moves these orders to a separate Order Detail file. Verizon therefore reports only those orders associated with the former Bell Atlantic territory under the Virginia Guidelines.⁷²⁴

The Guidelines also specify that Verizon should exclude orders in situations where a CLEC cancels an order before the start of a hot cut window and Verizon performs the hot cut. Verizon indicated that it reports completed orders; however, if the CLEC cancels the order, Verizon would not complete and thus not report the order. It explained that the "Verizon performs the hot cut" portion of the exclusion was a scenario that would not happen because the cut is coordinated and would not have continued without approval by the CLEC.⁷²⁵

For the PR-9-02 measure, the Guidelines specify that Verizon should exclude early cuts not called into the 877-HotCuts number. Verizon confirmed that, while it included all early cuts as misses in the PR-9-01 metric calculation, it counted as early cuts in the PR-9-02 measure only those orders where the CLEC called in the 877-HotCuts number (designated with an MFC of "D12"). Liberty therefore concluded that Verizon was properly applying the exclusions in the Guidelines.

PR-9-01 – % On Time Performance – Hot Cut

The PR-9-01 metric measures the percentage of hot cut orders that Verizon completed on time.

⁷²² Interview #5, October 3, 2003.

⁷²³ Response to Data Request #245.

⁷²⁴ Interview #13, October 17, 2003.

⁷²⁵ Interview #5, October 3, 2003. Verizon confirmed that its treatment of this exclusion was the same in Virginia as it was for New Jersey.

Liberty reviewed the metric algorithm that Verizon uses to calculate the PR-9-01 results. To calculate the denominator for the measure, Verizon counts all hot cut orders completed in the month. To calculate the numerator, Verizon counts the number of completed orders that have a "Y" in the Met field.

Liberty recalculated the CLEC aggregate result for September 2003 using the Order Detail data that Verizon provided.⁷²⁶ Liberty replicated Verizon's denominator, as well as the overall result. Liberty concluded that Verizon's method for calculating the PR-9-01 metric is consistent with the Guidelines, and that its reported results are accurate.

Liberty obtained the Order Detail Excel file containing source data for Virginia hot cut orders completed during the month of September 2003.⁷²⁷ Liberty requested the Order Detail file prepared by the metric specialist, rather than the data mart file from NMP, to verify that the data flowed to NMP properly. Since Verizon no longer records the turn-up time in the Order Detail data, Liberty could not compare the FDT to the turn-up time for all completed orders to determine if the metrics team had assigned the proper Met code. Instead, Liberty selected a sample of 20 orders for further review. Liberty requested that Verizon provide the OSS Logs associated with these orders so that Liberty could establish that Verizon assigned the code correctly.

Liberty reviewed the OSS logs that Verizon provided and discussed some of them with Verizon in more detail.⁷²⁸ Liberty found that Verizon had properly scored the orders as met or missed in each case. Fourteen of the orders that Liberty examined were IDLC orders, of which Verizon missed ten. Liberty found that Verizon had adequately documented situations associated with IDLC orders in which it, for example, encountered facilities trouble on the due date or did not complete pre-due date testing and properly scored such orders as missed.

Liberty requested the daily missed orders reports prepared by the metrics team for the last two weeks of September 2003.⁷²⁹ There were six missed orders during this time period, and in one instance, the MFC assigned by the metric specialist differed from that assigned by the RCCC coordinator. Liberty found that the error rate in MFC coding was reasonable, less than one percent (one order in two weeks compared to 890 completed orders for the entire month). Liberty concluded that the review process done by the metric specialist provides adequate assurance that Verizon appropriately identifies missed orders. Liberty also confirmed that the Order Detail data reflected the six orders missed for the two-week period.

The Glossary to the Guidelines defines coordinated cut-overs as relating to only Verizon-to-CLEC hot cuts for the purposes of the PR-9 measure. Verizon denotes both Verizon-to-CLEC hot cuts and CLEC-to-CLEC hot cuts (such as for migrations from UNE-P to UNE-L) with a request type of "BB" in its ordering data, and denotes certain other CLEC-to-CLEC hot cut orders with a request type of "AB." During the audit of this measure in New Jersey, Liberty

⁷²⁶ Response to Data Request #251.

⁷²⁷ Response to Data Request #251.

⁷²⁸ Response to Data Request #405 and clarification phone call on Data Request #405 on November 25, 2003.

⁷²⁹ Response to Data Request #248.

found that Verizon had incorrectly included some request type “AB” CLEC-to-CLEC hot cuts in reported results. Verizon indicated that it made a change to its WPTS system since that audit to prevent this problem. In certain cases, a hot cut order comes through to WPTS without an order request type assigned. During the New Jersey Audit, Liberty found that the RCCC coordinator reviewing such an order could bypass filling in the order request type field, and WPTS would assign the default type of a Verizon-to-CLEC hot cut (even though the order would be identified as a CLEC-to-CLEC hot cut in Verizon’s ordering system). Now, this order request type field remains as “unassigned” until a coordinator enters the proper value.⁷³⁰ Liberty found that none of the 890 September 2003 hot cut orders had a request type other than “BB,” and was satisfied that Verizon’s change to the system will prevent the problem in the future.

As a cross check on accuracy, Liberty examined NMP ordering data to determine if Verizon had properly included all completed hot cut orders in reported results. Verizon showed the 890 completed hot cut orders from the WPTS Order Detail file as completed in its September 2003 ordering data.⁷³¹ Liberty examined Verizon’s ordering data to determine if it included only relevant request type “BB” orders in hot cut results. Liberty selected all orders from the September ordering data with a request type of “BB” and compared them to Verizon’s hot cut orders. There were approximately 400 orders with request type “BB” in the ordering data that did not appear in the hot cut data. Liberty selected a sample of 20 PONs and requested that Verizon confirm that these “BB” orders related to CLEC-to-CLEC migrations that it did not consider as hot cuts. Verizon confirmed that, with one exception, the 20 “BB” orders either pertained to CLEC-to-CLEC migrations or were not “like-for-like” migrations.⁷³² However, Verizon found that one order was actually a hot cut that should have been included in September results. Verizon indicated that the RCCC miscoded the migration type on the order (*e.g.*, Verizon-to-UNE, resale-to-UNE). Verizon subsequently issued a flash report to the RCCC highlighting the error and reminding the RCCC personnel to update the migration type field correctly. Verizon also stated that, although it did not analyze all “BB” request type orders, it believed the error to be an isolated incident.⁷³³

Liberty concluded that Verizon did not properly include all relevant orders in its September 2003 reported results. However, Liberty is satisfied that Verizon has taken appropriate action to ensure that all relevant hot cut orders are included in the future.

As discussed in the ordering chapter, Liberty received sample orders from CLECs. Five September orders from one CLEC were request type “BB” orders. Liberty found three of the orders correctly summarized in Verizon’s Order Detail file. The other two orders were not in the Order Detail file because these orders were for resale to facility migrations, and appropriately excluded.

⁷³⁰ Interview #5, October 3, 2003.

⁷³¹ One of the 890 PONs was missing. Verizon clarified in response to Data Request #590 that the PON was not included in September ordering data because the PON was not completed during September, *i.e.*, it still had pending service order activity at month’s end.

⁷³² In response to Data Request #588, Verizon indicated that an example of a migration that was not “like for like” was a migration from retail POTS to UNE ARDU. Verizon does not consider such migrations to be hot cuts.

⁷³³ Response to Data Request #588.

PR-9-02 – % Early Cuts - Lines

The PR-9-02 metric measures the percentage of total lines that Verizon cuts before the FDT.

Liberty reviewed the metric algorithm that Verizon uses to calculate the PR-9-02 results. To calculate the denominator for the measure, Verizon counts the number of lines associated with all hot cut orders completed in the month. To calculate the numerator, the Verizon counts the number of lines associated with completed orders that have a “D12” MFC code.

Liberty recalculated the CLEC aggregate result for September 2003 using Verizon's Order Detail data.⁷³⁴ Liberty replicated Verizon's denominator, as well as the overall result. Liberty concluded that Verizon's method for calculating the PR-9-02 metric is consistent with the Guidelines, and that its reported results are accurate.

PR-9-08 – Average Duration of Service Interruption

The PR-9-08 metric is a hybrid measure, because it requires data from both the M&R and PR domains. This metric reports the average duration of service outages that customers experience on lines that had been involved in a hot cut within the past seven days. The Guidelines definition for the numerator and denominator of this measure indicates that Verizon should include only those troubles with a disposition code of 03 (drop wire trouble), 04 (cable trouble), and 05 (central office trouble) in the result.

The Guidelines' description for PR-9-08 refers to “troubles called in to the 1-877-HotCuts line (Installation troubles).” CLECs report troubles on hot cuts by i) calling the 877-HotCuts line, ii) using the RETAS GUI system, or iii) calling the normal CLEC trouble-reporting telephone number. Verizon includes in PR-9-08 all troubles associated with hot cuts completed within the past seven days, regardless of how the CLEC reported the trouble. Verizon's approach is reasonable, but not consistent with the Guidelines. In New York, Verizon petitioned for a clarification to the Guidelines for the PR-9-08 measure to remove the reference to troubles called in to the 1-877-HotCuts line from the definition of the measure. The New York Commission adopted the clarification in an order issued in October 2003.⁷³⁵ Verizon indicated that it would ultimately reflect the change in the Virginia Guidelines.

Verizon includes only out-of-service troubles and excludes service-affecting troubles in PR-9-08.⁷³⁶ Verizon interprets the title of the metric, average duration of service interruption, to mean an out-of-service condition.⁷³⁷ Liberty believes that Verizon's interpretation is reasonable, but recommends that Verizon seek a clarification to the Guidelines to make this convention explicit.

⁷³⁴ Response to Data Request #251.

⁷³⁵ Response to Data Request #674.

⁷³⁶ Hot cuts can also result in service-affecting problems. For example, a customer could experience noise on the line due to a change in facilities, such as when Verizon moves the CLEC from an IDLC system to either a copper pair or a universal digital loop carrier system. This situation would be a service-affecting, rather than an out-of-service, problem, and Verizon would not include it in PR-9-08.

⁷³⁷ Response to Data Request #670.

Verizon uses a hot cut indicator field to select the relevant trouble tickets to include in the PR-9-08 results. Verizon sends a file containing information on hot cuts that it completed during the month (similar in form to the Order Detail file discussed in PR-9-01) to NMP. Verizon executes a procedure in NMP that matches the area codes and circuit IDs associated with completed hot cuts with those in the M&R trouble ticket data in the NMP warehouse.⁷³⁸ If there is a match, NMP populates the hot cut indicator field in the M&R data with a "Y." However Verizon sets this field to "Y" only if it closed the trouble ticket within seven days of the hot cut.⁷³⁹ Liberty believes that Verizon's approach is inconsistent with the Guidelines. The Guidelines for the PR-9-08 metric define the denominator as the number of hot cut installation troubles "reported within seven (7) days." Verizon identifies trouble tickets relevant to the PR-9-08 metric based on troubles that it closed within seven days, not troubles that the CLECs reported within seven days.

Verizon stated that that the trouble must be reported and found, meaning that Verizon must clear the trouble to one of the three disposition codes (*i.e.*, 03, 04, or 05), for the trouble to be included in the metric.⁷⁴⁰ Liberty agrees that Verizon must wait until it completes the trouble report to allow it to determine the correct disposition code. This does not mean, however, that Verizon should not identify all troubles that the CLECs report within seven days. Verizon should modify its procedure in NMP to identify trouble tickets that the CLECs reported within seven days of the hot cut that Verizon ultimately closed to one of the three disposition codes.

The Guidelines do not specify how Verizon should define the reporting month for this measure, and state only that Verizon should include troubles reported within seven days. Liberty believes that Verizon's approach of counting a trouble ticket in the month in which Verizon closes it is reasonable. For example, a CLEC could report a trouble associated with a completed hot cut near the end of the month, but Verizon may not clear the trouble until the beginning of the next month. In such a case, Verizon should count this trouble ticket in the results of the month that it cleared the trouble. Liberty recommends that Verizon seek to clarify the Guidelines to reflect this convention for defining the reporting month.

Liberty examined how Verizon implemented the Guidelines exclusions. Verizon identifies trouble tickets associated with affiliates and test CLECs using a test account indicator that it determines within NMP using a look-up table. Verizon also identifies trouble tickets associated with the former GTE territory in Virginia using an indicator that it determines within NMP. Verizon then excludes these trouble tickets within its metric algorithm. Because Verizon uses the data in the Order Detail file to identify completed hot cut orders, it properly applies the other exclusions in the Guidelines relevant to hot cuts.

Verizon had adopted many of the conventions and exclusions that it uses in the M&R domain for the PR-9-08 measure. For example, Verizon includes only customer-direct and customer-referred

⁷³⁸ Verizon opened Metric Change Control No. 10370 to add the area code to the matching procedure. Verizon found that its procedure incorrectly identified trouble tickets related to hot cuts when it used only the circuit ID, because this field is not unique across all states. Verizon put the change in place beginning with the August 2003 data month.

⁷³⁹ Interview #23, December 2, 2003.

⁷⁴⁰ Response to Data Request #671.

troubles in the measure. Verizon excludes trouble tickets associated with corporate and administrative orders from the measure, as well as any ticket that the Verizon technician flagged as having an error. Verizon interprets an installation trouble to be only the first trouble that occurs within the seven-day window. If Verizon receives another trouble report, it considers this a repeat trouble, rather than a separate installation trouble.⁷⁴¹ These conventions and exclusions are not contained in the Guidelines, and Liberty recommends that Verizon seek a clarification to make them explicit for PR-9-08.

To calculate the denominator for the measure, Verizon counts the number of out-of-service trouble tickets, completed within the calendar month, with disposition codes of 03, 04, and 05 that it flagged with the hot cut indicator (*i.e.*, completed within seven days of a hot cut). To calculate the numerator, Verizon sums the interval between the trouble clear date/time and the trouble receipt date/time for all the trouble reports in the denominator.

Liberty found that Verizon had an incorrect logic statement in its algorithm, where it selects UNE-L and UNE-P products, rather than only loops. Verizon indicated that platform hot cuts are CLEC-to-CLEC migrations and are not included in the hot cut metrics. Verizon added that because it identifies troubles associated with hot cuts by the orders it reports in PR-9-01, it would only select troubles associated with hot cut loops, not platform orders.⁷⁴² Liberty recommends that Verizon revise its metric algorithm for PR-9-08, although the error reportedly has no effect on reported results.

Liberty concluded that Verizon's method for calculating the PR-9-08 metric is not consistent with the Guidelines.

Liberty did not recalculate Verizon's CLEC aggregate result because Verizon's hot cut indicator field is incorrect.

3. Findings and Recommendations

Verizon's documentation related to the PR-9 metric is inadequate.

During its audit of the PR-9 measures in New Jersey, Liberty found that Verizon's documentation for the metric was out of date. Verizon subsequently updated its documentation and applicable business processes for this metric. Although updated, the documentation still lacks definite explanations and illustrative examples regarding the metric specialist's role of interpreting OSS Log information, assigning the governing MFC code, and scoring the order as met or missed. Liberty therefore recommends that Verizon expand its documentation for this measure.

⁷⁴¹ Interview #23, December 2, 2003.

⁷⁴² Response to Data Request #672.

The Guidelines description for PR-9-01 is inaccurate.

The PR-9-01 definition refers to “orders cancelled during or after a defective cut due to Verizon reasons” being considered not met. According to Verizon, this refers to a situation that does not actually happen. Verizon indicated that the CLEC cannot cancel an order after the cut has started, nor can Verizon cancel an order after it has worked it. Verizon considers this language about cancelled orders to be in conflict with the definition for the denominator of PR-9-01, which measures completed orders. Liberty recommends that Verizon seek a revision to the Guidelines to remove the language regarding “orders cancelled during or after a defective cut due to Verizon reasons.” Liberty agrees that counting cancelled orders as misses is not consistent with the denominator for PR-9-01, nor is it consistent with the Guidelines exclusion regarding orders that are not complete.

Verizon's method for basing the PR-9-08 metric on trouble reports closed within seven days of a hot cut is inconsistent with the Guidelines.

Verizon identifies trouble tickets relevant to the PR-9-08 metric on the basis of troubles that it closed within seven days, not troubles that the CLECs reported within seven days. Liberty believes that Verizon's approach is incorrect. The Guidelines for the PR-9-08 metric define the denominator as the number of hot cut installation troubles “reported within seven (7) days.” Verizon should modify its procedure in NMP to identify trouble tickets that the CLECs reported within seven days of the hot cut and that Verizon ultimately closed to the 03, 04, or 05 disposition codes.

Portions of Verizon's method for calculating the PR-9-08 measure are either not consistent with or not addressed in the Guidelines.

Liberty found instances where Verizon's process for calculating the PR-9-08 measure is reasonable, but either not consistent with the Guidelines or not well defined.

The Guidelines' description for PR-9-08 refers to “troubles called in to the 1-877-HotCuts line (Installation troubles).” Verizon includes in PR-9-08 all troubles associated with hot cuts completed within the past seven days, regardless of how the CLEC reported the trouble. Verizon's approach is reasonable, but not consistent with the Virginia Guidelines. The New York Commission adopted a clarification to the Guidelines for the PR-9-08 measure to change the definition of the measure to remove the reference to troubles called in to the 1-877-HotCuts line. Verizon indicated that it would ultimately reflect the change in the Virginia Guidelines.

Verizon includes only out-of-service troubles and excludes service-affecting troubles in PR-9-08. Liberty believes that Verizon's interpretation is reasonable, but recommends that Verizon seek a clarification to the Guidelines to make this convention explicit.

The Guidelines do not specify how Verizon should define the reporting month for this measure, stating only that Verizon should include troubles reported within seven days. Verizon counts the trouble in PR-9-08 in the month that it closed the ticket. Liberty believes Verizon's approach is

reasonable, and recommends that Verizon seek to clarify the Guidelines to reflect this convention for defining the reporting month.

Verizon had adopted many of the conventions and exclusions that it uses in the M&R domain for the PR-9-08 measure. Verizon includes only customer direct and customer referred troubles in the measure, and excludes trouble tickets associated with corporate and administrative orders, as well as any ticket that the Verizon technician flagged as having an error. Verizon also interprets an installation trouble to be only the first trouble that occurs within the seven-day window. If Verizon receives another trouble report, it considers this a repeat trouble, rather than a separate installation trouble. These conventions and exclusions are not contained in the Guidelines, and Liberty recommends that Verizon seek a clarification to make them explicit for PR-9-08.

Liberty also found that Verizon had an incorrect logic statement in its algorithm. Liberty recommends that Verizon revise its metric algorithm for PR-9-08, although the error reportedly has no effect on reported results.

VI. Maintenance & Repair (M&R) Performance Measures

A. General Background

The Maintenance and Repair (M&R) measures report on Verizon's ability to provide M&R services to CLECs with quality comparable to that provided to its own retail customers. The Guidelines list a total of five M&R measures and 23 sub-metrics. The PAP focuses on four M&R measures, 13 sub-metrics, and 73 reported results. The 13 sub-metrics included in the PAP are:

- MR-1-01 and MR-1-06
- MR-3-01 and MR-3-02
- MR-4-01, MR-4-02, MR-4-03, MR-4-04, MR-4-05, MR-4-06, MR-4-07, and MR-4-08
- MR-5-01.

The PAP identifies MR-3-01, MR-4-01, MR-4-04, MR-4-06, MR-4-08, and MR-5-01 as Critical Measures.

There are two general types of M&R metrics, MR-1 and MR-2 through MR-5. The MR-1 metrics address the response time of system interfaces that allow CLECs to open, track, and close trouble tickets. The MR-2 through MR-5 metrics measure various characteristics associated with the troubles themselves, as well as Verizon's performance in resolving them. Because of the significant commonality in the business processes and data for the MR-2 through MR-5 metrics, Liberty reports on the MR-2 through MR-5 processes jointly in a separate section of this chapter. In addition, Liberty reports its findings related to MR-2 through MR-5 in a common section at the end of this chapter.

B. MR-1, Response Time OSS Maintenance Interface

1. Background

The MR-1 metric reports on the responsiveness of Verizon's OSS maintenance interfaces. Each of the MR-1 sub-metrics calculates the average response time of a different query (*e.g.*, creating a trouble report). There are six MR-1 sub-metrics.

The Guidelines define the response interval as the elapsed time, in seconds, between the transmission of a query request and the receipt of a response by the requesting carrier. Verizon measures performance for CLECs at the access platform and draws CLEC results from the actual response times reported by the maintenance OSS interface, Repair and Trouble Administration System (RETAS). The Guidelines state that Verizon collects maintenance performance data in two databases. The Guidelines also note that, for CLECs, the Create Trouble transaction includes the basic create function.

Verizon pulls retail results from its Common Agent Desktop (CAD). This system measures the elapsed time between receipt of the request from the GUI in the CAD server and response by the CAD server to the GUI. Retail response times for the create, modify, and request cancellation transactions are the sum of the averages of two measurements consisting of: i) the initial inquiry transaction and ii) the "action request," which is the create, modify, or cancel transaction. The initial inquiry, which consists of a telephone number entered into the Trouble Entry (TE) screen, is required to proceed to the Trouble Report (TR) screen for the action request. Verizon measures the initial inquiry interval from when CAD receives the inquiry request from the user to when CAD receives data from the Loop Maintenance Operations System (LMOS) and CAD sends a TR screen back to the user. Verizon measures the action request interval from the time CAD receives the request (*i.e.*, create, modify, or cancel in the TR screen) from the user to the time CAD sends the LMOS information to the GUI. If the user cancels the transaction between the first and second measurements, the average inquiry interval calculation will still include the time from the first measurement.

All of the MR-1 sub-metrics exclude EnView transactions and CLEC complex-create trouble transactions that are not available to retail. Verizon also removes transactions that do not complete due to Line-In-Use (LIU) from the MR-1-06 results.

Verizon reports all of the MR-1 sub-metrics on a statewide basis for Verizon retail and an aggregate of CLECs. Verizon calculates results for transactions occurring between 8:00 a.m. and 5:00 p.m. seven days a week, with no holiday exclusions. The standard for all of the MR-1 sub-metrics is parity with retail plus no more than four seconds. The additional time is an allowance for variations in functionality.

The Guidelines provide the following formulas for the MR-1 sub-metrics:

MR-1-01: Average Response Time – Create Trouble

(Sum of all response times from Enter key to reply on screen for Create Trouble transactions)/(Number of Create Trouble transactions)

MR-1-02: Average Response Time – Status Trouble

(Sum of all response times from Enter key to reply on screen for Status Trouble transactions)/(Number of Status Trouble transactions)

MR-1-03: Average Response Time – Modify Trouble

(Sum of all response times from Enter key to reply on screen for Modify Trouble transactions)/(Number of Modify Trouble transactions)

MR-1-04: Average Response Time – Request Cancellation of Trouble

(Sum of all response times from Enter key to reply on screen for Request for Cancellation of Trouble transactions)/(Number of Request for Cancellation of Trouble transactions)

MR-1-05: Average Response Time – Trouble Report History (By TN/Circuit)

(Sum of all response times from Enter key to reply on screen for Trouble Report History transactions)/(Number of Trouble Report History transactions)

MR-1-06: Average Response Time – Test Trouble (POTS Only)

(Sum of all response times from Enter key to reply on screen for Trouble Test transactions)/(Number of Trouble Test transactions)

Two of the MR-1 reported results are relevant to Verizon's PAP. During the July and August 2003 reporting months, Verizon did not incur any penalties associated with this measure.⁷⁴³

2. Analysis and Evaluation

Liberty conducted a complete evaluation of the MR-1 sub-metrics in Virginia. This evaluation included a review of the entire process by which Verizon reports these metric results, from obtaining source data to determining exclusions and calculating the final results. Liberty also assessed the adequacy of Verizon's MR-1 process documentation.

Liberty obtained Verizon's source data for MR-1 for September 2003 and recalculated the MR-1 sub-metric results.⁷⁴⁴ Liberty's calculations resulted in the same performance results, with the same number of observations, as those reported by Verizon.

Liberty requested an in-person interview with Verizon personnel who could demonstrate Verizon retail representatives' steps for each of the six MR-1 transaction types. Verizon chose to make it a telephone interview during which Liberty viewed the transaction steps via the Internet.⁷⁴⁵ Liberty also conducted an in-person interview with a CLEC whose personnel demonstrated the CLEC representatives' steps for the same transaction types.⁷⁴⁶

The Virginia Guidelines exclude CLEC complex-create trouble transactions that are not available in retail from the MR-1 calculations. Liberty learned that there are two types of complex-create transactions.⁷⁴⁷ One type is feature-fix-create transactions, which have a trouble type code of 1503.⁷⁴⁸ The second type is create-trouble transactions on circuits with recent

⁷⁴³ Responses to Data Requests #198 and #203 (July and August 2003 C2C Reports).

⁷⁴⁴ Response to Data Request #263.

⁷⁴⁵ Interview #8, November 13, 2003.

⁷⁴⁶ Interview conducted at Cavalier, October 21, 2003.

⁷⁴⁷ Response to Data Request #308.

⁷⁴⁸ Response to Data Request #424.

change activity that require service order look-ups.⁷⁴⁹ Verizon noted that it recently changed the New York Guidelines for MR-1 to list these two types of complex-create transactions. This clarification would be helpful for the Virginia Guidelines as well.

In New Jersey, CLECs accessed the Verizon M&R OSS using either Electronic Bonding Trouble Administration (EBTA) or Web GUI. Verizon reported MR-1 performance results in New Jersey separately for each of these two access methods, and the New Jersey performance standards for these methods were different. The Virginia Guidelines for MR-1 make no mention of either EBTA or Web GUI and list only one performance standard. Consistent with this, the Virginia performance reports only contain one result for each sub-metric. Liberty confirmed that Verizon reports only one access method, Web GUI, in Virginia. The Virginia Guidelines indirectly acknowledge this by noting that RETAS reports actual response times for CLECs, which means Web GUI is the interface.

3. Findings and Recommendations

Verizon does not report MR-1 results for all required services.

In calculating its reported results for MR-1, Verizon includes only POTS-type services in its calculations and therefore is not in conformance with the Guidelines. Verizon indicated that it only includes ISDN, Private Branch Exchange (PBX), and POTS type services in MR-1.⁷⁵⁰ The Guidelines for MR-1 only provide for one product exclusion, "CLEC Create Transactions - complex create trouble transactions not available to retail." Furthermore, the Guidelines indicate that MR-1-06 should be POTS only, implying that other measures include all services. Because Verizon has not measured the response times for other services, Liberty cannot state what effect this inappropriate exclusion is having on the performance results.

Liberty recommends that Verizon either include all services in the MR-1 sub-metrics or seek to modify the Guidelines to reflect the products that are actually being included.

Verizon is making an unjustified exclusion when calculating MR-1-04 results.

The Guidelines define the denominator of MR-1-04 as "Number of Request for Cancellation of Trouble transactions." However, Verizon does not include request for cancellation transactions with an error code of 0302 in its MR-1-04 results.⁷⁵¹ Users cannot cancel these transactions because of some ongoing activity regarding them, and Verizon includes them in the MR-1-03 metric results because the request actually results in a modification, not a cancellation, of the trouble ticket. Liberty recommends that either Verizon include these transactions in the MR-1-04 results or request permission to revise the Guidelines for MR-1-04 to allow for their exclusion.

⁷⁴⁹ Response to Data Request #423.

⁷⁵⁰ Response to Data Request #422.

⁷⁵¹ Response to Data Request #421.

Verizon is under-reporting the CLEC's response time for MR-1.

Verizon excludes some "entitlement time" from the overall wholesale MR-1 response time. Verizon stated that entitlement time is the time associated with retrieving information from its backend systems and performing security functions. The standard for the MR-1 sub-metrics is parity with Verizon retail results plus not more than four seconds. This four-second differential exists to account for any variations in functionality. The Guidelines do not provide for the exclusion of any entitlement times from the calculation of wholesale response time. Verizon noted that it revised the New York C2C Guidelines to allow for exclusion of some entitlement times.⁷⁵²

Liberty recommends that Verizon change its methods and recalculate prior MR-1 results and PAP payments or, alternatively, that Verizon provide a complete justification for its current methods to the Commission.

Verizon does not meet the intent of the Guidelines for MR-1-03.

Verizon's reported results for MR-1-03 include both modify transactions and those request cancellation transactions that do not result in canceling the trouble ticket.⁷⁵³ Verizon noted that these types of request cancellation transactions use the modify function. The intent of the Guidelines is to measure the time required for Verizon to respond to a carrier requesting a "modify transaction," not to measure the time required by Verizon's systems whenever it performs a particular type of internal activity.

Liberty recommends that Verizon either only include the modify transaction response times in its MR-1-03 performance results or request a change to the Guidelines to allow the inclusion of request cancellation transactions that do not result in canceling the trouble ticket.

Verizon's MR-1 documentation is inadequate.

Verizon's MR-1 documentation contains errors and is too generic. For example, the flow chart on pages 41 and 42 of the MR-1 System Design document has arrows in the wrong places.⁷⁵⁴ Furthermore, it shows that Verizon excludes all transactions that have a response time greater than 600 seconds, but Metric Change Control No. 10157 rescinded this unjustified exclusion. Also, several of the constraints/remarks in the tables in that document are incorrect. In addition, the System Design document references Electronic Bonding (*e.g.*, see the table on page 11) as providing source data, although that is not correct in Virginia. Verizon stated that the Electronic Bonding sections of the document are "irrelevant."⁷⁵⁵

⁷⁵² Response to Data Request #304.

⁷⁵³ Responses to Data Requests #119 and #305.

⁷⁵⁴ Response to Data Request #36.

⁷⁵⁵ Response to Data Request #125.

Liberty recommends that Verizon review its MR-1 documentation for errors, and make any revisions necessary to ensure that it is specific to the requirements of the Virginia Guidelines.

C. MR-2 through MR-5: Business and Data Processes

1. Background

Metrics MR-2 through MR-5 focus on the frequency of troubles and Verizon's performance in resolving them. The following metrics are in this group:

- MR-2: Trouble Report Rate
- MR-3: Missed Repair Appointments
- MR-4: Trouble Duration Intervals
- MR-5: Repeat Trouble Reports.

Liberty reviewed the MR-2 through MR-5 measures as part of its audit of Verizon New Jersey. However, during the course of the New Jersey audit, Verizon moved its system for calculating the M&R metrics from the Network Operations Results Database (NORD) to NMP. The documentation and design that Liberty reviewed in New Jersey for the calculation of the M&R measures related to the NORD process that Verizon no longer uses.⁷⁵⁶ Liberty therefore conducted a complete evaluation of the NMP process for calculating the MR-2 through MR-5 metrics in Virginia. This evaluation included a review of the entire process by which NMP reports these metric results, from obtaining data from the source systems through making exclusions and calculating the final results.

2. Analysis and Evaluation

Liberty analyzed the MR-2 through MR-5 business process and metrics data management process through a combination of interviews, data requests, and data analysis. To evaluate the integrity of the data, Liberty obtained from Verizon a sample of raw trouble data in the LMOS and WFA-Control (WFA-C) systems. Liberty also interviewed two CLECs active in Virginia at their work centers.⁷⁵⁷ As part of the interviews, Liberty observed the CLECs opening trouble tickets, tracking troubles, and communicating with Verizon about the troubles. Liberty initially planned to obtain a representative sample of trouble tickets from the CLECs in order to compare the CLEC data to the data in Verizon's source systems as well as to the extracted data files used in Verizon's metric calculations. However, the CLECs ultimately did not provide the requested information.

⁷⁵⁶ Response to Data Request #36.

⁷⁵⁷ Interview conducted at NTELOS, October 9, 2003 and Interview conducted at Cavalier, October 21, 2003.

Verizon uses four source systems in the calculation of the MR-2 through MR-5 metrics: i) LMOS, ii) Network Services Data Base (NSDB), iii) WFA, and iv) NMP. Verizon defined the functions of these systems as follows:⁷⁵⁸

The Loop Maintenance Operations System – Host (LMOS Host) works in conjunction with the LMOS Front-end (FE) to provide a mechanized method of creating, prioritizing, and tracking maintenance work items. In addition, it provides a database of customer line record and circuit information for dispatch, testing, and measurement functions. Network Services Data Base (NSDB) is a line record repository that provides line records to WFA. NSDB provides the data fields on trouble reports taken in the previous 45 days. WFA coordinates and tracks the installation and maintenance activities for an entire circuit from the receipt of a work request to the completion of the request. WFA provides mechanized and automatic processing of the human and machine tasks required during installation and repair of Special Services, message, carrier, and non-design (POTS) circuits and services. Additionally, WFA provides ready access to detailed circuit records, pending work items and a history of circuit activity. Features in WFA facilitate automatic flow-through of work items from the receipt to the completion of a work request. The Network Metrics Platform system is a single enterprise wide data warehouse application. NMP's function is to gather, store and safeguard operational data. NMP uses this data to calculate, monitor and report performance metrics.

In its interviews with and data requests of Verizon, Liberty examined the flow of data from the source systems into NMP and the process used by NMP to manage and transform the data before calculation. Either the LMOS or the WFA-C system captures reported trouble information. Verizon enters troubles on retail POTS, resale POTS, resale 2-Wire Digital, or UNE-P into the LMOS. For all other products, Verizon enters the trouble into WFA-C.

The LMOS Business Process for Troubles

A CLEC can report a trouble electronically through RETAS, the Verizon Web GUI interface, or through Electronic Bonding Trouble Administration (EBTA), an electronic bonded system. A CLEC can also report a trouble by calling the Verizon Regional CLEC Maintenance Center (RCMC) in Richmond, Virginia. A CLEC reporting a trouble via the Web GUI inputs data such as customer name, type of line, line number, trouble type code, and customer contact person. Upon receipt of the trouble report, Verizon enters the master customer number (MCN) and the trouble description in LMOS if the CLEC did not provide that information. LMOS populates the trouble ticket number and the receipt date and time. For troubles processed through LMOS, the CLEC specifies the presumed trouble location, based on its own testing. A trouble in the loop will result in a “dispatch out,” while a trouble in the central office results in a “dispatch in.” Verizon then provides a commitment time to the CLEC based on the availability of its work force. Subsequently, Verizon hands off the ticket either to a field technician for a loop trouble or a central office technician for a central office trouble to resolve the trouble and restore service.

⁷⁵⁸ Response to Data Request #32.

Verizon has introduced a “single-ticket process” for LMOS-based troubles. This means that if Verizon determines that the trouble is not in the CLEC-specified location, it will automatically “redirect” the trouble without requiring that the CLEC open a new ticket. For example, if the CLEC stated that the trouble is in the loop but Verizon’s testing determines it is in the central office, Verizon will automatically dispatch a technician on the same ticket number to resolve the trouble in the central office.

The CLEC generally specifies if the customer has no dial tone or cannot call in or out, in which case LMOS codes the trouble Out of Service (OOS). When the CLEC calls the trouble into the RCMC, the RCMC representative designates this condition on the basis of information provided by the CLEC.

If access to a customer premises is necessary, the technician will arrive during the window that Verizon has established with the customer. If the customer is not available during this time window, the technician will populate the “customer-caused missed appointment” field.

Once the technician has resolved the trouble and restored service, he or she will enter a disposition code and the clear time (*i.e.*, the time at which the technician deems the trouble to be resolved) directly into LMOS using a hand-held terminal. Disposition codes are four digits, with the first two digits indicating the location of the trouble. For example, they identify a trouble in the drop wire by 03, trouble in the cable by 04, and trouble in the central office by 05. Verizon classifies both drop wire and cable troubles as loop troubles. The technician then closes the ticket in LMOS. LMOS automatically records a close time, *i.e.*, the time at which Verizon closes the ticket and notifies the CLEC. Under some circumstances, the technician may delay entry of the disposition code and clear time into LMOS, which could result in a significant difference between the clear and close times.⁷⁵⁹ Verizon indicated that it had quality assurance measures in effect to review this process and assure that technicians enter the correct disposition codes and clear times.

If Verizon’s testing determines that the trouble is not located anywhere in the circuit, the Verizon technician will assign a disposition code that indicates Found OK (FOK), Test OK (TOK), or Customer Provided Equipment (CPE). The four-digit codes for FOK and TOK begin with 07, 08, or 09. The four-digit disposition codes for CPE begin with either 12 or 13. After the technician records the disposition code and the clear time using a hand-held terminal, Verizon then notifies the CLEC and closes the trouble ticket.

Verizon uses a “Report Category” code to classify different types of trouble reports, which enables Verizon to distinguish customer-reported troubles from such things as preventive maintenance. Verizon identifies troubles reported by a CLEC as “Customer Direct,” Report Category 1. The other report categories include Category 4 (Verizon Employee Reported) and Category 6 (Customer Excluded). Verizon only includes Category 1 reports in the MR-2 through MR-5 metrics. Verizon can revise the report category of a trouble. For example, if a Verizon employee independently discovers a trouble on a CLEC line and opens a trouble ticket, Verizon

⁷⁵⁹ Response to Data Request #218.

classifies the trouble as Report Category 4. However, Verizon explained that if the CLEC subsequently reports the same trouble, Verizon changes the trouble to Category 1.⁷⁶⁰

In its calculation of the MR-2 through MR-5 measures, Verizon excludes troubles it classifies as “subsequent,” “repeat,” or “installation troubles.” Verizon defines a subsequent as a ticket opened by a CLEC on a trouble that the CLEC has already reported, when the original ticket for the trouble is still pending. Verizon generally excludes subsequents from the MR-2 through MR-5 calculations with the exception of MR-2-04, which explicitly measures the percentage of subsequent reports. Verizon defines a repeat as a ticket opened by a CLEC on a line or circuit that recently had a ticket closed on a trouble (usually seven or thirty days, depending on the measure). However, if a CLEC refers a trouble to Verizon after Verizon clears the trouble but before Verizon closes it, Verizon classifies that trouble as an “administrative repeat.”⁷⁶¹ Verizon excludes administrative repeats from most MR-2 through MR-5 metrics as subsequents. Verizon classifies a CLEC trouble report on a recently installed (usually within seven or 30 days, depending on the measure) line or circuit as an “installation trouble.” Verizon excludes installation troubles from certain MR-2 through MR-5 sub-metrics because metrics PR-6 and PR-9-08 explicitly measure them. Verizon only counts the first trouble reported after an installation as an installation trouble.⁷⁶² If a CLEC reports a second trouble within the appropriate time window, Verizon classifies it as a repeat trouble. Liberty agrees that this is a reasonable convention, although there appears to be no explicit documentation of it in the Guidelines.⁷⁶³

Under certain circumstances, Verizon authorizes the maintenance administrators and their management team to exclude trouble reports upon close out using the Final Status (FST). Examples of FST exclusions are i) reports on lines that are unassigned, suspended, disconnected, or denied service; ii) calls with insufficient information to process a report; and iii) reports of wires down or poles broken that are not owned or maintained by Verizon. These troubles have an “Exclude by FST” flag in the NMP data base. Verizon provided a copy of the practices document used for this manual exclusion process.⁷⁶⁴ Liberty examined this document and found the practices reasonable. However, the number of troubles excluded by the FST process can be substantial. Using data provided by Verizon concerning trouble tickets in LMOS for a portion of September 2003, Liberty found that the FST process excluded 12 percent of the tickets from a randomly sampled subset of the trouble tickets.⁷⁶⁵ This emphasizes the importance of manual processes in MR-2 to MR-5 results and the need for Verizon to assure adequate quality control of the processes.

Verizon transfers data on all tickets closed the previous day from LMOS to NMP daily. Verizon also transfers data on line records established as part of the provisioning process to NMP from NSDB.

⁷⁶⁰ Response to Data Request #358.

⁷⁶¹ Response to Data Request #489.

⁷⁶² Response to Data Request #207.

⁷⁶³ In the response to Data Request #674 and in the Verizon March 15, 2004, comments on Liberty February 6, 2004, Virginia Draft Audit Report, Verizon notes that a New York Public Service Commission order on 10-29-03 changed the language in the PR-6 section of the Guidelines to make this convention explicit for PR-6.

⁷⁶⁴ Response to Data Request #479.

⁷⁶⁵ Responses to Data Requests #352 and #750.

Verizon uses a monthly reclamation process on the LMOS data to reclassify and update some of the retail, resale, and UNE-P troubles on the basis of CLEC ID and Universal Service Order Code (USOC). Verizon pulls these data from the provisioning systems. During the course of Liberty's audit, Verizon discovered that the USOC update was improperly classifying some troubles. Verizon issued Metric Change Control No. 10508 to suspend the USOC update. Verizon's internal review determined that it could use maintenance data instead of the provisioning data. Effective the October 2003 data month, Verizon will use the maintenance and repair line record data to verify CLEC ID.

The WFA-C Business Process for Troubles

Verizon's process for resolving troubles managed through WFA-C is similar to that used for those managed through LMOS. However, the resolution of troubles for the types of products managed through WFA-C typically requires closer cooperation between Verizon and the CLEC. Thus, while in the LMOS process the CLEC determines the trouble location and whether to dispatch in or out, in the WFA-C process the Verizon representative in the RCMC determines the trouble location and dispatch direction for most products. An exception is the UNE POTS Loop product, for which the CLEC still determines the dispatch direction.

Another difference in WFA-C process is that, unlike the LMOS process where the Verizon repair technician closes the ticket, the RCMC representative closes the ticket, entering the clear time and disposition codes. For a few products like xDSL Line Sharing, however, Verizon has an "auto close process" which, similar to the LMOS process, has the Verizon repair technician executing the ticket closure. Verizon calls the WFA-C disposition codes "FAC codes"⁷⁶⁶ and, although they are structurally different from the LMOS disposition codes, they record the same types of dispositions.

In addition to the RCMC in Richmond, which specializes in UNE-L, UNE-P, and resale POTS products, Verizon has three other Verizon work centers that can be involved with products following the WFA-C process: i) a RCMC in East Brunswick, New Jersey, specializing in VADI and UNE 2-Wire Digital Loop products; ii) a RCMC in Bridgewater, New Jersey, specializing in UNE xDSL Loop and UNE specials products; and iii) the Regional Resold Specials Center (RRSC) in Hamilton Square, New Jersey, specializing in UNE-P and resold specials products.⁷⁶⁷

For specials, the CLEC typically calls the information into the RCMC in Richmond. However, the CLEC can also enter the troubles electronically providing the same information as they would for a ticket using the LMOS process, except the CLEC will enter the circuit ID rather than the line number to designate the circuit. The RCMC in Richmond interacts with the work groups in Bridgewater and East Brunswick, New Jersey. The RCMC representative obtains from the CLEC i) a description of the trouble, ii) access restrictions to the customer locations, and iii) whether the end-user is in or out of service. Verizon's policy is to correct troubles for specials as soon as possible. Verizon works closely with the CLEC to determine the nature and correction of

⁷⁶⁶ The FAC Codes are called trouble codes in the NMP fact tables and placed in the field "TROUBLE_CD."

⁷⁶⁷ Response to Data Request #38.

the trouble. Verizon also contacts the CLEC before closing the ticket to verify that it has fixed the trouble. As standard procedure, Verizon contacts the CLEC after clearing and before close.

Unlike LMOS troubles, some WFA-C troubles are subject to the stop-clock process. That is, the trouble duration interval excludes time when Verizon cannot access the circuit. Verizon's repair technicians determine the durations entered into WFA-C. The process depends on the Verizon repair technician following this process and entering the correct information in WFA-C. NMP calculates the stop-clock interval and other time intervals associated with resolving the troubles as part of the metrics data management process.

Verizon transfers data on closed tickets from WFA-C to NSDB. NSDB contains only closed tickets and no current trouble history. Each day, NSDB then transfers to NMP the data on all tickets closed on the previous day. For specials, NSDB stores the trouble reports, but Verizon keeps the line records in a separate database. The ordering and provisioning process establishes these line records. NSDB maintains the trouble ticket information for 45 days.⁷⁶⁸

For both the LMOS and WFA-C processes, the quality of the maintenance and repair metrics data is dependent on both the accuracy and the completeness of the information entered into the source systems by the Verizon repair technicians and RCMC personnel. Thus, human input plays a major role in the accuracy the MR-2 through MR-5 metrics. For example, if Verizon's technicians close trouble reports with incorrect disposition codes (*e.g.*, coding a trouble as TOK when in fact a trouble was found), NMP will exclude them from the metric calculations. In its New Jersey audit, Liberty concluded that Verizon did not provide adequate quality control over its trouble ticket process.

Liberty requested samples of relevant methods and procedures used by Verizon in the M&R process. For example, Liberty requested from Verizon the methods and procedures used by Verizon repair and maintenance personnel when they are unable to access a premises to repair a trouble.⁷⁶⁹ Liberty examined the documentation provided, particularly the guidelines for defining a no access condition and for determining the appropriate disposition codes in such a case. Liberty found the documented practices to be reasonable. However, the process can only result in accurate data if personnel follow the written practices.

To better assess the accuracy and completeness of the data entered into the source systems by Verizon personnel responsible for troubles in Virginia, Liberty requested information on internal and external audits, studies, and analyses of the accuracy of such data. Verizon responded by indicating that “[s]upervisors of the Maintenance administrators, repair service administrators, field and central office technicians perform work observations to assure that the associates are following current practices in regard to closing trouble tickets. If errors are detected during the closeout of a trouble ticket coaching and corrective actions is taken.”⁷⁷⁰ Verizon provided samples of the work observations. Verizon also provided examples of questionnaires used to evaluate inside and outside plant maintenance personnel. However, Verizon did not provide any

⁷⁶⁸ Response to Data Request #355.

⁷⁶⁹ Response to Data Request #213.

⁷⁷⁰ Response to Data Request #223.

evidence that it performed any independent internal or external audits of the accuracy of these data.

During Liberty's observation of the trouble resolution process in the course of an on-site visit to one CLEC active in Virginia, Liberty observed one case in which Verizon closed a trouble ticket but the customer and CLEC technician still reported problems.⁷⁷¹ The CLEC called Verizon to report the problem, which Verizon subsequently resolved. However, Liberty noted that Verizon did not open a new trouble ticket, so that Verizon captured neither the additional length of time to resolve the trouble nor the repeat trouble data. The CLEC representative informed Liberty that this appeared to be "the normal practice for Verizon." Although only a single incident, this example could be indicative of weaknesses in Verizon's quality assurance process. Verizon, however, indicated that this incident does not reflect its normal practice.⁷⁷² Furthermore, Verizon stated that it "has many M&Ps in place and conducts quality reviews on a regular basis. The Richmond, VA RCMC Maintenance Process has achieved ISO 9000 Certification. ISO 9000 certification requires reviews of all processes and documentation associated with center operations. Certification is achieved through compliance with all processes and documentation and is certified by an independent auditor."⁷⁷³ Liberty notes, however, that the ISO 9000 certification mentioned does not necessarily relate to the accuracy of the raw data used in the metrics calculations of concern to this report and that Verizon did not provide this information in response to Liberty's data request for "all internal and/or external audits, studies or analyses reviewing the accuracy" of the trouble ticket reports.⁷⁷⁴

The Metrics Data Management Process

Verizon uses NMP to manage the M&R data and to calculate the MR metrics. Verizon uses over 2,000 separate source ASCII flat files accessed by NMP to determine MR metric results. Verizon collects the source files together in the ETL (Extraction Transformation Load), which is an Oracle database. An Informatica application examines key fields in the data residing in ETL for errors. It removes and places in an archived error file those records with fields that fail the error check. Verizon informs the source systems' data owners of the errors. However, data owners cannot correct records in error and reintroduce them back into NMP. In general, data owners can only correct errors through the change control process. The process places the remaining files in a staging area for formatting and then in the data warehouse. The data warehouse has separate schema by metric domain. Verizon provided statistics on the errors in the load process for the month of September 2003.⁷⁷⁵ Verizon estimated that there were errors in approximately 0.3 percent of the approximately nine million records loaded in that month.

In a "spooling process," P/SQL scripts process the data residing in the data warehouse. These scripts set flags and calculate time intervals in a SPOOL database, which is a temporary table. Verizon then transfers the data to the data marts in FACT-table format. Verizon uses three FACT

⁷⁷¹ Interview with NTELOS, October 9, 2003.

⁷⁷² Interview #6, October 16, 2003.

⁷⁷³ Verizon March 15, 2004, comments on Liberty February 6, 2004, Virginia Draft Audit Report.

⁷⁷⁴ Data Requests #223, #350, and #351.

⁷⁷⁵ Response to Data Request #356.

tables to produce the MR-2 through MR-5 metrics: i) TB_DM_MNR_LINE_COUNT_FACT, which is only used for MR-2 and contains information on the number of lines or circuits; ii) TB_DM_MNR_TRBL_FACT, which contains trouble data for POTS products; and iii) TB_DM_MNR_TRBL_FACT_SPL, which contains trouble data for specials. From the data marts, Verizon uses a Microstrategy process to create ASCII tag files that show the results of most of the calculations. These files have separate reporting categories such as aggregate, CLEC, state, and C2C vs. Federal Communications Commission (FCC) report. There is a separate data mart called the filing mart that contains records actually used for filing the metrics reports. Verizon indicated that the "filing mart is created as a separate process. After the report results have been validated via the normal monthly validation process, records are moved into the filing mart."⁷⁷⁶ Data are available online in NMP for 13 months and offline for five years.

The NMP Reports Process, a Microstrategy application, processes the ASCII tag files, performing PAP calculations and statistical analyses and, if necessary, combining data from different tag files. For example, for some metrics this process would combine ASR and LSR data, which are in different tag files.

The source file management process does not dynamically handle dataset name changes. Also, the documentation on field edits and validations is not included in the current version of the system design document. In addition, the NMP data warehouse loads are either fully successful or not. There are no partial loads. If there is an edit failure during the data warehouse load, Verizon must stop the process and make corrections. Verizon handles all changes to hard-coded logic and look-up tables through the formal change management process for both regular maintenance and defects. Verizon does not monitor instances of default field values.

Liberty requested information on the quality controls within the NMP process for the MR metrics. Verizon responded as follows:⁷⁷⁷

Verizon's NMP team conducts domain and quality assurance testing in each of the metric calculation domains on a monthly basis. In addition, the NMP team conducts report and quality assurance testing for all metrics, regardless of calculation origination.

The processes of Metric Calculation domain testing are executed each month to provide independent validation that Change Control Requests have been implemented accurately and in accordance with the CCR Requirement. The domain testers independently develop and maintain SQL scripts that are executed against the NMP tables. The testing SQL produces output that is used to verify the NMP metric calculation results.

After testing is successfully completed for a release, the data validator (from the NMP metric calculation domain team) approves or signs-off all of the CCRs packaged in the release. This sign-off is executed via the CCR database using the data validation functionality provided.

⁷⁷⁶ Response to Data Request #357.

⁷⁷⁷ Response to Data Request #222.

The domain testers perform QA testing each month regardless of whether or not there are impacting CCRs. QA validation script results are compared to ASCII files for verification of the monthly data. Additional QA and crosschecks performed by the domain test team are: Reasonability checks, Tags presence validation, Sub-metric values validation, and ASCII tag file validation. The NMP QA Test team highlights Tag Variances by Domain that fall outside of predefined thresholds. Additionally, new and missing Tags are also highlighted. This is used to identify potential QA issues.

Report testing is performed for metrics calculated by NMP as well as metrics calculated outside of NMP. Replication and various inspection scripts are used to validate the monthly reports. Each report is inspected to ensure that the CCRs have been correctly implemented. In addition, NMP compares metric values from one month to the next and then highlights the metrics that exceed predetermined thresholds.”

In order to directly assess the quality and integrity of the data as NMP transforms it, Liberty requested and received a selected set of data from all trouble tickets (both wholesale and retail) created from a period in September 2003 in the Potomac region. Verizon provided LMOS trouble tickets⁷⁷⁸ from MTAS, which is the repository of the LMOS tickets, and troubles tickets for specials⁷⁷⁹ from WFA-C. Verizon provided i) the telephone number, ii) the trouble ticket number (for specials), iii) the receipt date and time, iv) the clear date and time, v) the close date and time, vi) the number of subsequents, vii) the number of repeat troubles, ix) the disposition code, x) the report category, xi) the state code, and xii) the CLEC identification. Liberty then selected a random sample of 100 Virginia trouble tickets (resale, UNE-P and retail) from the MTAS data and 100 from the WFA-C data, and looked for these trouble tickets in the appropriate NMP FACT tables. Liberty also checked to make sure that Verizon preserved the data from the original ticket in the process of converting the data into the FACT table format. Liberty performed the same analysis with separate samples of 100 UNE-L and 100 Line Sharing troubles from across the Potomac region (District of Columbia, Maryland, Virginia and West Virginia).⁷⁸⁰

Liberty found a small number of tickets that Verizon did not transfer into the FACT tables. Verizon explained that it removed all these tickets in the spooling process due to legitimate exclusions.⁷⁸¹ Liberty found all tickets of the WFA-C sample that were from the former Bell Atlantic territory in the appropriate FACT table (TB_DM_MNR_TRBL_FACT_SPL).⁷⁸²

⁷⁷⁸ Response to Data Request #352.

⁷⁷⁹ Response to Data Request #353.

⁷⁸⁰ Verizon asserted that the processing of the M&R metrics data is essentially the same across the Potomac region. Hence, Liberty has assumed that the data provided by Verizon is representative of all Potomac jurisdictions.

⁷⁸¹ Responses to Data Requests #744, #750, and #814.

⁷⁸² Response to Data Request #774. Liberty did not find four tickets from the original sample of 100 in the data warehouse, but Verizon identified all of these as coming from the former GTE territory in Virginia.

For the MTAS sample, Liberty could not find 13 of the 100 trouble tickets in the appropriate FACT table (TB_DM_MNR_TRBL_FACT). However, Verizon explained that it excluded 12 of these in transferring data between the data warehouse and the data mart because they were designated as excluded by the FST process.⁷⁸³ The remaining trouble ticket was not associated with a telephone number.⁷⁸⁴ Verizon therefore legitimately excluded all of the 13 trouble tickets.

For the Line Sharing sample, Liberty could not find ten of the 100 troubles in the appropriate FACT table (TB_DM_MNR_TRBL_FACT). Verizon explained that five of these were in former Virginia GTE territory and that it excluded the other five between the data warehouse and the data mart because the trouble code was "INF." Both exclusions are legitimate for the MR-2 through MR-5 metrics.⁷⁸⁵

Liberty found all the 100 troubles in the UNE-L sample in the appropriate FACT table (TB_DM_MNR_TRBL_FACT). However, Liberty noted a few differences between the clear dates and times in the sample and those in the FACT table. Verizon explained that these differences resulted from Verizon's not supplying the correct fields from the source data files to Liberty.⁷⁸⁶

Liberty reviewed Verizon's definitions for key data fields used in the MR-2 through MR-5 metrics to determine if they were consistent with the Guidelines. Verizon provided definitions for each of the data fields in the NMP M&R FACT tables.⁷⁸⁷ Using interviews and data requests, Liberty examined and analyzed each of the fields used in the processing of the MR-2 through MR-5 metrics and compared the fields with the requirements specified in the Guidelines. Liberty found that Verizon had appropriately identified each of the fields and that the definitions of the fields as used in the calculations appear to be correct.

The algorithms Verizon uses to calculate the metrics results based on the data in the data marts used for the MR metrics (TB_DM_MNR_LINE_COUNT_FACT, TB_DM_MNR_TRBL_FACT, and TB_DM_MNR_TRBL_FACT_SPL) are included in a document known as the C2C Metrics Algorithms (CMAs). Verizon provided a copy of the Virginia CMAs for June 2003. Liberty also requested copies of the Virginia CMAs for the months of July, August, and September, 2003. Verizon failed to provide these, asserting that, "The CMA provided ... for VA June 2003 is essentially the same code used to produce the metrics during the July thru September 03 data months with the exception of any Data Calculation Correction Change Controls implemented after the June 03 data month."⁷⁸⁸ As a result, as indicated in the following sections, Liberty relied on the June 2003 CMAs to evaluate the Verizon calculations for September 2003.

⁷⁸³ Response to Data Request #750.

⁷⁸⁴ In response to Data Request #352, Verizon indicated that such reports "usually are for things like broken pole, wire hanging low, SAC door open." These troubles are appropriately excluded from the metrics.

⁷⁸⁵ Response to Data Request #814.

⁷⁸⁶ Response to Data Request #813.

⁷⁸⁷ Response to Data Request #40.

⁷⁸⁸ Responses to Data Requests #266, #267, and #268,

The Virginia Guidelines do not clearly define the reporting month for the MR-2 through MR-5 metrics. Liberty determined that Verizon uses the month in which it closes a trouble ticket to determine which troubles will be included in a monthly report. Liberty believes Verizon's approach is reasonable, but recommends that Verizon seek to clarify the Guidelines to reflect this convention for defining the reporting month.

D. MR-2, Trouble Report Rate

1. Background

The MR-2 metric reports the network trouble report rate and the percentage of subsequent reports. There are five MR-2 sub-metrics.

The Guidelines define the network trouble report rate as the number of direct or referred customer reported troubles for which Verizon finds the trouble disposition to be in the Verizon network per 100 lines/circuits/trunks in service. Disposition codes for drop wire (03), cable (04), and central office (05) identify a network trouble.

Subsequent reports, as reported in MR-2-04, are customer trouble calls on an existing trouble that is pending, usually for status or to change/update information.

The MR-2 sub-metrics report on distinct products types as detailed in the table below:

Sub-Metric	Resale	UNE	Trunks
MR-2-01	<ul style="list-style-type: none"> • Specials 	<ul style="list-style-type: none"> • Specials 	<ul style="list-style-type: none"> • CLEC Trunks
MR-2-02 MR-2-03 MR-2-04	<ul style="list-style-type: none"> • POTS • 2-Wire Digital Services (ISDN) 	<ul style="list-style-type: none"> • Platform • Loop • 2-Wire Digital Services • 2-Wire xDSL Loops • 2-Wire xDSL Line Sharing • 2-Wire xDSL Line Splitting 	

MR-2-05	<ul style="list-style-type: none"> • POTS • Specials • 2-Wire Digital Services (ISDN) 	<ul style="list-style-type: none"> • Platform • Loop • Specials • 2-Wire Digital Services • 2-Wire xDSL Loops • 2-Wire xDSL Line Sharing • 2-Wire xDSL Line Splitting 	
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The Guidelines list the following exclusions from the MR-2 calculations:

- Report rate excludes subsequent reports
- Troubles reported on Verizon official administrative lines
- Troubles closed due to customer action
- Troubles reported by Verizon employees during preventative maintenance for which there is no associated customer report.

The Guidelines also allow Verizon to exclude CPE troubles as well as troubles reported but not found (*e.g.*, FOK or TOK) from the calculation of report rates. Additionally, MR-2-02 and MR-2-03 do not include installation troubles on 2-Wire xDSL Loops and 2-Wire xDSL Line Sharing.

Verizon reports the MR-2 sub-metrics on a statewide basis for individual and aggregate CLECs, and for Verizon retail.⁷⁸⁹ The standard for MR-2-01, MR-2-02, and MR-2-03 is parity with retail with the following exceptions: UNE 2-Wire xDSL Line Sharing and UNE 2-Wire xDSL Line Splitting have a standard of parity with VADI. For CLEC trunks, the retail equivalent is Inter-exchange Carrier Feature Group-D (IXC FGD) trunks. Additionally, the Guidelines indicate that Verizon should assess parity for trunks in conjunction with Mean Time to Repair (MTTR), which metric MR-4 measures. There is no standard for MR-2-04; the Guidelines state that assessment of parity should be in conjunction with missed appointments, which metric MR-3 measures. Because MR-2-05 is to be used for root cause analysis, it has no standard.

The Guidelines provide the following formulas for the MR-2 sub-metrics:

MR-2-01: Network Trouble Report Rate

⁷⁸⁹ The Retail Analog Compare Table of the Guidelines (p. 5) lists the specifics. For resale POTS and UNE-P, the Guidelines define the retail analog as retail POTS, with business and residence disaggregations to match the equivalent resale POTS and UNE-P business and residence. For resale 2-Wire Digital, Verizon defines retail analog as retail ISDN (2-Wire Digital). For UNE-L, Verizon defines retail analog as retail POTS (both business and residence). For UNE 2-Wire Digital Loop and UNE 2-Wire xDSL Loop, Verizon defines retail analog as “Retail POTS – Total (ALL)”, which includes business POTS, residence POTS, and ISDN BRI. For resale and UNE Specials, Verizon defines the retail analog as retail Specials, with DS0 and below and DS1 and above as separate disaggregations to match the equivalent resale and UNE Specials disaggregations.

(Number of all trouble reports with found network troubles)/(Number of lines or specials or trunks in service)

MR-2-02: Network Trouble Report Rate – Loop

(Number of all loop trouble reports (disposition codes 03 or 04))/(Number of lines in service)

MR-2-03: Network Trouble Report Rate – Central Office

(Number of all central office trouble reports (disposition code 05))/(Number of lines in service)

MR-2-04: Percent Subsequent Reports

(Number of subsequent reports, including Field and administrative repeaters for disposition codes 03, 04 and 05)/(Number of total disposition codes 03, 04, and 05 reported, per MR-2-01)

MR-2-05: Percent CPE/TOK/FOK Trouble Report Rate

(Number of all CPE (disposition codes 12 or 13), TOK and FOK (disposition codes 07, 08 and 09) troubles plus No Trouble Found, for specials)/(Number of lines in service)

The MR-2 measures are not included in Verizon's PAP.

2. Analysis and Evaluation

Liberty reviewed the MR-2 measure as part of its audit of Verizon New Jersey. With the exception of the performance standard descriptions and the product disaggregations, the Guidelines for the MR-2 sub-metrics in Virginia are identical to those in New Jersey. However, Verizon moved MR-2 to NMP, so Liberty reviewed Verizon's process documentation and the metric algorithms used to identify exclusions and calculate the measures to determine whether Verizon's definitions for key data fields on the NMP M&R FACT tables are consistent with the Guidelines and whether its systems accurately calculate derived values and logic flags.⁷⁹⁰

Verizon applies a number of exclusions to all of the MR-2 to MR-5 sub-metrics, and Liberty examined Verizon's implementation of these exclusions. Verizon excludes subsequent reports by counting only closed Category 1 troubles and initial troubles in the metrics calculations.⁷⁹¹ Verizon excludes troubles reported by Verizon employees in the course of performing preventative maintenance (Category 4 troubles) by including only Category 1 troubles in the

⁷⁹⁰ Verizon provided FACT Tables in responses to Data Requests #40 and #36.

⁷⁹¹ Responses to Data Requests #362, #481 and #585.

calculation.⁷⁹² Verizon employees establish the report category of a trouble as part of the original trouble reporting process, and Verizon includes the report category in the source system data records. Verizon also classifies administrative repeats as subsequent reports and excludes them through the use of the "ADMIN_REPEAT_FLAG," set during the spooling process.⁷⁹³ Verizon identifies these troubles by flagging those with identical closed dates and different cleared dates.⁷⁹⁴ Although the definition of MR-2-04 alludes to the inclusion of administrative repeats in the category of subsequent reports, the Guidelines do not explicitly state that this convention holds for all MR-2 to MR-5 metrics. Liberty believes that Verizon should recommend wording changes to the Guidelines to make this exclusion clear.

Verizon excludes troubles closed due to customer action (*i.e.*, troubles with a disposition code beginning with 06) by specifying the disposition code of the troubles in the calculation.⁷⁹⁵ The Verizon field technician or RCMC representative sets the disposition code at the time that the trouble is closed. Verizon excludes administrative lines by identifying them as part of the spooling process by setting the flag "CORP_TEL_IND" equal to "Y" through matching with a look-up table of MCNs.⁷⁹⁶ Verizon excludes test account lines from all metrics and Verizon affiliates from CLEC calculations.⁷⁹⁷ Verizon excludes test accounts in the MR-2 through MR-5 metrics through use of the "TEST_ACC_IND" flag, which is set as part of the spooling process using a look-up table to indicate test accounts, affiliate accounts, and certain other accounts excluded from the metrics.⁷⁹⁸ Verizon only includes those lines or circuits with TEST_ACC_IND equal to "N" in the CLEC metrics calculations.

In addition to these general exclusions that the Guidelines explicitly list for MR-2 through MR-5, Verizon identifies trouble tickets associated with the former GTE territory in Virginia using the "FGTE_IND" flag, which is set during the Spooling process by using a wire center look-up table. Verizon only includes those troubles with FGTE_IND equal to "N" in the metrics calculations. In addition, Verizon manually excludes certain troubles by the FST process described in Section C above. Verizon flags these troubles as part of the spooling process within NMP by setting the field EXCLUDE_BY_FST_IND equal to "1." As a result, Verizon does not move them from the data warehouse to the FACT tables.

During its New Jersey audit, Liberty found that Verizon was including the Line Splitting product in its reported results for Line Sharing. Liberty advised against this and recommended that Verizon report each product separately or clarify the Guidelines to make it clear that the Line Sharing results also included the Line Splitting product. In Virginia, the Guidelines call for a separate disaggregation for each of these two products. Verizon accomplishes this disaggregation using the PRODUCT_IND field. Verizon derives the indicators on the basis of the CKT_ID, ISDN flag, USOC, and state code, and populates the PRODUCT_IND using the name of the

⁷⁹² Responses to Data Requests #362 and #485.

⁷⁹³ Response to Data Request #489.

⁷⁹⁴ Responses to Data Requests #36 and #40.

⁷⁹⁵ Response to Data Request #752.

⁷⁹⁶ Response to Data Request #206.

⁷⁹⁷ These two exclusions are documented on p. 4 of the Guidelines.

⁷⁹⁸ Response to Data Request #487.

product. Liberty reviewed the September 2003 data and found that Verizon appeared to be properly separating the Line Splitting and Line Sharing products in its calculations.

The definition of MR-2 indicates that the metric “measures the total initial customer direct or referred troubles reported.” Verizon has explained that “[a] referred trouble is defined as a trouble being referred from the business office or operator services on behalf of the customer. For example, a customer calls the business office to question his bill and mentions that he has static on the line. The Business office rep then refers the trouble to the repair service for the customer.”⁷⁹⁹ In addition, Verizon indicated that such troubles are included in Report Category 1. Thus, by including all Category 1 troubles in the calculation of MR-2, Verizon would automatically include referred troubles.

In addition to the Retail Analog Compare Table included at the beginning of the Guidelines, the *Performance Standard* section of the Guidelines contains specific language regarding how Verizon should assess parity for the MR-2 sub-metrics. This same language was not present in the New Jersey Guidelines. Liberty therefore examined the retail analogs for each of the MR-2 metrics to verify consistency with the Guidelines. For the trunk retail equivalent sub-metrics, the Guidelines state “parity should be assessed in conjunction with MTTR.” Considering that the MR-4 sub-metrics measure MTTR and the MR-2 sub-metrics are a measure of trouble report rates, it is not clear why this statement is valid. Verizon explained:⁸⁰⁰

MR-2-01, 02, 03-Network Trouble Report Rate is a parity measure. The statement ‘Parity should be assessed in conjunction with MTTR.’ is provided as informational and has been in the guideline since February 16, 1999. The intent of the statement is to refer the user to MR-4- Trouble Duration Intervals to understand the value of performance results as related to Interconnection Trunks. This is because the volume of trouble reports for Interconnection Trunks is so small that the best indication of service is how fast the trouble is fixed, when it occurs.

The Guidelines define the retail analog for 2-Wire xDSL Line Sharing (product code 3343) and 2-Wire xDSL Line Splitting (product code 3345) as parity with VADI. The standard for these products in New Jersey was parity with retail. Liberty examined the reason for this difference and found the Virginia standard to be a reasonable one because most of the business of Verizon’s VADI subsidiary had been in selling Line Sharing products. However, Liberty also learned in interviews that the difference is also moot, at least for the present, as Verizon has eliminated VADI as a separate subsidiary, and the Verizon retail organization now carries out those functions. Furthermore, the methods and procedures used by the retail organization to order, provision, and repair Line Sharing are the same as those used while VADI was a separate subsidiary. For example, Verizon still processes VADI-like orders through the same CLEC interfaces that the separate subsidiary used. Hence, the data are treated the same for metrics purposes as they were formerly. VADI-like orders appear as if a CLEC submitted them. Verizon also indicated that it had foreseen issues that might arise in interpreting the Guidelines when it eliminated VADI as a separate subsidiary. As a result, in the most recent version of the

⁷⁹⁹ Response to Data Request #208.

⁸⁰⁰ Response to Data Request #709.

Guidelines, the Glossary defines VADI more generally to include activities carried out by the Verizon retail organization: "Verizon Advanced Data Incorporated (VADI) is either the separate data affiliate or the office or division within Verizon that provides retail xDSL services." Thus, it is Verizon's view that no immediate change to the Guidelines is necessary. Verizon mentioned that the issue of how the Guidelines treat VADI may change as of June 2004.⁸⁰¹ At that point, the FCC will no longer require Verizon to submit VADI orders as if they were CLEC orders. In addition, Line Sharing will be in the midst of its phase out.

As noted above, the MR-2 metrics report troubles per 100 lines, circuits, or trunks. However, the formulas provided in the Guidelines for the MR-2 sub-metrics state that the denominators are the *number* of lines, circuits, or trunks rather than the *number divided by 100*, as it should be. This can be confusing, and Liberty recommends that Verizon seek a change in the wording of the Guidelines to clarify this point.

MR-2-01 – Network Trouble Report Rate

The MR-2 metric reports the number of network troubles per 100 lines/circuits/trunks. The MR-2-01 sub-metric reports only specials and trunks.

Network troubles are those either in the loop or in the central office. For the products reported in MR-2-01, the loop troubles are those with the condition that the field "TROUBLE_CD" is equal to either "CO" or "FAC." The TROUBLE_CD field provides the WFA-C equivalent to the disposition codes used in LMOS but with a different coding scheme.⁸⁰² "FAC" is equivalent to disposition codes 03 and 04, while "CO" is equivalent to disposition code 05.

To verify that Verizon calculates MR-2-01 in accordance with the Guidelines, Liberty examined Verizon's documentation of the algorithms for MR-2-01 in its June 2003 CMAs. Liberty compared the algorithms for all reported products (both wholesale products and retail analogs) with the wording of the Guidelines. Liberty noted that in the retail analog calculation for trunks (product code 5000), Verizon includes affiliate transactions. Verizon explained that "[f]or trunks, the Verizon Retail equivalent is IXC FGD service. VZ Affiliate customers purchase IXC FGD trunks and therefore are included in the retail calculations. There is no exclusion for Verizon Retail Affiliate customers stated in the guidelines."⁸⁰³ Liberty agrees that this is a reasonable interpretation of the Guidelines.

Liberty also performed its own calculation of the MR-2-01 results for UNE specials (both wholesale products and retail analogs) for September 2003 using Verizon's FACT table data and Liberty's algorithm that it based on its interpretation of the Guidelines. Liberty reproduced the results reported by Verizon for September 2003 to within the reporting precision (three decimal significance).⁸⁰⁴

⁸⁰¹ Interview #22, November 26, 2003.

⁸⁰² Response to Data Request #488.

⁸⁰³ Response to Data Request #492.

⁸⁰⁴ Response to Data Request #815.

MR-2-02 – Network Trouble Report Rate - Loop

This metric reports the number of loop troubles per 100 lines/circuits/trunks. Because Verizon does not report specials and trunks as part of this metric, it identifies loop troubles by the condition that the disposition code is equal to 03 or 04.

The Guidelines for MR-2-02 specify that for 2-Wire xDSL Loops (product code 3342) and 2-Wire xDSL Line Sharing (product code 3343) products, Verizon should exclude installation troubles. Verizon refers to this as an “I-code” exclusion. Verizon explained that it implements this exclusion by using two flags set during the spooling process⁸⁰⁵: “RPR_RPT_30DAY_IND,” which indicates whether there has been a repeat trouble received within 30 days of the last trouble for that line, and “INST_RPT_30DAY_IND,” which indicates whether there has been a trouble received within 30 days of the completion of the order provisioning that line.⁸⁰⁶ Verizon defines repeat troubles and installation troubles in such a way that they are mutually exclusive. Only the first trouble received within 30 days after order completion is considered to be an installation (I-code) trouble. Verizon classifies any additional troubles received within 30 days after order completion as repeat troubles.

For MR-2-02 and MR-2-03 Verizon defines an installation trouble as one for which RPR_RPT_30DAY_IND is equal to “N” and INST_RPT_30DAY_IND is equal to “Y”.⁸⁰⁷ Verizon accomplishes the exclusion of installation troubles⁸⁰⁸ for 2-Wire xDSL Loops, 2-Wire xDSL Line Sharing and 2-Wire xDSL Line Splitting products by using the logical negation of this condition: RPR_RPT_30DAY_IND is equal to “Y” or INST_RPT_30 DAY_IND is equal to “N”. However, during the spooling process Verizon also creates another flag, INST_RPT_IND, which is set to “Y” if the trouble is the first trouble received within 30 days of order completion.⁸⁰⁹ As indicated below in the discussion of MR-5, Verizon uses the condition “INST_RPT_IND = N” to exclude installation troubles for that metric. When Liberty attempted to apply this condition in MR-2-02 and MR-2-03, the results were different in some cases from those obtained by applying the condition “RPR_RPT_30DAY_IND = Y or INST_RPT_30DAY_IND = N”.

The discrepancies among the results of applying the different algorithms used by Verizon to identify I-code troubles in MR-2, MR-5, and PR-6 appear to result from cases in which a trouble occurs on a line before and after an installation. If there is a pre-installation trouble and a post-installation trouble that occur within 30 days of each other and the post-installation trouble occurs within 30 days of the installation, then all three flags, INST_RPT_30DAY_IND, RPR_RPT_30DAY_IND, and INST_RPT_IND, will be set equal to “Y”. However, since the post-installation trouble is a legitimate installation, this trouble will be improperly *excluded* from the PR-6-01 and PR-6-03 metrics and will be improperly *included* in the MR-2-02 and MR-2-03

⁸⁰⁵ Response to Data Request #569.

⁸⁰⁶ Response to Data Requests #207 and #791.

⁸⁰⁷ Verizon uses this condition to identify installation troubles to include in the PR-6-01 (% Installation Troubles reported within 30 Days) and PR-6-03 (% Installation Troubles reported within 30 Days – FOK/TOK/CPE) Quality metrics.

⁸⁰⁸ Response to Data Request #498.

⁸⁰⁹ Response to Data Request #791.

metrics for 2-Wire xDSL Loops, 2-Wire xDSL Line Sharing and 2-Wire xDSL Line Splitting. Verizon has confirmed that the correct condition for MR-2-02 and MR-2-03 is "INST_RPT_IND = N" and intends to issue a change control to correct the MR-2 calculations.⁸¹⁰

To verify that Verizon calculates MR-2-02 in accordance with the Guidelines, Liberty examined Verizon's June 2003 CMAs. Liberty compared the algorithms for all reported products (both wholesale products and retail analogs) with the wording of the Guidelines and noted several instances where the algorithms appeared to be inconsistent with the Guidelines. Verizon confirmed that several of the algorithms for MR-2-02 in the June 2003 CMAs are incorrect, including those for MR-2-02-2341 (resale 2-Wire Digital),⁸¹¹ MR-2-02-3342 (UNE 2-Wire xDSL Loops),⁸¹² and MR-2-02-3345 (UNE 2-Wire xDSL Line Splitting).⁸¹³ In addition, Liberty discovered that Verizon applies the installation trouble exclusion to UNE 2-Wire xDSL Line Splitting, although this exclusion does not appear in the Guidelines.⁸¹⁴

Liberty also performed its own calculation of the MR-2-02 results for all product disaggregations (both wholesale products and retail analogs) in September 2003 using Verizon's FACT table data and algorithms that Liberty developed based on the Guidelines. With the exceptions noted below, Liberty reproduced the results reported by Verizon for September to within the reporting precision (three decimal significance), despite the errors in the CMA documentation of the algorithms. Thus, it appears that the errors are in the documentation of the algorithms rather than their implementation. For MR-2-02-3342 (UNE 2-Wire xDSL Loops), MR-2-02-3343 (UNE 2-Wire xDSL Line Sharing), and MR-2-02-3345 (UNE 2-Wire xDSL Line Splitting), Liberty performed the calculations with both algorithms noted above to exclude installation troubles. For the MR-2-02-3343 CLEC aggregate and retail analog calculations, Liberty obtained different results.⁸¹⁵ The results confirm that Verizon used the condition "RPR_RPT_30DAY_IND = Y or INST_RPT_30DAY_IND = N". However, as indicated above, this is not the correct algorithm for excluding installation troubles. Verizon has confirmed that "INST_RPT_IND = N" is the correct condition.⁸¹⁶ Hence, the MR-2-02-3343 results reported by Verizon in September 2003 are incorrect. Similarly, since the retail analog of MR-2-02-3343 and MR-2-02-3345 are the same, the reported MR-2-02-3345 retail results are incorrect also, regardless of whether or not the installation trouble exclusion applies to this product.

MR-2-03 – Network Trouble Report Rate – Central Office

This metric reports the number of central office troubles per 100 lines/circuits/trunks. Because Verizon does not report specials and trunks as part of this metric, it identifies loop troubles by the condition that the disposition code is equal to 05. The exclusions, retail analogs, and product

⁸¹⁰ Response to Data Request #791,

⁸¹¹ Response to Data Request #495.

⁸¹² Response to Data Request #499.

⁸¹³ Response to Data Request #501.

⁸¹⁴ Response to Data Request #767.

⁸¹⁵ The "INST_RPT_IND = N" condition produced a CLEC aggregate result of 0.13 and a retail result of 0.17. The "RPR_RPT_30DAY_IND = Y or INST_RPT_30DAY_IND = N" condition produced a CLEC aggregate result of 0.15 and a retail result of 0.18, as was reported by Verizon.

⁸¹⁶ Response to Data Request #791.

reporting dimensions for MR-2-03 are identical to those of MR-2-02. Hence the discussion above regarding these for MR-2-02 applies equally to MR-2-03, including the installation exclusions for UNE 2-Wire xDSL Loops (product 3342) and UNE 2-Wire xDSL Line Sharing (product 3343).

To verify that Verizon calculates MR-2-03 in accordance with the Guidelines, Liberty examined Verizon's June 2003 CMAs. Liberty compared the algorithms for all reported products (both wholesale products and retail analogs) with the wording of the Guidelines and noted several instances where the algorithms appeared to be inconsistent with the Guidelines. Verizon confirmed that several of the algorithms for MR-2-03 in the June 2003 CMAs are incorrect, including those for MR-2-03-3341 (UNE 2-Wire Digital), MR-2-03-3342 (UNE 2-Wire xDSL Loops), and MR-2-03-3345 (UNE 2-Wire xDSL Line Splitting).⁸¹⁷ In addition, Liberty discovered that Verizon applies the installation trouble exclusion to UNE 2-Wire xDSL Line Splitting, although this exclusion does not appear in the Guidelines.⁸¹⁸

Liberty also performed its own calculation of the MR-2-03 results for all product disaggregations (both wholesale products and retail analogs) in September 2003 using Verizon's FACT table data⁸¹⁹ and algorithms Liberty developed based on the Guidelines. As was the case for MR-2-02, with the exceptions noted below, Liberty reproduced the results reported by Verizon in September to within the reporting precision (three decimal significance), despite the errors in the June 2003 CMAs' documentation of the algorithms. Thus, as with MR-2-02, it appears that the errors are in the documentation of the algorithms rather than their implementation. For MR-2-03-3342 (UNE 2-Wire xDSL Loops), MR-2-03-3343 (UNE 2-Wire xDSL Line Sharing), and MR-2-03-3345 (UNE 2-Wire xDSL Line Splitting), Liberty performed the calculations with both algorithms noted above to exclude installation troubles. For the MR-2-03-3343 retail analog calculations, Liberty obtained different results.⁸²⁰ The results confirm that Verizon used the condition "RPR_RPT_30DAY_IND = Y or INST_RPT_30DAY_IND = N". However, as indicated above in the discussion of MR-2-02, this is not the correct algorithm for excluding installation troubles. Verizon has confirmed that "INST_RPT_IND = N" is the correct condition.⁸²¹ Hence, the MR-2-03-3343 retail analog results reported by Verizon in September 2003 are incorrect. Similarly, since the retail analog of MR-2-03-3343 and MR-2-03-3345 are the same, the reported MR-2-03-3345 retail results are also incorrect, regardless of whether or not the installation trouble exclusion applies to this product.

MR-2-04 – % Subsequent Reports

This metric reports the percentage of trouble reports that are subsequent reports. There is no standard for this metric. The Guidelines state that parity "is to be assessed in conjunction with missed appointments." The meaning of this statement is somewhat unclear, given the lack of a

⁸¹⁷ Responses to Data Requests #497, #499, and #501.

⁸¹⁸ Response to Data Request #767.

⁸¹⁹ Response to Data Request #263.

⁸²⁰ The "INST_RPT_IND = N" condition produced a retail result of 0.04 while the "RPR_RPT_30DAY_IND = Y or INST_RPT_30DAY_IND = N" condition produced a retail result of 0.05, as was reported by Verizon. For the September 2003 data, the two different conditions produced the same CLEC aggregate results.

⁸²¹ Response to Data Request #791.

standard. Verizon explained that the statement in the Guidelines “is provided as informational and has been in the guideline since its inception. The intent of the statement is to refer the user to MR-3 Missed Repair Appointments to understand performance results. This is largely because Missed Repair Appointments are the typical reason for a subsequent report.”⁸²²

The numerator of this metric is the number of subsequent reports of network troubles, and the Guidelines define the number of subsequent reports as “field and administrative repeaters for Disposition Codes 03, 04, and 05.” Verizon calculates the number of field repeaters by summing the field “SUBSEQUENT_CNT” that is set during the spooling process and “is a passed value for NDSB records and derived for LMOS records.”⁸²³ Verizon adds a calculation of the administrative repeats by summing all tickets for which ADMIN_REPEAT_FLAG is equal to “Y.” MR-2-04 is the one exception among the MR-2 through MR-5 sub-metrics for which Verizon does not exclude subsequents and administrative repeats. Verizon restricts the reports to network troubles by setting DISPOSITION_CD equal to 03, 04, or 05.

The denominator of the metric is the number of “Total Disposition Codes 03, 04, and 05 troubles reported (Per MR-2-01).” Because MR-2-01 and MR-2-04 have no commonality in their product disaggregations, the parenthetical reference to MR-2-01 is confusing. Verizon indicated that the statement “Per MR-2-01” “should be removed from the denominator in MR-2-04. This reference was originally in the Draft C2C Guidelines of December 1998. The MR-2-01 measure had a definition for POTS services, which had since been incorporated into the definition and glossary.”⁸²⁴ Furthermore, Verizon interprets the phrase “Total Disposition Codes ... troubles reported” as the number of “troubles with disposition codes of 03, 04, 05 plus the number of subsequent reports.”⁸²⁵

To verify that Verizon calculates MR-2-04 in accordance with the Guidelines, Liberty examined Verizon’s June 2003 CMAs. Liberty compared the algorithms for all reported products (both wholesale products and retail analogs) with the wording of the Guidelines. Given the interpretation of the numerators and denominators provided above, Liberty found only one anomalous algorithm, that for resale Digital (product code 2341). Verizon has agreed that this algorithm does not correctly include the administrative repeats in the numerator and denominator sums. However, “[t]here were no wholesale administrative repeaters for the July to September data months, therefore the ... calculations for these data months will not impact the reported results.”⁸²⁶ Liberty verified this statement for the September 2003 data month using data provided by Verizon.⁸²⁷ Liberty found a single retail administrative repeater for this data month but no wholesale administrative repeaters.

Liberty also performed its own calculation of the MR-2-04 results for all product disaggregations (both wholesale products and retail analogs) for September 2003 using Verizon’s FACT table

⁸²² Response to Data Request #708.

⁸²³ Response to Data Request #480.

⁸²⁴ Response to Data Request #715.

⁸²⁵ Response to Data Request #715.

⁸²⁶ Response to Data Request #714.

⁸²⁷ Response to Data Request #263.

data⁸²⁸ and algorithms Liberty developed based on the Guidelines. Liberty reproduced all of the results reported by Verizon for September 2003.

MR-2-05 – % CPE/TOK/FOK Trouble Report Rate

This metric reports the number of CPE, TOK, and FOK troubles per 100 lines/circuits/trunks in service. There is no standard for this metric and the Guidelines state that it is “[u]sed for root cause analysis. For CLEC troubles a not found trouble is coded as CPE.” Verizon selects the appropriate troubles to include in the calculations using the disposition codes set by the Verizon field technicians or RCMC representatives. The technicians code CPE troubles as disposition codes 12 and 13, and code the TOK and FOK trouble as disposition codes 07, 08, and 09. There is a different coding scheme used for specials troubles. The Guidelines indicate that Verizon should also include specials trouble reports coded as No Trouble Found (NTF).

To verify that Verizon calculates MR-2-05 in accordance with the Guidelines, Liberty examined Verizon's June 2003 CMAs. Liberty compared the algorithms for all reported products (both wholesale products and retail analogs) with the wording in the Guidelines and found all to be consistent with the Guidelines except that for UNE 2-Wire xDSL Line Splitting (MR-2-05-3343) and those for resale and UNE specials (MR-2-05-2200 and MR 2-05-3200). For MR-2-05-3343, the algorithm in the CMAs counts the incorrect disposition codes. Verizon has agreed that the documentation of this algorithm in the June 2003 CMAs is inaccurate.⁸²⁹

For specials, the Guidelines intend for Verizon to only include troubles with the field “TROUBLE_CD” equal to “CPE”, “TOK”, or “NTF” in the numerator of the metric. However, Liberty observed that Verizon's algorithm sums all troubles with TROUBLE_CD not equal to “CO” or “FAC.” Because there are other values of TROUBLE_CD listed in the FACT table documentation besides these five, the two specifications are not, in general, the same. Verizon has confirmed this conclusion.⁸³⁰ Thus, Verizon's implementation of MR-2-05 for specials is not in accordance with the intent of the Guidelines.

Liberty also performed its own calculation of the MR-2-05 results for all product disaggregations (both wholesale products and retail analogs) for September 2003 using Verizon's FACT table data⁸³¹ and algorithms Liberty developed based on the Guidelines. Liberty reproduced all of the results reported by Verizon for September to within the reporting precision (three decimal significance). Liberty's replication of the results for UNE 2-Wire xDSL Line Splitting (MR-2-05-3343) indicates that the problem observed with the algorithm in the June 2003 CMAs is likely to be an error in documentation rather than one in implementation.

⁸²⁸ Response to Data Request #263.

⁸²⁹ Response to Data Request #504.

⁸³⁰ Response to Data Request #768. Verizon points out that it excludes some of the additional possible values for TROUBLE_CD because of other conditions in its algorithm. However, “Came Clear” (*i.e.*, TROUBLE_CD is equal to “CC”) and “No Plant Condition” (*i.e.*, TROUBLE_CD is equal to “NPC”) would be included in the Verizon calculation. Verizon points out that these trouble codes are “similar to TOK/FOK.” Nevertheless, they are not explicitly indicated in the Guidelines for inclusion in the calculation of MR-2-05.

⁸³¹ Response to Data Request #263.

To reproduce Verizon's numerator for resale specials (MR-2-05-2200) and UNE specials (MR-2-05-3200), Liberty summed troubles with TROUBLE_CD equal to "CPE", "TOK", or "NTF," which is in accordance with the intent of the Guidelines although different from Verizon's algorithm, as noted above. However, Liberty noted that for the September 2003 data there are no other values of TROUBLE_CD that would be included in the Verizon algorithm. As Verizon has noted,⁸³² this will not always be the case. Hence, Liberty's replication of this metric for September 2003 provides no assurance that the calculation has been or will be accurate for other reporting months.

E. MR-3, Missed Repair Appointments

1. Background

The MR-3 metric reports on the percentage of network troubles not repaired and cleared by the committed date and time. There are five MR-3 sub-metrics; however, Verizon only reports three in Virginia.

Network troubles include troubles with the disposition code 03, 04, and 05. Verizon always dispatches out loop troubles, identified by disposition codes 03 and 04. Verizon determines appointments for POTS troubles on the basis of the availability of repair technicians.

For a UNE POTS voice loop, the Guidelines state that Verizon uses a single ticket process that allows it to easily change dispatch direction in the event that a CLEC makes an error with the initial dispatch.

The MR-3 sub-metrics report on distinct products types as detailed in the table below:

Sub-Metric	Resale	UNE	Trunks
MR-3-01 MR-3-02	<ul style="list-style-type: none"> • POTS – Business • POTS – Residence • 2-Wire Digital Services (ISDN) 	<ul style="list-style-type: none"> • Platform – Business • Platform – Residence • Loop • 2-Wire Digital Services • 2-Wire xDSL Loops • 2-Wire xDSL Line Sharing • 2-Wire xDSL Line Splitting 	

⁸³² Response to Data Request #768.

MR-3-03	<ul style="list-style-type: none"> • POTS • 2-Wire Digital Services (ISDN) 	<ul style="list-style-type: none"> • Platform • Loop • 2-Wire Digital Services • 2-Wire xDSL Loops • 2-Wire xDSL Line Sharing • 2-Wire xDSL Line Splitting 	
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The Guidelines list the following exclusions from the MR-3 calculations:

- Trouble reported on Verizon official administrative lines
- CLEC or end-user caused missed appointments, or missed appointment due to no access
- Subsequent reports
- Troubles closed due to customer action
- Troubles reported by Verizon employees in the course of preventative maintenance when there is no associated customer report
- Records for troubles on which Verizon dispatches a technician prior to the appointment date and encounters a no access situation.

Verizon excludes redirected troubles on POTS loops from the MR-3-02 sub-metric. The Guidelines define redirected troubles as troubles dispatched in and out when Verizon finds the trouble on the second dispatch after an incorrect initial dispatch by the CLEC. Except for MR-3-03, the Guidelines specify that Verizon should exclude CPE, FOK, and TOK troubles from the results.

Verizon reports the MR-3 sub-metrics on a statewide basis for individual and aggregate CLECs, and for Verizon retail. The standard for MR-3-01 and MR-3-02 is parity with retail except for UNE 2-Wire xDSL Line Sharing and UNE 2-Wire xDSL Line Splitting, for which the Guidelines' standard is parity with VADI performance. The Guidelines do not provide a standard for MR-3-03.

The Guidelines provide the following formulas for the MR-3 sub-metrics:

MR-3-01: Percent Missed Repair Appointment – Loop

(Number of loop troubles for which clear time is greater than commitment time, missed appointments for (M=X) for disposition codes 03 and 04)/(Number of loop troubles (disposition codes 03 and 04))

MR-3-02: Percent Missed Repair Appointment – Central Office

(Number of central office troubles for which clear time is greater than commitment time, missed appointments for (M=X) for disposition code 05)/(Number of Central Office troubles (disposition codes 0)5)

MR-3-03: Percent CPE/TOK/FOK – Missed Appointment

(Number of CPE, FOK, or TOK troubles for which clear time is greater than commitment time, missed appointments for (M=X) for disposition codes 07, 08, 09, 12 and 13)/(Number of CPE/FOK/TOK troubles (disposition codes 07, 08, 09, 12 and 13))

Two of the MR-3 sub-metrics are relevant to Verizon's PAP. During the July and August 2003 reporting months, Verizon did not incur any penalties associated with this measure.⁸³³

2. Analysis and Evaluation

Liberty reviewed the MR-3 measure as part of its audit of Verizon New Jersey. With the exception of allowing for two additional exclusions and some differences in the product disaggregations, the Guidelines for the Virginia MR-3 metric are identical to those in New Jersey. However, because Verizon moved MR metrics to NMP, Liberty conducted a complete evaluation of the NMP process used in calculating the MR-3 sub-metrics in Virginia.⁸³⁴

Upon opening a trouble ticket in either LMOS or WFA-C, Verizon makes a commitment to the CLEC or customer to clear the trouble by a specific date and time. Verizon establishes the date and time based on the availability of technicians, and notifies the CLEC or customer of the commitment. The customer must conclude an agreement to provide access during the time period contained within the commitment window. If Verizon clears the trouble by the end of its commitment window, then Verizon has met its commitment. If Verizon clears the trouble after the commitment time expires, then for MR-3 purposes, Verizon treats the trouble as a missed appointment. Verizon designates troubles with this condition in the FACT tables by using the MISSED_APPT_CNT field, a field set during the spooling process, and counting the number of missed appointments for each trouble listed in the source systems. Verizon defines a missed appointment as one for which the clear time is later than the commitment time. In the calculation of the MR-3 metrics, Verizon determines the number of troubles with missed appointments by summing over troubles for which MISSED_APPT_CNT is greater than zero.

Verizon is properly implementing the exclusions listed in the Guidelines for MR-3, which are common to the other MR-2 through MR-5 metrics. The methods used for this are the same as those for MR-2 as described above in Section D.

The Guidelines require that the No Access Rule apply to the MR-3 sub-metrics. The No Access Rule provides that if Verizon dispatches a technician prior to the appointment date and the CLEC or end-user causes access to the customer premises to be unavailable, Verizon should exclude the

⁸³³ Responses to Data Requests #198 and #203 (July and August 2003 C2C Reports).

⁸³⁴ Response to Data Request #36.

trouble ticket from the MR-3 calculations. Liberty reviewed Verizon's Standard Subscriber No Access Maintenance Policy to evaluate the circumstances under which a technician identifies a no access situation and the process used by the technician in such circumstances.⁸³⁵ When faced with a no access situation, the technician returns the trouble to the dispatch pool and the trouble remains open. Verizon excludes the trouble from MR-3, because only closed troubles are included in the NMP calculations.⁸³⁶ Liberty found this policy to be reasonable, if Verizon follows it correctly. Verizon also excludes troubles from MR-3 for which the CLEC or end-user is the cause of the missed appointment. In such a case, Verizon closes the trouble with a disposition code of either 09XX or 12XX and excludes it from the MR-3 sub-metrics on that basis.⁸³⁷

The New Jersey and Virginia Guidelines for MR-3 differ with regard to product disaggregations. For the MR-3-01 and MR-3-02 sub-metrics in Virginia, Verizon disaggregates the POTS product into business and residential service. Verizon is to report separately the UNE 2-Wire xDSL Line Sharing and UNE 2-Wire xDSL Line Splitting products in Virginia for MR-3. Liberty evaluated the product disaggregation to ensure that Verizon had correctly identified the various products. Verizon uses the RES_BUS_PUB_IND field to identify residential and business POTS service. It derives this field using the TB_DW_RES_BUS_BTR table, state codes, and class of service parameters.⁸³⁸ Similarly, Verizon splits UNE 2-Wire xDSL products into Line Sharing and Line Splitting using the PRODUCT_IND field. Verizon derives the indicators on the basis of the CKT_ID, ISDN flag, USOC, and state code. Verizon populates the PRODUCT_IND using the name of the product. Liberty reviewed the September 2003 data and found that Verizon appears to be properly identifying the residential and business POTS services. In addition, Liberty found that Verizon appears to be properly identifying the UNE 2Wire xDSL products.

The standard for MR-3 UNE 2-Wire xDSL Line Sharing and UNE 2-Wire xDSL Line Splitting is parity with VADI. This standard is reasonable because most of the business of VADI has been in selling Line Sharing products. Verizon eliminated VADI as a separate subsidiary, and Verizon's retail organization now carries out its functions. However, the methods and procedures used by the retail organization to order, provision, and repair Line Sharing are the same as those used while VADI was a separate subsidiary. It is Verizon's view that no immediate change is necessary in the Guidelines. Verizon mentioned that the issue of how it should treat VADI may change as of June 2004. At that point, the FCC will no longer require Verizon to submit VADI orders as if they were CLEC orders. In addition, Line Sharing will be in the midst of its phase out.⁸³⁹

⁸³⁵ Response to Data Request #213.

⁸³⁶ Responses to Data Requests #50, #213, #753, and #754.

⁸³⁷ Response to Data Request #213.

⁸³⁸ Response to Data Request #40.

⁸³⁹ Interview #22, November 26, 2003.

MR-3-01: Percent Missed Repair Appointment – Loop

MR-3-01 measures the percentage of missed repair appointments on loop troubles for which Verizon failed to meet its commitment. Verizon defines loop troubles as those with disposition code 03 or 04. Verizon does not report specials and trunks for this metric.

To verify that Verizon calculates MR-3-01 in accordance with the Guidelines, Liberty examined Verizon's June 2003 CMAs. Liberty compared the algorithms for all reported products (both wholesale products and retail analogs) with the wording of the Guidelines and found all to be consistent.

Liberty also performed its own calculation of the MR-3-01 results for all product disaggregations (both wholesale products and retail analogs) for September 2003 using Verizon's FACT table data⁸⁴⁰ and algorithms Liberty developed based on the Guidelines. Liberty replicated Verizon's results to within the reporting precision (three decimal significance).

MR-3-02: Percent Missed Repair Appointment – Central Office

MR-3-02 measures the percentage of missed repair appointments on central office troubles for which Verizon failed to meet its commitment. Verizon defines central office troubles as those with disposition code 05. Verizon does not report specials and trunks for this metric.

A unique feature of this metric is the treatment of the calculation for UNE POTS Loop (product code 3112). For this product, the Guidelines specify that Verizon should exclude redirected troubles. The Guidelines indicate that “[a] trouble is considered a redirect if it was dispatched **IN** and **OUT**, and the trouble was found on the second dispatch (due to a CLEC error in the initial dispatch direction). Reports with multiple dispatches in the same direction are not excluded.” Verizon implements this specification by summing ACTUAL_DURATION_RUN but excluding those troubles for which the field “DISPATCH_IN_CNT” is less than or equal to 1 and the field “DISPATCH_OUT_CNT” is equal to 1.⁸⁴¹ The fields DISPATCH_IN_CNT and DISPATCH_OUT_CNT, which Verizon sets during the spooling process, contain the number of dispatches in and dispatches out, respectively, that were made in resolving the trouble. This algorithm would exclude troubles with one dispatch in and one dispatch out, but would not exclude troubles with one dispatch out and multiple dispatches in or troubles with multiple dispatches in both directions. Verizon explained this as follows:⁸⁴² “[t]he guideline excludes a CLEC misdirected trouble. A misdirected trouble adds to the duration interval through no fault of Verizon. In the case of multiple dispatches, both in and out, Verizon does not take the exclusion because it should have isolated the trouble on the initial redirected dispatch. If Verizon failed to determine that, and had to dispatch again, then Verizon is at fault and the trouble does not qualify for exclusion.” Although this distinction is somewhat unclear from the wording of the Guidelines, Liberty agrees that Verizon's logic is consistent with the intent of MR-3-02. Liberty also notes that Verizon does not exclude redirected troubles in the calculation of the retail analog

⁸⁴⁰ Response to Data Request #263.

⁸⁴¹ Response to Data Requests #576 and #713.

⁸⁴² Response to Data Request #770.

for UNE POTS Loop,⁸⁴³ although there is no explicit indication in the Guidelines that Verizon should perform the CLEC and retail analog calculations differently.

To verify that Verizon calculates MR-3-02 in accordance with the Guidelines, Liberty examined Verizon's June 2003 CMAs. Liberty compared the algorithms for all reported products (both wholesale products and retail analogs) with the wording of the Guidelines and found all to be consistent with the Guidelines using the interpretations provided above, with the exception MR-3-02-3112⁸⁴⁴ (UNE POTS Loop), which did not contain the exclusion required for redirected troubles. Verizon acknowledged the error in the CMA.⁸⁴⁵

Liberty also performed its own calculation of the MR-3-02 results for all product disaggregations (both wholesale products and retail analogs) for September 2003 using Verizon's FACT table data⁸⁴⁶ and algorithms that Liberty developed based on the interpretation of the Guidelines provided above. Liberty reproduced all the Verizon calculations for this metric. Thus, it appears that the one algorithm error observed is in the documentation of the algorithm rather than its implementation.

MR-3-03: Percent CPE/TOK/FOK – Missed Appointment

MR-3-03 measures the percentage of missed repair appointments for CPE, TOK, and FOK troubles for which Verizon failed to meet its commitment. The CPE, TOK, and FOK troubles are those with disposition code 07, 08, 09, 12, or 13. Verizon does not report Specials and trunks for this metric.

To verify that Verizon calculates MR-3-03 in accordance with the Guidelines, Liberty examined Verizon's June 2003 CMAs. Liberty compared the algorithms for all reported products (both wholesale products and retail analogs) with the wording of the Guidelines and found all to be consistent.

Liberty also recalculated the MR-3-03 results for all product disaggregations (both wholesale products and retail analogs) for September 2003 using Verizon's FACT table data⁸⁴⁷ and algorithms that Liberty developed based on the Guidelines. Liberty reproduced all the Verizon calculations for this metric.

⁸⁴³ Response to Data Requests #215 and #745.

⁸⁴⁴ The product code for UNE POTS Loop is "3550" in the June 2003 CMAs. However, Verizon has subsequently issued Metric Change Control No. 10335 and changed this product code to "3112" beginning with the September 2003 data month. See response to Data Request #716.

⁸⁴⁵ Response to Data Request #509.

⁸⁴⁶ Response to Data Request #263.

⁸⁴⁷ Response to Data Request #263.

F. MR-4, Trouble Duration Intervals

1. Background

MR-4 measures the Mean Time to Repair (MTTR) and other characteristics of trouble duration for network trouble reports. There are ten MR-4 sub-metrics; Verizon reports eight of these in Virginia.

The Guidelines define MTTR as the average duration from trouble receipt to trouble clearance. Calculation of the MR-4 measure includes troubles with disposition codes 03, 04, and 05. Verizon measures the repair intervals on resale and UNE-P POTS troubles on a running clock basis, which includes weekends and holidays. For special services and interconnection trunks, Verizon should measure the repair intervals on a stop clock basis. That is, Verizon should stop the clock when CLEC testing is occurring, Verizon is awaiting carrier acceptance, or Verizon cannot gain access. For UNE-L, UNE 2-Wire Digital Loop, and UNE 2-Wire xDSL products, Verizon should measure the repair interval on a limited stop clock basis. That is, Verizon should stop the clock for outside dispatch tickets if access to the customer premises is after the offered repair interval. Otherwise, Verizon should use a running clock.

The Guidelines define an Out of Service (OOS) condition as the condition for which there is no dial tone, the customer cannot call out, or others cannot call the customer. For specials, the Guidelines define an OOS condition as a circuit that is completely out of service, not just intermittently so, and the completion code indicates that Verizon finds the trouble in its own network. Verizon measures the OOS interval for all products beginning at the time at which either a CLEC or a Verizon representative enters the trouble into Verizon's maintenance OSS interface.

The MR-4 sub-metrics report on distinct products types as detailed in the table below:

Sub-Metric	Resale	UNE	Trunks
MR-4-01	<ul style="list-style-type: none"> • POTS • 2-Wire Digital Services (ISDN) • Specials – Non-DS0 and DS0 • Specials – DS1 and DS3 	<ul style="list-style-type: none"> • Platform • Loop • 2-Wire Digital Services • Specials – Non-DS0 and DS0 • Specials – DS1 and DS3 	<ul style="list-style-type: none"> • CLEC Trunks

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MR-4-02	<ul style="list-style-type: none"> • POTS – Business • POTS – Residence • 2-Wire Digital Services (ISDN) 	<ul style="list-style-type: none"> • Platform – Business • Platform – Residential • Loop • 2-Wire Digital Services • 2-Wire xDSL Loops • 2-Wire Line Sharing • 2-Wire Line Splitting 	
MR-4-03	<ul style="list-style-type: none"> • POTS – Residence • POTS – Business • 2-Wire Digital Services (ISDN) 	<ul style="list-style-type: none"> • POTS – Platform Business • POTS – Platform Residence • POTS – Loop • 2-Wire Digital Services • 2-Wire xDSL Loop • 2-Wire xDSL Line Sharing • 2-Wire xDSL Line Splitting 	
MR-4-04	<ul style="list-style-type: none"> • POTS • 2-Wire Digital Services (ISDN) • Specials – Non-DS0 and DS0 • Specials – DS1 and DS3 	<ul style="list-style-type: none"> • Platform • Loop • 2-Wire Digital Services • 2-Wire xDSL Loop • 2-Wire xDSL Line Sharing • 2-Wire xDSL Line Splitting • Specials – Non-DS0 and DS0 • Specials – DS1 and DS3 	<ul style="list-style-type: none"> • CLEC Trunks
MR-4-05			<ul style="list-style-type: none"> • CLEC Trunks

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MR-4-06	<ul style="list-style-type: none"> • POTS – Business • POTS – Residence • Specials – Non-DS0 and DS0 • Specials – DS1 and DS3 	<ul style="list-style-type: none"> • Platform – Business • Platform – Residence • Specials – Non-DS0 and DS0 • Specials – DS1 and DS3 	<ul style="list-style-type: none"> • CLEC Trunks
MR-4-07	<ul style="list-style-type: none"> • POTS – Residence • POTS – Business • 2-Wire Digital Services (ISDN) 	<ul style="list-style-type: none"> • POTS – Platform Business • POTS – Platform Residence • POTS – Loop • 2-Wire Digital Services • 2-Wire xDSL Loop • 2-Wire xDSL Line Sharing • 2-Wire xDSL Line Splitting 	<ul style="list-style-type: none"> • CLEC Trunks
MR-4-08	<ul style="list-style-type: none"> • POTS – Business • POTS-- Residence • 2-Wire Digital Services (ISDN) • Specials – Non-DS0 and DS0 • Specials – DS1 and DS3 	<ul style="list-style-type: none"> • Platform – Business • Platform – Residence • Loop • 2-Wire Digital Services • 2-Wire xDSL Loop • 2-Wire xDSL Line Sharing • 2-Wire xDSL Line Splitting • Specials – Non-DS0 and DS0 • Specials – DS1 and DS3 	<ul style="list-style-type: none"> • CLEC Trunks

The Guidelines list the following exclusions:

- Trouble reported on Verizon official administrative lines
- Subsequent reports
- CPE troubles
- FOK or TOK troubles

- Troubles closed due to customer action
- Troubles reported by Verizon employees in the course of preventative maintenance when there is no associated customer report.

For troubles with a stop clock, Verizon excludes from the calculations the interval during which it stops the clock. It also excludes redirected troubles on POTS loops from sub-metric MR-4-03.

Verizon reports the MR-4 sub-metrics on a statewide basis for individual and aggregate CLECs, and for Verizon retail. The standard for the MR-4 sub-metrics is parity with retail except for UNE 2-Wire xDSL Line Sharing and UNE 2-Wire xDSL Line Splitting. The standard for these products is parity with VADI.

The Guidelines provide the following formulas for the MR-4 sub-metrics:

MR-4-01: Mean Time to Repair – Total

(Sum of trouble clear date and time minus trouble receipt date and time for central office and loop troubles (disposition codes 03, 04 and 05))/(Number of central office and loop troubles (disposition codes 03, 04 and 05))

MR-4-02: Mean Time to Repair – Loop Trouble

(Sum of trouble clear date and time minus trouble receipt date and time for loop troubles (disposition codes 03 and 04))/(Number of loop troubles (disposition codes 03 and 04))

MR-4-03: Mean Time to Repair – Central Office Troubles

(Sum of trouble clear date and time minus trouble receipt date and time for central office troubles (disposition code 05))/(Number of central office troubles (disposition code 05))

MR-4-04: Percent Cleared (All Troubles) Within 24 Hours

(Number of troubles for which the trouble clear date and time minus the trouble receipt date and time is less than or equal to 24 hours)/(Number of total central office and loop troubles (disposition codes 03, 04 and 05))

MR-4-05: Percent Out of Service Greater than Two Hours

(Number of trunk OOS troubles for which the trouble clear date and time minus the trouble receipt date and time is greater than two hours)/(Number of total trunk OOS troubles, including loop and central office)

MR-4-06: Percent Out of Service Greater than Four Hours

(Number of OOS troubles for which the trouble clear date and time minus the trouble receipt date and time is greater than four hours)/(Number of OOS troubles, including loop and central office)

MR-4-07: Percent Out of Service Greater than 12 Hours

(Number of OOS troubles for which the trouble clear date and time minus the trouble receipt date and time is greater than 12 hours)/(Number of OOS troubles, including loop and central office)

MR-4-08: Percent Out of Service Greater than 24 Hours

(Number of OOS troubles for which the trouble clear date and time minus the trouble receipt date and time is greater than 24 hours)/(Number of OOS troubles, including loop and central office)

All the MR-4 sub-metrics are relevant to Verizon's PAP. For the July and August 2003 reporting months, Verizon incurred a \$70,018 penalty related to this measure.⁸⁴⁸

2. Analysis and Evaluation

The Virginia MR-4 sub-metrics are significantly different from the MR-4 sub-metrics that Liberty audited in New Jersey. In addition to the definitional differences in the Guidelines, Verizon now calculates the Virginia MR-4 sub-metrics in NMP.⁸⁴⁹ Liberty therefore conducted a complete evaluation of the MR-4 sub-metrics in Virginia paying particular attention to variations between the Virginia and New Jersey Guidelines. This evaluation involved a review of the entire process used to report these metric results, from obtaining source data to identifying exclusions and tracking the source data through to the NMP warehouse for the calculation of the final results. Liberty reviewed Verizon's process documentation and the metric algorithms used to identify exclusions and calculate the measures to determine whether Verizon's definitions for key data fields on the NMP M&R FACT tables⁸⁵⁰ are consistent with the Guidelines and whether its systems accurately calculate derived values and logic flags.

The primary differences for this measure in Virginia are i) the use of a "limited stop clock" for most UNE products⁸⁵¹, ii) the treatment of "misdirected troubles" on UNE POTS loops, iii) the lack of definition for how Verizon treats complex products, iv) the lack of information on the treatment of holidays and weekends for OOS troubles, and v) the definition of an OOS trouble for specials. Other variations from the New Jersey Guidelines include significant differences in the product disaggregations, as well as additional exclusions in Virginia for redirected troubles and for the time period during which Verizon initiates the stop clock.

⁸⁴⁸ Responses to Data Requests #198 and #203 (July and August 2003 C2C Reports).

⁸⁴⁹ Response to Data Request # 5.

⁸⁵⁰ Response to Data Request #40.

⁸⁵¹ Response to Data Request #51.

For resale POTS, resale Digital, and UNE POTS Platform, Verizon calculates the repair interval on a running clock basis. That is, the interval measures the total time between the trouble ticket receipt time and the clear time, including weekends and holidays. Verizon derives this time from the field "ACTUAL_DURATION_RUN" in the FACT tables. Verizon used the spooling process to calculate this field for each applicable trouble ticket. The spooling algorithm involves selecting the receipt date and time and the clear date and time from the source systems and calculating their difference.⁸⁵²

For specials and trunks, Verizon calculates the repair interval on a stop clock basis. That is, Verizon stops the duration clock when the repair technicians are unable to access the circuits or trunks to make the repairs. RCMC representatives determine the times for stopping and starting the clock and enter them manually into WFA-C. Verizon provided a copy of the procedures that they use.⁸⁵³ In the MR-4 calculations for specials and trunks, Verizon determines the durations using the field "ACTUAL_DURATION_STOP" in the FACT tables. Verizon uses the spooling process to calculate this field for each applicable trouble ticket. The spooling algorithm uses the receipt date and time, the clear date and time, and stop time information in the source systems.⁸⁵⁴ In its examination of a sample of 100 WFA-C trouble tickets, Liberty noted that in a number of cases the stop time intervals can be substantially different from the raw difference between the clear date and time and the receipt date and time. Thus, it is very important for the accuracy of the stop clock calculations that the repair technicians follow the appropriate procedures.

For the UNE-L (product code 3112), UNE 2-Wire Digital Loop (product code 3341), and UNE 2-Wire xDSL⁸⁵⁵ products, Verizon calculates the trouble duration intervals on a limited stop clock basis. In New Jersey, Verizon calculated the MR-4 metric for these products using a running clock.⁸⁵⁶ The "limited stop clock" means that Verizon uses the running clock for dispatch-in troubles but uses the stop clock for dispatch-out troubles. As part of the spooling process, Verizon calculates the running clock interval using the ACTUAL_DURATION_RUN field, and the stop clock interval using the ACTUAL_DURATION_STOP field. Verizon performs the calculation by examining the field "DISPATCH_OUT_CNT" in the FACT tables. It sets this field during the spooling process for products with LMOS data and extracts it from NSDB for the other products. If the field is equal to "0", Verizon counts the ACTUAL_DURATION_RUN field. If the field is greater than "0", Verizon counts the ACTUAL_DURATION_STOP field. Although not explicitly stated in the Guidelines, Verizon uses these limited stop clocks to calculate trouble duration intervals for the retail analog of product codes 3343 and 3345, which is VADI Line Sharing. On the other hand, Verizon uses the running clock to calculate the trouble duration intervals for the retail analogs of products 3112, 3341, and 3342.

⁸⁵² Response to Data Request #567.

⁸⁵³ Response to Data Request #220.

⁸⁵⁴ Response to Data Request #568.

⁸⁵⁵ This includes UNE 2-Wire xDSL Loops (product code 3342), UNE 2-Wire xDSL Line Sharing (product code 3343), and UNE 2-Wire xDSL Line Splitting (product code 3345).

⁸⁵⁶ Response to Data Request #51.

Verizon is properly implementing the exclusions listed in the Guidelines for MR-4 that are common to the other MR-2 through MR-5 metrics. The methods used for this are the same as for MR-2 and described above in Section D.

The accuracy of the MR-4 sub-metrics for those products using either a stop clock or a modified stop clock to calculate the trouble duration interval depends on the Verizon field technicians and RCMC representatives properly recording when they are unable to access a customer premises. Liberty reviewed the documentation on how Verizon technicians record the stop clock measurement in such cases and found the practices to be reasonable.⁸⁵⁷ However, the accuracy of the data is dependent on Verizon personnel following these procedures.

The description of the numerators for the MR-4 metrics in the Guidelines is somewhat misleading, given the use of the stop clock for some products. The numerators, which use the trouble duration time, all refer to “trouble clear date and time minus receipt date and time.” This description of the trouble duration interval is true only for those products using the running clock to measure the trouble duration.

For the MR-4-02, MR-4-03, MR-4-06, MR-4-07, and MR-4-08 sub-metrics, the Guidelines specify a disaggregation of resale and UNE-P POTS products into business and residential service. Verizon also reports the UNE 2-Wire xDSL Line Sharing and UNE 2-Wire xDSL Line Splitting products separately in Virginia. Liberty evaluated the product disaggregation to ensure that Verizon had correctly identified the various products. Verizon uses the RES_BUS_PUB_IND field to identify residential and business POTS service. It derives this field using the TB_DW_RES_BUS_BTR table, state codes, and class of service parameters.⁸⁵⁸ Similarly, Verizon splits the UNE 2-Wire xDSL product into Line Sharing and Line Splitting using the PRODUCT_IND field. It derives the indicators based on CKT_ID, ISDN flag, USOC, and state code. Verizon populates the PRODUCT_IND using the name of the product. Liberty reviewed September 2003 data and found that Verizon properly identified the residential and business POTS services and UNE 2-Wire xDSL products.

The standard for MR-4 UNE 2-Wire xDSL Line Sharing and UNE 2-Wire xDSL Line Splitting is parity with VADI. This standard is reasonable because most of the business of VADI has been in selling Line Sharing products. Verizon eliminated VADI as a separate subsidiary, and Verizon's retail organization now carries out its functions. However, the methods and procedures used by the retail organization to order, provision, and repair Line Sharing are the same as those used while VADI was a separate subsidiary. It is Verizon's view that no immediate change is necessary in the Guidelines. Verizon mentioned that the issue of how it should treat VADI may change as of June 2004.⁸⁵⁹ At that point, the FCC will no longer require Verizon to submit VADI orders as if they were CLEC orders. In addition, Line Sharing will be in the midst of its phase out.

For the MR-4-01, MR-4-04, MR-4-06, and MR-4-08 sub-metrics, the Guidelines specify a disaggregation of resale and UNE specials into two separate categories: “Non DS0 and DS0” and

⁸⁵⁷ Response to Data Request #220.

⁸⁵⁸ Response to Data Request #40.

⁸⁵⁹ Interview #22, November 26, 2003.

“DS1 and DS3”. Verizon identifies which circuits fit into each of the two categories using the “DS_LEVEL” field in the specials FACT table. Verizon populates this field during the spooling process using a look-up table. Verizon has explained that the term “Non DS0” is “intended to capture troubles that did not meet the DS 0, 1, or 3 look-up criteria in the original development of guidelines. This nomenclature has shown no products to fit this category.”⁸⁶⁰ Verizon designates any records satisfying this criterion with the symbol “@” in the field DS_LEVEL.⁸⁶¹ In examining the Verizon data for September 2003, Liberty did observe a number of instances of this designation and found that Verizon correctly placed them in the Non DS0 and DS0 category from the specials FACT table in the MR-4 calculations. Liberty also verified the sorting of DS0, DS1, and DS3 circuits from the specials FACT table in the September 2003 calculations.

During the course of Liberty’s audit, Verizon discovered that it was excluding certain trouble durations from the MR-4 numerators. Verizon was not counting UNE 2-Wire Digital products with a platform service code in the numerator because these products use the running clock but Verizon’s algorithm searched for a stop clock time. Verizon determined, however, that New York was the only state affected by this error. Verizon issued a Metric Change Control No. 10530 to correct this error beginning in the October 2003 data month.

MR-4-01 – Mean Time to Repair – Total

This sub-metric measures the mean difference between the receipt date and time and the clear date and time for all network troubles. As indicated above for some of the products reported for this metric, Verizon eliminates from the calculated interval the time during which the line/circuit/trunk was inaccessible to the Verizon repair technician. Verizon defines the network troubles as the sum of loop (DISPOSITION_CD is equal to 03 or 04 for non-specials and TROUBLE_CD is equal to FAC for specials) and central office (DISPOSITION_CD is equal to 05 for non-specials and TROUBLE_CD is equal to CO for specials).

To verify that Verizon calculates MR-4-01 in accordance with the Guidelines, Liberty examined Verizon’s June 2003 CMAs. Liberty compared the algorithms for all reported products (both wholesale products and retail analogs) with the wording of the Guidelines and found all to be consistent.

Liberty also recalculated the MR-4-01 results for all product disaggregations (both wholesale products and retail analogs) for September 2003 using Verizon’s FACT table data⁸⁶² and algorithms that Liberty developed based on the Guidelines. Liberty reproduced all the Verizon results for this metric.

⁸⁶⁰ Response to Data Request #574.

⁸⁶¹ Response to Data Request #573.

⁸⁶² Response to Data Request #263.

MR-4-02 – Mean Time to Repair – Loop Trouble

This sub-metric measures the mean difference between the receipt date and time and the clear date and time for all loop troubles. For some products, Verizon eliminates from the calculated interval the time during which the line/circuit/trunk was inaccessible to the Verizon repair technician. Loop troubles those with disposition code 03 or 04.

To verify that Verizon calculates MR-4-02 in accordance with the Guidelines, Liberty examined Verizon's June 2003 CMAs. Liberty compared the algorithms for all reported products (both wholesale products and retail analogs) with the wording of the Guidelines and found them to be consistent, with the exception of the algorithm for resale Digital (product code 2341) in which Verizon had reversed the retail and wholesale calculations. Verizon agreed that this CMA is incorrect.⁸⁶³

Liberty also recalculated the MR-4-02 results for all product disaggregations (both wholesale products and retail analogs) for September 2003 using Verizon's FACT table data⁸⁶⁴ and algorithms that Liberty developed based on the Guidelines. Liberty reproduced all of Verizon's results for this metric and confirmed that the one algorithm error observed is in the CMA documentation rather than in Verizon's code.

MR-4-03 – Mean Time to Repair – Central Office Trouble

This sub-metric measures the mean difference between the receipt date and time and the clear date and time for all central office troubles. For some of the products reported for this metric Verizon eliminates from the calculated interval the time during which the line/circuit/trunk was inaccessible to the Verizon repair technician. Central office troubles are those with disposition code 05.

A unique feature of this metric is the treatment of the calculation for UNE POTS Loop (product code 3112). For this product, the Guidelines specify that Verizon should exclude redirected troubles, similar to its application for MR-3-02 for UNE POTS Loop. As was the case for MR-3-02, Verizon's implementation of MR-4-03 excludes troubles with one dispatch in and one dispatch out, but not those with one dispatch out and multiple dispatches in or troubles with multiple dispatches in both directions. Although the logic of this implementation is somewhat unclear in the Guidelines, Liberty agrees with Verizon that this implementation is consistent with the intent of MR-4-03.⁸⁶⁵ As with MR-3-02, Verizon does not exclude redirected troubles in the calculation of the MR-4-03 retail analog for UNE POTS Loop,⁸⁶⁶ although there is not explicit indication in the Guidelines that Verizon should perform the CLEC and retail analog calculations differently.

⁸⁶³ Response to Data Request #578.

⁸⁶⁴ Response to Data Request #263.

⁸⁶⁵ Response to Data Request #770.

⁸⁶⁶ Response to Data Request #215.

To verify that Verizon calculates MR-4-03 in accordance with the Guidelines, Liberty examined Verizon's June 2003 CMAs. Liberty compared the algorithms for all reported products (both wholesale products and retail analogs) with the wording of the Guidelines and found all to be consistent, with the exception of the algorithm for the retail analog of UNE 2-Wire xDSL Line Splitting (product code 3345) and that for the wholesale calculation of UNE POTS Loop (product code 3112). The algorithm for retail analog of Line Splitting in the June 2003 CMA document contains an error in the denominator calculation, and the specification of the retail analog products is incorrect. Verizon agreed that this CMA is incorrect but indicated that its production code is correct.⁸⁶⁷ On the other hand, the algorithm for UNE POTS Loop appears to be incorrect both in the CMA document and in its implementation.⁸⁶⁸ For this product, Verizon applies the logic for exclusion of redirects noted above, which Liberty agrees is consistent with the intent of the Guidelines. However, Verizon calculates the repair times using the running clock rather than the limited stop clock as required by the Guidelines.

Liberty also recalculated the MR-4-03 results for all product disaggregations (both wholesale products and retail analogs) for September 2003 using Verizon's FACT table data⁸⁶⁹ and algorithms that Liberty developed based on the Guidelines. Liberty reproduced all of Verizon's results for this metric including the UNE POTS Loop sub-metric (product code 3112) noted above. This confirms that the algorithm error observed for the retail analog of UNE 2-Wire xDSL Line Splitting is likely in the June 2003 CMAs rather than in Verizon's code. Furthermore, at least for the September 2003 data, the error noted in the algorithm for UNE POTS Loop appears to have no effect on the reported results.

MR-4-04 – % Cleared (all troubles) within 24 Hours

This sub-metric measures the percentage of network troubles for which the trouble duration is less than 24 hours. For some of the products reported for this metric Verizon eliminates from the calculated interval the time for which the line/circuit/trunk was inaccessible to the Verizon repair technician. Network troubles are the sum of loop troubles (DISPOSITION_CD is equal to 03 or 04 for non-specials and TROUBLE_CD equals FAC for specials) and central office troubles (DISPOSITION_CD is equal to 05 for non-specials and TROUBLE_CD equals CO for specials).

To verify that Verizon calculates MR-4-04 in accordance with the Guidelines, Liberty examined Verizon's June 2003 CMAs. Liberty compared the algorithms for all reported products (both wholesale products and retail analogs) with the wording of the Guidelines and found all to be consistent.

Liberty also recalculated the MR-4-04 results for all product disaggregations (both wholesale products and retail analogs) for September 2003 using Verizon's FACT table data⁸⁷⁰ and algorithms Liberty developed based on the Guidelines. Liberty reproduced all of Verizon's results for September 2003 to within the reporting precision (three decimal significance).

⁸⁶⁷ Response to Data Request #579.

⁸⁶⁸ Response to Data Request #771.

⁸⁶⁹ Response to Data Request #263.

⁸⁷⁰ Response to Data Request #263.

MR-4-05 – % Out of Service > 2 Hours

This sub-metric reports the percentage of network troubles for which a trunk was OOS and the trouble duration was greater than two hours. Trunks are the only product reported for this metric. The OOS condition occurs when a CLEC originally reports the trouble. Verizon indicates the condition in its FACT tables using the flag “OUT_OF_SERVCE_IND”, which it sets during the spooling process. If a line/circuit/trunk is OOS, Verizon sets this flag to “Y.”

To verify that Verizon calculates MR-4-05 in accordance with the Guidelines, Liberty examined Verizon's June 2003 CMAs. Liberty compared the algorithms for all reported products (both wholesale products and retail analogs) with the wording of the Guidelines and found all to be consistent.

Liberty has also recalculated the MR-4-05 results both wholesale products and retail analog for September 2003 using Verizon's FACT table data and algorithms that Liberty developed based on the Guidelines. Liberty reproduced all of Verizon's results for September.

MR-4-06 – % Out of Service > 4 Hours

This sub-metric reports the percentage of network troubles for which a line/circuit/trunk was OOS and the trouble duration was greater than four hours. The OOS condition occurs for POTS lines when a customer cannot receive calls, cannot make calls, or has no dial tone.⁸⁷¹ The CLEC notes this condition when it originally reports the trouble. Verizon indicates it for each trouble in the FACT tables using the flag “OUT_OF_SERVCE_IND”, which it sets during the spooling process. If a line/circuit/trunk is OOS, Verizon sets this flag to “Y.”

To verify that Verizon calculates MR-4-06 in accordance with the Guidelines, Liberty examined Verizon's June 2003 CMAs. Liberty compared the algorithms for all reported products (both wholesale products and retail analogs) with the wording of the Guidelines and found all to be consistent.

Liberty also recalculated the MR-4-06 results for all product disaggregations (both wholesale products and retail analogs) for September 2003 using Verizon's FACT table data⁸⁷² and algorithms that Liberty developed based on the Guidelines. Liberty reproduced all of Verizon's results for this metric for September 2003.

MR-4-07 – % Out of Service > 12 Hours

This sub-metric reports the percentage of network troubles for which a line/circuit/trunk was OOS and the trouble duration was greater than 12 hours. The OOS condition is the same as that

⁸⁷¹ Response to Data Request #214.

⁸⁷² Response to Data Request #263.

described above for MR-4-05 and MR-4-06. A unique feature of MR-4-07 and MR-4-08 involves the calculation of the retail analog for UNE POTS Loop (product code 3112). The definition of this analog in the Retail Analog Compare Table of the Guidelines is "Retail POTS (Total Loop and CO Frame/Wiring troubles)" with the note that the calculation "excludes translation and switch troubles." As Verizon has explained, the exclusion of translation and switch troubles exists in order to make the retail analog more comparable to the UNE POTS Loop offering, since the UNE-L product does not have a switch function associated with it.⁸⁷³ To accomplish the exclusion of translation and switch troubles in the calculation of the MR-4-07 and MR-4-08 UNE POTS Loop retail analogs, Verizon uses the flag "FDIS_EXCLUSION_IND" in the FACT tables. It sets this flag during the spooling process by using a look-up table of full disposition codes.⁸⁷⁴ The full codes specify more precisely where the trouble was found. If Verizon can match a trouble with the list in the look-up table, the FDIS_EXCLUSION_IND flag is set to "Y" and Verizon excludes such troubles in the calculation of the UNE POTS Loop retail analog. After investigating the trouble codes used for this exclusion, Liberty determined that they did not correspond to the intent of the Guidelines in all cases. Verizon has explained that it incorrectly applied a list of codes used in Verizon North to the Verizon South region, including Virginia.⁸⁷⁵

To verify that Verizon calculates MR-4-07 in accordance with the Guidelines, Liberty examined Verizon's June 2003 CMAs. Liberty compared the algorithms for all reported products (both wholesale products and retail analogs) with the wording of the Guidelines and found all to be consistent.

Liberty also recalculated the MR-4-07 results for all product disaggregations (both wholesale products and retail analogs) for September 2003 using Verizon's FACT table data⁸⁷⁶ and algorithms that Liberty developed based on the Guidelines. Liberty reproduced all of Verizon's results for this metric for September.

MR-4-08 – % Out of Service > 24 Hours

This sub-metric reports the percentage of network troubles for which a line/circuit/trunk was OOS and the trouble duration was greater than 24 hours. The OOS condition is the same as that described above for MR-4-05 and MR-4-06. The MR-4-08 retail analog calculation for UNE POTS Loop excludes translation and switch troubles. Liberty describes the algorithm Verizon uses to accomplish this in the discussion of MR-4-07 above. As was the case for MR-4-07, Liberty determined that Verizon did not exclude troubles that in all cases correspond to the intent of the Guidelines.

To verify that Verizon calculates MR-4-08 in accordance with the Guidelines, Liberty examined Verizon's June 2003 CMAs. Liberty compared the algorithms for all reported products (both wholesale products and retail analogs) with the wording of the Guidelines and found most to be

⁸⁷³ Response to Data Request #769.

⁸⁷⁴ Response to Data Request #769.

⁸⁷⁵ Response to Data Request #843.

⁸⁷⁶ Response to Data Request #263.

consistent. The exceptions were for resale POTS – business (product code 2110), resale POTS – residence (product code 2120), UNE POTS Platform – business (product code 3144) and UNE POTS Platform – residence (product code 3145). In all of these cases the June 2003 CMAs listed the incorrect OOS interval. Verizon agreed that this algorithm is incorrect in the June 2003 CMAs but indicated that its production code is correct.⁸⁷⁷ In addition, Verizon has acknowledged that the June 2003 CMAs for MR-4-08-3341 (UNE 2-Wire Digital) and MR-4-08-3345 (UNE 2-Wire xDSL Line Splitting) are incorrect because of an interchange of denominator and numerator and a missing EXCLUDE_BY_FST exclusion, respectively.⁸⁷⁸ However, Verizon has indicated that the production code for MR-4-08-3345 is correct.⁸⁷⁹

Liberty also recalculated the MR-4-08 results for all product disaggregations (both wholesale products and retail analogs) for September 2003 using Verizon's FACT table data⁸⁸⁰ and algorithms that Liberty developed based on the Guidelines. Liberty reproduced all of Verizon's results for this metric for September.

G. MR-5, Repeat Trouble Reports

1. Background

MR-5 reports on the percentage of repeated trouble reports. The Guidelines define a repeat trouble report as a trouble reported/cleared on the same line/circuit/trunk as a previous trouble report within the last 30 calendar days. The repeat report has a disposition code of 03, 04, or 05, regardless of the disposition code on the initial trouble. Verizon determines the 30-day interval for a repeat report on the basis of the close date of the original report.

The MR-5 sub-metric reports on the following product types:

Sub-Metric	Resale	UNE	Trunks
MR-5-01	<ul style="list-style-type: none"> • POTS • Specials • 2-Wire Digital Services (ISDN) 	<ul style="list-style-type: none"> • Platform • Loop • Specials • 2-Wire Digital Services • 2-Wire xDSL Loops • 2-Wire xDSL Line Sharing • 2-Wire xDSL Line Splitting 	<ul style="list-style-type: none"> • CLEC Trunks

⁸⁷⁷ Response to Data Request #580.

⁸⁷⁸ Responses to Data Requests #581 and #582.

⁸⁷⁹ Response to Data Request #582.

⁸⁸⁰ Response to Data Request #263.

The Guidelines list the following exclusions from its MR-5 repeat calculations:

- Trouble reported on Verizon official administrative lines
- Subsequent reports, while trouble is pending
- CPE troubles
- FOK or TOK troubles
- Troubles closed due to customer action
- Troubles reported by Verizon employees in the course of preventative maintenance when there is no associated customer report
- Troubles included in the PR-6-01 sub-metric results for Percent Installation Troubles Reported within 30 Days.

The Guidelines also require that Verizon not consider a trouble report a repeat report if the original trouble report was a loop trouble that was either no access or misdirected. Verizon closes a trouble as no access if access is not available in the scheduled appointment window.⁸⁸¹ Verizon considers troubles closed out to CPE, TOK, or FOK misdirected if it finds the trouble in a second report dispatched in the opposite direction.

Verizon reports the MR-5 metric on a statewide basis for individual and aggregate CLECs, and for Verizon retail. The standard for MR-5-01 is parity with retail, except for UNE 2-Wire xDSL Line Sharing and UNE 2-Wire xDSL Line Splitting which Verizon measures against VADI performance.

The Guidelines provide the following formula for the MR-5 sub-metric:

MR-5-01: Percent Repeat Reports within 30 Days

(Number of central office and loop troubles (disposition codes 03, 04, or 05, that had previous troubles within the last 30 days, with disposition code 03, 04 or 05 that repeated from disposition codes of less than 14)/(Total central office and loop troubles (disposition codes 03, 04, or 05) within the calendar month)

MR-5-01 is relevant to Verizon's PAP. During the July and August 2003 reporting months, Verizon did not incur any penalties associated with this measure.⁸⁸²

2. Analysis and Evaluation

Liberty reviewed the MR-5 measure as part of its audit of Verizon New Jersey and found MR-5 in Virginia to be similar. One difference is that the Virginia Guidelines define the period in which Verizon measures a repeat relative to the time that it closes the trouble report, compared to the clear time used in New Jersey. Because Verizon moved the M&R measures to NMP, Liberty conducted a complete evaluation of the NMP process for calculating the MR-5 sub-metrics in

⁸⁸¹ Guidelines, page 83.

⁸⁸² Responses to Data Requests #198 and #203 (July and August 2003 C2C Reports).

Virginia. During its audit, Liberty evaluated the entire process through which NMP reports these metric results, including obtaining data from the source systems, making exclusions, and calculating the final results. Liberty reviewed Verizon's process documentation and the metric algorithms used to identify exclusions and calculate the measures. In addition, Liberty reviewed the documentation to determine whether Verizon's definitions for key data fields on the NMP M&R FACT tables were consistent with the Guidelines and whether its systems accurately calculated any derived values and logic flags.⁸⁸³

Verizon is properly implementing the exclusions listed in the Guidelines for MR-5 that are common to the other MR-2 through MR-5 metrics. The methods used for this are the same as for MR-2 and described above in Section D.

The Virginia Guidelines list two additional exclusions that were not in the New Jersey Guidelines. Verizon does not score a subsequent report as a repeat trouble report when the original report for "[l]oop troubles (*e.g., analog loop, 2-Wire Digital Loops, and 2-Wire xDSL Loops*)" is closed to a no access or is misdirected. In addition, Verizon excludes troubles that are included in the PR-6-01 metric (Percent Installation Troubles Reported within 30 days) from the MR-5 results. Although not explicitly stated in the Guidelines, these exclusions do not apply to the retail analog calculations.⁸⁸⁴ Liberty believes this process is reasonable, but recommends that Verizon seek to revise the Guidelines to explicitly state that these exclusions apply to wholesale troubles only.

For the no access exclusion with Loop products, the Guidelines further explain that the "initial trouble may only be closed to a *No Access* disposition code if access is not available within the appointment window." Verizon uses the disposition code to exclude these cases. Liberty reviewed the procedures used by Verizon technicians in determining when they should close an original report with a no access disposition code. Liberty found the procedures used to determine no access were reasonable and complete.

The Guidelines also explain that for Loop products, Verizon considers a trouble misdirected if it closed the original report to NTF, FOK or CPE and Verizon dispatched the trouble found in a second report on the same line in the opposite direction. Verizon has explained that these exclusions are implemented in the metrics calculations using the condition "NON_MISDIRECT_IND = Y."⁸⁸⁵ This field NON_MISDIRECT_IND is a flag set during the spooling process in NMP.⁸⁸⁶ NMP populates the NON_MISDIRECT field with a "Y" when a report is not misdirected and is included as a repeat report.⁸⁸⁷

As indicated, MR-5 also provides for the exclusion of troubles reported in the PR 6-01 sub-metric (Percent Installation Troubles Reported within 30 Days). Verizon implements the exclusion of PR-6-01 installation troubles using two flags set during the spooling process:

⁸⁸³ Response to Data Request #40.

⁸⁸⁴ Response to Data Request #746.

⁸⁸⁵ Response to Data Request #572.

⁸⁸⁶ Response to Data Request #571.

⁸⁸⁷ Response to Data Request # 40.

RPR_RPT_30DAY_IND and INST_RPT_IND.⁸⁸⁸ Verizon's logic requires that RPR_RPT_30DAY_IND equals "Y" and INST_RPT_IND equals "N." This is a different logic from that used for excluding installation troubles from some of the calculations for MR-2, as noted above in the discussion of MR-2. Verizon has confirmed that the condition used in MR-5 is the correct one.⁸⁸⁹

Verizon only includes repeat troubles that it closed within 30 days of the previous trouble in its calculation of MR-5.⁸⁹⁰ However, Liberty notes that the language describing this in the Guidelines is unclear and potentially misleading. The Guidelines state that MR-5 measures "the percent of troubles cleared that have an additional trouble reported/cleared within 30 days for which a network trouble ... is found." Liberty believes that this could be interpreted to mean that Verizon will count either those troubles *reported* within 30 days or those *cleared* within 30 days. However, the definition of MR-5 also states that "[t]he identification of a repeat report and the scoring (number of days since original report) is based on the Close Date of the original report (often referred to as the 'OR') to the Close Date of the repeater." This last statement is, in fact, consistent with Verizon's actual practice. Nevertheless, Liberty notes that there can be significant differences among the report date and time, the clear date and time, and the close date and time. Therefore, Liberty believes that Verizon should seek to revise the Guidelines so that the description of MR-5 consistently refers to "closed date".

The standard for MR-5-01 UNE 2-Wire xDSL Line Sharing and UNE 2-Wire xDSL Line Splitting is parity with VADI. This standard is reasonable because most of the business of VADI has been in selling line-sharing products. Verizon eliminated VADI as a separate subsidiary, and Verizon's retail organization now carries out its functions. However, the methods and procedures used by the retail organization to order, provision, and repair Line Sharing are the same as those used while VADI was a separate subsidiary. It is Verizon's view that no immediate change is necessary in the Guidelines. Verizon mentioned that the issue of how it should treat VADI may change as of June 2004.⁸⁹¹ At that point, the FCC will no longer require Verizon to submit VADI orders as if they were CLEC orders. In addition, Line Sharing will be in the midst of its phase out.

During the course of Liberty's audit, Verizon discovered that, in certain instances, it was not accurately designating troubles as repeat troubles. The metrics system was not recognizing manual corrections to disposition codes for troubles on specials. For example, if Verizon changed the disposition code on a trouble after the trouble was closed, the system would not always recognize the second trouble as a repeater (e.g., when the disposition code on the initial trouble ticket was changed from CPE to CO and then the second trouble was also identified in the CO).⁸⁹² Verizon issued Metric Change Control No. 10388 to correct this procedure effective with the August 2003 data month. Liberty was unable to obtain samples of trouble tickets from CLECs; hence it was not possible for Liberty to verify whether this change addressed the problem.

⁸⁸⁸ Response to Data Request #570.

⁸⁸⁹ Response to Data Request #791.

⁸⁹⁰ Response to Data Request #584.

⁸⁹¹ Interview #22, November 26, 2003.

⁸⁹² Interview #23, December 2, 2003.

MR-5-01 – Percent Repeat Report Rate

This sub-metric reports the percent of network troubles that have a repeat report within 30 days. A network trouble is a loop trouble (disposition code 03 or 04 for non-specials and trouble code equals FAC for specials) or a central office trouble (disposition code 05 for non-specials and trouble code equals CO for specials). Verizon defines a repeat report as a trouble on the same line/circuit/trunk as a previous trouble report that occurred within the last 30 calendar days of the previous trouble. The repeat report can be associated with any disposition code (< 14), not just those corresponding to a network trouble. However, as indicated above, Verizon only includes repeat troubles that are within 30 days of the previous (closed) trouble.

To verify that Verizon calculates MR-5 in accordance with the Guidelines, Liberty reviewed the documentation provided by Verizon. As a part of the documentation review, Liberty analyzed the June 2003 CMA documentation provided for MR-5. Liberty compared the algorithms (wholesale and retail) with the wording of the Guidelines and found them to be consistent with Verizon's interpretation of the Guidelines with the exception of MR-5-01-3341 (UNE 2-Wire Digital), which is missing the "NON_MISDIRECT_IND = Y" condition. Verizon acknowledged this error but indicated the error is only in the CMA documentation and not in the calculated results.⁸⁹³

Liberty also performed its own calculation for all of the product disaggregations (both wholesale and retail analogs) in September 2003. Using the September FACT table⁸⁹⁴ and its own algorithms, based on Verizon's interpretation of the Guidelines, Liberty reproduced and verified the results for MR-5-01 as reported by Verizon in September 2003. This supports Verizon's contention that the error in the MR-5-01-3341 algorithm is in the documentation and not the calculation.

H. Findings and Recommendations – MR-2 through MR-5

Verizon's quality control process is inadequate to assure accurate data for MR-2 through MR-5 metric calculations.

Verizon's repair technicians and RCMC representatives manually enter much of the primary data used in the calculation of the MR-2 through MR-5 metrics. Therefore, the reported results are very dependent on the accuracy of this manual input. In response to Liberty's request for information on quality controls for this process, Verizon provided a limited number of documents relating to reviews of personnel performance by Verizon management. Verizon did not provide any examples of independent audits of the work practices. Furthermore, in its very limited observation of the trouble resolution process at one CLEC active in Virginia, Liberty noted an instance of the failure of a Verizon RCMC representative to follow proper trouble ticket practices that would have resulted in incorrect measurements of trouble durations times as well

⁸⁹³ Response to Data Request #792,

⁸⁹⁴ Response to Data Request #263.

as incorrect determination of the number of repeat reports. Verizon indicated that this example does not reflect its normal practice.⁸⁹⁵ In addition, Verizon has stated that it “has many M&Ps in place and conducts quality reviews on a regular basis. The Richmond, VA RCMC Maintenance Process has achieved ISO 9000 Certification. ISO 9000 certification requires reviews of all processes and documentation associated with center operations. Certification is achieved through compliance with all processes and documentation and is certified by an independent auditor.”⁸⁹⁶ Liberty notes, however, that the ISO 9000 certification mentioned does not necessarily relate to the accuracy of the raw data used in the metrics calculations and that Verizon did not provide this information in response to Liberty’s data request for “all internal and/or external audits, studies or analyses reviewing the accuracy” of the trouble ticket reports.⁸⁹⁷

Therefore, because of the importance of the manual data entry for the accuracy of the MR metrics, Liberty recommends that Verizon institute a thorough review of the maintenance and repair data entry process and the quality controls that it has in place for this process. This review should include periodic, independent internal or external audits and quantitative assessments of accuracy of the manual data entry to assure that the any errors in the data are within acceptable limits.

Verizon’s interpretation of the MR-2 through MR-5 metrics includes assumptions that the Guidelines do not document.

During its review of the MR-2 through MR-5 metrics, Liberty noted several cases in which Verizon’s interpretation of practices used in calculating these metrics is undocumented or not clearly documented in the Guidelines:

- The Guidelines do not clearly reflect Verizon’s convention for determining the reporting month to which it assigns individual troubles.
- The Guidelines do not document clearly the fact that Verizon classifies administrative repeats as subsequents.
- The fact that Verizon defined repeat troubles and installation troubles so that they are mutually exclusive appears to be undocumented.⁸⁹⁸
- In several cases Verizon applies different exclusions and timing algorithms to the CLEC and retail analog calculations for the same metric, although the Guidelines do not explicitly state this.
- The Guidelines should more clearly reflect Verizon’s implementation of the exclusion of redirected troubles in MR-3-02 and MR-4-03 in cases where there are multiple dispatches in and out.

⁸⁹⁵ Interview #6, October 16, 2003.

⁸⁹⁶ Verizon March 15, 2004 comments on Liberty February 6, 2004 Virginia Draft Audit Report.

⁸⁹⁷ Data Requests #223, #350, and #351.

⁸⁹⁸ In the response to Data Request #674 and in the Verizon March 15, 2004 comments on Liberty February 6, 2004, Virginia Draft Audit Report, Verizon notes that a New York Public Service Commission order on 10-29-03 changed the language in the PR-6 section of the Guidelines to make this convention explicit for PR-6. However, it would be helpful to add clarifying language to MR-2 as well.

- In the Guidelines, the statement of the calculation of the time intervals in the numerators for each of the MR-4 sub-metrics is unclear, since the phrase “trouble clear date and time minus trouble receipt date and time” is strictly accurate only in the case of those products for which the running clock applies.
- The Guidelines do not document Verizon’s exclusion of troubles through the FST process.
- The Guidelines should make clear in the definition of the denominators of the MR-2 sub-metrics that the denominators are the number of lines, circuits, or trunks *divided by 100*.
- The phrase “Per MR-2-01” should be removed from the definition of the denominator of MR-2-04.

Liberty recommends that Verizon review the Guidelines for MR-2 through MR-5 documentation errors, and seek revisions to the Guidelines as necessary to insure complete and accurate documentation of the metrics.

Verizon’s documentation of the algorithms it uses to perform the metrics calculations for MR-2 through MR-5 includes numerous errors.

While reviewing the documentation of Verizon’s algorithms in the June 2003 CMAs, Liberty found numerous instances in which the algorithms were erroneous, although the actual implementation of the calculation appeared to be correct. These include:

- MR-2-02-2341 (Resale 2-Wire Digital)
- MR-2-02-3342 (UNE 2-Wire xDSL Loops)
- MR-2-02-3345 (UNE 2-Wire xDSL Line Splitting)
- MR-2-03-3341 (UNE 2-Wire Digital)
- MR-2-03-3342 (UNE 2-Wire xDSL Loops)
- MR-2-03-3345 (UNE 2-Wire xDSL Line Splitting)
- MR-2-04-2341 (Resale Digital)⁸⁹⁹
- MR-2-05-3343 (UNE 2-Wire xDSL Line Splitting)
- MR-3-02-3112 (UNE POTS Loop)
- MR-4-02-2341 (Resale Digital)
- MR-4-03-3345 (UNE 2-Wire xDSL Line Splitting)
- MR-4-08-3341 (UNE 2-Wire Digital)
- MR-4-08-3345 (UNE 2-Wire xDSL Line Splitting)
- MR-5-01-3341 (UNE 2-Wire Digital).

⁸⁹⁹ In this case, Verizon indicated that both the algorithm and its documentation are erroneous. However, the error did not affect results reported in the July to September data months. See response to Data Request #714.

It is important that the documentation of the algorithms be accurate, both to facilitate the change control process and to support audits and reviews of the process. The June 2003 CMAs are the only known documentation of Verizon's algorithms that would permit a CLEC to independently determine whether its results were correct. Liberty recommends that Verizon thoroughly revise the documentation of the calculation algorithms in the June 2003 CMAs and keep it up to date.

Verizon does not adhere to the Guidelines in the calculation of MR-2-02 and MR-2-03 for 2-Wire xDSL Line Splitting.

The Virginia C2C Guidelines for MR-2 list the following exclusion: "Excluded from MR-2-02 and MR-2-03 for 2-Wire xDSL Loops and 2-Wire xDSL Line Sharing: Installation troubles." Liberty observed that Verizon applies this exclusion properly to these two products. However, Liberty found that Verizon also applies the exclusion to 2-Wire xDSL Line Splitting.

While Liberty finds this exclusion to be reasonable, the Guidelines do not explicitly allow it. Therefore, Liberty recommends that Verizon either seek a modification in the Guidelines to add the exclusion for Line Splitting or change its algorithm for Line Splitting to comply with the Guidelines.

Verizon does not correctly apply the exclusion of installation troubles in MR-2-02 and MR-2-03.

The Guidelines for MR-2-02 and MR-2-03 specify the exclusion of installation troubles for 2-Wire xDSL Loops and 2-Wire xDSL Line Sharing. In examining the algorithms that Verizon used to perform this exclusion, Liberty found that Verizon does not apply the exclusion correctly. In performing the calculation for September 2003 data using the correct algorithm, Liberty determined that the numbers Verizon reported incorrect numbers for that month for the CLEC aggregate and retail analog of MR-2-02-3343 (2-Wire xDSL Line Sharing) and for the retail analog of MR-2-03-3343 (2-Wire xDSL Line Sharing).

Therefore, Liberty recommends that Verizon correct the algorithm it uses to apply the installation trouble exclusions in MR-2-02 and MR-2-03 for 2-Wire xDSL Loops (product code 3342) and for 2-Wire xDSL Line Sharing (product code 3343). If the exclusion should apply also to 2-Wire xDSL Line Splitting (product code 3345), Verizon should correct the algorithm for this product also.

Verizon's algorithm for calculating MR-2-05 for specials is not in accordance with the Guidelines.

The Virginia Guidelines for MR-2-05 specify that the numerator of MR-2-05 should be the "[n]umber of all CPE (Disposition Codes 12/13), Test OK, and Found OK troubles (Disposition Codes 07, 08, and 09) and No Trouble Found (NTF) for Specials." However, Liberty found that in calculating MR-2-05 for resale and UNE specials, Verizon potentially includes additional trouble codes to the ones specified in the Guidelines. Liberty's calculation indicated that this

difference had no impact on the results reported for September 2003. However, it is possible that there have been or will be differences in other reporting months.

Liberty recommends that Verizon either change its algorithm for MR-2-05 specials or seek to change the Guidelines to reflect the trouble codes included by its algorithm. Verizon has indicated that it intends to adopt the latter alternative.⁹⁰⁰

Verizon's algorithm for calculating MR-4-03 for UNE POTS Loop is incorrect.

The Guidelines for MR-4 specify that a "limited stop clock" should be used to calculate repair times for several products including UNE POTS Loop (product code 3112). This means that for dispatches in, the time should be calculated on a "running clock" basis (*i.e.*, the repair time is the total time between receipt of the trouble ticket and the clearance of the trouble). However, for dispatches out, Verizon should calculate the time on a "stop clock" basis (*i.e.*, remove the time during which technicians are unable to access the premises for repairs from the repair time calculation).

Liberty found that in calculating repair times for MR-4-03 for the UNE POTS Loop product, Verizon uses the running clock rather than the limited stop clock.

Verizon's algorithm for calculating the MR-4-07 and MR-4-08 retail analog for UNE POTS Loop applies incorrect exclusions.

The Guidelines specify that the MR-4-07 and MR4-08 retail analog of UNE POTS Loop should consist of "Retail POTS (Total Loop and CO Frame/Wiring troubles) Note: excludes translation and switch troubles." Liberty determined that Verizon's algorithm for the MR-4-07 and MR-4-08 UNE POTS Loop retail analogs fails to properly exclude the translation and switch troubles from the calculation.

Verizon should correct its algorithm to conform to the Guidelines. Verizon has indicated that it intends to issue a change control to effect this change.⁹⁰¹

Verizon's description of MR-5 in the Guidelines is unclear.

Verizon uses three different terms to describe which repeat troubles will be included within the 30-day interval specified by this metric: "report date," "clear date," and "close date." In fact, Verizon uses close date to determine the inclusion of a repeat report.

Liberty recommends that Verizon seek to revise the Guidelines to use the term "close date" consistently in the description.

⁹⁰⁰ Response to Data Request #768.

⁹⁰¹ Response to Data Request #843.

VII. Network Performance Measures

A. General Background

The Network Performance measures report on the percent of final trunk groups that exceed blocking standards and the ability of Verizon to establish and augment collocation arrangements. The Guidelines list two Network Performance measures and 12 sub-metrics. The PAP focuses on eight sub-metrics:

- NP-1-03 and NP-1-04
- NP-2-01, NP-2-02, NP-2-05, NP-2-06, NP-2-07, and NP-2-08.

The PAP also identifies all of these sub-metrics, except NP-1-03, as Critical Measures.

For its audit of the network performance measures in Virginia, Liberty built on the knowledge gained during its recent audit of Verizon's New Jersey network performance measures, focusing on differences that existed in Virginia. As part of its audit, Liberty obtained an overview of Verizon's processes and systems that generate the data used for these measures. Liberty reviewed how Verizon captures the raw data and whether it collects and reports all relevant data. Liberty also identified all exclusions that Verizon makes to the source data and assessed the processing steps applied by Verizon to that source data to generate the reported network performance metric results. The latter assessment included a review of the June 2003 CMAs used by Verizon to develop the metric results.

Liberty determined whether key data field definitions are consistent with the Virginia Guidelines, and assessed whether Verizon correctly calculates any derived values from the source data. Liberty also identified whether there appeared to be any significant opportunities for inaccuracies in the source data. In addition, Liberty recalculated selected network performance sub-metric results as a check on the reliability of Verizon's processes.

B. NP-1, Percent Trunk Group Blockage

1. Background

The Guidelines for Virginia do not define a "Trunk Group." However, the New Jersey Guidelines define a "Trunk Group" as a set of trunks, traffic-engineered as a unit for the establishment of connections between switching systems, in which all of the paths are interchangeable. Final Trunk Groups (FTGs) do not overflow. The NP-1 measure reports the percentage of FTGs that exceed blocking design thresholds. There are four NP-1 sub-metrics.

The Guidelines define CLEC trunks as dedicated final trunks carrying traffic from the Verizon tandem to the CLEC, and they define Verizon retail trunks as Common Final Trunks carrying local traffic between offices.

The Guidelines specify that Verizon's monthly trunk blockage studies use a "time consistent" busy hour, and that the data collected during a single study period are a sample subject to statistical variation.

The Guidelines indicate that Verizon should provide notification to CLECs of certain specific blocked trunk situations. Upon identifying that the trunk group is blocked due to CLEC causes, Verizon is required to exclude the trunk group from its NP-1 performance measurements unless the CLEC responds back with documentation that the blocking cause information is inaccurate. The trunk groups subject to this notification and confirmation process are:

- Trunks blocked due to CLEC network failure
- Trunks that actually overflow to a final trunk, but are not designed as an overflow trunk
- Blocked trunks where a CLEC order for augmentation is overdue
- Blocked trunks where a CLEC has not responded to or has denied Verizon request for augmentation
- Trunks blocked due to other CLEC trunk network rearrangements.

Verizon is also required to exclude IXC dedicated trunks and common trunks carrying only IXC traffic from the calculations of the NP-1 sub-metrics.

Verizon reports all of the NP-1 sub-metrics on a statewide basis for individual and aggregate CLECs, as well as for Verizon retail. There are no performance standards for NP-1-01, NP-1-02, and NP-1-03; however, Verizon must provide an explanation and, if necessary, an action plan for individual trunks if blocked for two consecutive months. The Guidelines note that, because common trunks carry both retail and CLEC traffic, there will always be parity on them. The standard for NP-1-04 is zero, *i.e.*, no final trunk group should exceed the blocking standard for three consecutive months.

The Guidelines provide the following formulas for the NP-1 sub-metrics:

NP-1-01: % Final Trunk Groups Exceeding Blocking Standard

(Number of final trunk groups that exceed blocking threshold for one (1) month, exclusive of trunks that block due to CLEC network problems as agreed by CLECs)/(Total number of final trunk groups)

NP-1-02: % Final Trunk Groups Exceeding Blocking Standard (No Exceptions)

(Number of final trunk groups that exceed blocking threshold)/(Total number of final trunk groups)

NP-1-03: Number of Final Trunk Groups Exceeding Blocking Standard – Two Months

Number of final trunk groups that exceed blocking threshold, for two (2) consecutive months, exclusive of trunks that block due to CLEC network problems as agreed by CLECs

NP-1-04: Number of Final Trunk Groups Exceeding Blocking Standard – Three Months

Number of final trunk groups that exceed blocking threshold for three (3) consecutive months, exclusive of trunks that block due to CLEC network problems as agreed by CLECs.

Two of the NP-1 reported results are relevant to Verizon's PAP. During the July and August 2003 reporting months, Verizon did not incur penalties associated with this measure.⁹⁰²

2. Analysis and Evaluation

Liberty confirmed that the terms "trunk group" and "time consistent busy hour" used by Verizon have the same meaning in Virginia as in New Jersey.⁹⁰³

Verizon has tables that specify the blocking threshold (or service threshold) above which it is statistically probable that it is not meeting the design blocking standard. According to the Network Performance and the Glossary sections of the Guidelines, Verizon designs both dedicated FTGs to CLECs and Common Final Trunks to have a B.005 blocking threshold. The Guidelines also state that this is a threshold of about 2 percent. Liberty confirmed that the blocking threshold is exactly 2 percent.⁹⁰⁴

Verizon follows essentially the same process steps in calculating the NP-1 metric results in Virginia as it does in New Jersey, although it uses different source data. Liberty reviewed the Verizon Virginia process documentation for NP-1 to confirm that this is the case and to assess its completeness and correctness.⁹⁰⁵ In its audit of NP-1 in New Jersey, Liberty recommended that Verizon revise the *Exclusions* section of the Guidelines to state clearly which exclusions are made to which of the NP-1 sub-metrics, and whether they are made to the denominator or only to the numerator. Liberty determined that this same recommendation is required in Virginia. Also in New Jersey, Liberty found that, if the results of a study period for a particular FTG yielded no data, or if they yielded invalid or non-representative data, then Verizon still included that FTG in the denominator when calculating NP-1 metric results for the month, thus inappropriately improving the reported results. Liberty determined that Verizon is following this same procedure when making its NP-1 calculations in Virginia.

The Guidelines for NP-1 in Virginia state that:

⁹⁰² Responses to Data Requests #198, and #203 (July and August 2003 C2C Reports).

⁹⁰³ Response to Data Request #132.

⁹⁰⁴ Response to Data Request #134.

⁹⁰⁵ Responses to Data Requests #88 and #138.

Data collected in a single study period to monitor trunk group performance is a sample and is subject to statistical variation based upon the number of trunks in the group and the number of valid measurements.

The New Jersey Guidelines do not contain any statements related to sampling for NP-1. Verizon's initial response providing NP-1 documentation for Virginia did not contain any discussion of sampling. Liberty issued a follow-up request to learn about the sampling method used in Virginia and to ensure that it is reasonable and appropriate.⁹⁰⁶

The *Exclusions* section of the Virginia Guidelines lists five of the six New Jersey exclusions for CLEC-caused blockage. However, the Virginia Guidelines state that Verizon will notify the CLECs if trunks are blocked for any of these five reasons, and the CLECs will have the opportunity to respond that the condition or its stated cause is inaccurate. Liberty queried Verizon to understand its process for issuing the required notifications and responding to them.⁹⁰⁷

As was the case with the New Jersey Guidelines, the description of NP-1-02 in the Virginia Guidelines notes that there are *No Exceptions*. During the New Jersey audit, Liberty took considerable effort to learn exactly what exclusions Verizon was making to each of the NP-1 sub-metrics, and whether it was making the exclusions to the denominator or the numerator. Verizon's responses to Liberty's requests for Virginia indicate that it makes the same exclusions. Liberty confirmed this during the audit, and determined that Verizon makes its exclusions in the same way.

The New Jersey Guidelines for NP-1 call for the exclusion of Verizon affiliate dedicated final trunks from the CLEC aggregate dedicated final trunk results, but the Virginia Guidelines for NP-1 do not note this exclusion, although an early section of the Guidelines mentions the exclusion. Liberty confirmed that the Virginia NP-1 CLEC aggregate dedicated final trunk reported results exclude Verizon affiliates.

Liberty obtained Verizon's trunk blockage data for the month of September 2003 and confirmed Verizon's reported results by recalculating the NP-1 Virginia metric results for that month.⁹⁰⁸

3. Findings and Recommendations

Verizon is not following a requirement in the *Exclusions* section of the Guidelines.

Verizon is not following the requirement in the *Exclusions* section of the Guidelines to notify CLECs electronically about trunk group blockages that may be CLEC-caused, and to allow them to respond, before excluding those trunk groups from NP-1.⁹⁰⁹ This means that the reported

⁹⁰⁶ Response to Data Request #138.

⁹⁰⁷ Responses to Data Requests #136 and #432.

⁹⁰⁸ Response to Data Request #264.

⁹⁰⁹ Response to Data Request #136.

results for NP-1-01, NP-1-03 and NP-1-04 all assume that the CLECs would agree with Verizon's conclusion about every trunk group that Verizon excluded because it believed CLECs caused the blockage. Furthermore, Verizon indicated that it does not plan to implement the process required by the Guidelines.⁹¹⁰

Verizon uses the E1W standard remark to designate trunk groups affected by extraordinary catastrophic events. Verizon's algorithms exclude blocked trunk groups with an E1W code from the numerator of NP-1-01, but they include them in the numerator of NP-1-02. However, the Guidelines for the Potomac states do not allow for excluding trunks blocked because of catastrophic events from any NP-1 sub-metric. Verizon's justification for making this exclusion is that it believes NP-1-01 should measure blockages for which Verizon is accountable, and Verizon does not believe it is accountable for catastrophic events. Verizon stated that it has never used the E1W code for any blocked trunk group in the Potomac states.⁹¹¹ Liberty notes that Metric Change Control No.10609 will include the E1W code for Verizon retail NP-1 results.

Liberty recommends that Verizon be required to follow precisely the exclusions section of the Guidelines.

Verizon is not reporting retail results for all NP-1 sub-metrics.

The Guidelines for NP-1 include Verizon retail in the *Report Dimensions* section. However, Verizon only reports retail results for NP-1-01 and NP-1-02, but not for NP-1-03 or NP-1-04. Verizon stated that retail results for these two NP sub-metrics would have no useful meaning.⁹¹²

Liberty recommends that all relevant parties determine the value of Verizon reporting retail results for NP-1-03 and NP-1-04. If it is determined that such reporting would provide no useful information, Liberty recommends that Verizon seek a revision to the Guidelines to require retail reporting only for NP-1-01 and NP-1-02.

Verizon is not making the same exclusions to all the NP-1 sub-metrics.

The *Exclusions* section of the C2C Guidelines for NP-1 is not qualified. However, Verizon is not making the same exclusions to all the NP-1 sub-metrics. Verizon excludes FTGs carrying only IXC traffic from both the numerator and denominator of all of the NP-1 sub-metrics. In the denominator of all the NP-1 sub-metrics, Verizon includes trunks blocked due to CLECs and trunks, not designated as overflow trunks, that overflow to a final trunk. Verizon excludes these same trunks from the numerator of all sub-metrics except NP-1-02, which includes them if they meet the blocking criterion.

⁹¹⁰ Response to Data Request #432.

⁹¹¹ Response to Data Request #430.

⁹¹² Response to Data Request #431.

Liberty recommends that Verizon seek to revise the *Exclusions* section of the Guidelines for NP-1 to specify the exclusions made to each of the NP-1 sub-metrics, and state if they are made to the denominator or only to the numerator.

Verizon overstates its NP-1 results.

Verizon overstates its results for NP-1 by including trunks with no or invalid data in the denominator.⁹¹³ If the results of a study period for a particular FTG yield no data, or if they yield invalid or non-representative data, then Verizon still includes that FTG in the denominator when calculating NP-1 metric results for the month.⁹¹⁴ However, such a FTG will never be included in the numerator, regardless of whether it actually exceeded its blocking threshold during the month. This practice treats FTGs with no data the same as those that had data and were not blocked beyond the threshold, thus inappropriately improving Verizon's reported NP-1 performance results.

Liberty recommends that Verizon exclude FTGs with no data from both the numerators and the denominators of all of the NP-1 metric results.

Verizon's methods and procedures documentation for NP-1 is too generic.

Verizon's procedures and guidelines governing how the NP-1 metric results are to be developed and calculated are generic documents containing some statements that do not apply to the Potomac states. For example, the *Detailed Requirements Definition* document for NP-1 lists exclusions without noting the requirement to contact CLECs before excluding trunks on which blockage may have been CLEC-caused.⁹¹⁵ Verizon agrees that the *Detailed Requirements Definition* document is a "generic" one.⁹¹⁶ Furthermore, in discussing NP-1 exclusions, that same document states that:

Some of the causes that are excluded include those blockages that are caused by a CLEC switch failure or a non-forecasted increase in traffic load by the CLEC.

Verizon agrees that there is no exclusion for non-forecasted increases in CLEC traffic load, again stating that the methods and procedures were "written generically."⁹¹⁷

Liberty recommends that Verizon prepare NP-1 methods and procedures that completely and comprehensively address the Virginia, and only the Virginia, NP-1 metric calculation and reporting requirements.

⁹¹³ Responses to Data Requests #96 and #133.

⁹¹⁴ Response to Data Request #96.

⁹¹⁵ Response to Data Request #88.

⁹¹⁶ Response to Data Request #137.

⁹¹⁷ Response to Data Request #429.

C. NP-2, Collocation Performance

1. Background

The metrics within NP-2 report Verizon's performance in responding to requests for collocation and in establishing collocation arrangements. There are eight NP-2 sub-metrics.

The Guidelines define the response and completion collocation intervals as the number of business days between the order application date and the date Verizon notifies the CLEC of space availability, and the number of business days between the order application date (when Verizon receives a valid service request) and order completion, respectively. The Guidelines specify that Verizon's work is not complete on a collocation arrangement until i) the arrangement is suitable for use by the CLEC and ii) Verizon provides the CLEC with the cable assignment information necessary to use the facility. There are no exclusions for NP-2 except for the standard Guidelines exclusions for Verizon affiliate and test CLEC data.

Verizon reports all of the NP-2 sub-metrics on a statewide basis for individual and aggregate CLECs. Verizon reports separate results for new and augmented applications for all sub-metrics. The standard for the percentage on time sub-metrics, NP-2-01, NP-2-02, NP-2-05, and NP-2-06, is 95 percent. The applicable Verizon tariff contains the specific collocation intervals for these on-time sub-metrics. The remaining average interval and average delay days sub-metrics do not have an associated standard. The Guidelines provide the following formulas for the NP-2 sub-metrics:

NP-2-01: % On Time Response to Request for Physical Collocation

(Number of requests for physical collocation arrangements where a response to the request was due in the report period and was answered on time)/(Number of requests for physical collocation where the initial response was due in the report period)

NP-2-02: % On Time Response to Request for Virtual Collocation

(Number of requests for virtual collocation arrangements where a response to the request was due in the report period and was answered on time)/(Number of requests for virtual collocation where the initial response was due in the report period)

NP-2-03: Average Interval – Physical Collocation

(Sum of the duration from application date to completion date for physical collocation arrangements completed during the report period, excluding time for CLEC milestone misses)/(Number of physical collocation arrangements completed)

NP-2-04: Average Interval – Virtual Collocation

(Sum of the duration from application date to completion date for virtual collocation arrangements completed during the report period, excluding time for CLEC milestone misses)/(Number of virtual collocation arrangements completed)

NP-2-05: % On Time – Physical Collocation

(Number of physical collocation arrangements completed on or before the due date, including due date extensions resulting from CLEC milestone misses)/(Number of physical collocation arrangements completed)

NP-2-06: % On Time – Virtual Collocation

(Number of virtual collocation arrangements completed on or before the due date, including due date extensions resulting from CLEC milestone misses)/(Number of virtual collocation arrangements completed)

NP-2-07: Average Delay Days – Physical Collocation

(Sum of the duration between actual physical collocation arrangement completion date and due date for missed physical collocation arrangements, including due date extensions resulting from CLEC milestone misses)/(Number of missed physical collocation arrangements)

NP-2-08: Average Delay Days – Virtual Collocation

(Sum of the duration between actual virtual collocation arrangement completion date and due date for missed virtual collocation arrangements, including due date extensions resulting from CLEC milestone misses)/(Number of missed virtual collocation arrangements)

Six of the NP-2 sub-metrics are relevant to Verizon's PAP. During the July and August 2003 reporting months, Verizon did not incur any penalties associated with this measure.⁹¹⁸

2. Analysis and Evaluation

Liberty examined Verizon's methods for processing requests for collocation in Virginia, and found them essentially the same as those used for New Jersey.⁹¹⁹ Verizon receives the majority of collocation applications via email, although CLECs submit some by mail. Verizon considers requests for collocation as engineered projects, and records information on these requests in its Customer Business Services/Customer Network Engineering (CBS/CNE) system, which Verizon

⁹¹⁸ Responses to Data Requests #203 and # 416 (July and August 2003 C2C Reports).

⁹¹⁹ Interview #2, October 7, 2003.

uses to track engineering jobs (such as installing and removing equipment) and to place and track orders with vendors.⁹²⁰

The collocation application team in Boston, Massachusetts is responsible for inputting data on each collocation application into the CBS/CNE database. This team records all milestone dates associated with application processing, up to the point where Verizon gives a due date to the CLEC. The Local Collocation Coordinator (LCC), a region-specific project manager, is responsible for inputting all information associated with the actual building of the arrangement, up to the time that Verizon turns the arrangement over to the CLEC.

The Virginia Network Interconnect Services Tariff allows Verizon eight business days after receipt of a valid collocation application (an application with the required application fee) to confirm whether space is available to accommodate the CLEC's request. The tariff allows Verizon an interval of 76 business days to complete physical collocation arrangements, which include physical, Secured Collocation Open Physical Environment (SCOPE), and secured Cageless Collocation – Open Environment (CCOE) arrangements. If Verizon encounters major construction obstacles or the application involves special requirements, the tariff allows Verizon to extend the interval by 15 business days, resulting in an interval of 91 business days. The tariff allows an interval of 105 business days for Verizon to complete unsecured CCOE (also a type of physical collocation) and virtual arrangements. The intervals are the same for both new and augmented collocation requests; however, the tariff indicates that the interval will be 45 business days for defined types of requests.⁹²¹

In some cases, Verizon offers a CLEC a scheduled due date for completion that is sooner than that required under the tariff. If Verizon misses this date, it considers the application a miss (under NP-2-05 and NP-2-06), even if it completed the request within the interval allowed under the tariff.⁹²² Liberty also found an instance where Verizon offered an interval significantly longer than the interval allowed under the tariff. In that case, Verizon had no further space in the central office to accommodate the CLEC's request. Verizon planned to complete a building extension in that office in the near future. Rather than denying the collocation request as allowed under the tariff, Verizon negotiated a due date with the CLEC with a construction start date that coincided with the expected completion of the addition. As a result, Verizon's completion interval for this request was roughly 300 days.⁹²³

Under the tariff, the CLEC must pay 50 percent of the collocation construction fees by the 17th day after its application. Verizon does not, however, wait for receipt of these fees from the CLEC to continue with the construction.⁹²⁴ In cases where the CLEC does not provide a forecast to Verizon at least 60 days before its application, the tariff allows Verizon to extend the interval for completion the collocation by up to two months. Verizon indicated that it rarely enforces the

⁹²⁰ In response to Data Request #105, Verizon explained that the CBS/CNE system is the source for all data for NP-2 metrics for Verizon East (formerly Bell Atlantic) states.

⁹²¹ Examples of the types of augment arrangements that qualify for the 45-day interval are 800 2-Wire voice grade terminations and 28 DS1 terminations.

⁹²² Interview #2, October 7, 2003.

⁹²³ Response to Data Request #372 (supplemental).

⁹²⁴ Interview #2, October 7, 2003.

forecasting guidelines in the tariff, and instead tries to accommodate the CLEC. Verizon stated that in the event that it did enforce the forecasting guidelines, it would extend the interval as allowed under the tariff and record the length of the extension as a CLEC milestone miss.⁹²⁵

If there are delays to completion of a collocation arrangement due to CLEC reasons, Verizon puts a CLEC milestone miss or “stop clock” on the order until the issue is resolved. Verizon provided Liberty with a listing of the valid CLEC milestone miss codes, which cover situations such as when there is a delay in the CLEC’s equipment installation or when Verizon has completed a job and is waiting for the CLEC to review and accept the installation.⁹²⁶ Verizon records the reason for the delay and the start and stop dates of the delay in CBS/CNE, and subtracts any CLEC-caused delays when it calculates the completion interval it uses for performance measures purposes.

There are certain applications tracked in the CBS/CNE system that Verizon does not consider collocation requests to be included in the NP-2 measures. For example, Verizon excludes from the NP-2 metrics Competitive Alternative Transport Terminal, Collocation Remote Terminal Equipment Enclosure, Feeder Distribution Interconnection Interface, Line Sharing, Shared/Sub-leased Caged, Transfer of Ownership, and Space Availability application types.⁹²⁷ These exclusions are reasonable, but Verizon should seek to reflect them in the Guidelines.

Verizon also excludes certain applications not specifically discussed in the Guidelines, *i.e.*, those designated by Verizon as: i) notice of termination, ii) “records only,” and iii) “reductions.”⁹²⁸ As Liberty learned during the New Jersey audit, a notice of termination is a written notification from a CLEC that it is terminating an existing collocation arrangement. There is no tariff interval associated with a termination because no construction work is required. CLECs may submit an application for Verizon to update its records on an existing collocation arrangement (such as informing Verizon of additional equipment that the CLEC is planning to add to an existing arrangement) that do not require any physical work by Verizon. A reduction is a request from a CLEC to reduce capacity on an existing collocation arrangement. There is no tariff interval associated with reduction applications. Verizon stated during the New Jersey audit that it believes that it appropriately excludes these three application types (which require no work on the part of Verizon) from the metrics because the product types in the Guidelines are for new builds and augmentations. Liberty believes these exclusions are reasonable, but Verizon should seek to reflect them in the Guidelines.

The CBS/CNE system calculates certain key data fields that Verizon uses to report results for the NP-2 metrics. The key data fields for the NP-2-01 and NP-2-02 measures (the percentage on time response to requests for collocation) are the i) initial response due date, ii) initial response scheduled interval, iii) date of initial response completion, iv) initial response completion interval, and v) on-time response indicator. Verizon calculates the date the initial response is due to the CLEC within CBS/CNE by adding eight business days to the application date.

⁹²⁵ Interview #2, October 7, 2003.

⁹²⁶ Response to Data Request #106.

⁹²⁷ Response to Data Request #107.

⁹²⁸ Response to Data Request #105.

Verizon calculates the initial response scheduled interval within CBS/CNE as the number of business days between the application date and the date the initial response is due to the CLEC. CBS/CNE calculates the initial response completion date as the earliest of the following (as applicable to a given request): i) date a cancellation confirmation letter is sent, ii) date a letter is sent to the CLEC with the estimated cost and scheduled completion date, iii) date a letter is sent informing the CLEC that additional time is needed to complete space assessment, iv) date a letter is sent to the CLEC informing it that the choices on the application are not available and providing alternative available choices, or v) date a letter is sent to the CLEC informing it that its requested preference for collocation is not available and giving it the option to be put in a queue for space distribution upon availability in the requested office.⁹²⁹ Liberty verified that the system was accurately calculating the initial response scheduled interval and the initial response completion date.

The CBS/CNE system calculates the initial response completion interval as the number of business days between the application date and the initial response completion date.⁹³⁰ Verizon does not use stop clocks during the initial response interval.⁹³¹ Liberty verified that the system was accurately calculating this interval in business days, taking into account any holidays. Verizon also calculates an on-time response indicator within NMP that Verizon uses in its metric calculations. Verizon sets the indicator to “Y” if the initial response completion interval is less than or equal to the initial response scheduled interval.⁹³²

CBS/CNE also calculates the following key data fields pertinent to the NP-2-03 through NP-2-08 metrics: i) completion interval, ii) scheduled interval, iii) delay days, and iv) on-time completion indicator. It calculates the completion interval as the number of business days between the completion date and the application start date, minus any delays for CLEC reasons.⁹³³ Liberty verified that the system was accurately calculating the completion interval, taking into account any holidays.

CBS/CNE calculates the scheduled interval as the number of business days between the application date and the scheduled date given by Verizon to the CLEC.⁹³⁴ Liberty verified that the system was accurately calculating this interval. However, Verizon's definition for the scheduled interval does not conform to the Guidelines (which cite the tariff) because, as discussed previously, it assigns due dates with the CLEC that are sometimes shorter than the intervals in the Guidelines. Liberty therefore recommends that Verizon seek a modification to the Guidelines to reflect that it should meet the shorter of either the promised completion interval or the interval specified in the tariff.

⁹²⁹ Response to Data Request #105.

⁹³⁰ Response to Data Request #105.

⁹³¹ Interview #2, October 7, 2003. In response to Data Request #367, Verizon added that should a CLEC make a change to an application during the initial response period that would alter the space assessment determination, Verizon would revise the start date to the date it received the revised requirements.

⁹³² Response to Data Request #368.

⁹³³ Response to Data Request #105. Verizon records start and stop dates for up to four delays in the CBS/CNE data, and CBS/CNE calculates the duration of each delay in business days.

⁹³⁴ Response to Data Request #105.

As discussed previously, Liberty also found that Verizon offered an interval beyond that allowed under the tariff. While Verizon's efforts to accommodate the CLEC are appropriate, the tariff does not anticipate them. The practice has an effect on reported metric results, *i.e.*, it inflates the average completion interval. Liberty recommends that Verizon institute a new CLEC milestone miss code to use in such situations. Verizon could then subtract the time that the application was on hold pending capacity expansion from the completion interval, and assign a scheduled completion date consistent with those outlined in the tariff.

For requests that Verizon did not complete on time, CBS/CNE calculates delay days as the difference between the completion interval (which excludes CLEC delays) and the scheduled interval; delay days thus reflect the number of business days that completion was late due to Verizon reasons.⁹³⁵ Liberty reviewed the formula for this data field in Verizon's business rules and found that it was accurate. Liberty was not able to verify the delay day calculation with CBS/CNE data, however, because there were no applications during the audit period that were delayed due to Verizon reasons. Verizon uses an on-time completion indicator within NMP for its metric calculations. Verizon sets the indicator to "Y" if the completion interval is equal to or less than the scheduled interval.⁹³⁶ Liberty reviewed the on-time completion indicator and found that the system was accurately calculating it.

Overall, Liberty found that Verizon appropriately applied the exclusions set forth in the Guidelines. Verizon accurately subtracts the time associated with CLEC milestone misses from its completion interval. The Guidelines specify that Verizon exclude affiliate data (including VADI) from CLEC aggregate results. Verizon accomplishes this by filtering out collocation requests by affiliates when it extracts the data from NMP that it uses to calculate metric results.⁹³⁷ The Guidelines also specify that Verizon exclude test CLEC data from CLEC aggregate results. Verizon stated that it did not use test IDs in the NP-2 domain. As such, Verizon has no process to remove them from metric results.⁹³⁸ Given that test orders are impractical in the collocation environment, Liberty believes that Verizon's approach to this exclusion is reasonable.

Although not explicitly stated in the Guidelines, Verizon excludes applications associated with the former GTE territory from reported results. Verizon sends CBS/CNE information to NMP on former GTE territory applications in a data file separate from the one that Verizon uses to calculate the metrics.⁹³⁹ Verizon therefore appropriately excludes applications associated with the former GTE territory in Virginia.

When Liberty audited the NP-2 measures in New Jersey, Verizon calculated the metric results manually. Verizon moved the calculation of NP-2 results to NMP beginning with the June data month. Each month, the NP-2 metric specialist located in New York, New York executes a program that extracts data from the CBS/CNE system and sends them to the NMP warehouse.

⁹³⁵ Response to Data Request #105.

⁹³⁶ Response to Data Request #369.

⁹³⁷ Responses to Data Requests #256 and #370. Verizon excludes affiliate ACNA codes, which are the same as CLEC IDs.

⁹³⁸ Response to Data Request #520.

⁹³⁹ Response to Data Request #366.

Verizon extracts information on those applications having either an initial response due date or a completion date within the reporting month.⁹⁴⁰ To calculate the metrics, Verizon extracts the data on these same applications from the NMP warehouse and creates a collocation data mart, which Verizon uses in its metric algorithms to calculate results by state and by individual CLEC.⁹⁴¹ Verizon then aggregates these results accordingly in the NMP reporting system.

Verizon provided to Liberty its process documentation covering the present method of preparing the NP-2 metrics.⁹⁴² While the documentation was relatively complete, it was not entirely current. Verizon wrote the metric process documentation in terms of a future move to NMP. Because Verizon had already completed this change, it should update its documentation accordingly. Also, Liberty found that the documentation contained incorrect definitions for key variables, and that it omitted details on how NMP calculated certain fields. Liberty subsequently had to issue data requests to, for example, determine definitions for the on-time indicators and to identify how Verizon excluded applications associated with the former GTE territories.⁹⁴³

Because Verizon has only a small number of collocation requests, Liberty used data from two months (August and September 2003) for replicating Verizon NP-2 results. Liberty requested that Verizon provide a file of collocation data from CBS/CNE for applications received from March 1, 2003, through September 30, 2003 (to adequately capture all relevant data for August and September completions). Liberty also requested that Verizon extract from CBS/CNE more fields than it typically uses to calculate its measures so that Liberty could check the accuracy of any fields calculated within CBS/CNE.⁹⁴⁴ Liberty decided to use the original source data from CBS/CNE, rather than the Collocation data mart from NMP, to recalculate results as an additional check on the accuracy of the data extraction process.

NP-2-01 and NP-2-02 – % On Time Response to Request for Collocation

NP-2-01 measures the percentage of on-time responses to requests for physical collocations (physical, SCOPE, secured CCOE, and unsecured CCOE), reported separately by new and augmented collocations. NP-2-02 measures the percentage of on-time responses to requests for virtual collocations, reported separately by new and augmented collocations.

Liberty examined the CMAs that Verizon uses to calculate the NP-2-01 and NP-2-02 measures. Verizon correctly uses all collocation requests for which an initial response was due in the reporting month in the denominator for the measure. To calculate the numerator, Verizon counts the number of requests for which the on-time response indicator is “Y.” Verizon also indicated

⁹⁴⁰ Response to Data Request #256.

⁹⁴¹ In response to Data Request #255 (supplemental), Verizon confirmed that it extracted records from the NMP warehouse that had an initial response due date or a completion date within the reporting month.

⁹⁴² Response to Data Request #105.

⁹⁴³ Responses to Data Requests #368 and #369. Also, during Interview #2, October 7, 2003, Verizon indicated that one of the references in its business documentation to a ten-day initial response interval was a typographical error.

⁹⁴⁴ Response to Data Request #257. Because Verizon indicated that it had recently completed some requests that had been pending for a long time, Liberty requested that Verizon review its data in CBS/CNE and include information on any specific applications completed in August or September 2003 that it had received earlier than March 2003.

that it includes in the measure completed initial responses for orders that are later cancelled, which is consistent with the Guidelines.⁹⁴⁵

Liberty concluded that Verizon's method for calculating these measures conforms to the Guidelines.

Liberty replicated Verizon's reported CLEC aggregate results for NP-2-01 and NP-2-02 for August and September 2003.

Liberty concluded that Verizon is accurately reporting its results for these measures.

NP-2-03 and NP-2-04 – Average Interval

NP-2-03 measures the average completion interval for physical collocations, and NP-2-04 measures the average completion interval for virtual collocations. Verizon reports both measures separately by new and augmented collocations.

Liberty examined the algorithms that Verizon uses to calculate the NP-2-03 and NP-2-04 measures. Verizon correctly uses all collocation requests that it completed during the reporting month in the denominator for the measure. To calculate the numerator, Verizon sums the completion intervals for all completed requests. The reported results represent the average completion intervals.

Liberty concluded that Verizon's method for calculating these measures conforms to the Guidelines.

Liberty replicated Verizon's reported CLEC aggregate results for NP-2-03 and NP-2-04 for August and September 2003.

Liberty concluded that Verizon is accurately reporting its results for these measures.

NP-2-05 and NP-2-06 – % On Time

NP-2-05 and NP-2-06 measure the percent of on-time completions for physical and virtual collocations, respectively. Verizon reports separate results for each measure by new and augmented collocations.

Liberty examined the algorithms that Verizon uses to calculate the NP-2-05 and NP-2-06 measures. Verizon correctly uses all collocation requests that it completed during the reporting month as the denominator for the measure. To calculate the numerator, Verizon counts the number of requests where the on-time completion indicator is "Y."

⁹⁴⁵ Interview #2, October 7, 2003.

Liberty concluded that Verizon's method for calculating these measures conforms to the Guidelines.

Liberty replicated Verizon's reported CLEC aggregate results for NP-2-05 and NP-2-06 for August and September 2003.

Liberty concluded that Verizon is accurately reporting its results for these measures.

NP-2-07 and NP-2-08 – Average Delay Days

NP-2-07 measures the average number of delay days associated with physical collocations that Verizon completed late due to its own reasons. NP-2-08 measures the average number of delay days associated with virtual applications. Verizon reports separate results for each measure by new and augmented collocations.

Liberty examined the algorithms that Verizon uses to calculate the NP-2-07 and NP-2-08 measures. Verizon correctly uses all collocation requests that it completed during the reporting month in the denominator for the measure. To calculate the numerator, Verizon sums the delay days associated with orders that it did not complete on time, *i.e.*, those with an on-time completion indicator of "N".

Liberty concluded that Verizon's method for calculating these measures conforms to the Guidelines. Verizon reported no results for these measures for August and September 2003, and Liberty verified that there were no completed collocation requests in the data that had delays for Verizon reasons.

Liberty concluded that Verizon is accurately reporting its results for these measures.

3. Findings and Recommendations

Verizon has adopted conventions for calculating the NP-2 performance metrics that are either not consistent with or not addressed in the Guidelines.

Liberty found that at times Verizon assigns a scheduled completion date with the CLEC that is shorter than the interval allowed under the tariff. Liberty recommends that Verizon seek a revision to the Guidelines to clarify that it measures itself against the shorter of the offered completion interval or the standard interval under the tariff.

Liberty also found that Verizon assigned a scheduled completion interval that is significantly longer than the interval allowed under the tariff. While Verizon's efforts to accommodate the CLEC are appropriate, the tariff does not anticipate them. The practice has an effect on reported metric results, *i.e.*, it inflates the average completion interval. Liberty recommends that Verizon institute a new CLEC milestone miss code to accommodate situations in which it holds a CLEC request rather than rejecting it, such as for a planned expansion to capacity in a central office.

Also, Liberty recommends that Verizon seek clarification to the Guidelines regarding the types of engineering applications and collocation requests that it excludes from the metrics.

Verizon's documentation for the NP-2 metrics is outdated and inaccurate.

During its audit of the NP-2 measures in New Jersey, Liberty found that Verizon's documentation for the metrics was inadequate. Verizon subsequently expanded and updated its documentation and applicable business processes for this metric, and Liberty found that they were generally complete. However, Verizon wrote its business process documentation in terms of a future move to NMP, and should update it to reflect the fact that Verizon has completed this change. Liberty also found that the documentation contained incorrect definitions for certain variables and no definitions for others. Liberty therefore recommends that Verizon correct and update its documentation.

VIII. Billing Performance Measures

A. General Background

The billing measures report on Verizon's performance in providing in a timely manner: i) daily usage feeds, ii) carrier bills, and iii) acknowledgement and resolution of billing claims. The Virginia Guidelines include three billing measures and four sub-metrics. The PAP includes three sub-metrics: BI-1-02, BI-3-04, and BI-3-05. Of these, the PAP identifies BI-3-04 and BI-3-05 as Critical Measures.

Liberty found that Verizon produced generally accurate results for the billing performance measures. Liberty successfully replicated the results for all of the sub-metrics for the September 2003 data month. Liberty also found that Verizon generally follows the Guidelines by correctly applying exclusions and by properly defining the logic and data fields it uses to calculate the denominators and numerators in the BI metric calculations.⁹⁴⁶ Throughout this audit Liberty found the Verizon personnel assigned to work with Liberty on the billing metrics to be knowledgeable and cooperative.

Liberty found that, in general, Verizon's documentation for the billing domain was comprehensive, and covered the billing source systems, data flows from the source systems to the NMP warehouse, the data files that Verizon extracts from NMP to calculate the metrics, as well as definitions of data fields and methods for applying exclusions. However, Liberty subsequently had to issue data requests to clarify certain areas that Verizon did not present in a clear or complete fashion in the documentation.

As part of its audit of Verizon's procedures for processing the BI performance measures, Liberty obtained an overview of Verizon's business processes and systems that generate the data used for these measures. Liberty reviewed how Verizon captures the raw data and whether it collects and reports all relevant data. Liberty sought to determine whether key data field definitions were consistent with the Guidelines and to assess whether Verizon correctly calculated logic variables and derived values from the source data. Liberty also sought to identify whether there were any significant opportunities for inaccuracies in source data.

Liberty reviewed the process by which Verizon extracts data from its legacy source systems, the Carrier Access Billing System (CABS), the Customer Records Information System (CRIS), expressTRAK, and the Wholesale Claim and Inquiry Tracking System (WCITS) and sends them to the NMP data warehouse. Liberty also reviewed the process by which Verizon extracts data from the NMP warehouse and creates the data tables that its metric algorithms use to process results each month.

Liberty reviewed the programming algorithms that Verizon uses to calculate the BI measures to determine whether they produced results that were accurately defined and consistent with the Guidelines. Liberty also examined whether Verizon correctly applied any exclusions specified in

⁹⁴⁶ Liberty lists exceptions to this general finding in the detailed "Findings and Recommendations" section of this chapter.

the Guidelines. Liberty recalculated the CLEC aggregate results for each of the sub-metrics as an additional check on the reliability of Verizon's results. Liberty also obtained a small amount of data from one participating CLEC and compared it to the data that Verizon uses to calculate results.

The Guidelines indicate that Verizon should exclude its affiliate data and test CLEC data from CLEC aggregate results for all BI measures. Verizon derives a test account indicator within NMP that identifies test CLEC or Verizon affiliate records through the use of a look up table. Verizon excludes test CLEC bills within its metric algorithms. Verizon calculates results for each sub-metric by individual CLEC and Verizon affiliate, and aggregates them accordingly in the NMP reporting system.⁹⁴⁷ Liberty concluded that Verizon was correctly applying the test CLEC and Verizon affiliate exclusions.

Verizon should exclude data associated with the former GTE territory in Virginia from reported results. Verizon stated that the billing source systems identify records associated with the former GTE territory in Virginia and label such records with a state code of "VG" or "VC" (to indicate former GTE or former Contel territory).⁹⁴⁸ Because Verizon reports results by state, it excludes former GTE data (as well as former Contel data) from Virginia results because Verizon reports only those records with a state code of "VA" in Virginia. Liberty concluded that Verizon was correctly applying this exclusion.

B. BI-1, Timeliness of Daily Usage Feed (DUF)

1. Background

BI-1 measures the number of business days from creation of the call message to the date that Verizon makes the usage information available to the CLEC on the daily usage feed (DUF). In Virginia, Verizon reports one BI-1 sub-metric, which measures the percentage of UNE and resale usage records that Verizon transmitted within four business days.

The Guidelines state that Verizon should exclude Verizon test orders and Verizon affiliate data from the calculation of this measure. Verizon reports the BI-1 sub-metric on a statewide basis for individual and aggregate CLECs. The standard for BI-1-02 is 95 percent within four business days. The Guidelines provide the following formula for the BI-1 sub-metric:

BI-1-02: Timeliness of Daily Usage Feed

⁹⁴⁷ Response to Data Request #13.

⁹⁴⁸ Response to Data Request #379 (clarification). Verizon's source systems that handle bills use the billing account number to determine the appropriate state code. For DUF files, the Event Preprocessor System identifies the appropriate territory and state code by categorizing the calls based on the customer's working telephone number and the central office to which it relates. For billing claims, the Verizon representative selects the appropriate state code when entering the claim into the system.

(Number of usage records on DUF tapes processed during the month, where the difference between the current date and the call date is four days or less)/(Number of usage records on DUF tapes processed during the month)

The BI-1-02 results are relevant to Verizon's PAP. During the July and August 2003 reporting months, Verizon did not incur any penalties associated with this measure.⁹⁴⁹

2. Analysis and Evaluation

The Guidelines indicate that Verizon gathers daily usage information from the switch, although not all offices poll this usage data every business day. Verizon captures weekend and holiday usage on the next business day, and collects usage data for all CLECs and its own retail customers at the same time. CLECs receive DUF files electronically through the Network Data Mover (NDM) system called ConnectDirect, or through the mail on magnetic tape or compact disc.

Verizon uses its Bell Atlantic Usage Interface (BAUI) system, a sub-system of CRIS, to process and distribute CLEC resale and UNE DUF files and to calculate certain statistics on those files. Prior to flowing to BAUI, data from the switch first flow through Verizon's Event Pre-Processor (EPP) system, a sub-system of expressTRAK. The EPP system identifies whether usage ownership is wholesale or retail. For wholesale usage, EPP identifies the CLEC to which a given call belongs, and whether the CLEC is a reseller or UNE provider.⁹⁵⁰

Verizon collects information about daily usage feeds in BAUI and sends files daily to NMP for storage in the NMP warehouse.⁹⁵¹ To calculate the metric, Verizon selects the DUF records from the NMP warehouse that have a file sent date within the past two months, and places those records into the Bill MBF DUF Detail Fact table used by Verizon's metrics algorithm.⁹⁵²

The key data fields in the Bill MBF DUF Detail Fact table are the CLEC ID and file sent date, as well as five day-counter fields that indicate how many DUF records Verizon sent within a given number of business days.

BAUI records the file sent date as the date that it creates the DUF files. This happens before Verizon sends the files to the CLEC and, in most cases, actual electronic file transmission is the next step in the process. However, Verizon stated that it records no separate timestamp for when it actually sends the file.⁹⁵³ The Virginia Guidelines indicate that Verizon should measure the number of business days from the creation of the call to the point "the usage information is made

⁹⁴⁹ Responses to Data Requests #198 and #203 (July and August 2003 C2C Reports).

⁹⁵⁰ In response to Data Request #389, Verizon explained that the EPP system feeds the call records to a router application that determines the CLEC identifier by accessing a reference database.

⁹⁵¹ Response to Data Request #10.

⁹⁵² Interview #1, October 30, 2003. In response to Data Request #478, Verizon clarified that the Bill MBF DUF Detail Fact table contained data for the current and prior reporting month because Verizon uses the same file for calculating metrics that require the prior month's data in other states. Verizon selects only those records with a file sent date during the reporting month in the metric algorithms it uses for Virginia.

⁹⁵³ Interview #1, October 30, 2003.

available to the CLEC” on the DUF. Verizon’s method does not account for any delays in Verizon’s transmission of the DUF files or in creating and mailing DUF files on tape or compact disc.

Liberty requested that Verizon provide documentation on the DUF files that BAUI created during a typical business week along with the corresponding NDM transmission logs for the same data set.⁹⁵⁴ Liberty found that Verizon generates the DUF files in BAUI in the morning, and that it sends approximately 25 percent of the DUF files on magnetic tape and approximately 75 percent electronically. Liberty reviewed the NDM transmission logs and found that Verizon generally transmits the electronic DUF file to the CLEC on the same day that it created it. For some DUF files, however, the NDM logs indicated that there was an error during transmission. In some cases, Verizon could resend the DUF file successfully later the same day, but in other cases it made repeated attempts to send the DUF file over several days. Liberty found situations in which it appeared that Verizon was catching up by sending multiple DUF files on the same day. Verizon explained that if a CLEC has a problem receiving transmissions, Verizon archives the DUF files until the CLEC can fix the problem and receive them. Also, certain CLECs have a dial-up arrangement, and the DUF files will remain in the queue until the CLEC dials in to download them.⁹⁵⁵ Liberty was satisfied that Verizon generally makes the electronic files available to the CLEC on the same day that it creates them, and that delays are typically on the CLEC side.

Although Verizon’s approach to measurement does not literally conform to the Guidelines, Liberty believes that it is reasonable. In most cases, the date that BAUI creates the DUF file and the date that Verizon makes the file available electronically to the CLECs are the same. Also, there is no practical way for Verizon to record the point at which mailed DUF files are “available to the CLEC.” Liberty believes it is reasonable to assume that Verizon can prepare and send the magnetic tapes on the same business day. Liberty recommends that Verizon seek a clarification to the Guidelines to indicate that it measures timeliness for both electronic and mailed DUF files based on the point at which the BAUI system creates the file.

The BI-1-02 measure uses the interval between the date that calls are made and recorded at the switch, and the file sent date for the DUF file that contains the record of the calls. As Liberty learned during the New Jersey audit, the BAUI system calculates the number of usage records in a given DUF file that it sent to the CLEC within three, four, five, and eight business days of the date that Verizon recorded the calls at the switch. The NMP system creates five records in the Bill MBF DUF Detail Fact table for each DUF file, one indicating the total usage record count in the DUF file (where the day-counter value is 0), and the other four indicating the number of usage records in that file that were within three, four, five, or eight business days (where the day-counter fields would be 3, 4, 5, and 8, respectively).⁹⁵⁶

Liberty obtained data from a participating CLEC on 20 DUF files that it received from Verizon during September 2003. Liberty learned that the CLEC’s record count for each DUF file

⁹⁵⁴ Response to Data Request #393.

⁹⁵⁵ Response to Data Request #393 (supplemental) and clarification call on Data Request #393 on January 20, 2004.

⁹⁵⁶ Verizon confirmed that its method in Virginia was the same as that in New Jersey.

represented calls in the former Bell Atlantic and former Contel territories in Virginia.⁹⁵⁷ Liberty compared the CLEC's record count for each DUF file to the usage record counts recorded in Verizon's Bill MBF DUF Detail Fact tables for the states of "VA" and "VC."⁹⁵⁸ In all cases, the CLEC's record count matched the combined total number of usage records in Verizon's data.

Liberty examined how Verizon applied the exclusions for BI-1 set forth in the Guidelines. As noted previously, Liberty found that Verizon applied them correctly.

Liberty examined the algorithm that Verizon uses to calculate the BI-1-02 measure. To calculate the denominator for the measure, Verizon sums the number of total usage records in each DUF file it sent during the reporting month, based on the file sent date. To calculate the numerator, Verizon sums the number of usage records in each DUF file that it sent within four business days.⁹⁵⁹ Liberty concluded that Verizon's method for calculating this measure conforms to the Guidelines.

Liberty recalculated the CLEC aggregate result, BI-1-02-2030, for September 2003 using the Bill MBF DUF Detail Fact table that Verizon provided.⁹⁶⁰ Liberty replicated Verizon's denominator, as well as the overall result.

C. BI-2, Timeliness of Carrier Bill

1. Background

The BI-2 measure reports Verizon's ability to provide carrier bills in a timely manner. Verizon reports one BI-2 sub-metric in Virginia, which measures the percentage of carrier bills that Verizon sends to the CLEC within ten business days of the bill date (unless the CLEC requests special treatment). The Guidelines define the bill date as the end of the billing period for recurring, non-recurring, and usage charges. Under the Guidelines, Verizon should exclude Verizon test orders and Verizon affiliate data from the calculation of this measure.

Verizon reports the BI-2 sub-metric for aggregate CLECs on a statewide basis. The standard for BI-2-01 is 98 percent in ten business days. The Guidelines provide the following formula for the BI-2 sub-metric:

BI-2-01: Timeliness of Carrier Bill

(Number of carrier bills sent to the CLEC within ten business days of the bill date)/(Number of carrier bills distributed)

The BI-2-01 results are not included in Verizon's PAP.

⁹⁵⁷ Interview #27, December 22, 2003.

⁹⁵⁸ Verizon provided data tables in responses to Data Requests #265 and #636.

⁹⁵⁹ Verizon counts all records in the Bill MBF DUF Detail Fact file that have a day-count indicator of 4.

⁹⁶⁰ Response to Data Request #265.

2. Analysis and Evaluation

Verizon uses the expressMedia/Bill Reformat System (BRS)⁹⁶¹ and CABS to process CLEC bills. Verizon captures information on all versions of a CLEC bill (paper and electronic) that it can send in more than one bill format. Each CLEC typically has numerous bills separately identified by individual billing account numbers.

CLECs can receive more than one version of their bill, and Verizon includes all versions of a bill in the BI-2-01 result. Verizon includes both original and revised final bills in its BI-2 measure.⁹⁶² As Liberty learned during the New Jersey audit, a revised final bill is not a corrected or duplicate bill, but the equivalent of an original bill. If Verizon receives a payment or makes an adjustment after it processes the original final bill, its system creates a revised final bill reflecting the new activity on the account. The billing system will continue to generate revised final bills until the balance is zero or Verizon writes off the account.

Verizon indicated that at times it would send a duplicate bill at the request of the CLEC. Verizon indicated that it uses only the first copy of the bill it sent in the calculation of the BI-2-01 results.⁹⁶³ Verizon uses a screening process within NMP to select the version of the duplicate bill with the earliest distribution date.⁹⁶⁴ Liberty believes that this treatment is appropriate. Verizon indicated that it had no duplicate bills during the September 2003 data month.⁹⁶⁵

Verizon sends files containing billing information daily from CABS and expressMedia and weekly from BRS to NMP for storage in the NMP warehouse.⁹⁶⁶ To calculate the metrics, Verizon selects the relevant billing records from the NMP warehouse that have a bill distribution date within a given month, and places those records into the Bill Timeliness data table used by Verizon's metrics algorithm.⁹⁶⁷

The key data fields in the Bill Timeliness table are the i) CLEC ID, ii) account key (which identifies separate CLEC billing accounts), iii) bill distribution date, iv) bill date, and v) on-time indicator. Verizon calculates the on-time indicator within NMP. If the difference between the bill distribution date and the bill date is ten business days or less, Verizon assigns a "Y" to this field, otherwise it assigns an "N." Liberty examined this indicator and found that Verizon calculated it correctly.

Liberty identified two issues surrounding Verizon's method for assigning the bill distribution date. First, the date that Verizon uses is actually a proxy for the bill distribution date. Verizon's CABS and expressMedia/BRS systems record a timestamp when they package the bills and send

⁹⁶¹ The expressMedia system is the invoicing application of expressTRAK, and BRS is a sub-system of CRIS.

⁹⁶² Interview #1, October 30, 2003.

⁹⁶³ Response to Data Request #380.

⁹⁶⁴ Verizon compares bills with the same billing account number, CLEC ID, state, bill media, bill type, and billing date and selects the one with the earliest bill distribution date. Verizon considers those with a later distribution date to be duplicates.

⁹⁶⁵ Response to Data Request #396.

⁹⁶⁶ Interview #1, October 30, 2003 and response to Data Request #10.

⁹⁶⁷ Interview #1, October 30, 2003.

them to the next step in the bill process. Verizon uses this timestamp as the bill distribution date.⁹⁶⁸ Verizon sends the bill information for paper bills to its Richmond center, which is responsible for printing and distributing them.⁹⁶⁹ As the next step in the process for electronic bills, Verizon's billing systems send the bills to the BRS system for distribution to the CLEC in the required format.⁹⁷⁰ Therefore, the date that Verizon uses to calculate bill timeliness is prior to the point of measurement indicated in the Guidelines, *i.e.*, when the bill is "sent to the carrier."

Second, since Verizon does not record the actual date that it distributes the bill, it must rely on an exception process to identify instances in which it did not meet the ten business day window for bill timeliness. Verizon stated that it had an internal target of three days to distribute bills from the Richmond center after the CABS or expressMedia/BRS systems have provided the package of prepared bills. Verizon indicated that it has a notification process in place if the Richmond center encounters a problem and will not get a day's run of bills distributed on time, *i.e.*, within ten business days of the bill date.⁹⁷¹ In such a case, the Richmond center would alert various Verizon departments, including retail customer service and wholesale billing. The Richmond center would provide the wholesale billing group with a count of the number of bills in a given day's billing run that it will issue late.⁹⁷²

According to Verizon, the wholesale billing group would record the information in a spreadsheet file that it would send to NMP. Verizon does not change any of the information on the bills that it recorded in NMP. Rather, Verizon would manually adjust the BI-2-01 result that it generated during the production run of the metric algorithms using the information on the spreadsheet.⁹⁷³ Essentially, Verizon would decrease the number of "on time" bills in the numerator of the measure to reflect those bills that it sent late, which would lower its reported performance. Verizon would then send the modified results to the NMP reporting system that publishes results.⁹⁷⁴ Verizon stated that it would issue a change control in the event that it had to make such a restatement of results.⁹⁷⁵ Verizon indicated that it had a similar internal target and exception process for electronic bills.⁹⁷⁶

Verizon stated that, for practical purposes, it has no point other than when CABS or expressMedia/BRS creates the bill package to record a consistent timestamp for both paper and electronic bills. Verizon indicated that it does not record when the Richmond center printed and mailed a paper bill. Verizon's billing systems do record an electronic acknowledgment from the CLEC's system that it received its electronic bill, but it does not use this timestamp. Verizon therefore relies upon this exception process to identify instances in which it does not meet its on-time distribution target for paper bills. Verizon indicated that it rarely misses its target, and therefore rarely has to modify its BI-2 results. Liberty asked Verizon how often during the last

⁹⁶⁸ Interview #1, October 30, 2003.

⁹⁶⁹ In response to Data Request #589, Verizon indicated that the Richmond center also processes bills that it sends to CLECs on magnetic tape.

⁹⁷⁰ Response to Data Request #385 (clarification).

⁹⁷¹ Interview #1, October 30, 2003 and response to Data Request #381.

⁹⁷² Interview #1, October 30, 2003 and response to Data Request #382.

⁹⁷³ Interview #1, October 30, 2003.

⁹⁷⁴ Interview #1, October 30, 2003.

⁹⁷⁵ Interview #1, October 30, 2003.

⁹⁷⁶ Response to Data Request #589.

18-month period the Richmond center did not distribute a given day's run of bills within the ten business day window. Verizon did not answer the question directly, but rather stated that it had distributed no late bills for Virginia during the July to September 2003 audit period.⁹⁷⁷ Verizon would not address the other 15 months, and therefore Liberty cannot determine how frequently Verizon relies upon this exception process.

Liberty examined the Bill Timeliness data for September 2003 and found that, for all bills, the interval between the bill date and the bill distribution date was six calendar days or less, with an average of three calendar days. If Verizon meets its internal target to distribute bills within three days of packaging by the billing source systems, Verizon will remain within the interval of ten business days (which is considerably longer in calendar days). Liberty is therefore satisfied that Verizon's use of a proxy for the bill distribution date, in combination with the exception procedure that it has in place for late bills, is adequate to enable Verizon to produce reliable results.⁹⁷⁸

The definition for the measure set forth in the Guidelines indicates that Verizon should include all carrier bills "unless the CLEC requests special treatment." Liberty asked Verizon how it interpreted this language. Verizon stated that it considered special treatment to be out of the ordinary handling for bills such as a CLEC request to hold a bill. Verizon indicated that once the CLEC lifts the hold on a bill, Verizon would send a bill timeliness record on the bill to NMP. The bill would be included in the BI-2 measure as long as the bill distribution date was within the current reporting month. Liberty believes that this treatment is inconsistent with the language of the Guidelines. Verizon indicated that it currently had no CLEC requests for special treatment.⁹⁷⁹ Liberty believes Verizon's practice would have a minimal effect on reported results. However, Liberty recommends that Verizon should either exclude special treatment bills or seek a revision to the Guidelines in order to include them.

During Liberty's audit of the BI-2 measure in New Jersey, Liberty found that Verizon did not include certain bills in reported results.⁹⁸⁰ Verizon subsequently issued a Change Control Notice for a change to the logic that it used to send BRS data to NMP.⁹⁸¹ Verizon explained that it sends BRS data on a bill to NMP after the CLEC's system acknowledges receipt of the electronic billing file. Prior to the change, Verizon's method did not capture bills that the CLEC confirmed after the week had passed. Stated differently, if the CLEC did not confirm receipt until the week after the weekly feed to NMP, information on that bill would never be sent from BRS to NMP. Verizon changed its method to capture bills acknowledged by the CLEC after the weekly report period.⁹⁸²

⁹⁷⁷ Response to Data Request #382.

⁹⁷⁸ Liberty believes that it is reasonable to assume that Verizon can successfully send bills electronically within the same three-day window.

⁹⁷⁹ Response to Data Request #384.

⁹⁸⁰ In New Jersey, Verizon reports the BI-2 metric for electronic (BOS BDT format only) and paper bills separately, and reports results based on CLEC bills of record. Liberty found that Verizon excluded certain versions of a CLEC's bill because there was supposed to be a bill of record in BOS BDT format that it would count. Liberty found that there was no corresponding BOS BDT format bill in a few cases, and thus Verizon counted no bill of record for these CLECs in BI-2 results.

⁹⁸¹ CCNJ2003-08865.

⁹⁸² Response to Data Request #385.

Liberty examined how Verizon applied the exclusions for BI-2 set forth in the Guidelines. As noted previously, Liberty found that Verizon applied them correctly.

Liberty obtained data from a participating CLEC for six bills that Verizon sent during September 2003. Liberty found that the bill dates that the CLEC provided for these six bills matched those in Verizon's Bill Timeliness data table. The bill distribution dates, however, did not match. The bill distribution date that the CLEC provided for each bill was the date that Verizon printed on its bill. Verizon later clarified that it printed the statement "this bill was mailed on mm/dd/yy" on its paper bills and that it set the date at six business days after the bill date.⁹⁸³ Verizon also acknowledged that the distribution date it printed on the bill was not always the same as the actual distribution date. As discussed above, the bill distribution date that Verizon records in its Bill Timeliness data table is the date that its billing system prepares the bill, not when Verizon distributes it. In all cases, the bill distribution date printed on the bill was within three business days of the one that Verizon recorded, a result that is consistent with its internal target for the Richmond center. The CLEC also provided the date on the shipping label for each bill and, in two cases, Liberty found that Verizon had actually sent out the bill on the next business day after the "bill mailed" date printed on the bill. In both cases, however, Verizon had sent the bill out within ten business days of the bill date.

Liberty examined the algorithm that Verizon uses to calculate the BI-2-01 measure. To calculate the denominator for the measure, Verizon counts the number of bills with a bill distribution date during the reporting month. To calculate the numerator, Verizon counts the number of these bills that it sent within ten business days of the bill date.⁹⁸⁴

Liberty concluded that Verizon's method for calculating this measure conforms to the Guidelines.

Liberty recalculated the CLEC aggregate result, BI-2-01-2030, for September 2003 using the Bill Timeliness table that Verizon provided.⁹⁸⁵ Liberty replicated Verizon's reported denominator, as well as the overall result.

D. BI-3, Billing Accuracy and Claims Processing

1. Background

The BI-3 measure reports Verizon's ability to acknowledge and resolve billing claims in a timely manner. Verizon reports two BI-3 sub-metrics in Virginia. BI-3-04 measures the percentage of CLEC billing claims that Verizon acknowledged within two business days, and BI-3-05 measures the percentage of CLEC billing claims that Verizon resolved within 28 calendar days

⁹⁸³ Response to Data Request #515.

⁹⁸⁴ Verizon counts the number of bills identified in the denominator that have an on-time indicator of "Y."

⁹⁸⁵ Response to Data Request #265.

after acknowledging them. The Guidelines indicate that these are interim sub-metrics, currently under trial in New York.

The Guidelines indicate that Verizon receives billing claims from 8:00 a.m. to 5:00 p.m., Monday through Friday, except for Verizon holidays, and that Verizon should consider any CLEC billing adjustment claims it receives outside of these hours as if it had received at 8:00 a.m. on the next business day.

The Guidelines require that Verizon exclude CLEC claims for certain adjustments from BI-3:

- Charges for directories
- Incentive regulation credits
- Credits for performance remedies
- Out-of-service credits
- Special promotional credits.

As with all metrics, Verizon must exclude Verizon affiliate and test CLEC data from BI-3 reported results.

Verizon reports the BI-3 sub-metrics for aggregate CLECs on a statewide basis. The standard for both sub-metrics is 95 percent. The Guidelines provide the following formulas for the BI-3 sub-metrics:

BI-3-04: % CLEC Billing Claims Acknowledged Within Two Business Days

(Number of billing claims acknowledged during the month within two business days)/(Total number of valid/complete billing adjustment claims acknowledged during the month)

BI-3-05: % CLEC Billing Claims Resolved Within 28 Calendar Days After Acknowledgement

(Number of billing adjustment claims during the month resolved within 28 calendar days after acknowledgment)/(Total number of billing adjustment claims resolved during the month)

Both BI-3 results are relevant to Verizon's PAP. During the July and August 2003 reporting months, Verizon did not incur any penalties associated with this measure.⁹⁸⁶

2. Analysis and Evaluation

CLECs submit billing claim forms to Verizon's Wholesale Billing Claims Center in Newark, New Jersey either electronically via email or in hard copy by fax or mail. Verizon assigns each claim to a Verizon claims representative, who reviews the claim to make sure it is accurate and complete. If the claim is incomplete or inaccurate, the representative returns the claim to the

⁹⁸⁶ Responses to Data Requests #198 and #203 (July and August 2003 C2C Reports).

CLEC with a request for further information. After determining that the claim is complete, the representative enters the claim into WCITS. The representative enters the date that Verizon received the claim into WCITS, which Verizon records as the received date.⁹⁸⁷ WCITS assigns a claim number and records the date the representative entered the claim into the system. The representative also selects the appropriate billing adjustment code for the claim from a pull-down window in WCITS, reportedly based on the code that the CLEC entered onto the claim form. According to Verizon, representatives can access job aids on the company's internal website for guidance on the correct use of the codes, and management was currently developing a quality assurance review program to ensure that representatives are using correct codes.⁹⁸⁸ Verizon indicated that it would be implementing a web GUI application in the future to allow CLECs to enter claims directly into WCITS.⁹⁸⁹

The Verizon representative is responsible for generating the claim acknowledgement. WCITS contains an acknowledgement form that the Verizon representative completes and attaches in an email sent back to the CLEC, advising the CLEC that Verizon viewed the claim as received, understandable, and accepted. It also provides the CLEC with the claim number. WCITS records the date and time that the representative sent the acknowledgement.

The Verizon representative is also responsible for researching and resolving the claim. Verizon indicated that it considers the claims "resolved" when it sends the resolution letter to the CLEC, regardless of whether the CLEC agrees to the resolution. WCITS contains a resolution form that the representative completes and attaches to an email sent back to the CLEC. WCITS then records the date of the email as the resolution date. Verizon stated that in some cases the CLEC can escalate a resolved claim if it is not satisfied with the resolution and bill adjustment amount, but that the escalation process is outside the metrics measurement. Stated differently, Verizon does not re-open the claim if it is contested or escalated, and does not report the claim again if Verizon later changes the outcome of the claim after further negotiations with the CLEC.⁹⁹⁰

WCITS replaced the Claims and Adjustment Tracking System (CATS), and Verizon stated that it ceased using information from CATS in December 2002 and that there are no more open claims in CATS. Verizon sends data from WCITS to NMP on a weekly and monthly basis.⁹⁹¹ Verizon still uses the data extraction function in CATS to extract data from WCITS to send to NMP. Verizon selects the relevant claim records from the NMP warehouse that have a resolution date or an acknowledgment date within the reporting month, and places those records into the Bill Claim data table used by Verizon's metric algorithms.⁹⁹²

⁹⁸⁷ Response to Data Request #512.

⁹⁸⁸ Response to Data Request #395.

⁹⁸⁹ Interview #1, October 30, 2003.

⁹⁹⁰ Interview #1, October 30, 2003.

⁹⁹¹ Interview #1, October 30, 2003. In response to Data Request #386, Verizon explained that it implemented Metric Change Control No. 10035, effective in the June 2003 data month. Verizon changed the weekly WCITS feed to a cumulative feed, which captures any updates or corrections on claims that the source system previously sent to NMP. Prior to the change, Verizon sent separate files, one containing weekly activity on current claims and another containing corrections on prior weeks' claims.

⁹⁹² Interview #1, October 30, 2003.

The key data fields in the Bill Claim data table are the i) CLEC ID, ii) Verizon claim number, iii) received date, iv) acknowledgement date, v) resolution date, vi) on-time acknowledgement indicator, and vii) on-time resolution indicator. Verizon calculates the indicator fields within NMP. Verizon sets the on-time acknowledgement indicator to “Y” if the difference between the received date and acknowledgement date is two business days or less. Verizon sets the on-time resolution indicator to “Y” if the difference between the acknowledgement date and the resolution date is 28 calendar days or less. Liberty reviewed the indicator fields and found that Verizon calculates them correctly.

The Guidelines state that Verizon should treat claims that it receives outside of business hours (8:00 a.m. to 5:00 p.m. Monday through Friday) as if it received them on the next business day. Verizon enters the actual date that it received the claim from the CLEC in WCITS, and does not adjust it to reflect business days or hours. Verizon indicated that it accounts for weekends and holidays when it calculates the on-time acknowledgment indicator for the BI-3-04 measure. Verizon does not, however, recognize weekends and holidays for the purposes of calculating the on-time resolution indicator for the BI-3-05 measure because, consistent with the definition of this metric, it reflects calendar days.⁹⁹³ Liberty believes that Verizon's approach for BI-3-05 is correct, but recommends that Verizon seek a modification to the Guidelines to indicate that the language regarding claims that Verizon receives outside of business hours applies only to the BI-3-04 sub-metric.

Liberty examined how Verizon applied the test CLEC and Verizon affiliate exclusions set forth in the Guidelines. As noted previously, Liberty found that Verizon applied them correctly. The Guidelines specify that Verizon should exclude adjustments for charges for directories, incentive regulation credits, credits for performance remedies, out-of-service credits, and special promotional credits. Verizon uses a screening process within NMP to exclude these types of billing adjustment claims. Verizon maintains a look up table of billing claim adjustments codes that it excludes from the data that NMP places into the Bill Claim data table. Verizon provided Liberty with the look up table, and Liberty found that it contained the five billing adjustments that Verizon should exclude.⁹⁹⁴ Liberty has concluded that Verizon is applying this exclusion correctly.

Liberty obtained data from a participating CLEC on 12 claims that the CLEC sent to Verizon during September 2003. Liberty found that the received date, acknowledgement date, and resolution date that the CLEC provided for each claim matched those recorded by Verizon in the Bill Claim table data.

BI-3-04 – % CLEC Billing Claims Acknowledged within Two Business Days

The BI-3-04 sub-metric measures the percentage of claims that Verizon acknowledges within two business days. Liberty examined the algorithm that Verizon uses to calculate the BI-3-04 measure. To calculate the denominator for the measure, Verizon counts the number of claims in the Bill Claim data table with an acknowledgement date within the reporting month. To calculate

⁹⁹³ Response to Data Request #516.

⁹⁹⁴ Response to Data Request #510.

the numerator, Verizon counts the number of claims with an on-time acknowledgement indicator of “Y.”

Liberty concluded that Verizon's method for calculating this measure conforms to the Guidelines.

Liberty found that Verizon's algorithm used a field labeled “create date” rather than the one labeled “acknowledgement date.” Verizon explained that when it migrated the billing claim application from CATS to WCITS, it introduced a data mapping convention such that the data that NMP actually populates in the “create date” field in the Bill Claim data mart is the acknowledgement date from WCITS (and not the date that Verizon received the claim).⁹⁹⁵ Verizon stated that it had used the correct data field, *i.e.*, the acknowledgement date, to calculate the BI-3-04 sub-metric in Virginia.⁹⁹⁶

Liberty recalculated the CLEC aggregate result, BI-3-04-2030, for September 2003 using the Bill Claim table data that Verizon provided.⁹⁹⁷ Liberty replicated Verizon's reported denominator, as well as Verizon's reported result.

BI-3-05 – % CLEC Billing Claims Resolved within 28 Calendar Days After Acknowledgement

The BI-3-05 sub-metric measures the percentage of claims that Verizon resolves within 28 calendar days after acknowledgement. Liberty examined the algorithm that Verizon uses to calculate the BI-3-05 measure. To calculate the denominator for the measure, Verizon counts the number of claims in the Bill Claim data table with a resolution date within the reporting month. To calculate the numerator, Verizon counts the number of claims with an on-time resolution indicator of “Y.”

Liberty concluded that Verizon's method for calculating this measure conforms to the Guidelines.

Liberty recalculated the CLEC aggregate result, BI-3-05-2030, for September 2003 using the Bill Claim table data that Verizon provided.⁹⁹⁸ Liberty replicated Verizon's reported denominator, as well as the overall result.

⁹⁹⁵ Interview #1, October 30, 2003.

⁹⁹⁶ Response to Data Request #387. Verizon clarified that there was no separate acknowledgement date in the CATS system, and Verizon used the create date because the representative performed the acknowledgement at the same time he or she entered the claim in CATS. When Verizon migrated from CATS to WCITS, it adopted the data mapping convention to avoid having to use separate NMP logic for WCITS and CATS records.

⁹⁹⁷ Response to Data Request #265.

⁹⁹⁸ Response to Data Request #265.

E. Findings and Recommendations

Verizon has adopted certain conventions for calculating the BI measures that the Guidelines do not reflect.

Liberty found a number of instances in which Verizon's approach to calculating the measures was reasonable, but not reflected in the Guidelines.

The BI-1 Guidelines indicate that Verizon should measure the number of business days from the creation of the call to the point "the usage information is made available to the CLEC" on the DUF. Verizon calculates the number of business days using the date that it creates the DUF file, rather than the date it actually sends the DUF file to the CLEC. Verizon's method does not account for any delays in Verizon's transmission of the DUF files or in creating and mailing DUF files on tape or compact disc.

Although Verizon's approach to measurement does not literally conform to the Guidelines, Liberty believes that it is reasonable. Generally, the date that BAUI creates the DUF file and the date that Verizon makes the file available to the CLEC electronically are the same. Also, there is no practical way for Verizon to record the point at which mailed DUF files are "available to the CLEC." Liberty recommends that Verizon seek a clarification to the Guidelines to indicate that it measures timeliness for both electronic and mailed DUF files based on the point at which the BAUI system creates the file.

The definition for the BI-2 measure set forth in the Guidelines indicates that Verizon should include all carrier bills "unless the CLEC requests special treatment." Verizon stated that it considered special treatment to be out of the ordinary handling for bills such as a CLEC request to hold a bill. Verizon indicated that once the CLEC lifts the hold on a bill, Verizon would send a bill timeliness record on the bill to NMP. The bill would be included in the BI-2 measure as long as the bill distribution date was within the current reporting month. Liberty believes that this treatment is inconsistent with the language of the Guidelines. Liberty believes Verizon's practice would have a minimal effect on reported results. However, Liberty recommends that Verizon should either exclude special treatment bills or seek a revision to the Guidelines in order to include them.

The Guidelines for BI-3 state that Verizon should treat claims that it receives outside of business hours (8:00 a.m. to 5:00 p.m. Monday through Friday) as if it received them on the next business day. Verizon indicated that it accounts for weekends and holidays when it calculates the on-time acknowledgment indicator for the BI-3-04 measure. Verizon does not, however, recognize weekends and holidays for the purposes of calculating the on-time resolution indicator for the BI-3-05 measure because it reflects calendar days. Liberty believes that Verizon's approach for BI-3-05 is correct, but recommends that Verizon seek a modification to the Guidelines to indicate that the language regarding claims that Verizon receives outside of business hours applies only to the BI-3-04 sub-metric.

IX. Operator Services, Directory Assistance, and General Performance Measures

A. General Background

The OD measures report Verizon's average speed of answer by operator services and directory assistance. The Guidelines list two OD measures. However, in Virginia, Verizon does not report OD-2, which is LIDB, Routing and OS/DA Platforms. The PAP does not include the two OD-1 sub-metrics.

For its audit of OD-1 in Virginia, Liberty built on the knowledge gained during its recent audit of Verizon's New Jersey OD-1 measures, focusing on differences that existed in Virginia. As part of its audit, Liberty obtained a focused overview of Verizon's processes and systems that generate the data used for the measure. Liberty reviewed how Verizon captures the raw data and whether it collects and reports all relevant data. Liberty also identified all exclusions that Verizon makes to the source data and assessed the processing steps applied by Verizon to that source data to generate the reported OD-1 performance metric results. The latter assessment included a review of the June 2003 Carrier-to-Carrier Metric Algorithms used by Verizon to develop the metric results.

Liberty determined whether key data field definitions were consistent with the Guidelines, and assessed whether Verizon correctly calculates any derived values from the source data. Liberty also identified whether there appeared to be any significant opportunities for inaccuracies in the source data. In addition, Liberty recalculated the OD-1 performance sub-metric results as a check on the reliability of Verizon's processes.

B. OD-1, Operator Services/Directory Assistance – Speed of Answer

1. Background

The OD-1 measure calculates the speed of answer for operator services and directory assistance. There are two OD-1 sub-metrics.

There are no exclusions from the calculation of this measure.

Verizon reports the OD-1 sub-metrics on a statewide basis. According to the Guidelines, Verizon reports one result for Virginia retail combined with CLEC resale, and a second result for CLECs that are facility-based or obtain UNE-P products from Verizon. The standard for both sub-metrics is parity with retail.

The Guidelines provide the following formulas for the OD-1 sub-metrics:

OD-1-01: Average Speed of Answer – Operator Services

(Sum of call answer time from the time the calls enter the queue for an operator to the time the calls are answered by an operator)/(Number of calls answered)

OD-1-02: Average Speed of Answer – Directory Assistance

(Sum of call answer time from the time the calls enter the queue for an operator to the time the calls are answered by an operator)/(Number of calls answered)

OD-1 is not included in Verizon's PAP.

2. Analysis and Evaluation

In reviewing the Virginia C2C Reports for OD-1, Liberty noted that, for both operator services and directory assistance, the average speed of answer was dramatically shorter for facility-based/UNE-P CLEC calls than for Verizon retail (plus resale) calls. During the audit, Liberty learned that, because there are significantly fewer CLEC calls, Verizon has adjusted the call queues so that CLEC facility-based/UNE-P calls receive priority.⁹⁹⁹ Liberty notes that, while this adjustment has presumably helped to shorten call waiting times for CLEC facility-based/UNE-P calls, it has not done so for CLEC resale calls.

It appeared to Liberty that the column headed *Observations* in the Virginia C2C Reports may actually be the number of CLEC observations, while the column headed *Difference* may actually be the number of Verizon retail plus resale observations. During the audit, Liberty determined that this is correct.¹⁰⁰⁰

Liberty has confirmed that the only calls Verizon reports for OD-1 in Virginia are calls from Verizon Virginia customers or calls from Virginia CLEC customers.¹⁰⁰¹

Liberty asked Verizon if the processes, methods and procedures for calculating OD-1 in Virginia are the same as those Verizon employs in New Jersey. Verizon replied that they are, although each state has unique call queues.¹⁰⁰²

The Guidelines for Virginia note that Verizon reports OD-1 with one result for Verizon retail plus CLEC resale, and a second result for CLECs that are facility-based or that Verizon provides UNE-P services. Liberty confirmed that Verizon structured its processes to accomplish this. Calls from facility-based CLECs arrive on dedicated trunks. These calls are therefore easily identifiable and Verizon routes them to a CLEC call queue. Verizon provides CLECs that receive UNE-P or resale services with an Account Owner Service Provider ID (AO-SPID), which identifies the type of service the CLEC receives from Verizon. If a CLEC receives both resale and UNE-P services, then the CLEC has two AO-SPIDs, one for each type of service. As

⁹⁹⁹ Response to Data Request #145.

¹⁰⁰⁰ Response to Data Request #144.

¹⁰⁰¹ Response to Data Request #301.

¹⁰⁰² Response to Data Request #94.

each call from a CLEC customer enters the Verizon call center, Verizon's systems determine the AO-SPID for the call and place the call in either the CLEC or Verizon/resale queue as appropriate.¹⁰⁰³

Liberty obtained the OD-1 source data for Virginia for September 2003 and recalculated the metric results, focusing on any exclusions or modifications that Verizon made to the source data during the metric results development process. Liberty obtained the same results as those reported by Verizon.

3. Findings and Recommendations

Verizon's OD-1 documentation is inadequate.

Verizon's OD-1 documentation contains errors. For example, the NMP East OD-1 Detailed Design document states that Verizon deletes error records after 15 days, but Verizon has indicated that it does not delete error records.¹⁰⁰⁴ In some places, that same Detailed Design document treats OD-1 as if it were reporting on directory assistance update accuracy (for example, see section 4.1). Liberty inquired about this error and asked how this procedural document was used within Verizon (given that it contains erroneous information). Verizon stated that Section 4.1 of the document contains a typographical error, but Verizon did not provide revised documentation and it declined to explain how the faulty document had been used within Verizon to prepare OD-1 metric results.¹⁰⁰⁵ Additionally, the June 2003 OD-1 CMAs originally provided to Liberty were incorrect, as acknowledged by Verizon.¹⁰⁰⁶ Liberty notes that Verizon considers these CMAs to be the "official documentation for replicating the metrics."¹⁰⁰⁷

Liberty recommends that Verizon review its OD-1 documentation and correct all errors and omissions.

The OD-1 section of the Potomac states' C2C Report is misleading.

The C2C Report for each OD-1 sub-metric includes a result for Verizon, a result for CLECs, a column headed *Difference*, and a column headed *Observations*. Verizon has stated that the numbers in the *Difference* column in the performance report are the number of Verizon observations, and the numbers in the *Observations* column are the number of CLEC observations.¹⁰⁰⁸

Verizon should revise the *Difference* header to make clear that it represents the number of Verizon observations, rather than some type of difference.

¹⁰⁰³ Responses to Data Requests #143, #146, and #307.

¹⁰⁰⁴ Response to Data Request #592.

¹⁰⁰⁵ Response to Data Request #593.

¹⁰⁰⁶ Response to Data Request #542.

¹⁰⁰⁷ Response to Data Request #545.

¹⁰⁰⁸ Response to Data Request #144.