VIII. Performance Metrics Domain Results and Analysis

KPMG Consulting

Draft Final Report-Version 1.0 as of March 4, 2002
Published by KPMG Consulting, Inc. – CONFIDENTIAL   VIII – Page 417
For Verizon Virginia, Inc. and the Virginia State Corporation Commission use only

This page is intentionally left blank.

KPMG Consulting

Draft Final Report-Version 1.0 as of March 4, 2002
Published by KPMG Consulting, Inc. – CONFIDENTIAL   VIII – Page 418
For Verizon Virginia, Inc. and the Virginia State Corporation Commission use only

A.   Test Results: Metrics Standards and Definitions Documentation Verification and Validation Review (PMR1)

1.0   Description
The Metrics Standards and Definitions Documentation Verification and Validation Review (PMR1) evaluated metrics definitions and standards documentation and reviewed the related policies and practices. This included the documentation, policies, and practices associated with both Competitive Local Exchange Carrier (CLEC) and retail measurements.

2.0   Methodology
This section summarizes the test methodology

2.1   Business Process Description
On February 17, 2000, the Commonwealth of Virginia State Corporation Commission, in an order initiating third-party testing of Verizon Virginia's (Verizon VA) operations support systems (OSS), authorized KPMG Consulting to prepare and deliver to its designated Project Leader a draft set of performance standards ("metrics") by which Verizon VA performance was to be evaluated.[127]

On April 27, 2000, KPMG Consulting submitted a draft to the Commonwealth of Virginia State Corporation Commission's Project Leader, based on a set of metrics proposed by Verizon and incorporating elements of the metrics adopted in the states of New York, Pennsylvania, and New Jersey. On April 28, 2000, the Project Leader, after consultation with KPMG Consulting, posted draft metrics on the Commonwealth of Virginia State Corporation Commission's website and circulated copies to CLECs and other interested parties for comment.[128]

On May 19, 2000, comments on the Project Leader's draft metrics were filed by Verizon; AT&T Communications of Virginia, Inc.; the Office of Attorney General, Division of Consumer Counsel; Cox Virginia Telecom, Inc.; and MCI WorldCom, Inc.[129] These comments were taken into account in the development of the final set of metrics, the Virginia Carrier-to-Carrier Guidelines Performance Standards and Reports, adopted by the Commonwealth of Virginia State Corporation Commission on August 11, 2000. At the same time, the Commonwealth of Virginia State Corporation Commission, in recognition of the need for metrics to reflect changes in market conditions, technology, and Verizon's systems, established a collaborative process that gave CLECs a role in the evolution of metrics in Virginia.

---

[127] Commonwealth of Virginia State Corporation Commission, PUC960111 and PUC000035 (February 17, 2000).

[128] Commonwealth of Virginia State Corporation Commission, Project Leader Ruling Seeking Comments on Metrics (April 28, 2000).

[129] Commonwealth of Virginia State Corporation Commission, Project Leader Ruling Adopting Metrics (August 11, 2000).

KPMG Consulting
Draft Final Report-Version 1.0 as of March 4, 2002
Published by KPMG Consulting, Inc. – CONFIDENTIAL   VIII – Page 419
For Verizon Virginia, Inc. and the Virginia State Corporation Commission use only

The Carrier-to-Carrier Guidelines define the metrics that Verizon VA is required to compute and publish in monthly Carrier-to-Carrier reports. The Carrier-to-Carrier Guidelines detail metric reporting requirements, including products, geographic breakouts, exclusions, and performance standards.

Verizon VA distributes CLEC Aggregate Carrier-to-Carrier reports on the 27th of the month and CLEC Specific Carrier-to-Carrier reports on the 29th of the month, for the previous month's data. As stipulated in the introduction to the Carrier-to-Carrier Guidelines, these reports are furnished to the Commonwealth of Virginia State Corporation Commission and to eligible CLECs upon request. The reports document Verizon VA's calculated values for performance measures in the categories of Pre-Ordering, Ordering, Provisioning, Maintenance and Repair, Network Performance, Billing, Operator Services and Databases, and General.

2.2   Scenarios
Scenarios were not applicable to this test.

2.3   Test Targets & Measures
The test target was the Verizon VA metrics standards and definitions process and included evaluation of the following sub-processes:

♦   Documentation of metrics standards and definitions;
♦   Distribution of metrics standards and definitions; and
♦   Distribution of metrics reports.

2.4   Data Sources
Primary sources included the Virginia Carrier-to-Carrier Guidelines Performance Standards and Reports, dated August 11, 2000; Carrier-to-Carrier reports; and the Commonwealth of Virginia State Corporation Commission Case Numbers PUC960111 and PUC000035.

This test did not rely on data generation or volume testing.

2.5   Evaluation Methods
The Metrics Standards and Definitions Documentation Verification and Validation Review consisted of reviewing two types of Verizon VA metrics documentation: 1) the Carrier-to-Carrier Guidelines and 2) the Carrier-to-Carrier reports covering the May, June, July, August, September, October, and December 2001 data months.

KPMG Consulting
Draft Final Report-Version 1.0 as of March 4, 2002
Published by KPMG Consulting, Inc. – CONFIDENTIAL   VIII – Page 420
For Verizon Virginia, Inc. and the Virginia State Corporation Commission use only

KPMG Consulting examined the Carrier-to-Carrier Guidelines to verify that they accurately represented Verizon VA's reporting agreements with the Commonwealth of Virginia State Corporation Commission. KPMG Consulting also examined Verizon's process for distributing the Carrier-to-Carrier Guidelines and reports to verify that they were available to Verizon's wholesale customers on a consistent basis. Lastly, KPMG Consulting verified that Verizon published the Carrier-to-Carrier reports on time.

2.6   Analysis Methods

The Metrics Standards and Definitions Documentation Verification and Validation Review included a checklist of evaluation criteria developed by KPMG Consulting during the initial phase of the Verizon Virginia, Inc. OSS Evaluation Project. These evaluation criteria provided the framework of norms, standards, and guidelines for the Metrics Standards and Definitions Documentation Verification and Validation Review.

The data collected were analyzed employing the evaluation criteria detailed in Section 3.0 below.

3.0   Results

This section identifies the evaluation criteria and test results. The results of this test are presented in the table below.

Table 1-1: PMR1 Evaluation Criteria and Results

Test Reference.	Evaluation Criteria	Result	Comments
PMR1-1	The Carrier-to-Carrier Guidelines in use by Verizon VA were approved by the Commonwealth of Virginia State Corporation Commission.	Satisfied	KPMG Consulting examined the metric definitions and standards used by Verizon VA during the test months and confirmed that they were based on the Virginia Carrier-to-Carrier Guidelines Performance Standards and Reports, dated August 11, 2000, approved by the Commonwealth of Virginia State Corporation Commission.
PMR1-2	The Carrier-to-Carrier Guidelines are published through a distribution channel that is accessible to relevant parties.	Satisfied	KPMG Consulting confirmed that the approved Carrier-to-Carrier Guidelines were posted to the Commonwealth of Virginia State Corporation Commission's website at http://www.state.va.us/scc/division/puc/oss.

KPMG Consulting

Draft Final Report-Version 1.0 as of March 4, 2002
Published by KPMG Consulting, Inc. – CONFIDENTIAL   VIII – Page 421
For Verizon Virginia, Inc. and the Virginia State Corporation Commission use only

Test Reference.	Evaluation Criteria	Result	Comments
PMR1-3	The Carrier-to-Carrier reports are published on time and through a distribution channel accessible to relevant parties.	Satisfied	For the data months of July, August, September, October, and December 2001, KPMG Consulting inspected copies of the email messages forwarded to the Commonwealth of Virginia State Corporation Commission that accompanied the CLEC Aggregate and CLEC Specific Carrier-to-Carrier reports transmitted by Verizon VA to the eligible parties. KPMG Consulting confirmed that the reports were sent on the respective due dates. KPMG Consulting also sought confirmation of receipt directly from CLECs. No CLECs reported failure to receive their reports on time.

KPMG Consulting

Draft Final Report-Version 1.0 as of March 4, 2002
Published by KPMG Consulting, Inc. – CONFIDENTIAL   VIII – Page 422
For Verizon Virginia, Inc. and the Virginia State Corporation Commission use only

B.   *Test Results: Data Collection and Storage Verification and Validation Review (PMR2)*

1.0   *Description*
The Data Collection and Storage Verification and Validation Review (PMR2) evaluated policies and practices for collecting and storing raw data that is processed through Verizon Virginia's (Verizon VA) information systems as well as processed data that is used in the creation of performance metrics.

2.0   *Methodology*
This section summarizes the test methodology.

2.1   *Business Process Description*
Verizon VA gathers raw data from service orders, troubles, and other business transactions submitted by its retail and wholesale customers (Competitive Local Exchange Carriers (CLEC)). This raw data is housed in Verizon's source systems (see Table 2-1 below). In order to produce performance metrics, the raw data undergoes a transformation process in which the data fields necessary for calculating metric results are extracted from the raw data. The data resulting from this transformation process is referred to as "filtered" or "processed" data and is housed in repositories where it is further manipulated to produce the metric results published in Verizon's monthly Carrier-to-Carrier reports. In a few instances, raw data is used to populate the Carrier-to-Carrier reports directly without first being filtered. Such, for example, is the case with the EnView data used to generate Pre-Ordering (PO) metrics.

Because of the numerous Verizon information systems involved in gathering and processing the data used to generate performance metrics, KPMG Consulting concentrated on (i) those source systems related to raw data as determined in the Metrics Data Filtering and Integrity Verification and Validation Review (PMR4) and (ii) the repositories associated with processed data as determined in the Metrics Calculation and Reporting Verification and Validation Review (PMR3). The following table lists the source systems and repositories analyzed in this test.

Table 2-1: PMR2 Source Systems And Repositories

Category	Source Systems	Repositories
Pre-Ordering (PO)	EnView, Pontronics, Pinnicle Automatic Call Distributor (ACD)	Not Applicable
Ordering (OR)	Exchange Access Control & Tracking System (EXACT), BA ISCS Rep System (BAIRS), Pontronics, Request Manager (RM)	Evidentiary Database (ED), Ordering Metrics Manager (OMM)

KPMG Consulting
Draft Final Report-Version 1.0 as of March 4, 2002
Published by KPMG Consulting, Inc. – CONFIDENTIAL   VIII – Page 423
For Verizon Virginia, Inc. and the Virginia State Corporation Commission use only

Category	Source Systems	Repositories
Provisioning (PR)	Trunk Integrated Record Keeping System (TIRKS), Network Services Database (NSDB), Network Analysis and Measurement System (NAMS), expressTRAK	Service Order Database (SORD), ED
Maintenance and Repair (MR)	Workforce Administration (WFA) Systems, Loop Maintenance Operations Systems (LMOS), Network Analysis and Measurement System (NAMS), Mechanized Trouble Analysis System (MTAS), Repair Trouble Administration System (RETAS)/Caseworker	Network Operations Database (NORD), ED
Billing (BI)	Carrier Access Billing System (CABS), Customer Record Information System (CRIS), expressTRAK, Bell Atlantic User Interface (BAUI) for Daily Usage File (DUF)	Billing Metrics Repository (BMR)
Network Performance (NP)	Traffic Data Management System (TDMS), Network Data System (NDS), Traffic Information Distributor And Editor (TIDE)	Total Network Data System (TNDS)
Operator Services and Databases (OD)	Force Management System (FMS), D1 System	Not Applicable

Pre-Ordering

EnView is a simulation system that uses robots to generate simulated Pre-Order queries. EnView mimics a clerk requesting pre-order transaction information (e.g., Due Date Availability, Address Validation, Customer Service Record (CSR), Product & Service Availability, Telephone Number Availability and Reservation (TNA)). The response time for each simulated EnView transaction is written to a daily log file. The log files are processed by Perl scripts to produce PO metrics. Pontronics extracts status information from the Netlink production servers and produces reports for Interface Availability metrics. Pinnicle Automatic Call Distributor (ACD) distributes all incoming calls to Verizon's contact centers for Contact Center Availability metrics.

KPMG Consulting
Draft Final Report-Version 1.0 as of March 4, 2002
Published by KPMG Consulting, Inc. – CONFIDENTIAL   VIII – Page 424
For Verizon Virginia, Inc. and the Virginia State Corporation Commission use only

Ordering

EXACT is a mainframe system that accepts Access Service Requests (ASR) from CLECs. BA ISCS Rep System (BAIRS) is a query tool that extracts ASR information from EXACT and sends reports to the Evidentiary Database (ED) for metric production. Request Manager (RM) accepts LSRs from CLECs and Verizon's retail customers. RM gathers statistics for Ordering activity and sends metrics information to Ordering Metrics Manager (OMM). OMM is a data provider for LSR Ordering (OR) metrics.

The ED is a data provider of selected OR (ASR), Maintenance and Repair (MR) and Provisioning (PR) metrics (Hot cuts, UNE Specials, and Trunks). ED also receives raw transactions from source systems, calculates the metrics, and provides the metrics results for the Carrier-to-Carrier reports.

Provisioning

Trunk Integrated Record Keeping System (TIRKS) provides trunk-related information to NSDB and WFA. Network Services Database (NSDB) is a line record database that provides line record information to WFA. Network Analysis and Measurement System (NAMS) collects trouble information for Specials used in the production of some PR metrics. Service Order Database (SORD) is a repository that produces PR metrics for various product groups.

Maintenance and Repair

The Workforce Administration (WFA) systems (Workforce Administration/Control (WFA/C), Workforce Administration/Dispatch In (WFA/DI), and Workforce Administration/Dispatch Out (WFA/DO)) are used to track installation and maintenance activity, dispatch technicians, and automate the assignment of work. Loop Maintenance Operations Systems (LMOS) collect trouble information for Plain Old Telephone Service (POTS) and non-design Specials. Mechanized Trouble Analysis System (MTAS) is a Verizon South data store for POTS trouble history data. The Repair Trouble Administration System (RETAS) is an interface used by CLECs to submit trouble information. Caseworker is the retail trouble reporting system. NORD is a database that receives data from several systems, including MTAS, and is used in the creation of MR metrics.

Billing

Carrier Access Billing System (CABS) provides billing services for carriers. It receives service order information, usage data, adjustments and payment information to produce bills and Customer Service Requests (CSR). Data from CABS is used for the production of Billing (BI) metrics. expressTRAK and Customer Record Information System (CRIS) provide billing services for wholesale and retail customers. BAUI provides daily usage feeds for Resale and UNE customers. BMR is a repository that receives metrics information from various systems, including CABS, CRIS, BAUI, and expressTRAK, and produces BI metrics.

KPMG Consulting   **Draft Final Report-Version 1.0 as of March 4, 2002**
                    Published by KPMG Consulting, Inc. – CONFIDENTIAL   VIII – Page 425
                    For Verizon Virginia, Inc. and the Virginia State Corporation Commission use only

Network Performance

Traffic Data Management System (TDMS) collects raw traffic data from circuit switches to produce data for Network Performance (NP) metrics. Network Data System-Traffic Information Distributor And Editor (NDS-TIDE) is a distributor of circuit switch traffic data. Total Network Data System (TNDS) provides a centralized database that supports the engineering and administration of the Public Switched Telephone Network (PSTN).

Operator Services and Databases

Force Management System (FMS) collects raw data from switches. The D1 system is used to manage directory assistance information. Both systems provide data for Operator Services and Databases (OD) metrics.

General

Metrics for the General (GE) category (directory listing verification and bona fide request fulfillment) are produced manually from spreadsheets on which data providers record timeliness data. Since the metrics are produced manually, there were no related systems in the scope of this test.

2.2   Scenarios
Scenarios were not applicable to this test.

2.3   Test Targets & Measures
The test targets were Verizon's data processing and data retention processes and included reviews of the following sub-processes:

♦   Collection policies and procedures for CLEC and retail data;
♦   Identification of data collection points;
♦   Existence of data collection tools;
♦   Storage policies and procedures for CLEC and retail data;
♦   Identification of storage sites;
♦   Existence of storage tools; and
♦   Internal controls.

2.4   Data Sources
The sources of data for this test included the following:

♦   Interviews conducted by KPMG Consulting with Verizon data providers, database administrators, application managers, project managers, and data center staff;

Draft Final Report-Version 1.0 as of March 4, 2002
Published by KPMG Consulting, Inc. – CONFIDENTIAL   VIII – Page 426
For Verizon Virginia, Inc. and the Virginia State Corporation Commission use only

♦ Documentation related to source systems, such as data flow diagrams, requirements detail specifications, product specification documents, operational guides, technical guides, user guides, system administrator guides, capacity management handbooks, user forms, and metrics calculation manuals; and

♦ Data sets from source records and filtered data, error reports, system activity reports, and storage records.

This test did not rely on data generation or volume testing.

2.5   Evaluation Methods

The evaluation of the data collection and storage processes consisted of an investigation of the information systems across the following categories included in the Virginia Carrier-to-Carrier Guidelines Performance Standards and Reports, dated August 11, 2000: Pre-Ordering, Ordering, Provisioning, Maintenance and Repair, Network Performance, Billing, Operator Services and Databases, and General. Through a preliminary information request, KPMG Consulting identified the source systems, repositories, and tools that are used by Verizon to generate and report metric results.

KPMG Consulting conducted interviews with Verizon personnel knowledgeable in the data collection and storage processes and procedures associated with these systems. KPMG Consulting also reviewed documentation that supported these processes and procedures. Adherence to the processes and procedures was tested by analyzing data sets received in the Metrics Calculation and Reporting Verification and Validation Review (PMR3) and the Metrics Data Filtering and Integrity Verification and Validation Review (PMR4) and by examining system activity reports, error reports, and storage records, as appropriate.

2.6   Analysis Methods

The Data Collection and Storage Verification and Validation Review included a checklist of evaluation criteria developed by KPMG Consulting during the initial phase of the Verizon Virginia, Inc. OSS Evaluation Project. These evaluation criteria provided the framework of norms, standards, and guidelines for the Data Collection and Storage Verification and Validation Review.

The data collected was analyzed employing the evaluation criteria detailed in Section 3.0 below.

3.0   Results

This section identifies the evaluation criteria and test results. The results of this test are presented in the table below.

KPMG Consulting

Draft Final Report-Version 1.0 as of March 4, 2002
Published by KPMG Consulting, Inc. – CONFIDENTIAL   VIII – Page 427
For Verizon Virginia, Inc. and the Virginia State Corporation Commission use only

Table 2-2: PMR2 Evaluation Criteria and Results: Pre-Ordering

Test Reference	Evaluation Criteria	Result	Comments
PMR2-1-A	Verizon Virginia's data collection and storage processes are documented and the documentation is complete and up-to-date.	Satisfied	KPMG Consulting verified that Verizon's data collection and storage processes for systems used in producing PO metrics was documented by examining the most recent versions of data flow diagrams for EnView, Pontronics, and Pinnicle ACD; architectural drawings of system configuraton; EnView Systems Administrator and Collector Configuration guides; Pontronics Support Handbook; and the metrics production manual for Pinnicle. KPMG Consulting confirmed that this document-ation was complete and up-to-date by using it to request data sets from the En View and Pinnicle systems in order to replicate November and December 2001 metric results.
PMR2-2-A	Verizon Virginia's technical documentation describing metrics data collection, processing, and storage is complete and accurate.	Satisfied	KPMG Consulting confirmed the completeness and accuracy of Verizon's technical documentation by comparing the log file format for EnView, input file samples and metrics datafiles for Pontronics, and reports from Pinnicle ACD with the system documentation.
PMR2-3-A	Verizon Virginia has adequate capacity to process and store data.	Satisfied	Verizon has adequate capacity to process and store data based on the following: ♦ EnView log files and Pinnicle reports are stored on shared file servers, with several terabytes of storage capacity. As of October 2001, only 20% of the Pinnicle system's capacity had been used. Capacity for both systems can be easily augmented. ♦ The Pontronics system has two terabytes of space, of which 625 gigabytes have been allocated.

KPMG Consulting
Draft Final Report-Version 1.0 as of March 4, 2002
Published by KPMG Consulting, Inc. – CONFIDENTIAL   VIII – Page 428
For Verizon Virginia, Inc. and the Virginia State Corporation Commission use only

Test Reference	Evaluation Criteria	Result	Comments
PMR2-4-A	Verizon Virginia's systems that collect data include controls and edits to ensure records that drive metrics calculation are accurate.	Satisfied	KPMG Consulting's inspection of the Pre-Order Job Aid, coupled with successful replication of the PO metrics in the December 2001 Carrier-to-Carrier reports, confirmed that Verizon has controls to ensure records from the Pontronics, EnView, and Pinnacle systems that drive metrics calculation are accurate.
PMR2-5-A	Verizon Virginia makes regularly scheduled backups of critical data.	Satisfied	KPMG Consulting established that Verizon makes regularly scheduled backups of critical data by examining documented backup procedures and sample logs for Verizon's Data Center operations that govern corporate backups.
PMR2-6-A	Data is retained in compliance with regulatory requirements or KPMG Consulting's OSS evaluation requirements.	Satisfied	There are no specific federal or state requirements for retaining metrics data in Virginia. However, Verizon retains PO data for periods up to seven years. KPMG Consulting validated Verizon's ability to retain data long enough to meet the requirements of OSS testing by obtaining, from Verizon VA in November 2001, log files relating to the August 2001 data month.
PMR2-7-A	Read and write access to metrics data is limited to authorized personnel.	Satisfied	Access to metrics data is limited to authorized personnel in the following manner: for EnView, access to stored log files is restricted to five key Windows NT administrators. Access to the Pinnicle system is controlled by the system administrator; to the reports, by Windows NT administrators. Access to Pontronics servers is limited to system administrators.

KPMG Consulting
Draft Final Report-Version 1.0 as of March 4, 2002
Published by KPMG Consulting, Inc. – CONFIDENTIAL   VIII – Page 429
For Verizon Virginia, Inc. and the Virginia State Corporation Commission use only

Table 2-3: PMR2 Evaluation Criteria and Results: Ordering

Test Reference	Evaluation Criteria	Result	Comments
PMR2-1-B	Verizon Virginia's data collection and storage processes are documented and the documentation is complete and up-to-date.	Satisfied	KPMG Consulting verified that Verizon's data collection and storage processes for systems used in producing OR metrics were documented by examining the most recent versions of data flow diagrams for OR metrics, OMM, ED, RM, EXACT, and BAIRS; the production support manual for OMM; and documentation describing operational procedures for EXACT and BAIRS. KPMG Consulting confirmed that this document-ation was complete and up-to-date by using it to request raw and processed data for August and October 2001, respectively, for data integrity testing.
PMR2-2-B	Verizon Virginia's technical documentation describing metrics data collection, processing, and storage is complete and accurate.	Satisfied	KPMG Consulting confirmed the completeness and accuracy of Verizon's technical documentation by examining the file and record layouts for OMM, Requirements Detail Specification (RDS) documents for ED, and a specification document for RM and by comparing the file layouts of the data from these systems with the documentation. Data formats for EXACT and BAIRS are based on public Ordering Billing Forum ASR standards issued by Telcordia.

KPMG Consulting
Draft Final Report-Version 1.0 as of March 4, 2002
Published by KPMG Consulting, Inc. – CONFIDENTIAL   VIII – Page 430
For Verizon Virginia, Inc. and the Virginia State Corporation Commission use only

Test Reference	Evaluation Criteria	Result	Comments
PMR2-3-B	Verizon Virginia has adequate capacity to process and store data.	Satisfied	KPMG Consulting obtained the following evidence that Verizon has adequate capacity to process and store data: ♦ For OMM, EXACT, and BAIRS, Data Center capacity utilization reports; ♦ For ED, a utilization report produced by the system administration team that jointly administers ED and SORD; ♦ For RM, copy of a weekly dashboard reporting capacity utilization; and ♦ Verizon Information Processing Services (VIPS) documentation used by the Data Center organization for mainframe and the Wholesale Capacity Management handbook used for UNIX server, capacity planning. Additionally, on July 11, 2001, the VIPS organization conducted a presentation for KPMG Consulting on their capacity planning process.
PMR2-4-B	Verizon Virginia's systems that collect data include controls and edits to ensure records that drive metrics calculation are accurate.	Satisfied	KPMG Consulting's successful replication of the OR metrics in the December 2001 Carrier-to-Carrier reports, coupled with inspection of documentation relating to the following systems, confirmed that Verizon has controls and edits to ensure records that drive metrics calculation are accurate: ♦ For OMM, error reports and the production support manual; ♦ For ED, copies of program code for handling processing errors and reports for data transmission errors; ♦ For RM, raw data files containing rejected records; and ♦ For EXACT and BAIRS, a report containing fatal errors.

KPMG Consulting

Draft Final Report-Version 1.0 as of March 4, 2002
Published by KPMG Consulting, Inc. – CONFIDENTIAL   VIII – Page 431
For Verizon Virginia, Inc. and the Virginia State Corporation Commission use only

Test Reference	Evaluation Criteria	Result	Comments
PMR2-5-B	Verizon Virginia makes regularly scheduled backups of critical data.	Satisfied	KPMG Consulting established that Verizon makes regularly scheduled backups of critical data by examining documented backup procedures or logs for OMM, ED, EXACT, BAIRS, and RM.
PMR2-6-B	Data is retained in compliance with regulatory requirements or KPMG Consulting's OSS evaluation requirements.	Satisfied	There are no specific federal or state regulatory requirements for retaining metrics data in Virginia. However, Verizon retains OR data for periods up to seven years. KPMG Consulting validated Verizon's ability to retain data long enough to meet the requirements of OSS testing by obtaining, from Verizon VA in November 2001, processed data relating to the June 2001 data month.
PMR2-7-B	Read and write access to metrics data is limited to authorized personnel.	Satisfied	Access to metrics data is limited to authorized personnel in the following manner: ♦ For OMM, EXACT, and BAIRS, access to application servers is controlled by the Data Center organization; and ♦ For ED, access is controlled by the application team.

KPMG Consulting

Draft Final Report-Version 1.0 as of March 4, 2002
Published by KPMG Consulting, Inc. – CONFIDENTIAL   VIII – Page 432
For Verizon Virginia, Inc. and the Virginia State Corporation Commission use only

Table 2-4: PMR2 Evaluation Criteria and Results: Provisioning

Test Reference	Evaluation Criteria	Result	Comments
PMR2-1-C	Verizon Virginia's data collection and storage processes are documented and the documentation is complete and up-to-date.	Satisfied	KPMG Consulting verified that Verizon's data collection and storage processes for systems used in producing PR metrics were documented by examining the most recent versions of data flow diagrams for PR processing and documentation for SORD operations and maintenance. KPMG Consulting confirmed that this document-ation was complete and up-to-date by using it to request raw and processed data for July 2001 and October 2001, respectively, for data integrity testing.
PMR2-2-C	Verizon Virginia's technical documentation describing metrics data collection, processing, and storage is complete and accurate.	Satisfied	KPMG Consulting confirmed the completeness and accuracy of Verizon's technical document-ation by examining the interface specification document for SORD and input data processing document for NAMS and by comparing the record layout of the raw and processed data obtained with the technical documentation; and for TIRKS and WFA, by obtaining raw data for data integrity testing.
PMR2-3-C	Verizon Virginia has adequate capacity to process and store data.	Satisfied	Verizon has adequate capacity to process and store data based on the following: ♦ For TIRKS, NSDB, and NAMS, capacity utilization reports from the Data Center; ♦ For SORD, a utilization report produced by the system administration team; and ♦ VIPS documentation used by the Data Center organization for mainframe capacity planning. Additionally, on July 11, 2001, the VIPS organization conducted a presentation for KPMG Consulting on their capacity planning process.

![KPMG Consulting]
Draft Final Report-Version 1.0 as of March 4, 2002
Published by KPMG Consulting, Inc. – CONFIDENTIAL   VIII – Page 433
For Verizon Virginia, Inc. and the Virginia State Corporation Commission use only

Test Reference	Evaluation Criteria	Result	Comments
PMR2-4-C	Verizon Virginia's systems that collect data include controls and edits to ensure records that drive metrics calculation are accurate.	Satisfied	KPMG Consulting's successful replication of the PR metrics in the December 2001 Carrier-to-Carrier reports, coupled with inspection of documentation relating to the following systems, confirmed that Verizon has controls and edits to ensure records that drive metrics calculation are accurate: ♦ For TIRKS and NSDB, error handling procedures that are described in TCM; ♦ For SORD, email alerts; and ♦ For NAMS, Open Query System error queries.
PMR2-5-C	Verizon Virginia makes regularly scheduled backups of critical data.	Satisfied	KPMG Consulting established that Verizon makes regularly scheduled backups of critical data by examining documented backup procedures or logs for TIRKS, NSDB, NAMS, and SORD.
PMR2-6-C	Data is retained in compliance with regulatory requirements or KPMG Consulting's OSS evaluation requirements.	Satisfied	There are no specific federal or state regulatory requirements for retaining metrics data in Virginia. However, Verizon retains PR data for periods up to four years. KPMG Consulting validated Verizon's ability to retain data long enough to meet the requirements of OSS testing by obtaining, from Verizon VA in November 2001, processed data relating to the April 2001 data month.
PMR2-7-C	Read and write access to metrics data is limited to authorized personnel.	Satisfied	Access to metrics data is limited to authorized personnel in the following manner: ♦ For TIRKS, NSDB, and NAMS, access to application servers is controlled by the Data Center organization; and ♦ For SORD, access is controlled by the application team.

KPMG Consulting
Draft Final Report-Version 1.0 as of March 4, 2002
Published by KPMG Consulting, Inc. – CONFIDENTIAL   VIII – Page 434
For Verizon Virginia, Inc. and the Virginia State Corporation Commission use only

Table 2-5: PMR2 Evaluation Criteria and Results: Maintenance & Repair

Test Reference	Evaluation Criteria	Result	Comments
PMR2-1-D	Verizon Virginia's data collection and storage processes are documented and the documentation is complete and up-to-date.	Satisfied	KPMG Consulting verified that Verizon's data collection and storage processes for systems used in producing MR metrics were documented by examining the most recent versions of data flow diagrams for MR metrics, NORD, and LMOS; and system administration manuals for NORD, RETAS, and MTAS. KPMG Consulting confirmed that this document-ation was complete and up-to-date by using it to request raw and processed data for June and October 2001, respectively, for data integrity testing.
PMR2-2-D	Verizon Virginia's technical documentation describing metrics data collection, processing, and storage is complete and accurate.	Satisfied	KPMG Consulting confirmed the completeness and accuracy of Verizon's technical documentation by comparing the raw and processsed data obtained with the technical documentation and by examining the technical reference manual for NORD; input and output record layouts and data dictionary for MTAS; output record layouts for WFA; data records and the table of contents of the LMOS technical documentation available on Verizon's intranet; and the Product Specification Document (PSD) and output log files for RETAS.
PMR2-3-D	Verizon Virginia has adequate capacity to process and store data.	Satisfied	Verizon has adequate capacity to process and store data based on the following: ♦ For LMOS, MTAS, and WFA, capacity utilization reports from the Data Center; ♦ For NORD, a manual utilization report provided by the system administration team; and ♦ VIPS documentation used by the Data Center organization for capacity planning. Additionally, on July 11, 2001, the VIPS organization conducted a presentation for KPMG Consulting on their capacity planning process.

KPMG Consulting

Draft Final Report-Version 1.0 as of March 4, 2002
Published by KPMG Consulting, Inc. – CONFIDENTIAL   VIII – Page 435
For Verizon Virginia, Inc. and the Virginia State Corporation Commission use only

Test Reference	Evaluation Criteria	Result	Comments
PMR2-4-D	Verizon Virginia's systems that collect data include controls and edits to ensure records that drive metrics calculation are accurate.	Satisfied	KPMG Consulting's successful replication of the MR metrics in the December 2001 Carrier-to-Carrier reports, coupled with inspection of documentation relating to the following systems, confirmed that Verizon has controls and edits to ensure records that drive metrics calculation are accurate: ♦ For NORD and MTAS, error reports; ♦ For WFA, error handling procedures that are described in TCM; ♦ For LMOS, screen prints of trouble entry edit errors; and ♦ For RETAS, error notifications.
PMR2-5-D	Verizon Virginia makes regularly scheduled backups of critical data.	Satisfied	KPMG Consulting established that Verizon makes regularly scheduled backups of critical data by examining documented backup procedures or logs for NORD, MTAS, LMOS, RETAS, and WFA.
PMR2-6-D	Data is retained in compliance with regulatory requirements or KPMG Consulting's OSS evaluation requirements.	Satisfied	There are no specific federal or state regulatory requirements for retaining metrics data in Virginia. However, Verizon retains MR data for periods up to three years. KPMG Consulting validated Verizon's ability to retain data long enough to meet the requirements of OSS testing by obtaining, from Verizon VA in November 2001, processed data relating to the June 2001 data month.
PMR2-7-D	Read and write access to metrics data is limited to authorized personnel.	Satisfied	Access to metrics data is limited to authorized personnel in the following manner: ♦ For NORD, LMOS, RETAS, and MTAS, access to application servers is controlled by the Data Center organization; and ♦ For WFA, access is controlled by system administrators.

KPMG Consulting

Draft Final Report-Version 1.0 as of March 4, 2002
Published by KPMG Consulting, Inc. – CONFIDENTIAL   VIII – Page 436
For Verizon Virginia, Inc. and the Virginia State Corporation Commission use only

Table 2-6: PMR2 Evaluation Criteria and Results: Network Performance

Test Reference	Evaluation Criteria	Result	Comments
PMR2-1-E	Verizon Virginia's data collection and storage processes are documented and the documentation is complete and up-to-date.	Satisfied	KPMG Consulting verified that Verizon's data collection and storage processes for systems used in producing NP metrics were documented by examining the most recent versions of data flow diagrams for NP metrics, TIDE and TNDS and an architecture diagram for TDMS. KPMG Consulting confirmed that this document-ation is complete and up-to-date by using it to request raw and processed data for September and October 2001, respectively, for data integrity testing.
PMR2-2-E	Verizon Virginia's technical documentation describing metrics data collection, processing, and storage is complete and accurate.	Satisfied	KPMG Consulting confirmed the completeness and accuracy of Verizon's technical documenta-tion for TDMS, NDS/TIDE, and TNDS by examining the structure of the records used in these systems in conjunction with systems architecture diagrams and technical guides and by comparing the record layout of the raw and processed data obtained with the technical documentation.
PMR2-3-E	Verizon Virginia has adequate capacity to process and store data.	Satisfied	Verizon has adequate capacity to process and store data based on the following: ♦ For NDS/TIDE, TDMS, and TNDS, capacity utilization reports from the Data Center; and ♦ VIPS documentation used by the Data Center organization for capacity planning. Additionally, on July 11, 2001, the VIPS organization conducted a presentation for KPMG Consulting on their capacity planning process.

Draft Final Report-Version 1.0 as of March 4, 2002
Published by KPMG Consulting, Inc. – CONFIDENTIAL   VIII – Page 437
For Verizon Virginia, Inc. and the Virginia State Corporation Commission use only

Test Reference	Evaluation Criteria	Result	Comments
PMR2-4-E	Verizon Virginia's systems that collect data include controls and edits to ensure records that drive metrics calculation are accurate.	Satisfied	KPMG Consulting's successful replication of the NP metrics in the October 2001 Carrier-to-Carrier reports, coupled with inspection of the error handling procedures that are described in the installation and planning guide for the NDS/TIDE system, confirmed that Verizon has controls and edits to ensure records from those systems as well as the TNDS, to which data flows from those downstream systems, are accurate. The creation and processing of data through the TDMS system is mechanical and, therefore, provides no opportunity for the introduction of human error.
PMR2-5-E	Verizon Virginia makes regularly scheduled backups of critical data.	Satisfied	KPMG Consulting established that Verizon makes regularly scheduled backups of critical data by examining documented backup procedures or logs for NDS/TIDE, TNDS, and TDMS.
PMR2-6-E	Data is retained in compliance with regulatory requirements or KPMG Consulting's OSS evaluation requirements.	Satisfied	There are no specific federal or state regulatory requirements for retaining metrics data in Virginia. However, Verizon retains data in the TNDS system for up to three months. KPMG Consulting validated Verizon's ability to retain data long enough to meet the requirements of OSS testing by obtaining, from Verizon VA in August 2001, processed data relating to the May 2001 data month.
PMR2-7-E	Read and write access to metrics data is limited to authorized personnel.	Satisfied	KPMG Consulting confirmed that access to metrics data is limited to authorized personnel in the following manner: ♦ For NDS-TIDE, access to application servers is controlled by application administrators. ♦ For TDMS, users and system administrators have only read access to the data. Internal storage is managed by the vendor.

KPMG Consulting
Draft Final Report-Version 1.0 as of March 4, 2002
Published by KPMG Consulting, Inc. – CONFIDENTIAL   VIII – Page 438
For Verizon Virginia, Inc. and the Virginia State Corporation Commission use only

Table 2-7: PMR2 Evaluation Criteria and Results: Billing

Test Reference	Evaluation Criteria	Result	Comments
PMR2-1-F	Verizon Virginia's data collection and storage processes are documented and the documentation is complete and up-to-date.	Satisfied	KPMG Consulting verified that Verizon's data collection and storage processes for systems used in producing BI metrics were documented by examining the most recent versions of data flow diagrams for Billing, BMR, CABS, and CRIS; data flow diagrams and functional documentation for expressTRAK; and detailed design documents for BMR. KPMG Consulting confirmed that this document-ation is complete and up-to-date by using it to request raw and processed data for August and October 2001, respectively, for data integrity testing.
PMR2-2-F	Verizon Virginia's technical documentation describing metrics data collection, processing, and storage is complete and accurate.	Satisfied	KPMG Consulting confirmed the completeness and accuracy of Verizon's technical documentation by examining record layouts, validation reports, and detailed design documents for BMR, CRIS, expressTRAK, and CABS; sample files sent from expressTRAK to BMR; and by comparing the file layout of raw and processed data obtained with the technical documentation.

KPMG Consulting
Draft Final Report-Version 1.0 as of March 4, 2002
Published by KPMG Consulting, Inc. – CONFIDENTIAL   VIII – Page 439
For Verizon Virginia, Inc. and the Virginia State Corporation Commission use only

Test Reference	Evaluation Criteria	Result	Comments
PMR2-3-F	Verizon Virginia has adequate capacity to process and store data.	Satisfied	Verizon has adequate capacity to process and store data based on the following: ♦ For BMR, CABS, and expressTRAK, capacity utilization reports from the Data Center; ♦ For CRIS, a manual utilization report produced by the system administration team. As CRIS is being replaced by expressTRAK, capacity utilization continues to shrink; and ♦ VIPS documentation used by the Data Center organization for mainframe and the Wholesale Capacity Management handbook used for UNIX server, capacity planning. Additionally, on July 11, 2001, the VIPS organization conducted a presentation for KPMG Consulting on their capacity planning process.
PMR2-4-F	Verizon Virginia's systems that collect data include controls and edits to ensure records that drive metrics calculation are accurate.	Satisfied	KPMG Consulting's successful replication of the BI metrics in the December 2001 Carrier-to-Carrier reports, coupled with inspection of documentation relating to the following systems, confirmed that Verizon has controls and edits to ensure records that drive metrics calculation are accurate: ♦ For BMR, the PL/1 code for edit rules and error reports; ♦ For CABS, an Abend display; and ♦ For expressTRAK, an error report file.
PMR2-5-F	Verizon Virginia makes regularly scheduled backups of critical data.	Satisfied	KPMG Consulting established that Verizon makes regularly scheduled backups of critical data by examining documented backup procedures or logs for CRIS, CABS, and BMR; and Data Center ISO documentation for expressTRAK.

KPMG Consulting

Draft Final Report-Version 1.0 as of March 4, 2002
Published by KPMG Consulting, Inc. – CONFIDENTIAL   VIII – Page 440
For Verizon Virginia, Inc. and the Virginia State Corporation Commission use only

Test Reference	Evaluation Criteria	Result	Comments
PMR2-6-F	Data is retained in compliance with regulatory requirements or KPMG Consulting's OSS evaluation requirements.	Satisfied	There are no specific federal or state regulatory requirements for retaining metrics data in Virginia. However, Verizon retains BI data for periods up to 18 months. KPMG Consulting validated Verizon's ability to retain data long enough to meet the requirements of OSS testing by obtaining, from Verizon VA in October 2001, processed data relating to the September 2001 data month.
PMR2-7-F	Read and write access to metrics data is limited to authorized personnel.	Satisfied	Access to metrics data is limited to authorized personnel in the following manner: ♦ For BMR, CRIS, and expressTRAK, access to application servers is controlled by the Data Center organization. ♦ For CABS, access is controlled by the application team.

KPMG Consulting

Draft Final Report-Version 1.0 as of March 4, 2002
Published by KPMG Consulting, Inc. – CONFIDENTIAL   VIII – Page 441
For Verizon Virginia, Inc. and the Virginia State Corporation Commission use only

Table 2-8: PMR2 Evaluation Criteria and Results: Operator Services and Databases

Test Reference	Evaluation Criteria	Result	Comments
PMR2-1-G	Verizon Virginia's data collection and storage processes are documented and the documentation is complete and up-to-date.	Satisfied	KPMG Consulting verified that Verizon's data collection and storage processes for systems used in producing OD metrics were documented by examining the most recent versions of data flows for Operator Services and Databases; FMS architecture, user guide, and training manuals for FMS; and a system administration guide for D1 system. KPMG Consulting confirmed that this documentation was complete and up-to-date by using it to request FMS queue reports from July through October 2001 and D1 data for the August 2001 data month for replication purposes.
PMR2-2-G	Verizon Virginia's technical documentation describing metrics data collection, processing and storage is complete and accurate.	Satisfied	KPMG Consulting confirmed the completeness and accuracy of Verizon's technical documentation by comparing file and record layouts for input and output data for FMS with the technical documentation; and examining technical guide, mechanical update guide, sample input, and output data records for D1 system.
PMR2-3-G	Verizon Virginia has adequate capacity to process and store data.	Satisfied	Verizon has adequate capacity to process and store data based on the following: ♦ For FMS, capacity utilization reports from the Data Center; and ♦ For D1, capacity is managed by the vendor.
PMR2-4-G	Verizon Virginia's systems that collect data include controls and edits to ensure records that drive metrics calculation are accurate.	Satisfied	KPMG Consulting's succcessful replication of the OD metrics in the December 2001 Carrier-to-Carrier report, coupled with inspection of documentation relating to the following systems, confirmed that Verizon has controls and edits to ensure records that drive metrics calculation are accurate: ♦ For FMS, log reports; and ♦ For D1, an error report illustrating update error.

Draft Final Report-Version 1.0 as of March 4, 2002
Published by KPMG Consulting, Inc. – CONFIDENTIAL   VIII – Page 442
For Verizon Virginia, Inc. and the Virginia State Corporation Commission use only

Test Reference	Evaluation Criteria	Result	Comments
PMR2-5-G	Verizon Virginia makes regularly scheduled backups of critical data.	Satisfied	KPMG Consulting established that Verizon makes regularly scheduled backups of critical data by examining documented backup procedures or logs for FMS and D1 system.
PMR2-6-G	Data is retained in compliance with regulatory requirements or KPMG Consulting's OSS evaluation requirements.	Satisfied	There are no specific federal or state requirements for retaining metrics data in Virginia. However, Verizon retains OD data for periods up to 90 days. KPMG Consulting validated Verizon's ability to retain data long enough to meet the requirements of OSS testing by obtaining, from Verizon VA in September 2001, FMS queue reports for July and August 2001 and D1 data for August 2001.
PMR2-7-G	Read and write access to metrics data is limited to authorized personnel.	Satisfied	Security access to FMS and D1 systems is controlled by the application team.

KPMG Consulting

Draft Final Report-Version 1.0 as of March 4, 2002
Published by KPMG Consulting, Inc. – CONFIDENTIAL   VIII – Page 443
For Verizon Virginia, Inc. and the Virginia State Corporation Commission use only

C.   *Test Results: Metrics Calculation and Reporting Verification and Validation Review (PMR3)*

1.0   Description
The Metrics Calculation and Reporting Verification and Validation Review (PMR3) evaluated the processes used to calculate and report performance metrics and retail analogs. The test relied on re-calculating Competitive Local Exchange Carrier (CLEC) metrics and retail analogs and reconciling discrepancies to validate the accuracy of the metric values reported. The test used both retrospective data and data collected by KPMG Consulting and Verizon Virginia (Verizon VA) from the execution of transactions. This test analyzed the consistency between the Virginia Carrier-to-Carrier Guidelines Performance Standards and Reports (Carrier-to-Carrier Guidelines), dated August 11, 2000 and approved by the Commonwealth of Virginia State Corporation Commission, and the procedures used for calculating metrics. It also examined Verizon VA's monthly Carrier-to-Carrier reports to determine whether or not Verizon reported all the metrics and standards it was required to according to the Carrier-to-Carrier Guidelines.

2.0   Methodology
This section summarizes the test methodology.

2.1   Business Process Description
Verizon VA produces monthly Carrier-to-Carrier reports based on the Carrier-to-Carrier Guidelines. Please see Metrics Standards and Definitions Documentation Verification and Validation Review (PMR1) for an overview of these Carrier-to-Carrier Guidelines. The Carrier-to-Carrier reports contain averages, percentages, observation counts, differences,[130] standard deviations, sampling errors, and z-scores.

2.2   Scenarios
Scenarios were not applicable to this test.

2.3   Test Targets & Measures
The test target was the replication of metric values, including evaluation of the completeness and accuracy of metrics calculations and reports, and the documentation of related processes.

2.4   Data Source
The sources of data for this test included the Carrier-to-Carrier Guidelines, orders issued by the Commonwealth of Virginia State Corporation Commission, algorithms for metrics calculation, processed data, and monthly CLEC Aggregate and KPMG CLEC Specific Carrier-to-Carrier reports published by Verizon VA.

---

[130] The difference result is the difference between the metric result and the performance standard as defined in the Carrier-to-Carrier Guidelines.

Draft Final Report-Version 1.0 as of March 4, 2002
Published by KPMG Consulting, Inc. – CONFIDENTIAL   VIII – Page 444
For Verizon Virginia, Inc. and the Virginia State Corporation Commission use only

Processed data is data that has undergone a transformation process in which the data fields necessary for calculating metric values are extracted from raw data gathered in Verizon's operations support systems (OSS) from service orders, troubles, and other business transactions submitted by Verizon's retail and wholesale customers.

KPMG Consulting used the May, June, July, August, September, October, November, and December 2001 CLEC Aggregate and the July, August, September, October, November, and December 2001 KPMG CLEC Specific Carrier-to-Carrier reports as the baseline for this analysis.

KPMG Consulting tested metric domains based on a schedule agreed upon by the Commonwealth of Virginia State Corporation Commission and Verizon. For the Pre-Ordering, Ordering, Maintenance and Repair, Network Performance, Operator Services and Databases, and General domains, the test began with the May 2001 data month. For the Provisioning domain, the test began with the July 2001 data month. For the Billing domain, the test began with the August 2001 data month.

This test did not rely on data generation or volume testing.

2.5   Evaluation Methods
Using processed data provided by Verizon VA, KPMG Consulting created programs/code to replicate the retail and wholesale values in the CLEC Aggregate and KPMG CLEC Specific Carrier-to-Carrier reports produced by Verizon VA and to determine if the values produced by KPMG Consulting matched the values reported by Verizon VA. Where discrepancies were identified, KPMG Consulting conducted a quantitative evaluation to determine if those discrepancies demonstrated inaccuracies in Verizon's reporting.

KPMG Consulting's evaluation included a review of the Carrier-to-Carrier reports to verify that Verizon VA was reporting all of the metrics and standards required by the Carrier-to-Carrier Guidelines in the appropriate levels of disaggregation.

KPMG Consulting also held discussions with Verizon data providers to verify that the metrics exclusions applied by Verizon to the raw data were consistent with the exclusions documented in the Carrier-to-Carrier Guidelines. KPMG Consulting's own programs/code included the application of exclusions to the processed data, where appropriate.

2.6   Analysis Methods
The Metrics Calculation and Reporting Verification and Validation Review included a checklist of evaluation criteria developed by KPMG Consulting during the initial phase of the Verizon Virginia, Inc. OSS Evaluation Project. These evaluation criteria provided the framework of norms, standards, and guidelines for the Metrics Calculation and Reporting Verification and Validation Review.

The data collected were analyzed employing the evaluation criteria detailed in Section 3.0 below.

Draft Final Report-Version 1.0 as of March 4, 2002
Published by KPMG Consulting, Inc. – CONFIDENTIAL   VIII – Page 445
For Verizon Virginia, Inc. and the Virginia State Corporation Commission use only

3.0   Results

This section identifies the evaluation criteria and test results. The results of this test are presented in the table below.

*Table 3-1: **PMR3** Evaluation Criteria and Results: Pre-Ordering*

Test Reference	Evaluation Criteria	Result	Comments
PMR3-1-A	Verizon VA-reported and KPMG Consulting-calculated metrics values agree.	Satisfied	Pre-Ordering (PO) percentages and averages, observation counts, and differences in the December 2001 CLEC Aggregate Carrier-to-Carrier reports agreed with values calculated by KPMG Consulting.
PMR3-2-A	Verizon VA reported all of the metrics required by the Carrier-to-Carrier Guidelines, in the appropriate levels of disaggregation.	Satisfied	The December 2001 CLEC Aggregate Carrier-to-Carrier report contained all of the PO metrics required by the Carrier-to-Carrier Guidelines, in the appropriate levels of disaggregation, except for: ♦ PO-8-01, % On-Time – Manual Loop Qualification.
PMR3-3-A	Verizon VA's implemented metrics calculations are consistent with the documented metrics calculations.	Satisfied	Verizon VA's calculations of PO metric values were consistent with the Carrier-to-Carrier Guidelines.
PMR3-4-A	Verizon VA's implemented metrics exclusions are consistent with the documented metrics exclusions.	Satisfied	The metrics exclusions implemented by Verizon VA were consistent with the exclusions documented in the Carrier-to-Carrier Guidelines.

KPMG Consulting

Draft Final Report-Version 1.0 as of March 4, 2002
Published by KPMG Consulting, Inc. – CONFIDENTIAL   VIII – Page 446
For Verizon Virginia, Inc. and the Virginia State Corporation Commission use only

Table 3-2: PMR3 Evaluation Criteria and Results: Ordering

Test Reference	Evaluation Criteria	Result	Comments
PMR3-1-B	Verizon VA-reported and KPMG Consulting-calculated metrics values agree.	Satisfied	All Ordering (OR) percentages and averages, observation counts, standard deviations, sampling errors, and z-scores in the December 2001 CLEC Aggregate and the December 2001 KPMG CLEC Specific Carrier-to-Carrier reports agreed with values calculated by KPMG Consulting.
PMR3-2-B	Verizon VA reported all of the metrics required by the Carrier-to-Carrier Guidelines, in the appropriate levels of disaggregation.	Satisfied	The December 2001 CLEC Aggregate and KPMG CLEC Specific Carrier-to-Carrier reports contained all of the OR metrics required by the Carrier-to-Carrier Guidelines, in the appropriate levels of disaggregation.
PMR3-3-B	Verizon VA's implemented metrics calculations are consistent with the documented metrics calculations.	Satisfied	Verizon VA's calculations of OR metric values were consistent with the Carrier-to-Carrier Guidelines.
PMR3-4-B	Verizon VA's implemented metrics exclusions are consistent with the documented metrics exclusions.	Satisfied	The metrics exclusions implemented by Verizon VA were consistent with the exclusions documented in the Carrier-to-Carrier Guidelines.

KPMG Consulting
Draft Final Report-Version 1.0 as of March 4, 2002
Published by KPMG Consulting, Inc. – CONFIDENTIAL   VIII – Page 447
For Verizon Virginia, Inc. and the Virginia State Corporation Commission use only

Table 3-3: PMR3 Evaluation Criteria and Results: Provisioning

Test Reference	Evaluation Criteria	Result	Comments
PMR3-1-C	Verizon VA-reported and KPMG Consulting-calculated metrics values agree.	Satisfied	All Provisioning (PR) percentages and averages, observation counts, standard deviations, sampling errors, and z-scores in the December 2001 CLEC Aggregate and the December 2001 KPMG CLEC Specific Carrier-to-Carrier reports agreed with values calculated by KPMG Consulting.
PMR3-2-C	Verizon VA reported all of the metrics required by the Carrier-to-Carrier Guidelines, in the appropriate levels of disaggregation.	Satisfied	The December 2001 CLEC Aggregate and KPMG CLEC Specific Carrier-to-Carrier reports contained all of the PR metrics required by the Carrier-to-Carrier Guidelines, in the appropriate levels of disaggregation.
PMR3-3-C	Verizon VA's implemented metrics calculations are consistent with the documented metrics calculations.	Satisfied	Verizon VA's calculations of PR metric values were consistent with the Carrier-to-Carrier Guidelines.
PMR3-4-C	Verizon VA's implemented metrics exclusions are consistent with the documented metrics exclusions.	Satisfied	The metrics exclusions implemented by Verizon VA were consistent with the exclusions documented in the Carrier-to-Carrier Guidelines.

KPMG Consulting

Draft Final Report-Version 1.0 as of March 4, 2002
Published by KPMG Consulting, Inc. – CONFIDENTIAL　　　　VIII – Page 448
For Verizon Virginia, Inc. and the Virginia State Corporation Commission use only

Table 3-4: PMR3 Evaluation Criteria and Results: Maintenance and Repair

Test Reference	Evaluation Criteria	Result	Comments
PMR3-1-D	Verizon VA-reported and KPMG Consulting-calculated metrics values agree.	Satisfied	All Maintenance and Repair (MR) percentages and averages, observation counts, differences, standard deviations, sampling errors, and z-scores in the December 2001 CLEC Aggregate report and the December 2001 KPMG CLEC Specific Carrier-to-Carrier reports agreed with values calculated by KPMG Consulting except for: ♦ MR-1-06, Average Response Time – Test Trouble (POTS Only). Verizon reported a CLEC average value of 27.66 with an observation count of 1365. KPMG Consulting calculated a CLEC average value of 27.75 with an observation count of 1357. Verizon VA's discrepancies represent 0.08% of the 1178 opportunities Verizon had to report MR values and 0.09% of the 1063 opportunities Verizon had to report observation counts in December. For these discrepancies, Verizon indicated that the test ID ZBEL was incorrectly included in the metric for December 2001 Virginia MR-1-06 Carrier-to-Carrier results, that a change control has been approved, and that ZBEL will be excluded from metrics calculations beginning with the February data month.
PMR3-2-D	Verizon VA reported all of the metrics required by the Carrier-to-Carrier Guidelines, in the appropriate levels of disaggregation.	Satisfied	The December 2001 CLEC Aggregate and KPMG CLEC Specific Carrier-to-Carrier reports contain all of the MR metrics required by the Carrier-to-Carrier Guidelines, in the appropriate levels of disaggregation.

KPMG Consulting

Draft Final Report-Version 1.0 as of March 4, 2002
Published by KPMG Consulting, Inc. – CONFIDENTIAL   VIII – Page 449
For Verizon Virginia, Inc. and the Virginia State Corporation Commission use only

Test Reference	Evaluation Criteria	Result	Comments
PMR3-3-D	Verizon VA's implemented metrics calculations are consistent with the documented metrics calculations.	Satisfied	Verizon VA's calculations of MR metrics values were consistent with the Carrier-to-Carrier Guidelines.
PMR3-4-D	Verizon VA's implemented metrics exclusions are consistent with the documented metrics exclusions.	Satisfied	The metrics exclusions implemented by Verizon VA were consistent with the exclusions documented in the Carrier-to-Carrier Guidelines.

KPMG Consulting

Draft Final Report-Version 1.0 as of March 4, 2002
Published by KPMG Consulting, Inc. – CONFIDENTIAL   VIII – Page 450
For Verizon Virginia, Inc. and the Virginia State Corporation Commission use only

Table 3-5: PMR3 Evaluation Criteria and Results: Billing

Test Reference	Evaluation Criteria	Result	Comments
PMR3-1-E	Verizon VA-reported and KPMG Consulting-calculated metrics values agree.	Satisfied	All Billing (BI) percentages, observation counts, sampling errors, z-scores, and differences in the December 2001 CLEC Aggregate and KPMG Specific Carrier-to-Carrier reports agreed with values calculated by KPMG Consulting.
PMR3-2-E	Verizon VA reported all of the metrics required by the Carrier-to-Carrier Guidelines, in the appropriate levels of disaggregation.	Satisfied	The December 2001 CLEC Aggregate and KPMG Specific Carrier-to-Carrier reports contained all of the BI metrics required by the Carrier-to-Carrier Guidelines, in the appropriate levels of disaggregation.
PMR3-3-E	Verizon VA's implemented metrics calculations are consistent with the documented metrics calculations.	Satisfied	Verizon VA's calculations of BI metric values were consistent with the Carrier-to-Carrier Guidelines.
PMR3-4-E	Verizon VA's implemented metrics exclusions are consistent with the documented metrics exclusions.	Satisfied	The metrics exclusions implemented by Verizon VA were consistent with the exclusions documented in the Carrier-to-Carrier Guidelines.

KPMG Consulting

Draft Final Report-Version 1.0 as of March 4, 2002
Published by KPMG Consulting, Inc. – CONFIDENTIAL   VIII – Page 451
For Verizon Virginia, Inc. and the Virginia State Corporation Commission use only

Table 3-6: PMR3 Evaluation Criteria and Results: Network Performance

Test Reference	Evaluation Criteria	Result	Comments
PMR3-1-F	Verizon VA-reported and KPMG Consulting-calculated metrics values agree.	Not Satisfied	All Network Performance (NP) percentages and averages, observation counts, sampling errors, and differences in the December 2001 CLEC Aggregate Carrier-to-Carrier reports agreed with values calculated by KPMG Consulting except for: ◆ NP-5-01, % of Network Outage Notices Sent Within 30 Minutes. Verizon reported a retail percentage value of 79.17% and KPMG Consulting calculated a retail percentage value of 20.83%. ◆ NP-5-01, % of Network Outage Notices Sent Within 30 Minutes. Verizon reported a resale percentage value of 79.17% and KPMG Consulting calculated a resale percentage value of 20.83%. Verizon VA's discrepancies represent 7.69% of the 26 opportunities Verizon had to report NP values.
PMR3-2-F	Verizon VA reported all of the metrics required by the Carrier-to-Carrier Guidelines, in the appropriate levels of disaggregation.	Satisfied	The December 2001 CLEC Aggregate Carrier-to-Carrier report contained all of the NP metrics required by the Carrier-to-Carrier Guidelines, in the appropriate levels of disaggregation.
PMR3-3-F	Verizon VA's implemented metrics calculations are consistent with the documented metrics calculations.	Satisfied	Verizon VA's calculations of NP metric values were consistent with the Carrier-to-Carrier Guidelines.
PMR3-4-F	Verizon VA's implemented metrics exclusions are consistent with the documented metrics exclusions.	Satisfied	The metrics exclusions implemented by Verizon VA were consistent with the exclusions documented in the Carrier-to-Carrier Guidelines.

KPMG Consulting

Draft Final Report-Version 1.0 as of March 4, 2002
Published by KPMG Consulting, Inc. – CONFIDENTIAL   VIII – Page 452
For Verizon Virginia, Inc. and the Virginia State Corporation Commission use only

Table 3-7: PMR3 Evaluation Criteria and Results: Operator Services and Databases

Test Reference	Evaluation Criteria	Result	Comments
PMR3-1-G	Verizon VA-reported and KPMG Consulting-calculated metrics values agree.	Satisfied	All Operator Services and Databases (OD) values, observation counts, sampling errors, and z-scores in the December 2001 CLEC Aggregate Carrier-to-Carrier reports agreed with values calculated by KPMG Consulting.
PMR3-2-G	Verizon VA reported all of the metrics required by the Carrier-to-Carrier Guidelines, in the appropriate levels of disaggregation.	Satisfied	The December 2001 CLEC Aggregate Carrier-to-Carrier reports contained all of the OD metrics stipulated in the Carrier-to-Carrier Guidelines.
PMR3-3-G	Verizon VA's implemented metrics calculations are consistent with the documented metrics calculations.	Satisfied	Verizon VA's calculations of OD metric values were consistent with the Carrier-to-Carrier Guidelines.
PMR3-4-G	Verizon VA's implemented metrics exclusions are consistent with the documented metrics exclusions.	Satisfied	The metrics exclusions implemented by Verizon VA were consistent with the exclusions documented in the Carrier-to-Carrier Guidelines.

KPMG Consulting

Draft Final Report-Version 1.0 as of March 4, 2002
Published by KPMG Consulting, Inc. – CONFIDENTIAL   VIII – Page 453
For Verizon Virginia, Inc. and the Virginia State Corporation Commission use only

Table 3-8: PMR3 Evaluation Criteria and Results: General

Test Reference	Evaluation Criteria	Result	Comments
PMR3-1-H	Verizon VA-reported and KPMG Consulting-calculated metrics values agree.	Satisfied	All General (GE) values and observation counts in the December 2001 CLEC Aggregate Carrier-to-Carrier reports agreed with values calculated by KPMG Consulting.
PMR3-2-H	Verizon VA reported all of the metrics required by the Carrier-to-Carrier Guidelines, in the appropriate levels of disaggregation.	Satisfied	The December 2001 CLEC Aggregate Carrier-to-Carrier reports contained all of the GE metrics stipulated in the Carrier-to-Carrier Guidelines, in the appropriate levels of disaggregation.
PMR3-3-H	Verizon VA's implemented metrics calculations are consistent with the documented metrics calculations.	Satisfied	Verizon VA's calculations of GE metric values were consistent with the Carrier-to-Carrier Guidelines.
PMR3-4-H	Verizon VA's implemented metrics exclusions are consistent with the documented metrics exclusions.	Satisfied	The metrics exclusions implemented by Verizon VA were consistent with the exclusions documented in the Carrier-to-Carrier Guidelines.

KPMG Consulting

Draft Final Report-Version 1.0 as of March 4, 2002
Published by KPMG Consulting, Inc. – CONFIDENTIAL　　　VIII – Page 454
For Verizon Virginia, Inc. and the Virginia State Corporation Commission use only

D.   Test Results: Metrics Data Filtering and Integrity Verification and Validation Review (PMR4)

1.0   Description
The Metrics Data Filtering and Integrity Verification and Validation Review (PMR4) evaluated the overall policies and practices for replicating and converting the data necessary to produce the performance metrics. The objective was to determine the adequacy and completeness of related procedures. The Data Filtering and Integrity Verification and Validation Review used quantitative techniques to verify and validate Verizon Virginia (Verizon VA) data used in metrics calculations in Pre-Ordering, Ordering, Provisioning, Ordering and Provisioning Trunks, Maintenance & Repair, Network Performance, Billing, Operator Services and Databases, and General.

2.0   Methodology
This section summarizes the test methodology.

2.1   Business Process Description
Verizon VA gathers raw data from service orders, troubles, and other business transactions submitted by its retail and wholesale customers (Competitive Local Exchange Carriers (CLEC)). This raw data is housed in Verizon's operations support systems (OSS). In order to produce performance metrics, the raw data undergoes a transformation process in which the data fields necessary for calculating metric results are extracted from the raw data. The data resulting from this transformation process is referred to as "filtered" or "processed" data and is housed in repositories where it is further manipulated to produce the metric results published in Verizon's monthly Carrier-to-Carrier (C2C) reports. In a few instances, raw data is used to populate the Carrier-to-Carrier reports directly without the need for filtering. Such, for example, is the case with the EnView data used to generate Pre-Ordering (PO) metrics.

Verizon VA identifies processed data as the data that comes out of the last data collection point within its information systems. This data may have exclusions or other data manipulations applied to them since the time that the data entered its first collection point within Verizon VA systems.

2.2   Scenarios
Scenarios were not applicable to this test.

2.3   Test Targets & Measures
The test targets examined include transfer of data from point(s) of collection and conversion of data from unprocessed to processed form for Pre-Ordering, Ordering, Provisioning, Ordering and Provisioning Trunks, Maintenance and Repair, Network Performance, Billing, Operator Services and Databases, and General.

KPMG Consulting   **Draft Final Report-Version 1.0 as of March 4, 2002**
Published by KPMG Consulting, Inc. – CONFIDENTIAL   VIII – Page 455
For Verizon Virginia, Inc. and the Virginia State Corporation Commission use only

2.4   Data Sources

The sources of data for this test included: Verizon VA Carrier-to-Carrier reports, processed data (the same used in the Metrics Calculation and Reporting Verification and Validation Review (PMR3)), and unprocessed data in the form of logs, screen shots, data extracts, Verizon VA business rules, and/or the Virginia Carrier-to-Carrier Guidelines Performance Standards and Reports, dated August 11, 2000.

This test did not rely on data generation or volume testing.

2.5   Evaluation Methods

The Metrics Data Filtering and Integrity Verification and Validation Review consisted of extracting raw data from the raw data collection points identified in the Data Collection and Storage Verification and Validation Review (PMR2), processing the raw data in accordance with Verizon VA's business rules, and then analyzing the resulting filtered data to determine whether or not it was the same as the processed data used by Verizon VA to generate metrics results.

Raw or unprocessed data have not had any exclusions or any other data manipulations applied to them prior to their transformation into processed data for use in the calculation of performance metrics. In order to conduct an analysis on the raw data, stratified random samples of transactions or random selections of monthly data were generated from both Verizon VA retail and CLEC-filtered data used in the calculation of metrics. Orders and troubles submitted by KPMG Consulting acting as a pseudo-CLEC were traced to the raw data. Certain data fields used in metric calculations were requested from the samples of raw data and matched with the corresponding filtered data. Lastly, the Verizon-filtered data was examined to verify that records were not added inappropriately.

The following samples of raw data used to calculate metrics were requested from Verizon VA:

♦   June 2001 and September 2001 Contact Center Availability – records;
♦   May 2001, June 2001, August 2001, and September 2001 Change Notice Management – records;
♦   August 21, 2001 and December 13-27, 2001 Pre-Ordering EnView Transaction Logs – records;
♦   August 2001 Ordering LSR – orders;
♦   August 2001 Ordering ASR – orders;
♦   July 2001 Provisioning – orders;
♦   July 2001 Provisioning Pending – orders;
♦   June 2001 Maintenance & Repair Specials – troubles;
♦   June 2001 Maintenance & Repair Trunks – troubles;
♦   July 2001 Maintenance & Repair POTS – troubles;
♦   July 2001 Ordering and Provisioning Trunks – records;
♦   August 9, 2001 Billing DUF Timeliness – records;

KPMG Consulting

Draft Final Report-Version 1.0 as of March 4, 2002
Published by KPMG Consulting, Inc. – CONFIDENTIAL   VIII – Page 456
For Verizon Virginia, Inc. and the Virginia State Corporation Commission use only

- August 2001 Billing Timeliness – records;
- August 2001 and September 2001 expressTRAK paper bills;
- September 2001 Network Performance Percent Final Trunk Group Blockage – records;
- July 2001 Network Performance Collocation Performance – records;
- August 2001 Network Performance Network Outage Notification – records;
- 2nd Quarter 2001 Network Performance NXX Updates – records;
- August 2001 General Directory Listing Verification Reports – records;
- April 2001 General Poles, Ducts, Conduit and Rights of way – records; and
- June 2001 General % Bona Fide Request Responses – records.

This information, along with records and logs of the unprocessed data and descriptions of the systems, were delivered to KPMG Consulting. The data received for Operator Services and Databases were unprocessed, so it was not necessary to develop samples for this domain.

KPMG Consulting examined each unprocessed log, file, and record separately. The raw data were processed into a form that more closely resembled the processed data used in calculating metrics. KPMG Consulting extracted and calculated the fields requested in the sample from the unprocessed data files based on explanations and documentation received from Verizon VA. Using KPMG Consulting programs to extract and calculate the requested fields, KPMG Consulting compared each unprocessed record to each corresponding record in the processed data and identified inconsistencies. KPMG Consulting also compared its own records of KPMG Consulting CLEC transactions (e.g., number of records submitted, confirmation time received) to Verizon VA's processed data. This comparison was intended to demonstrate that the data used in the calculation of performance metrics was both accurate and complete.

2.6   Analysis Methods
The Metrics Data Filtering and Integrity Verification and Validation Review included a checklist of evaluation criteria developed by KPMG Consulting during the initial phase of the Verizon Virginia, Inc. OSS Evaluation Project. These evaluation criteria provided the framework of norms, standards and guidelines for the Metrics Data Filtering and Integrity Verification and Validation Review.

The data collected were analyzed employing the evaluation criteria detailed in Section 3.0 below.

3.0   Results
This section identifies the evaluation criteria and test results. The results of this test are presented in the table below.

KPMG Consulting   **Draft Final Report-Version 1.0 as of March 4, 2002**
                    Published by KPMG Consulting, Inc. – CONFIDENTIAL   VIII – Page 457
             For Verizon Virginia, Inc. and the Virginia State Corporation Commission use only

Table 4-1: PMR4 Evaluation Criteria and Results: Pre-Ordering

Test Reference	Evaluation Criteria	Result	Comments
PMR4-1-A	The transfer of unprocessed records to processed records is complete.	Satisfied	Data integrity was performed on the following Pre-Ordering (PO) metrics groups: PO-2, OSS Interface Availability; PO-3, Contact Center Availability; and PO-4, Timeliness of Change Management Notice. Because the data used in the calculation of the other PO metrics are already in their rawest form, data integrity was not performed on those metrics. Fifteen (15) PO-2 OSS Interface Availability EnView response log records were analyzed for December 2001 and no cases where an unprocessed record did not appear in the processed data were observed. Seventy (70) PO-3 Contact Center Availability records for the months of June and September 2001 to the Verizon VA-filtered data and observed no cases where an unprocessed record did not appear in the processed data. Twenty-six (26) PO-4 Change Management Notification records for June 2001 to the Verizon VA-filtered data and observed no cases where an unprocessed record did not appear in the processed data.

KPMG Consulting
Draft Final Report-Version 1.0 as of March 4, 2002
Published by KPMG Consulting, Inc. – CONFIDENTIAL   VIII – Page 458
For Verizon Virginia, Inc. and the Virginia State Corporation Commission use only

Test Reference	Evaluation Criteria	Result	Comments
PMR4-2-A	Verizon VA did not add inappropriate records to processed data.	Satisfied	Data integrity was performed on the following PO metrics groups: PO-2, OSS Interface Availability; PO-3, Contact Center Availability; and PO-4, Timeliness of Change Management Notice. Because the data used in the calculation of the other PO metrics are already in their rawest form, data integrity was not performed on these metrics. PO-2, PO-3, and PO-4 aggregate filtered data was analyzed for the records selected in PMR4-1-A and verified that Verizon VA did not add inappropriate records to that data.

KPMG Consulting

Draft Final Report-Version 1.0 as of March 4, 2002
Published by KPMG Consulting, Inc. – CONFIDENTIAL   VIII – Page 459
For Verizon Virginia, Inc. and the Virginia State Corporation Commission use only

Test Reference	Evaluation Criteria	Result	Comments
PMR4-3-A	Unprocessed data were transformed accurately to processed data.	Satisfied	Data integrity was performed on the following PO metrics groups: PO-2, OSS Interface Availability; PO-3, Contact Center Availability; and PO-4, Timeliness of Change Management Notice. Because the data used in the calculation of the other PO metrics are already in their rawest form, data integrity was not performed on these metrics.
			Fifteen (15) PO-2 records from the rawest collection point of data for the last two weeks of December 2001 were analyzed. Out of 360 possibilities for matches (15 records x 24 fields), Verizon VA unprocessed data matched 100% of the time with the processed data.
			Forty-nine (49) PO-3 records from the rawest collection point of data for the months of June and November 2001 were analyzed. Out of 196 possibilities for matches (49 records x four fields), Verizon VA unprocessed data matched 100% of the time with the processed data.
			Twenty-six (26) PO-4 records from the rawest collection point of data for June 2001 were analyzed. Out of 208 possibilities for matches (26 records x eight fields), Verizon VA unprocessed data matched 100% of the time with the processed data.

KPMG Consulting
Draft Final Report-Version 1.0 as of March 4, 2002
Published by KPMG Consulting, Inc. – CONFIDENTIAL   VIII – Page 460
For Verizon Virginia, Inc. and the Virginia State Corporation Commission use only

Table 4-2: PMR4 Evaluation Criteria and Results: Ordering

Test Reference	Evaluation Criteria	Result	Comments
PMR4-1-B	The transfer of unprocessed records to processed records is complete.	Satisfied	KPMG Consulting traced a sample of customer orders created by the KPMG Consulting CLEC in the months of August, September, and October 2001. Out of 978 records analyzed, KPMG Consulting was able to trace 99% of the records to Verizon VA raw data files. KPMG Consulting traced a sample of 305 wholesale and retail Ordering (OR) records from the rawest collection point of data to Verizon VA processed data files for August 2001 and observed no cases where an unprocessed record did not appear in the processed data.
PMR4-2-B	Verizon VA did not add inappropriate records to processed data.	Satisfied	KPMG Consulting compared Verizon VA OR raw data files against the KPMG Consulting CLEC records selected in PMR4-1-B and verified that Verizon did not add inappropriate records to the data. KPMG Consulting analyzed Verizon VA retail and wholesale OR processed data for the records selected in PMR4-1-B and verified that Verizon did not add inappropriate records to that data.

Draft Final Report-Version 1.0 as of March 4, 2002
Published by KPMG Consulting, Inc. – CONFIDENTIAL   VIII – Page 461
For Verizon Virginia, Inc. and the Virginia State Corporation Commission use only

Test Reference	Evaluation Criteria	Result	Comments
PMR4-3-B	Unprocessed data were transformed accurately to processed data.	Satisfied	KPMG Consulting traced 1377 customer orders with four data fields, on average, depending on order type, from the KPMG Consulting CLEC to the Verizon VA OR raw data. Out of 5527 possibilities for matches (1377 records x four fields, on average), the KPMG Consulting CLEC data matched 97% of the time with the Verizon VA raw data. KPMG Consulting requested a sample of 240 wholesale and retail LSR records with 30 fields from the rawest collection point of data for August 2001. Out of 7200 possibilities for matches (240 records x 30 fields), Verizon VA unprocessed data matched 96.2% of the time with the processed data. KPMG Consulting requested a sample of 30 ASR records with an average of seven fields from the rawest collection point of data for August 2001. Out of 210 possibilities for matches (30 records x seven fields), Verizon VA unprocessed data matched 100% of the time with the processed data. KPMG Consulting requested a sample of 35 Order Accuracy records with an average of seven fields from the rawest collection point of data for August 2001. Out of 252 possibilities for matches (35 records x seven fields, on average), Verizon VA unprocessed data matched 100% of the time with the processed data.

KPMG Consulting

Draft Final Report-Version 1.0 as of March 4, 2002
Published by KPMG Consulting, Inc. – CONFIDENTIAL   VIII – Page 462
For Verizon Virginia, Inc. and the Virginia State Corporation Commission use only

Table 4-3: PMR4 Evaluation Criteria and Results: Provisioning

Test Reference	Evaluation Criteria	Result	Comments
PMR4-1-C	The transfer of unprocessed records to processed records is complete.	Satisfied	KPMG Consulting traced a sample of 200 wholesale and retail customer orders from the Verizon VA aggregate filtered OR data to Verizon VA aggregate filtered Provisioning (PR) data for August 2001 and observed no cases where an unprocessed record did not appear in the processed data. KPMG Consulting traced a sample of four PR Hot cut records from the KPMG Consulting CLEC to the Verizon VA aggregate filtered PR data for October 2001 and observed no cases where an unprocessed record did not appear in the processed data.
PMR4-2-C	Verizon VA did not add inappropriate records to processed data.	Satisfied	KPMG Consulting analyzed Verizon CLEC customer order aggregate filtered data for the records selected in PMR4-1-C and verified that Verizon VA did not add inappropriate records to the data. KPMG Consulting analyzed Verizon VA aggregate filtered provisioning Hot cut data for the records selected in PMR4-1-C and verified that Verizon did not add inappropriate records to that data.

KPMG Consulting

Draft Final Report-Version 1.0 as of March 4, 2002
Published by KPMG Consulting, Inc. – CONFIDENTIAL   VIII – Page 463
For Verizon Virginia, Inc. and the Virginia State Corporation Commission use only

Test Reference	Evaluation Criteria	Result	Comments
PMR4-3-C	Unprocessed data were transformed accurately to processed data.	Satisfied	KPMG Consulting traced 200 customer wholesale and retail orders from the Verizon aggregate filtered OR data to Verizon aggregate filtered PR data for August 2001.
			Out of 1400 possibilities for matches (200 records x seven fields), Verizon VA OR processed data matched 100% of the time with the PR processed data.
			KPMG Consulting traced four PR Hot cut records from the KPMG Consulting CLEC to the Verizon aggregate filtered PR data for October 2001.
			Out of 28 possibilities for matches, (four records x seven fields), the KPMG Consulting CLEC data matched 100% of the time with the Verizon VA processed data.
			For the Provisioning test, KPMG Consulting requested a sample of 195 wholesale and retail records with 26 fields from the rawest collection point of data for July 2001.
			Out of 5070 possibilities for matches (195 records x 26 fields), Verizon VA unprocessed data matched 95.2% of the time with the processed data.
			For the Provisioning Pending test, KPMG Consulting requested a sample of 126 wholesale and retail records with 22 fields from the rawest collection point of data for July 2001.
			Out of 2684 possibilities for matches (126 records x 22 fields), Verizon VA unprocessed data matched 97.5% of the time with the processed data.

Draft Final Report-Version 1.0 as of March 4, 2002
Published by KPMG Consulting, Inc. – CONFIDENTIAL   VIII – Page 464
For Verizon Virginia, Inc. and the Virginia State Corporation Commission use only

Table 4-4: PMR4 Evaluation Criteria and Results: Ordering and Provisioning Trunks

Test Reference	Evaluation Criteria	Result	Comments
PMR4-1-D	The transfer of unprocessed records to processed records is complete.	Satisfied	KPMG Consulting traced a sample of 30 OR and PR Trunk records from the rawest collection point of data to Verizon VA processed data files for July 2001 and observed no cases where an unprocessed record did not appear in the processed data.
PMR4-2-D	Verizon VA did not add inappropriate records to processed data.	Satisfied	KPMG Consulting analyzed Verizon VA aggregate filtered OR and PR data for the records selected in PMR4-1-B and PMR4-1-C and verified that Verizon VA did not add inappropriate records to that data.
PMR4-3-D	Unprocessed data were transformed accurately to processed data.	Satisfied	KPMG Consulting requested a sample of 30 wholesale records with 27 fields from the rawest collection point of data for July 2001. Out of 810 possibilities for matches (30 records x 27 fields), Verizon VA unprocessed data matched 95.6% of the time with the processed data.

KPMG Consulting

Draft Final Report-Version 1.0 as of March 4, 2002
Published by KPMG Consulting, Inc. – CONFIDENTIAL   VIII – Page 465
For Verizon Virginia, Inc. and the Virginia State Corporation Commission use only

Table 4-5: PMR4 Evaluation Criteria and Results: Maintenance & Repair

Test Reference	Evaluation Criteria	Result	Comments
PMR4-1-E	The transfer of unprocessed records to processed records is complete.	Satisfied	KPMG Consulting traced a sample of 71 Maintenance and Repair (MR) POTS customer trouble reports from the KPMG Consulting CLEC to the Verizon processed data files for October 2001. KPMG Consulting was able to trace 99% of those records to the processed data.
			KPMG Consulting was unable to trace four MR Specials customer trouble reports from the KPMG Consulting CLEC to the Verizon CLEC filtered data because incomplete processing of a change control resulted in the troubles being excluded from the processed data. This was an isolated incident affecting only the KPMG Consulting Test CLEC processed data.
			KPMG Consulting traced 30 MR Trunk customer trouble reports from the rawest collection point of data to the Verizon CLEC filtered data for June 2001 and observed no cases where an unprocessed record did not appear in the processed data.
PMR4-2-E	Verizon VA did not add inappropriate records to processed data.	Satisfied	KPMG Consulting analyzed Verizon MR POTS customer trouble report aggregate filtered data for the records selected in PMR4-1-E and verified that Verizon VA did not add inappropriate records to that data.
			KPMG Consulting analyzed Verizon MR Specials customer trouble report aggregate filtered data for the records selected in PMR4-1-E and verified that Verizon did not add inappropriate records to that data.
			KPMG Consulting analyzed Verizon MR Trunks customer trouble report aggregate filtered data for the records selected in PMR4-1-E and verified that Verizon did not add inappropriate records to that data.

KPMG Consulting

Draft Final Report-Version 1.0 as of March 4, 2002
Published by KPMG Consulting, Inc. – CONFIDENTIAL   VIII – Page 466
For Verizon Virginia, Inc. and the Virginia State Corporation Commission use only

Test Reference	Evaluation Criteria	Result	Comments
PMR4-3-E	Unprocessed data were transformed accurately to processed data.	Satisfied	For the MR POTS test, KPMG Consulting selected a sample of 71 records with two fields from the KPMG CLEC Consulting. Out of 142 possibilities for matches (71 records x two fields), the KPMG Consulting CLEC data matched 100% of the time with the Verizon VA-processed data. For the MR POTS test, KPMG Consulting requested a sample of 330 wholesale and retail records with 16 fields from the rawest collection point of data for July 2001. Out of 5280 possibilities for matches (330 records x 16 fields), Verizon VA unprocessed data matched 96.8% of the time with the processed data. For the MR Specials test, KPMG Consulting selected a sample of four records with two fields from the KPMG Consulting CLEC. Out of eight possibilities for matches (four records x two fields), none of the Verizon VA unprocessed data matched the processed data because of the incomplete processing of a change control noted in PMR 4-1-E above. This was an isolated incident affecting only the KPMG Consulting Test CLEC. For the MR Specials test, KPMG Consulting requested an additional sample of 162 wholesale and retail records with 12 fields from the rawest collection point of data for June 2001. Out of 1944 possibilities for matches (162 records x 12 fields), Verizon VA unprocessed data matched 96.7% of the time with the processed data. For the MR Trunks test, KPMG Consulting requested a sample of 30 records with 13 fields from the rawest collection point of data for June 2001. Out of 390 possibilities for matches (30 records x 13 fields), Verizon VA unprocessed data matched 100% of the time with the processed data.

KPMG Consulting
Draft Final Report-Version 1.0 as of March 4, 2002
Published by KPMG Consulting, Inc. – CONFIDENTIAL   VIII – Page 467
For Verizon Virginia, Inc. and the Virginia State Corporation Commission use only

Table 4-6: PMR4 Evaluation Criteria and Results: Network Performance

Test Reference	Evaluation Criteria	Result	Comments
PMR4-1-F	The transfer of unprocessed records to processed records is complete.	Satisfied	KPMG Consulting traced all NP-1, Percent Final Trunk Group Blockage, records from the rawest collection point of data for September 2001. Out of 255 record, KPMG Consulting was able to trace 99% to Verizon VA-processed data files.
			KPMG Consulting analyzed 528 NP-2, Collocation Performance, records from the rawest collection point of data to Verizon VA-processed data files for July 2001 and observed no cases where an unprocessed record did not appear in the processed data.
			KPMG Consulting analyzed 39 NP-5, Network Outage Notification, records from the rawest collection point of data to Verizon VA-processed data files for August 2001 and observed no cases where an unprocessed record did not appear in the processed data.
			KPMG Consulting analyzed 58 NP-6, NXX Updates, records from the rawest collection point of data to Verizon VA-processed data files for the 2nd Quarter 2001 and observed no cases where an unprocessed record did not appear in the processed data.

KPMG Consulting

Draft Final Report-Version 1.0 as of March 4, 2002
Published by KPMG Consulting, Inc. – CONFIDENTIAL   VIII – Page 468
For Verizon Virginia, Inc. and the Virginia State Corporation Commission use only

Test Reference	Evaluation Criteria	Result	Comments
PMR4-2-F	Verizon VA did not add inappropriate records to processed data.	Satisfied	KPMG Consulting analyzed Verizon VA NP-1 aggregate filtered data for the records selected in PMR4-1-F and verified that Verizon did not add inappropriate records to that data. KPMG Consulting analyzed Verizon VA NP-2 aggregate filtered data for the records selected in PMR4-1-F and verified that Verizon did not add inappropriate records to that data. KPMG Consulting analyzed Verizon VA NP-5 aggregate filtered data for the records selected in PMR4-1-F and verified that Verizon did not add inappropriate records to that data. KPMG Consulting analyzed Verizon VA NP-6 aggregate filtered data for the records selected in PMR4-1-F and verified that Verizon did not add inappropriate records to that data.

KPMG Consulting

Draft Final Report-Version 1.0 as of March 4, 2002
Published by KPMG Consulting, Inc. – CONFIDENTIAL   VIII – Page 469
For Verizon Virginia, Inc. and the Virginia State Corporation Commission use only

Test Reference	Evaluation Criteria	Result	Comments
PMR4-3-F	Unprocessed data were transformed accurately to processed data.	Satisfied	KPMG Consulting analyzed the 255 NP-1 records for September 2001 and observed that they were transformed accurately to processed data.
			KPMG Consulting analyzed 528 NP-2 retail records for July 2001 and observed that they were transformed accurately to processed data.
			KPMG Consulting analyzed 39 NP-5 records for the month of July 2001.
			Out of 78 possibilities for matches (39 records x two fields), Verizon VA unprocessed data matched 100% of the time with the processed data.
			KPMG Consulting analyzed 58 NP-6 records for the 2nd Quarter 2001.
			Out of 174 possibilities for matches (58 records x three fields), Verizon VA unprocessed data matched 100% of the time with the processed data.

KPMG Consulting

Draft Final Report-Version 1.0 as of March 4, 2002
Published by KPMG Consulting, Inc. – CONFIDENTIAL   VIII – Page 470
For Verizon Virginia, Inc. and the Virginia State Corporation Commission use only

Table 4-7: PMR4 Evaluation Criteria and Results: Billing

Test Reference	Evaluation Criteria	Result	Comments
PMR4-1-G	The transfer of unprocessed records to processed records is complete.	Satisfied	KPMG Consulting traced 578 DUF Timeliness records from the rawest collection point of data to Verizon VA processed data files for August 2001 and observed no cases where an unprocessed record did not appear in the processed data.
			KPMG Consulting traced 20 Timeliness of Carrier Bill records from the rawest collection point of data to Verizon VA processed data files for August 2001 and observed no cases where an unprocessed record did not appear in the processed data.
			KPMG Consulting analyzed 10 expressTRAK records from the rawest collection point of data to Verizon VA processed data files for the months of August and September 2001 and observed no cases where an unprocessed record did not appear in the processed data.
PMR4-2-G	Verizon VA did not add inappropriate records to processed data.	Satisfied	KPMG Consulting analyzed Verizon aggregate filtered billing data for the records selected in PMR4-1-G and verified that Verizon did not add inappropriate records to that data.

KPMG Consulting
Draft Final Report-Version 1.0 as of March 4, 2002
Published by KPMG Consulting, Inc. – CONFIDENTIAL   VIII – Page 471
For Verizon Virginia, Inc. and the Virginia State Corporation Commission use only

Test Reference	Evaluation Criteria	Result	Comments
PMR4-3-G	Unprocessed data were transformed accurately to processed data.	Satisfied	KPMG Consulting found that of the 578 DUF records submitted by the KPMG Consulting CLEC in August 2001, 100% were transformed accurately to processed data. KPMG Consulting analyzed 20 Timeliness of Carrier Bill records for September 2001. Of 120 possibilities for matches (20 records x six fields), Verizon VA unprocessed data matched 100% of the time with the processed data. KPMG Consulting analyzed 10 expressTrak records for the months of August 2001 and September 2001. Out of 80 possibilities for matches (10 records x eight data fields), Verizon VA unprocessed data matched 93% of the time with the processed data.

Table 4-8: PMR4 Evaluation Criteria and Results: Operator Services and Databases

Test Reference	Evaluation Criteria	Result	Comments
PMR4-1-H	The transfer of unprocessed records to processed records is complete.	Not Applicable	Operator Services and Databases (OD) data used in the calculation of performance metrics are already in the rawest form. Data integrity was not performed on this domain.
PMR4-2-H	Verizon VA did not add inappropriate records to processed data.	Not Applicable	OD data used in the calculation of performance metrics are already in the rawest form. Data integrity was not performed on this domain.
PMR4-3-H	Unprocessed data were transformed accurately to processed data.	Not Applicable	OD data used in the calculation of performance metrics are already in the rawest form. Data integrity was not performed on this domain.

KPMG Consulting

Draft Final Report-Version 1.0 as of March 4, 2002
Published by KPMG Consulting, Inc. – CONFIDENTIAL   VIII – Page 472
For Verizon Virginia, Inc. and the Virginia State Corporation Commission use only

Table 4-9: PMR4 Evaluation Criteria and Results: General

Test Reference	Evaluation Criteria	Result	Comments
PMR4-1-I	The transfer of unprocessed records to processed records is complete.	Satisfied	KPMG Consulting analyzed 31 GE-1, Directory Listing Verification Reports, records from the rawest collection point of data to Verizon VA-processed data files for August 2001 and observed no cases where an unprocessed record did not appear in the processed data. KPMG Consulting analyzed six GE-2, Poles, Ducts, Conduit and Rights of Way, records from the rawest collection point of data to Verizon VA processed data files for April 2001 and observed no cases where an unprocessed record did not appear in the processed data. KPMG Consulting analyzed the only GE-3, % Bona Fide Request Responses record from the rawest collection point of data to Verizon VA-processed data files for June 2001 and observed that the unprocessed record appeared in the processed data.
PMR4-2-I	Verizon VA did not add inappropriate records to processed data.	Satisfied	KPMG Consulting analyzed GE-1 aggregate filtered data for the records selected in PMR4-1-G and verified that Verizon did not add inappropriate records to that data. KPMG Consulting analyzed GE-2 aggregate filtered data for the records selected in PMR4-1-G and verified that Verizon did not add inappropriate records to the data. KPMG Consulting analyzed GE-3 aggregate filtered data for the record selected in PMR4-1-G and verified that Verizon did not add inappropriate records to that data.

KPMG Consulting

Draft Final Report-Version 1.0 as of March 4, 2002
Published by KPMG Consulting, Inc. – CONFIDENTIAL   VIII – Page 473
For Verizon Virginia, Inc. and the Virginia State Corporation Commission use only

Test Reference	Evaluation Criteria	Result	Comments
PMR4-3-I	Unprocessed data were transformed accurately to processed data.	Satisfied	KPMG Consulting analyzed 31 GE-1 records for August 2001 and observed that they were transformed accurately to processed data. KPMG Consulting analyzed six GE-2 records for April 2001 and observed that they were transformed accurately to processed data. KPMG Consulting traced the bona fide request response record for June 2001 and observed that the record was transformed accurately to processed data.

KPMG Consulting

Draft Final Report-Version 1.0 as of March 4, 2002
Published by KPMG Consulting, Inc. – CONFIDENTIAL   VIII – Page 474
For Verizon Virginia, Inc. and the Virginia State Corporation Commission use only

E.   Test Results: Metrics Change Management Verification and Validation Review (PMR5)

1.0   Description
The Metrics Change Management Verification and Validation Review (PMR5) evaluated the overall policies and practices for managing changes to Verizon Virginia (Verizon VA) metrics and communicating these changes to the Commonwealth of Virginia State Corporation Commission and Competitive Local Exchange Carriers (CLEC). Metrics may undergo changes in definitions, allowed exclusions, standards, report dimensions, or calculation methods. In addition, new metrics may be added. This test evaluated the process for developing, testing, implementing, and monitoring metric changes and communicating those changes to relevant stakeholders.

2.0   Methodology
This section summarizes the test methodology.

2.1   Business Process Description
The Verizon Wholesale Performance Assurance (WPA) group has overall responsibility for the production of wholesale performance metrics. The Wholesale Metrics Development (WMD) directorate is the sub-group responsible for metrics change management. WMD is headed by a director who reports to the vice president heading WPA. Metrics change control requests are initiated from regulatory mandates, metric maintenance changes, or metric emergency changes. Such changes may be initiated either by the Commonwealth of Virginia State Corporation Commission or Verizon or CLECs, through the collaborative process.

All changes are tracked in the Change Control Database. The Change Control Database uses electronic forms to track metric changes through the various stages of the change control process from initiation to completion.

Development of a metric change begins with completion of a Change Control Identification (CCI) form in the Change Control Database, which is reviewed by a Change Control Manager (CCM). Changes go through a high-level assessment before they are approved. A Change Control Record (CCR) is created once the CCM and the originator define the change and determine that it is necessary. All metric changes require the approval of the Director of the WMD and Vice President of the WPA.

Draft Final Report-Version 1.0 as of March 4, 2002
Published by KPMG Consulting, Inc. – CONFIDENTIAL   VIII – Page 475
For Verizon Virginia, Inc. and the Virginia State Corporation Commission use only

Once a change is approved, an email notification is sent to data providers[131] to begin work. The data providers assess the impact of the change within 10 days and create an electronic response that indicates their ability to meet the requested implementation date. The data providers then begin work on implementing the change (e.g., developing code, queries, and data streams). If the data providers discover that they cannot meet their original commitment date, a Jeopardy Notice Form is issued informing the CCM of the potential missed commitment.

Approved changes go through a detailed analysis prior to implementation. For complex changes, Joint Application Development (JAD) sessions may be conducted to determine programming requirements.

For changes that require intervention of the information technology group, a Conceptual Initiative Definition (CID) form is filled out by the data providers. The CID outlines the changes required, including information about the specific metric(s) that are affected by the change, a short business description of the change, a business narrative summarizing the impact of the change, the scope and priority of the change, as well as the regulatory authority for the change. The IT group creates a Customer Requirement Definition (CRD) document based on the information in the CID. The CRD contains a more detailed assessment of the change, including functional requirements of the change, an assessment of the format or layout of the required metric reporting, if applicable, and information on the traceability documents required once the change is complete. The documents are reviewed by the relevant subject matter experts (SME).

When development work is complete, the change is ready for validation and testing. A test file and an electronic Validation Form are sent to the Wholesale Performance Metrics (WPM) group to determine if it is possible to map the metric results associated with the change to the appropriate Carrier-to-Carrier reports. Formulas are checked for accuracy and consistency with the Carrier-to-Carrier Guidelines; regression testing is done to ensure no errors are introduced to other programs. Thereafter, sample reports are generated and quality checks are performed prior to committing the change to production. Following the required sign-offs, the metric change then goes into production and the CCM closes out the change in the database.

The Commonwealth of Virginia State Corporation Commission and CLECs are notified electronically of metrics changes via Issue Logs sent out on the 27th of the month along with the CLEC Aggregate Carrier-to-Carrier report. These Issue Logs contain information about changes to regulatory orders, metrics processes, algorithms, and clarifications or corrections to metrics data and results. The Issue Logs aid recipients to independently validate the accuracy of the metric results contained in the Carrier-to-Carrier reports.

2.2   Scenarios
Scenarios were not applicable to this test.

---

[131] The term "data provider" refers to Verizon staff responsible for the calculation of metric results.

KPMG Consulting   **Draft Final Report-Version 1.0 as of March 4, 2002**
Published by KPMG Consulting, Inc. – CONFIDENTIAL   VIII – Page 476
For Verizon Virginia, Inc. and the Virginia State Corporation Commission use only

2.3   Test Targets & Measures

The test target examined the metrics change management process and included the following sub-processes:

♦   Developing change proposals;
♦   Evaluating change proposals;
♦   Implementing changes;
♦   Change management intervals;
♦   Change management documentation; and
♦   Tracking change proposals.

2.4   Data Sources

The data collected for this test included:

♦   Wholesale Metrics Development Change Control Database Manual;
♦   Wholesale Metrics Change Control Process Manual;
♦   Metrics Issues Log Process Method & Procedure document;
♦   Configuration Management Procedures – North and South document;
♦   Wholesale Performance Assurance Organization Chart;
♦   Issue Logs;
♦   Distribution List for Metrics Change Notification;
♦   Change Control Records;
♦   Conceptual Initiative Definition documents;
♦   Customer Requirement Definition documents; and
♦   Product Specification documents.

This test did not rely on data generation or volume testing.

2.5   Evaluation Methods

The Metrics Change Management Verification and Validation Review test was conducted using the following evaluation techniques: interviews, document reviews, and test transaction and change control request tracing through Verizon's change management process. Activities undertaken included the following:

♦   Sending data requests for Virginia-specific metrics change control documents along with a current report from the database showing all Virginia metrics change control requests (pending, active, and closed);
♦   Interviewing Verizon change control SMEs;

KPMG Consulting

Draft Final Report-Version 1.0 as of March 4, 2002
Published by KPMG Consulting, Inc. – CONFIDENTIAL   VIII – Page 477
For Verizon Virginia, Inc. and the Virginia State Corporation Commission use only

♦ Completing checklists incorporating specific evaluation criteria to determine whether processes were adequate, complete, and consistent; and

♦ Developing and documenting findings.

2.6   Analysis Methods

The Metrics Change Management Verification and Validation Review included a checklist of evaluation criteria developed by KPMG Consulting during the initial phase of the Verizon Virginia, Inc. OSS Evaluation Project. These evaluation criteria provided the framework of norms, standards, and guidelines for the Metrics Change Management Verification and Validation Review.

The data collected were analyzed employing the evaluation criteria detailed in Section 3.0 below.

3.0   Results Summary

This section identifies the evaluation criteria and test results. The results of this test are presented in the table below.

Table 5-1: PMR5 Evaluation Criteria and Results

Test Reference	Evaluation Criteria	Result	Comments
Completeness of Metrics Change Management Process			
PMR5-1-1	The change management process includes a change request, which identifies the author, provides initiation and required implementation dates of the change, as well as a description and the reason for the change.	Satisfied	KPMG Consulting inspected a sample of CCI and CCR forms from Verizon's Change Control Database and found that each identified the author and origination date of the change request and provided a description and business reason for the change. The CCR forms contained information about implementation dates.
PMR5-1-2	The change management process includes a high-level assessment of each requested change.	Satisfied	KPMG Consulting's examination of the CCRs confirmed that they provide a high-level assessment of each requested change. The CCR identifies the specific metrics impacted by each change proposal and the regulatory authority for the change. It also provides a short description of the change, an assessment of its impact, the scope and priority of the change, an estimate of the volume of data required, and details about the source of that data.

KPMG Consulting
Draft Final Report-Version 1.0 as of March 4, 2002
Published by KPMG Consulting, Inc. – CONFIDENTIAL   VIII – Page 478
For Verizon Virginia, Inc. and the Virginia State Corporation Commission use only

Test Reference	Evaluation Criteria	Result	Comments
PMR5-1-3	The change management process requires approval of changes by an appropriate authority at key stages of the process.	Satisfied	KPMG Consulting's inspection of the electronic signature records in the Change Control Database confirmed that changes were approved by the appropriate authority at key stages of the process. The records contained the signatures of Verizon's Vice President of Wholesale Performance Assurance and the Director of Wholesale Metrics Development giving their approval for work to commence and those of the Change Control Managers authorizing changes to be migrated to production.
PMR5-1-4	The change management process provides for the logging and tracking of all changes.	Satisfied	KPMG Consulting confirmed the existence of a system for logging and tracking all changes by tracing a sample of the changes through the various stages of their life cycle in Verizon's Change Control Database. KPMG Consulting's examination included confirmation that the database tracks dates for initiation, approval, implementation, and notification to CLECs and the Commonwealth of Virginia State Corporation Commission as well as the names of those initiating and approving the changes.
PMR5-1-5	The change management process provides for the notification of external parties impacted by the change.	Satisfied	KPMG Consulting confirmed the existence of a process to notify external parties of changes by inspecting Issue Logs for the data months of May, June, July, August, September, October, and December 2001 emailed by Verizon to the Commonwealth of Virginia State Corporation Commission and CLECs. The issue logs were distributed on time.
PMR5-1-6	The change management process provides for the monitoring of source systems for changes that impact metrics reporting.	Satisfied	Verizon's Wholesale Metrics Development leadership team and SMEs asserted, in interviews, that changes to operations support systems (OSS) that impact metrics reporting are communicated during weekly meetings held to discuss new initiatives.

KPMG Consulting
Draft Final Report-Version 1.0 as of March 4, 2002
Published by KPMG Consulting, Inc. – CONFIDENTIAL   VIII – Page 479
For Verizon Virginia, Inc. and the Virginia State Corporation Commission use only

Test Reference	Evaluation Criteria	Result	Comments
Completeness of Metrics Change Implementation Process			
PMR5-2-1	The change implementation process requires that a detailed level analysis of the change be provided in business English that is reviewed and approved by the relevant subject matter experts or business users.	Satisfied	KPMG Consulting's inspection of CID and CRD documents and minutes of JAD meetings confirmed that a detailed analysis is conducted of change proposals. The CRD contains a detailed assessment of the proposed change, including functional requirements and an assessment of the layout required for metric reporting. KPMG Consulting inspected the email approval that accompanies the CRD.
PMR5-2-2	The change implementation process requires that a design or technical description of the required change be provided prior to the start of any work.	Satisfied	KPMG Consulting's examination of an Evidentiary Database Requirements Detail Specification (ED_RDS) document issued for the April 2001 and May 2001 report months confirmed that Verizon's change management process includes a technical design of a change prior to implementation. The document identified the business owners, SMEs, and technical personnel responsible for the change. It also provided details of data sources, record layouts, processing requirements, and rules for metric calculation.
PMR5-2-3	The change implementation process requires an independent review or walk-through of the design or technical description of required changes for technical correctness and consistency, with the analysis reviewed by subject matter experts prior to the start of any programming.	Satisfied	KPMG Consulting's inspection of email communication confirmed that Verizon's SMEs reviewed the ED_RDS document for the April 2001 report month, approving the technical description as complete and accurate.

KPMG Consulting
Draft Final Report-Version 1.0 as of March 4, 2002
Published by KPMG Consulting, Inc. – CONFIDENTIAL   VIII – Page 480
For Verizon Virginia, Inc. and the Virginia State Corporation Commission use only

Test Reference	Evaluation Criteria	Result	Comments
PMR5-2-4	The change implementation process requires the documentation of programs and processes affected by or created for the change, including program comments where appropriate.	Satisfied	KPMG Consulting's examination of a sample of program code for metric production confirmed that programs and processes are documented.
PMR5-2-5	The change implementation process requires thorough testing of the change.	Satisfied	KPMG Consulting confirmed that metrics changes are thoroughly tested by inspecting sign-offs on the CCRs signifying that the following tests had been successfully concluded: mapping data input to the Data Load tool and output to the Carrier-to-Carrier report; checking the accuracy of calculation formulae; and regression testing to verify that new code did not create unintended impacts on other programs.
PMR5-2-6	The change implementation process requires that a version of each process description or program code with relevant documentation previously implemented be preserved prior to the implementation of a change.	Satisfied	KPMG Consulting obtained "before" and "after" versions of program code for a sample of program code changes to confirm that a version of program code is preserved prior to implementation of a change.

KPMG Consulting

Draft Final Report-Version 1.0 as of March 4, 2002
Published by KPMG Consulting, Inc. – CONFIDENTIAL   VIII – Page 481
For Verizon Virginia, Inc. and the Virginia State Corporation Commission use only

Test Reference	Evaluation Criteria	Result	Comments
Documentation of Change Management Process			
PMR5-3-1	The critical steps in the change management process and how those steps are to be performed are documented.	Satisfied	KPMG Consulting confirmed that the critical steps in the change management process are documented by reviewing the following Verizon documents: ♦ The Wholesale Change Control Process document, dated November 13, 2000, which includes a flow chart describing the entire change management process from initiation to completion; ♦ The Wholesale Metrics Change Control Database manual (version 2.1), which includes a description of the database and field layout, sample forms, and views available to users to obtain information; ♦ The Configuration Management Procedures – South document (version 1.3), which describes change control procedures within Verizon's IT organization; and ♦ The Metrics Issues Log Process Method & Procedure document, dated October 3, 2001, that describes the process by which Verizon notifies the Commonwealth of Virginia State Corporation Commission and CLEC community of changes to metrics definitions, standards, calculations, and results.
PMR5-3-2	The roles and responsibilities of the parties involved in the change management process are documented.	Satisfied	Organizational charts for Verizon's WPA group and the Wholesale Metrics Change Control Process document define the roles and responsibilities of the parties involved in the change management process.

KPMG Consulting

Draft Final Report-Version 1.0 as of March 4, 2002
Published by KPMG Consulting, Inc. – CONFIDENTIAL   VIII – Page 482
For Verizon Virginia, Inc. and the Virginia State Corporation Commission use only

Test Reference	Evaluation Criteria	Result	Comments
	Consistent Adherence to Change Management Process		
PMR5-4-1	All known changes followed the documented change management process.	Satisfied	In order to validate adherence to documented procedures, KPMG Consulting traced changes from two sources through Verizon's change control process. The sources included changes from Verizon's Change Control Database and changes encountered by KPMG Consulting during its PMR1,[132] PMR3,[133] and PMR4[134] tests. KPMG Consulting found one change that was implemented without issuance of a change control number and did not go through the change control process. Verizon took corrective action to preclude this from happening in the future by reviewing change control procedures with the data providers.

---

[132] Metrics Standards and Definitions Documentation Verification and Validation Review.

[133] Metrics Calculation and Reporting Verification and Validation Review.

[134] Metrics Data Filtering and Integrity Verification and Validation Review.

KPMG Consulting
Draft Final Report-Version 1.0 as of March 4, 2002
Published by KPMG Consulting, Inc. – CONFIDENTIAL   VIII – Page 483
For Verizon Virginia, Inc. and the Virginia State Corporation Commission use only

This page is intentionally left blank.

KPMG Consulting

Draft Final Report-Version 1.0 as of March 4, 2002
Published by KPMG Consulting, Inc. – CONFIDENTIAL   VIII – Page 484
For Verizon Virginia, Inc. and the Virginia State Corporation Commission use only