Audit of
FairPoint Communications'
New Hampshire
Retail Quality of Service Reports

FINAL REPORT

Prepared for:

The New Hampshire Public Utilities Commission

By:

The Liberty Consulting Group

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I. Introduction

A. Background and Purpose of the Audit

In the New Hampshire Public Utilities Commission ("Commission") February 25, 2008 Order in Docket No. DT 07-011 approving the transfer of the New Hampshire telecommunications utility franchise from Verizon Communications, Inc. ("Verizon") to FairPoint Communications, Inc. ("FairPoint"), the Commission adopted along with other conditions the January 23, 2008 Settlement Agreement ("2008 Settlement Agreement") with the Commission Staff ("Staff"). Among the terms of this Settlement Agreement are for FairPoint to:

- Report monthly and provide year-to-date monthly summaries of certain specified retail quality of service ("QoS") measurements
- Pay penalties if specified standards for these measurements are not met
- Submit to an independent audit of the QoS measurement reports.

Appendix E of FairPoint's First Amended Reorganization Plan, dated February 11, 2010, revised certain of these requirements, including modifications to some of the QoS measurements and penalty conditions.

The Commission issued a Request for Proposals ("RFP") on September 24, 2010 for consulting services to conduct an independent audit of the QoS reports, as specified in the 2008 Settlement Agreement. The RFP specified that the audit would assess "the scope, clarity, and accuracy" of the monthly QoS reports and that the specific audit scope of work would be determined in consultation with Staff with the intention to include the following possible tasks:

- Evaluate the methods FairPoint uses to gather, track, calculate, and report the current QoS measurements
- Assess, based on statistically valid sampling, the accuracy of reported measurements through December 31, 2010,[1] including:
  - Inspecting and understanding FairPoint's measurement and reporting process
  - Evaluating FairPoint's business rules and verifying how they are applied
- Identify any limitations of the current metrics and methodology in measuring FairPoint performance in those areas enumerated in Exhibit 3 of the 2008 Settlement Agreement
- Evaluate the effectiveness of the current selection of measurements in covering and assessing FairPoint performance in regulated areas of greatest concern to retail customers
- Identify any areas of ambiguity in the current metric definitions and propose clarifications where appropriate

[1] The RFP asked for the assessment of the accuracy of the reports from April 1, 2008 through December 31, 2010. However, as noted below, Liberty restricted the audit to calendar year 2010, with concurrence from Staff. From April 2008 through January 2009, FairPoint used Verizon's systems to produce the QoS reports and therefore has limited information of its own to support the report. Furthermore, for the remainder of 2009, after transitioning to its own operations support systems, FairPoint experienced a number of reporting problems requiring restatements and made a number of changes to its reporting systems, thereby significantly complicating the ability to audit the 2009 reports.

- Propose a method of calculating annual measurement results if any measurements are missing or apparently inaccurate for calendar year 2010
- Help develop recommendations for any changes regarding the scope and methods for continued QoS reporting
- Provide an interim recommendation to Staff of any procedural changes needed to improve the accuracy and/or usefulness of the 2010 QoS reports
- Prepare a draft report with opportunity for company response
- Evaluate company response and provide a final report to be made public.

The Commission awarded the contract for this audit to the Liberty Consulting Group ("Liberty") on November 12, 2010. This draft report describes the conduct of the audit and provides Liberty's findings, conclusions, and recommendations.

B. Overview of the New Hampshire Retail Quality of Service Measurements

Most retail service quality measurements that FairPoint currently reports to the Commission are the same as those Verizon reported before the change to FairPoint in March 2008. Between March 2008 and February 2009, FairPoint operated under a Transition Services Agreement with Verizon through which the company used Verizon's operations support systems for various purposes, including service quality reporting. As a result, FairPoint continued to report the same measurements Verizon had historically reported. The following table lists these measurements.

Quality of Service Measurements Reported from April 2008 through January 2009[2]

Verizon Measurement No.	Measurement Name
1	Percent Installation Orders Appointed within 3 Days
2	Percent Meet Installation Appointment Company Reasons
3	Total Held Orders on Hand – Month End
4	Held Orders over 30 Days
4a	Average Delay Days
5	Number of Installation Orders
5a	Access Line Inward Movement per ALIS – located
6	Percent Toll and Assist Answer Time within 10 seconds / Average Speed of Answer (seconds)
7	Percent Directory Assistance Answer within 10 seconds / Average Speed of Answer (seconds)
8	Percent Repair Service Answer within 20 seconds / Average Speed of Answer
8a	Percent of Calls to a Repair Number that are Abandoned
11	Peak Period Central Office Performance
12	Total Report Rate Including Subsequents
12a	Exchanges with Total Report Rate > 2.5
13	Percent Out of Service Cleared within 24 hours (Sundays excluded)
14	Number Out of Service Cleared within 24 hours

[2] In addition to the measurements listed in this table, FairPoint reported, in April and May 2008 only, two other measurements previously reported by Verizon: 9a, General Consumer Provisioning – Top Three (Outstanding, Very Good & Satisfied Response), and 10a, General Business Provisioning – Top Three (Outstanding, Very Good & Satisfied Response).

15a	Average Completion Time for Repairs (hours)
15b	Estimated Average Completion Time for Repairs (hours) (Sundays excluded)
16	Percent Met Repair Appointments
	Access Lines in Service (ALIS)

After cutting over to its newly developed operations support systems in February 2009, FairPoint began reporting service quality measurements using the new systems. The new systems included those used to calculate and report the New Hampshire service quality measurements identified above. Pursuant to the 2008 Settlement Agreement, several of the former Verizon measurements were modified or dropped and others were added. After the cutover, FairPoint attempted to implement these various changes in the company's new systems. During 2009 FairPoint also experienced numerous service-affecting problems with the new operations support systems after cutover. FairPoint also needed to restate a number of the 2009 measurements. After meeting with Staff in late 2009, FairPoint implemented changes to the service installation measurements specified in the 2008 Settlement Agreement.[3]

Exhibit 3 of the 2008 Settlement Agreement specified a standard compliance level for all measurements besides those established solely for tracking purposes, and established penalties for non-compliance with the standards. The standards were determined from a baseline performance level using the average of the performance for the twelve months ending December 31, 2007. For each measurement not initially in compliance with the standard, FairPoint was to determine a "Transition Increment," defined as the difference between the actual performance level and the required standard. FairPoint was required to reduce the Transition Increment by specified amounts at the end of 2008, 2009, and 2010, with full compliance to be achieved by July 31, 2011, and with the penalties subject to any applicable Transition Increments.

Exhibit 3 of the 2008 Settlement Agreement also specified that FairPoint:

- Report the measurements monthly and provide monthly year-to-date summary reports
- Report certain measurements at both the state and central office level
- Retain records of the measurements and summaries for a period of at least five years for audit purposes
- Produce the reports by the 20th day of the month following the measurement month.

FairPoint is allowed, if agreed by Staff, to exclude performance during major storms and other "Force Majeur" events from the determination of whether the performance has met the established standard.

FairPoint filed a Chapter 11 Reorganization Plan in October 2009 and during 2010 negotiated a settlement with advocates representing the State of New Hampshire as part of the process for

[3] Letter dated January 20, 2010 from Kevin M. Shea to Kathryn M. Bailey. Specifically, FairPoint changed the measurements of the percent of installation appointments met (Measurements 1 through 6) to measurements of average days to install, dropped the separate measurements of premises and mechanized installations for DSL (Measurements 4 and 5), and acknowledged calculation logic errors and the need for restatement of 2009 results for nine other measurements.

regulatory approval of the reorganization. This new settlement ("2010 Settlement Agreement") was incorporated as Appendix E to FairPoint's First Amended Reorganization Plan. Among the terms included in Appendix E were the following matters related to the quality of service measurements:

- The parties agreed that FairPoint had accrued $6 million in penalties for calendar year 2009 QoS performance
- FairPoint's penalties from failing to meet QoS measurement standards during 2009 were deferred until December 31, 2010
- These penalties became subject to possible reduction or elimination based on the performance during 2010 of five specified QoS measurements (in the naming convention of Attachment 1 of the 2010 Settlement Agreement[4]):
  1. "% Installation Appointments Met"
  2. "% Installation Service Orders Met within 30 Days"
  3. "Customer Trouble Reports Rate per 100 Lines – Network"
  4. "OOS Troubles Cleared in 24 hours (excluding Sunday)"
  5. "% Repair Commitments Met"
- The 2009 penalties will be reduced by 20 percent for each of these five measurements that meet its standard averaged over the full year 2010
- Penalties resulting from reported QoS measurements in 2010 and subsequent years remained in force
- Any remaining DSL QoS measurements (only one remaining measurement in 2010) will be dropped
- The method for determining penalties as described in the 2008 Settlement Agreement was clarified
- FairPoint is permitted to petition the Commission to reduce the penalties and modify the QoS measurements at the end of five years after the closing date of FairPoint-Verizon transaction.

The following table lists the measurements FairPoint reported during 2010. In many cases, FairPoint uses a different name for the measurements in its internal documentation from that in the monthly QoS reports. Liberty has used FairPoint's internal naming convention (with some slight spelling changes) in the remainder of this report, because these names correspond most closely to those FairPoint used in documents provided and in other data request responses during the audit. The table shows both names.

[4] There is some confusion and variation in the names of several of the QoS measurements. In this report, the five specified measurements are called Percent Installation Service Orders Met Commitment, Percent Installation Service Orders Met within 30 Days, Customer Trouble Report Rate Per 100 Lines –Network, Percent Out of Service Cleared within 24 Hours, and Percent Repair Commitments Met, respectively.

FairPoint Quality of Service Measurements Reported During 2010

Monthly QoS Report Measure-ment Number	Monthly QoS Report Measurement Name	Measurement Name Used in This Report[5]	Standard / Baseline	Subject to Reorg. Condition
1	POTs Premise Installation Average Days to Install	Average Days to Install – Premises Dispatch	TBD[6]	
2	POTs Mechanized Installation Average Days to Install	Average Days to Install – Mechanized	TBD	
3	POTs Combined Installation Average Days to Install	Average Days to Install – Total (POTS)	TBD	
6	DSL Combined Installation Average Days to Install	Average Days to Install – Total (DSL)	---	
7	% Installation Service Orders Met Commitment	Percent Installation Service Orders Met Commitment	90	X
8	% Installation Service Orders Met - w/in 30 days	Percent Installation Service Orders Met within 30 Days	95	X
9	% Toll and Local Assistance Operator Calls answered within 10 seconds	Percent Toll and Local Assistance Operator Calls Answered within 10 Seconds	90	
10	% Directory Assistance and Intercept Calls answered within 10 seconds	Percent Directory Assistance and Intercept Calls Answered within 10 Seconds	85	
11	% Repair Service Calls Answered within 20 seconds	Percent Repair Service Calls Answered within 20 Seconds	85	
12	% Business Office and Other Calls Answered within 20 seconds	Percent Business Office and Other Calls Answered within 20 Seconds	83	
13	Customer Trouble Reports Rate per 100 lines - Network	Customer Trouble Report Rate per 100 Lines – Network	1.12	X
14	% OOS Troubles cleared within 24 hours (excluding Sunday)	Percent Out of Service Cleared within 24 Hours	87	X
15	% Repair Commitments Met	Percent Repair Commitments Met	89	X
16	% Dialtone Speed within 3 seconds	Percent Dial Tone Speed within 3 Seconds	98	
17	% Call Completion	Percent Call Completion	97	
18	Held Orders Average Total Delay Days	Held Orders – Average Total Delay Days – Facility Reasons	6.46	
19	Total Held Orders on Hand Month End	Total Held Orders On Hand Month End – Facility Reasons	Tracking only	
20	Average Delay Days for installation of Service	Average Delay Days for Installation of Service	Tracking only	

[5] For the most part, these correspond to the names in FairPoint's internal documentation; however, Liberty has made some slight spelling changes. For example, "%" is written out as "percent," "#" is written out as "Number," "POTs" is changed to "POTS," and "premise" is changed to "premises."

[6] As noted, the definition of measurements 1, 2, 3, and 6 changed for 2010. Therefore, there was no baseline for these measurements during 2010. A baseline still needs to be established for measurements 1, 2 and 3; measurement 6 was dropped as of January 2011.

Monthly QoS Report Measure-ment Number	Monthly QoS Report Measurement Name	Measurement Name Used in This Report	Standard / Baseline	Subject to Reorg. Condition
21	Number of Installation Orders	Number of Installation Orders Completed	Tracking only	
22	Number of Access Lines Installed	Number of Access Lines Installed	Tracking only	
23	% Abandoned Repair Calls	Percent Abandoned Repair Calls	Tracking only	
24	Mean Time to Repair (Hours) All Service Problems	Mean Time to Repair	Tracking only	
25	# Repeat Trouble Reports	Number of Repeat Trouble Reports	Tracking only	
26	Access Lines in Service	Access Lines in Service	Tracking only	
27	Held Orders over 30 Days (for facility reasons)	Held Orders Over 30 Days – Facility Reasons	Tracking only	
	Held Orders > 30 Days - by central office		Tracking only	
	Central Offices with Customer Trouble Reports > 1.58 and 2.5		Tracking only	

C. Audit Scope

After consulting with Staff, Liberty focused the audit only on the 2010 QoS Reports and corresponding measurements. Liberty examined the processes and systems FairPoint used for all the QoS measurements reported during 2010. In particular, Liberty reviewed based on interviews and analysis of FairPoint-provided documents:

- The systems and processes FairPoint used for the measurement calculations
- FairPoint's business rule documentation describing the manner in which the transactions (orders, troubles, calls to call centers, *etc*.) appropriate to the measurement are chosen and the way the calculation is performed
- Whether the documented measurement calculations and business rules are appropriate for the intention of the measurement
- Whether the documented measurements calculations and business rules are designed to accurately calculate the measurement
- Whether the documented calculation methods were appropriate for the intention of the measurement
- Whether the source systems used for the data as stated in FairPoint's documentation are the appropriate source systems to use
- Whether FairPoint's documented process for drawing data from the source systems is properly designed
- The clarity and completeness of the measurement documentation
- The measurement change control process.

Liberty performed a more intensive analysis for the following subset of the QoS measurements reported in 2010, which were chosen with the concurrence of Staff:

- The five measurements whose 2010 reported results affect FairPoint's 2009 penalty liability:
  - Percent Installation Service Orders Met Commitment (Measurement 7)
  - Percent Installation Service Orders Met within 30 Days (Measurement 8)
  - Customer Trouble Reports Rate per 100 Lines – Network (Measurement 13)
  - Percent Out of Service Cleared within 24 Hours (excluding Sunday) (Measurement 14)
  - Percent Repair Commitments Met (Measurement 15)
- Access Lines in Service[7] (Measurement 26).

For these six measurements, Liberty examined in detail the integrity of the data FairPoint used in the 2010 measurement calculations, using data samples to assess whether the data was properly extracted from the source operations support systems, processed through the measurement calculation and reporting systems, and handled through the manual procedures to provide a complete and accurate report of QoS results. In particular, Liberty attempted to:

- Determine whether the FairPoint process and systems selected and aggregated the correct data subsets to provide a complete and accurate basis for calculating the intended result consistent with the measurement definitions
- Determine whether FairPoint appropriately applied the business rules necessary to accurately calculate the measurements
- Identify missing elements or flaws in the QoS measurement data processing that may cause the monthly reported results to be inaccurate
- Identify any other limitations in FairPoint's measurement calculation methodology that prevents the accurate measurement of FairPoint's performance.

Liberty also planned to try to replicate the reported results for these six measurements, that is, to calculate the reported results, using data drawn from FairPoint's systems and applying the appropriate business rules and Liberty's own algorithms. However, for various reasons that are described in more detail in the remainder of this report, the most important of which was FairPoint's inability to provide records of the actual datasets used to produce the 2010 reports, Liberty realized that the results of such replications would not provide useful information about the accuracy of FairPoint's reports of most measurements. Staff concurred with Liberty's assessment and any further attempt to replicate the reported results was abandoned.

At the request of Staff, Liberty performed a targeted examination of three other measurements:

- Average Days to Install – Premises Dispatch (Measurement 1)
- Average Days to Install – Mechanized (Measurement 2)

[7] Access Lines in Service was not one of the measurements originally identified for intensive review. However, because access line counts are used in the calculation of the Customer Trouble Report Rate per 100 Lines – Network measurement, Liberty included Access Lines in Service in the group of measurements targeted for intensive review.

- Average Days to Install – Total (POTS[8]) (Measurement 3).

For these measurements, Liberty examined whether FairPoint's systems and processes correctly: (a) identified as installations only orders that involved the addition or move of a customer's line and (b) distinguished installation orders requiring a premises dispatch from those not requiring a dispatch as is necessary to accurately calculate and report these three measurements. The need to distinguish installations involving dispatches to the premises from mechanized installations and to separately report them is a specific requirement of Exhibit 3 of the 2008 Settlement Agreement.

Finally, as requested in the RFP, Liberty reviewed the effectiveness of the existing measurements. As part of this review Liberty:

- Determined whether the current metric definitions are providing an effective and accurate assessment of FairPoint's performance in regulated areas that are important to the retail customer
- Developed recommendations for possible changes to existing QoS measurement definitions or new QoS measurements that might better represent the customer's experience of FairPoint's service performance
- Identified ambiguities in or misinterpretations of the current metric definitions and proposed clarifications where necessary
- Developed recommendations for procedural changes needed to improve the accuracy or usefulness of the quality of service reports
- Developed recommendations for other potential changes to the scope and methods of QoS measurement reporting.

The following table summarizes Liberty's audit approach for each QoS measurement.

Liberty's Audit Approach

Measurement	Monthly QoS Report Measurement Number	Liberty's Approach		
		Liberty's Approach	Targeted Review	Interviews, Document Review Only
Average Days to Install – Premises Dispatch	1		X	
Average Days to Install – Mechanized	2		X	
Average Days to Install – Total (POTS)	3		X	
Average Days to Install – Total (DSL)	6			X
Percent Installation Service Orders Met Commitment	7	X		
Percent Installation Service Orders Met within 30 Days	8	X		

[8] "POTS" means "Plain Old Telephone Service."

Measurement	Monthly QoS Report Measurement Number	Liberty's Approach		
		Liberty's Approach	Targeted Review	Interviews, Document Review Only
Percent Toll and Local Assistance Operator Calls Answered within 10 Seconds	9			X
Percent Directory Assistance and Intercept Calls Answered within 10 Seconds	10			X
Percent Repair Service Calls Answered within 20 Seconds	11			X
Percent Business Office and Other Calls Answered within 20 Seconds	12			X
Customer Trouble Report Rate per 100 Lines – Network	13	X		
Percent Out of Service Cleared within 24 Hours	14	X		
Percent Repair Commitments Met	15	X		
Percent Dial Tone Speed within 3 Seconds	16			X
Percent Call Completion	17			X
Held Orders – Average Total Delay Days – Facility Reasons	18			X
Total Held Orders On Hand Month End – Facility Reasons	19			X
Average Delay Days for Installation of Service	20			X
Number of Installation Orders Completed	21			X
Number of Access Lines Installed	22			X
Percent Abandoned Repair Calls	23			X
Mean Time to Repair	24			X
Number of Repeat Trouble Reports	25			X
Access Lines in Service	26	X		
Held Orders Over 30 Days – Facility Reasons	27			X

D. Liberty's Review Methods

Liberty gathered data for the audit from interviews of FairPoint subject matter experts, requests for data, and analysis of documents and measurement data FairPoint provided in response to the data requests. In total, Liberty conducted ten interviews and issued and received FairPoint responses to 214 data requests. Liberty also issued 37 data request clarifications, some involving multiple clarifications of a data request before it could be closed.

Based on analysis of the data and other information received, Liberty reached some tentative conclusions during the course of the audit. When these tentative conclusions indicated problems and issues that were likely to have a material effect on the reliability of the reported QoS measurements, Liberty informed Staff and FairPoint using the process of issuing 11 formal "Preliminary Finding" reports, which were first reviewed by Staff and then submitted to FairPoint. These reports described the issue and Liberty's basis for the tentative conclusions, and suggested recommendations for addressing the issues. FairPoint then had the ability to respond to the Preliminary Findings. This process helped Liberty verify the factual basis of the tentative conclusions by allowing FairPoint to provide any additional available factual information in its Preliminary Finding responses.

After final review of the data and any additional information FairPoint provided in the Preliminary Finding responses, Liberty compiled the audit's factual findings, final conclusions, and recommendations. These are discussed in the remainder of this report.

II. Findings

A. FairPoint's Service Quality Measurement Reporting Processes and Systems

FairPoint has stated that an objective in developing its reporting systems and processes was to maintain consistency with Verizon in reporting New Hampshire Quality of Service measurements. According to FairPoint, Verizon did not provide any documentation of the business rules used for the retail service quality measurements; however, FairPoint and Verizon held conversations to clarify the requirements for each of the measurements. Additionally, FairPoint engaged a firm that used as contractors former Verizon employees familiar with Verizon's service quality measurements and practices. After the closing of the 2008 merger transaction, FairPoint personnel continued to work with former Verizon employees who had worked with the teams that produced the Verizon Quality of Service reports.[9] Based on these conversations, FairPoint created documentation for the New Hampshire measurements in a document titled "New Hampshire SQI Metric Specifications for Regulatory Reporting" using the same format as the Verizon Carrier-to-Carrier document. FairPoint's system developer, Capgemini, used this document as the QoS functional design requirements for the reporting systems.[10]

FairPoint's Operations Performance Metrics organization is responsible for compiling the source data and calculating and reporting the service quality measurements, including the New Hampshire QoS measurements, Maine and Vermont retail service quality measurements, and the wholesale Carrier-to-Carrier Metrics and Performance Assurance Plans.[11] This organization, which is staffed with a director and at least two senior metrics analysts, is also responsible for maintaining and updating the QoS measurement documentation.[12]

FairPoint uses five different systems in calculating the New Hampshire QoS measurements. The company uses these same systems for calculating retail service quality measurements for the other two northern New England states and in calculating similar wholesale performance measurements. FairPoint's primary service quality measurement system is the Carrier Analysis Measurement Platform (CAMP), which the company uses for the automated calculation of 17 of the 25 New Hampshire QoS measurements reported during 2010. CAMP draws source data from the primary operations support systems FairPoint uses for service ordering and provisioning (MetaSolv, commonly known as M6, and Siebel) and for maintenance and repair (Remedy). FairPoint performs a manual calculation of one measurement, Percent Out of Service Cleared within 24 Hours, using repair data stored in a system called FireStage, which downloads that data from Remedy. Liberty found that FairPoint did not apply record count checks as part of the data extraction process from M6 and Remedy into CAMP or FireStage for reported results

[9] FairPoint's July 29, 2011 response to Liberty's Draft Final Report.
[10] Response to Data Request #1. The service quality measurement design documentation was never presented to the New Hampshire Commission staff for review and approval, and Liberty is not aware that there was a requirement to do so.
[11] Response to Data Request #5.
[12] Interview #1, January 4, 2011.

during 2010;[13] the implication of this is explored in Conclusion #2 below. FairPoint uses the Genesys, New Metrics, and Previsor systems in the calculation of the remaining seven measurements. New Metrics and Previsor draw source data directly from the network and operator services switches. Genesys is both an operations management and reporting system.

FairPoint uses CAMP for the final reporting of all the measurements. The senior metrics analysts in FairPoint's Operations Performance Metrics organization manually pull data or reports from FireStage, Genesys, New Metrics, and Previsor, and use the data and reports to populate spreadsheets with the information CAMP needs for reporting results. The information found in these spreadsheets includes the report month, sub-measurement number, product or interface, state, numerator, and denominator. FairPoint IT Data Management, which administers the CAMP system, loads these results into CAMP based on the spreadsheet files.[14]

FairPoint's data retention practices vary among the systems used for calculating the QoS measurements. FairPoint does not freeze either the source or processed data selected for each month's measurement calculations in CAMP.[15] Previsor maintains detailed data for a year and summarized data for seven years.[16] New Metrics has no data retention policy.[17] Genesys data is retained in the system for a period of one year and the previous year's data is available in storage.[18] FireStage data is fully archived to tape at the end of each month and the tapes are available in storage.[19] The implications of these various practices are discussed in Conclusion #3 below.

FairPoint uses a procedure to manage changes to the processes for calculating the New Hampshire Service Quality Measurements. This procedure is documented in the "Carrier Analysis Measurement Platform Metrics (CAMP) Governance Process" document dated March 3, 2010.[20]

The following table shows the data sources, calculation systems, and reporting system used for each measurement.

[13] Responses to Data Requests #63 and #126.
[14] Interview #1, January 4, 2011 and responses to Data Requests #43, #49, #64, and #69.
[15] Interview #9, May 5, 2011 and Data Request #191 requirements conference call, April 21, 2011.
[16] Response to Data Request #209.
[17] Although FairPoint's July 29, 2011 response to Liberty's Draft Final Report notes, "Service Quality Metrics based data is and has been available from cutover, February 2009 to current," FairPoint's response to Data Request #41 states that the company "has no data retention requirements with New Metrics" and indicates that data retention is based on system storage capacity with the newest data overwriting the oldest when the capacity has been exceeded.
[18] Response to Data Request #51.
[19] Response to Data Request #60.
[20] Document provided in response to Data Request #6.

Measurement to Systems Relationship

Measurement	FairPoint's Business Rules Documentation Reference	Monthly QoS Report Measure-ment Number	Data Source	Calculation System	Reporting System
Average Days to Install – Total (POTS)	NH-7.2.1	3	M6	CAMP	CAMP
Average Days to Install – Total (DSL)	NH-7.2.1	6	M6	CAMP	CAMP
Average Days to Install – Premises Dispatch	NH-7.2.1a	1	M6	CAMP	CAMP
Average Days to Install – Mechanized	NH-7.2.1b	2	M6	CAMP	CAMP
Percent Installation Service Orders Met within 30 Days	NH-7.2.1c	8	M6	CAMP	CAMP
Total Held Orders On Hand Month End – Facility Reasons	NH-7.3	19	M6	CAMP	CAMP
Held Orders Over 30 Days – Facility Reasons	NH-7.4.1	27	M6	CAMP	CAMP
Average Delay Days for Installation of Service	NH-7.4a	20	M6	CAMP	CAMP
Held Orders – Average Total Delay Days – Facility Reasons	NH-7.4b	18	M6	CAMP	CAMP
Number of Installation Orders Completed	NH-7.5	21	M6	CAMP	CAMP
Number of Access Lines Installed	NH-7.5a	22	M6	CAMP	CAMP
Percent Toll and Local Assistance Operator Calls Answered within 10 Seconds	NH-7.6.2	9	Operator Services Switches	New Metrics	Manual Input to CAMP
Percent Directory Assistance and Intercept Calls Answered within 10 Seconds	NH-7.7.2	10	Operator Services Switches	New Metrics	Manual Input to CAMP
Percent Repair Service Calls Answered within 20 Seconds	NH-7.8.2	11	Genesys	Genesys	Manual Input to CAMP
Percent Abandoned Repair Calls	NH-7.8a	23	Genesys	Genesys	Manual Input to CAMP
Percent Business Office and Other Calls Answered within 20 Seconds	NH-7.9b	12	Genesys	Genesys	Manual Input to CAMP
Percent Dial Tone Speed within 3 Seconds	NH-7.10	16	Network Switches	Previsor	Manual Input to CAMP
Percent Call Completion	NH-7.11	17	Network Switches	Previsor	Manual Input to CAMP
Customer Trouble Report Rate per 100 Lines – Network	NH-7.12.1	13	Remedy and Seibel	CAMP	CAMP

Measurement	FairPoint's Business Rules Documentation Reference	Monthly QoS Report Measure-ment Number	Data Source	Calculation System	Reporting System
Percent Out of Service Cleared within 24 Hours	NH-7.13c	14	Remedy	FireStage	Manual input to CAMP
Number of Repeat Trouble Reports	NH-7.14	25	Remedy	CAMP	CAMP
Mean Time to Repair	NH-7.15a	24	Remedy	CAMP	CAMP
Percent Repair Commitments Met	NH-7.16a	15	Remedy	CAMP	CAMP
Access Lines in Service	NH-7.17	26	Seibel	CAMP	CAMP
Percent Installation Service Orders Met Commitment	NH-7.19.1	7	M6	CAMP	CAMP

B. Service Quality Measurements Calculated in the CAMP System

1. CAMP System Overview

Three modules – Staging, Operational Data Source (ODS), and Data Warehouse – comprise the CAMP system. The server used for the CAMP system is located in Manchester, NH.[21] Source data from FairPoint's operations support systems are uploaded and stored in the Staging module. The data moves from Staging to ODS, where data transformations occur, derived fields are populated, and the records for inclusion in the measurements are identified.[22] The selected records used to calculate the numerator and denominator of each measurement are then moved to the Data Warehouse module from which the results are reported. FairPoint uses Business Objects software to obtain the final results data from the Data Warehouse.[23] However, because the Business Objects software is not programmed to create the reports in the required format, FairPoint must manually transfer the output to an Excel spreadsheet for the report FairPoint files with the Commission. FairPoint indicated that it has not programmed Business Objects to auto-create the report in the required format due to a lack of time and resources.[24]

FairPoint draws the data into the CAMP Staging module for use in calculating the QoS measurements from three source systems: M6, Remedy, and Siebel. CAMP receives its source data from M6 for the measurements related to service provisioning performance. CAMP obtains its source data from Remedy and Siebel for the measurements that report access lines in service and service repair performance.[25] Data from M6 and Remedy is uploaded to CAMP on a daily

[21] Response to Data Request #16.
[22] Responses to Data Requests #20 and #21. A data transformation occurs when the downstream CAMP data is altered in some manner from the original source data (*e.g.,* converting Greenwich Mean Time from source data to Eastern Standard Time in the CAMP data). A derived data field is a field that is not found in the source data, but is determined and populated downstream in CAMP based on information found in the source data and/or with look-up tables (*e.g.,* identifying the POTS product by the USOC codes in the source data and a look-up table that cross references these codes to the products).
[23] Business Objects software typically contains a suite of query, reporting, and analysis tools. According to FairPoint this software is used to extract the calculated measurement information from the CAMP Data Warehouse.
[24] "CAMP Reporting Overview" provided in response to Data Request #2, and Interview #1, January 4, 2011.
[25] See the "Measurement to Systems Relationship" table shown on pages 11 and 12.

basis; Siebel data is uploaded monthly.[26] The load process from the source systems to CAMP is a software-driven, selective load process; not all data from the source systems are loaded into CAMP.[27]

After CAMP calculates the measurements, FairPoint manually "scrubs" the results before reporting them. FairPoint's documentation states that this manual "scrub" process is performed only on measurements auto-calculated within the CAMP system.[28] This process uses manual SQL queries in an attempt to identify problems with the CAMP-calculated results as a quality check and to help identify the root cause of an operational or reporting problem when FairPoint fails to meet a performance benchmark. FairPoint makes any required corrections identified in the "scrub" process manually and then documents them.[29]

2. Service Provisioning Measurements Calculated in CAMP

a. Percent Installation Service Orders Met Commitment

FairPoint defines Percent Installation Services Orders Met Commitment as "the percent of total completed orders where FairPoint met the committed due date." FairPoint's business rules documentation[30] lists four exclusions for this measurement:

- Orders where the due date is missed by the end user
- Disconnect orders
- Record and listing orders
- FairPoint test orders and administrative orders.

FairPoint's business rules documentation[31] states that the numerator for the calculation of this measurement is the number of orders for which the "order completion date is less than or equal to the order due date." The denominator is the total number of "orders completed in the reporting period." The performance standard for this measurement is 90 percent.[32]

This measurement is limited to POTS service orders. Appendix A outlines FairPoint's processes for: (1) identifying POTS orders, (2) identifying orders specific to New Hampshire, (3) distinguishing retail from wholesale orders, and (4) identifying the orders to be excluded.
As noted, FairPoint's business rules documentation indicates that the calculation of Percent Installation Service Orders Met Commitment is based on the "order completion date" and "orders completed." However, as described in more detail in Appendix A, FairPoint's actual

[26] "CAMP Reporting Overview" presented during Interview #1, January 4, 2011.
[27] For example, FairPoint does not pull record orders from the source systems into CAMP.
[28] Interview #1, January 4, 2011 and "SQI Report Preparation Flow Chart" dated November 1, 2010 provided in response to Data Request #7.
[29] FairPoint provided this documentation for 2010 in response to Data Requests #115 and #116.
[30] FairPoint Communications New Hampshire SQI Metric Specifications for Regulatory Reporting, December 8, 2010.
[31] FairPoint Communications New Hampshire SQI Metric Specifications for Regulatory Reporting, December 8, 2010.
[32] FairPoint Communications New Hampshire SQI Metric Specifications for Regulatory Reporting, December 8, 2010.

practice is to use the service installation completion date, not the service order completion date, to determine whether it met the commitment date for a service order. FairPoint also determines the number of orders completed for the reported month based on the service installation completion date, not order completion date. Service installation completion occurs when all provisioning steps required for the order in the field and central office are complete; however, other steps in the provisioning process are still required after service installation completion to provide full service to the customer and thus complete the service order. Provisioning tasks that are not completed until after service installation completion include:[33]

- Updating the customer's billing record
- Updating the E911 database for new customers, additional lines, and customer moves
- Updating other external databases such as the Line Information Database (LIDB) and Caller ID with Name (CNAM).

The implications of using the service installation completion date instead of the service order completion date for this measurement are addressed in Conclusion #8.

For this measurement FairPoint defines "installation" as any service order other than those shown in the exclusion list. Therefore, mechanized orders for feature and Primary Interexchange Carrier (PIC) changes, as well as orders for official FairPoint service, are included in the calculation.[34] The implications of this are addressed in Conclusion #6 and #9.

b. Percent Installation Service Orders Met within 30 Days

FairPoint defines Percent Installation Services Orders Met within 30 Days as "the percent of total completed orders where FairPoint completes the installation within 30 days of application date." There are five exclusions listed for this measurement in FairPoint's documentation:[35]

- Orders for which the customer requested a later date
- Orders for which the due date is missed by the end user
- Disconnect orders
- Record and listing orders
- FairPoint test orders and administrative orders.

FairPoint indicated that, despite the documentation, it presently does not exclude orders where the customer requested a later date.[36] The implications of this are addressed in Conclusion #12.
FairPoint's business rules documentation[37] states that the numerator for the calculation of this measurement is the "number of completed orders where the installation appointment was complete within 30 days in the reporting period." The denominator is the total "number of

[33] Responses to Data Requests #142, #172 and #173.
[34] Responses to Data Requests #169, #177, and #187.
[35] FairPoint Communications New Hampshire SQI Metric Specifications for Regulatory Reporting, December 8, 2010.
[36] Responses to Data Requests #22 and #79.
[37] FairPoint Communications New Hampshire SQI Metric Specifications for Regulatory Reporting, December 8, 2010.

service orders completed in the reporting period." The performance standard for this measurement is 95 percent.[38]

For this measurement's calculation, the 30-day interval is calculated, on all service orders except those identified in the exclusion list, from the order start date to the completion date. The 30 days are based on calendar days with no exclusions for weekends or holidays.[39] However, as with Percent Installation Service Orders Met Commitment, FairPoint uses the service installation completion date rather than the service order completion date as the completion date for the calculation. The implications of using this method for calculating the provisioning time interval are addressed in Conclusion #8. FairPoint's methods for determining the order start date and the completion date are described in Appendix A.

Aside from the method used to calculate the 30-day interval, all of the criteria used to identify the POTS service orders to be included in this measurement's calculation are the same as for the Percent Installation Services Orders Met Commitment, and are described in Appendix A.[40]

c. Average Days to Install – Total (POTS)

FairPoint defines Average Days to Install – Total (POTS) as "the average days to install from order creation to work completion. Includes both premise [sic] dispatch and mechanized non-dispatch orders." There are four exclusions listed for this measurement in FairPoint's documentation:[41]

- Orders where the due date is missed by the end user
- Disconnect Orders
- FairPoint administrative and test orders
- Record and listing orders.

FairPoint's business rules documentation[42] states that the numerator for the calculation of this measurement is the "sum of the days to install service in the reporting period." The denominator is the "number of service orders completed in the reporting period." The performance standard for this measurement is as yet undetermined.[43] FairPoint's methods for determining the start date and the completion date are described in Appendix A.

Although not explicitly specified in FairPoint's business rule documentation, this measurement like the other Average Days to Install measurements includes only those orders that involve an

[38] FairPoint Communications New Hampshire SQI Metric Specifications for Regulatory Reporting, December 8, 2010.
[39] Interview #6, February 8, 2011 and response to Data Request #75.
[40] Interview #6, February 8, 2011.
[41] FairPoint Communications New Hampshire SQI Metric Specifications for Regulatory Reporting, December 8, 2010.
[42] FairPoint Communications New Hampshire SQI Metric Specifications for Regulatory Reporting, December 8, 2010.
[43] FairPoint Communications New Hampshire SQI Metric Specifications for Regulatory Reporting, December 8, 2010.

installation of dial tone or a move of customer service to a new location. They do not include orders for changes to existing service such as a feature or PIC change.

FairPoint's documentation also does not specify that the company calculates the numerator of the measurement based on business days rather than calendar days. The numerator is the number of business days from the order start date until the service installation completion date summed across all qualifying POTS orders. FairPoint determines the interval for each order by subtracting the order start date from the service installation completion date. FairPoint considers the day that the order was received as day zero. Orders completed on the same day they are received are assigned a zero-day interval. Intervals are calculated in units of days with no consideration of time of day (*e.g.*, an order that is completed at 12:01 AM on the day after it was received will be assigned a one-day interval). For order completion, as for all other service provisioning measures, FairPoint uses a derived order completion date based on when the service was installed rather than the actual order completion date. When calculating the interval, FairPoint excludes Saturdays and Sundays from the calculation.[44] The other variables needed to identify the service orders to be included in this measure's results, such as the state and the product identification, follow the logic described in Appendix A.

Consistent with FairPoint's practice for the two Percent Installation measurements described above, the company uses the service installation completion date rather than the service order completion date to determine the number of completed orders for the measurement denominator. The implications of this are discussed in Conclusion #8.

FairPoint indicated that it does not exclude orders for which the customer requested a later due date at order issuance.[45] The implications of this are addressed in Conclusion #12.

d. Average Days to Install – Premises Dispatch

FairPoint defines Average Days to Install – Premises Dispatch as "the average days to install from order creation to work completion for premise [sic] dispatch orders." The measurement includes POTS orders only. In addition to the four exclusions identified for Average Days to Install – Total (POTS), this measurement also excludes non-dispatched orders. FairPoint's business rules documentation[46] states that the numerator for the calculation of this measurement is the "sum of the days to install service in the reporting period." The denominator is the "number of premise [sic] dispatched service orders completed in the reporting period." The performance standard for this measurement is as yet undetermined.[47]

As with Average Days to Install – Total (POTS), FairPoint calculates the interval in the numerator based on business days, although this is not explicit in the documentation. The criteria

[44] "FRP_NH_SQI_RegulatoryReportingDataElementsDefinitions_120810" provided in response to Data Request #1 and Interview #10, May 16, 2011.
[45] Responses to Data Requests #27 and #90.
[46] FairPoint Communications New Hampshire SQI Metric Specifications for Regulatory Reporting, December 8, 2010.
[47] FairPoint Communications New Hampshire SQI Metric Specifications for Regulatory Reporting, December 8, 2010.

for identifying the service orders to be included in the calculation are also the same as for Average Days to Install – Total (POTS) with the exception that this measurement is limited to service orders requiring a premises dispatch. Appendix A describes the process FairPoint uses to identify premises dispatch orders.[48]

Also as with Average Days to Install – Total (POTS), FairPoint uses the service installation completion date rather than the service order completion date to determine the number of completed orders for the measurement denominator. Additionally, FairPoint does not exclude orders for which the customer requested a later due date at order issuance.[49] The implications of these two points are addressed in Conclusion #8 and Conclusion #12, respectively.

e. Average Days to Install – Mechanized

FairPoint defines Average Days to Install – Mechanized as "the average days to install from order creation to work completion for mechanized non-dispatch orders." The measurement includes POTS orders only. In addition to the four exclusions identified for Average Days to Install – Total (POTS), this measurement also excludes dispatched orders. FairPoint's business rules documentation[50] states that the numerator of this measurement is the "sum of the days to install service in the reporting period." The denominator is the "number of mechanized non-dispatched service orders completed in the reporting period." The performance standard is as yet undetermined.[51]

As with Average Days to Install – Total (POTS), FairPoint calculates the interval in the numerator based on business days, although this is not explicit in the documentation. The criteria for identifying the service orders to be included are also the same as those for Average Days to Install – Total (POTS) described above with the exception that this measurement is limited to service orders that do not require a premises dispatch. When calculating this measurement, FairPoint includes both fully mechanized service orders and service orders that require a technician to perform work in the central office. According to FairPoint, service orders that require work in the central office are classified as non-dispatch orders.[52] Appendix A describes the process FairPoint uses to identify non-dispatch orders.

Also as with Average Days to Install – Total (POTS), FairPoint uses the service installation completion date rather than the service order completion date to determine the number of completed orders for the measurement denominator. Additionally, FairPoint does not exclude orders for which the customer requested a later due date at order issuance.[53] The implications of these two points are addressed in Conclusion #8 and Conclusion #12, respectively.

[48] Response to Data Request #206.
[49] Responses to Data Requests #27 and #90.
[50] FairPoint Communications New Hampshire SQI Metric Specifications for Regulatory Reporting, December 8, 2010.
[51] FairPoint Communications New Hampshire SQI Metric Specifications for Regulatory Reporting, December 8, 2010.
[52] Response to Data Request #204.
[53] Responses to Data Requests #27 and #90.

f. Average Days to Install – Total (DSL)

The definition, exclusions, and calculation of Average Days to Install – Total (DSL) are identical to those of Average Days to Install – Total (POTS). The only difference is that it measures DSL rather than POTS orders. This measurement was eliminated in 2011 as part of the 2010 Settlement Agreement related to FairPoint's Chapter 11 Reorganization Plan.

g. Total Held Orders On Hand Month End – Facility Reasons

FairPoint defines Total Held Orders On Hand Month End – Facility Reasons as "the number of orders held at the end of the month, due to FairPoint reasons. Report includes orders still pending at the end of the month, held past their committed due dates and carry a FairPoint missed appointment code due to facility reasons." FairPoint lists five exclusions for this measurement in FairPoint's documentation:[54]

- Disconnect orders
- FairPoint administrative and test orders
- Orders that are completed or cancelled
- Orders where the completion date has been delayed due to end-user delay
- Orders with appointment codes indicating special construction.

This measurement is a count of the number of open orders that are on hold at the end of the reporting period because FairPoint facilities are not available to provision service at the requested location ("FairPoint facility reasons"). It is a diagnostic measure and therefore has no performance standard.[55] Although not clear from FairPoint's definition of this measurement, the measurement includes only late orders, not orders still pending at the end of the month that have not missed their due dates. Appendix A provides the details for identifying the orders to be included and excluded from the measurement.

The exclusion of disconnect orders appears to be a documentation error, because a disconnect order cannot be delayed for facility reasons. The exclusion for orders with appointment codes indicating special construction involves situations where an applicant requested service to a location that has not previously had service and requires special construction of facilities on private property. The initiation of construction beyond one pole on private property requires payment by the customer and the conveyance of required rights of way. FairPoint indicated that it cannot be held accountable for order delays for this type of construction, which is out of its control.[56]

FairPoint explained that the exclusion of orders for which the completion date has an end-user-caused delay applies when the facility problem has been resolved and a new due date has been established with the end user, but the new date was missed for end-user-caused reasons.[57]

[54] FairPoint Communications New Hampshire SQI Metric Specifications for Regulatory Reporting, December 8, 2010.
[55] FairPoint Communications New Hampshire SQI Metric Specifications for Regulatory Reporting, December 8, 2010.
[56] Response to Data Request #24.
[57] Response to Data Request #25.

FairPoint also indicated that its procedure for selecting orders for this measurement can result in the exclusion of an order that is being held for facility reasons in cases where an order was originally delayed due to customer reasons and it was later discovered that a FairPoint facilities issue was preventing the completion of that order.[58] The implications of this are addressed in Conclusion #15.

h. Held Orders for Over 30 Days – Facility Reasons

FairPoint defines Held Orders for Over 30 Days – Facility Reasons as "the number of open orders still pending at the close of the reporting period, that are held past their committed due date for more than 30 days, and carry a FairPoint missed appointment code for facility reasons." FairPoint lists five exclusions for this measurement in FairPoint's documentation:[59]

- Disconnect orders
- FairPoint administrative orders
- FairPoint test orders
- Orders where the completion date has been delayed due to end user delay
- Orders with appointment codes indicating special construction.

This measurement is a count of the number of open orders that have been in a hold status for more than 30 days for FairPoint facility reasons at the end of the reporting period. This is a diagnostic measure and therefore has no performance standard.[60]

FairPoint determines the 30-day period as the number of days, including Saturdays and Sundays, that have elapsed from the customer's desired due date.[61] The details are provided in Appendix A. As with Total Held Orders On Hand Month End – Facility Reasons, FairPoint's procedure for selecting orders for this measurement can result in the exclusion of an order that is being held for facility reasons in cases where an order was originally delayed due to customer reasons and it was later discovered that a FairPoint facilities issue was preventing the completion of that order.[62] The implications of this are addressed in Conclusion #15.

As is the case for Total Held Orders On Hand Month End – Facility Reasons, disconnect orders cannot be delayed for facility reasons. Thus, the exclusion listed for disconnect orders is unnecessary. The logic for the exclusion of special construction orders is also the same as for that measurement.

[58] Responses to Data Requests #27 and #89 and response to Preliminary Finding #11.
[59] FairPoint Communications New Hampshire SQI Metric Specifications for Regulatory Reporting, December 8, 2010.
[60] FairPoint Communications New Hampshire SQI Metric Specifications for Regulatory Reporting, December 8, 2010.
[61] Response to Data Request #26.
[62] Responses to Data Requests #27 and #89 and response to Preliminary Finding #11.

i. Average Delay Days for Installation of Service

FairPoint defines Average Delay Days for Installation of Service as "the average delay days, for completed orders missed due to FairPoint reasons on the original committed due date, and measures the average number of business days between the order due date and the actual work completion date." FairPoint lists six exclusions to this measure in FairPoint's documentation:[63]

- End user missed appointments
- Disconnect orders
- FairPoint administrative and record orders
- FairPoint test orders
- Listing orders
- Saturdays, Sundays, and legal holidays.

FairPoint's business rules documentation[64] states that the numerator of this measurement is the "sum of the completion date minus the due date for completed orders missed due to company reasons." The denominator is the "number of completed service orders that were missed for company reasons in the reporting period." This is a diagnostic measure and therefore has no performance standard.[65] The logic for identifying orders for inclusion in the measurement is provided in Appendix A. FairPoint uses the service installation completion date rather than the service order completion date to determine the number of completed orders for the measurement denominator.

j. Held Orders – Average Total Delay Days – Facility Reasons

FairPoint defines Held Orders – Average Total Delay Days – Facility Reasons as "orders missed due to FairPoint reasons for facility reasons on the original committed due date, the average number of business days between the order due date and actual work completion date." FairPoint lists six exclusions to this measure in its documentation:[66]

- Orders where the customer requested a later due date at order issuance
- Orders where the due date is missed by the customer
- Disconnect orders
- FairPoint administrative and test orders
- Record and listing orders
- Saturdays, Sundays and legal holidays.

[63] FairPoint Communications New Hampshire SQI Metric Specifications for Regulatory Reporting, December 8, 2010.
[64] FairPoint Communications New Hampshire SQI Metric Specifications for Regulatory Reporting, December 8, 2010.
[65] FairPoint Communications New Hampshire SQI Metric Specifications for Regulatory Reporting, December 8, 2010.
[66] FairPoint Communications New Hampshire SQI Metric Specifications for Regulatory Reporting, December 8, 2010.

FairPoint's business rules documentation[67] states that the numerator of this measurement is the "sum of the completion date minus due date for orders missed for due to company reasons for facility reasons." The denominator is the "number of completed orders missed for company reasons for facility reasons in the reporting period." The performance standard for this measurement is 6.46 days.[68]

FairPoint's definitions of the numerator and denominator for this measurement are somewhat confusing. Liberty found that, in practice, the numerator is the number of business days between the service installation completion date and the due date, summed across POTS orders for which the service installation date was missed for FairPoint facility reasons. The denominator is the number of orders for which the service was installed but due date was missed for FairPoint facility reasons in the reporting period. As these restatements of the definitions of the numerator and denominator indicate, FairPoint uses the service installation completion date rather than the service order completion date to calculate the average delay days and to select orders for the reporting month, which is also the case for many other provisioning measurements. The implications of this are addressed in Conclusion #8.

FairPoint's logic for identifying orders for inclusion in the measurement is provided in Appendix A. FairPoint indicated that it does not exclude orders for which the customer requested a later due date at order issuance; this exclusion is an error in the business rules documentation.[69] As with the other measurements of facility-caused delays, FairPoint's procedure for selecting orders for this measurement can result in the exclusion of an order that is being held for facility reasons in cases where an order was originally delayed due to customer reasons and it was later discovered that a FairPoint facilities issue was preventing the completion of that order.[70] The implications of this are addressed in Conclusion #15.

Also like the other measurements of facility-caused delays, disconnect orders cannot be delayed for facility reasons. Thus, the exclusion listed for disconnect orders is unnecessary.

k. Number of Installation Orders Completed

FairPoint defines Number of Installation Orders Completed as the "number of orders completed in a month that are not disconnects." FairPoint lists four exclusions to this measure in its documentation:[71]

- Disconnect orders
- FairPoint administrative orders
- FairPoint test orders
- Listing and record orders.

[67] FairPoint Communications New Hampshire SQI Metric Specifications for Regulatory Reporting, December 8, 2010.
[68] FairPoint Communications New Hampshire SQI Metric Specifications for Regulatory Reporting, December 8, 2010.
[70] Responses to Data Requests #27 and #89 and response to Preliminary Finding #11.
[70] Responses to Data Requests #27 and #89 and response to Preliminary Finding #11.
[71] FairPoint Communications New Hampshire SQI Metric Specifications for Regulatory Reporting, December 8, 2010.

FairPoint's business rules documentation[72] states that this measurement is a count of the "number of service orders (order types N, T and C) completed in the reporting period." The count includes: (1) orders for new service (order type 'N'), (2) orders for a move of an existing service to a new location (order type 'T'), and (3) orders that are issued to make changes, such as feature changes, to an existing customer's service (order type 'C'). This is a diagnostic measure and therefore has no performance standard. Appendix A describes the methods FairPoint uses for selecting orders for this measurement.

FairPoint uses the service installation completion date rather than the order completion date to determine the number of installations complete in the report month, as is also the case for many other provisioning measurements, as noted above. The implications of this are addressed in Conclusion #8.

l. Number of Access Lines Installed

FairPoint defines Number of Access Lines Installed as "the number of service orders for Inward Access Lines completed in the reporting period." FairPoint lists four exclusions to this measure in FairPoint's documentation:

- Disconnect orders
- FairPoint administrative orders
- FairPoint test orders
- Listing and record orders.

This measurement is a count of the number of inward access lines installed during the reporting period. It is a diagnostic measure and therefore has no performance standard. Results are reported monthly and cumulatively with a year-to-date total. [73] Appendix A describes the methods FairPoint uses for selecting orders for this measurement.

m. Access Lines in Service

FairPoint defines Access Lines in Service as "the total lines in service at month's end." The two exclusions listed for this measurement in FairPoint's documentation[74] are:

- FairPoint official lines
- Test lines.

This measurement is a count of the number of POTS access lines in service at the end of the month.[75] FairPoint indicated that the exclusion for official lines is an error in its documentation and these access lines are included in the monthly access line counts.[76]

[72] FairPoint Communications New Hampshire SQI Metric Specifications for Regulatory Reporting, December 8, 2010.
[73] FairPoint Communications New Hampshire SQI Metric Specifications for Regulatory Reporting, December 8, 2010.
[74] FairPoint Communications New Hampshire SQI Metric Specifications for Regulatory Reporting, December 8, 2010.

Appendix A provides the details of FairPoint's method for determining which lines are POTS access lines for the purpose of this measurement. The method is different from that FairPoint uses for the other provisioning measurements. All lines designated by at least one Universal Service Order Code (USOC) considered to be a POTS USOC are counted toward the lines-in-service total, even in cases where the line may be providing another, more complex, service such as DSL.[77] FairPoint counts the USOCs rather than the lines. As a result, if a line record erroneously contains multiple POTS USOCs (*e.g.*, 1FR and 1MR), FairPoint counts that line multiple times, once for each USOC, in the total Access Lines in Service results.[78] The implications of this are addressed in Conclusion #16.

As noted in Appendix A, FairPoint discovered a problem with incorrect state and retail identification for some lines in the Siebel source system for the Access Lines in Service calculation. As a result, FairPoint has recently changed the logic used to properly identify each access line. The company completed the necessary programming changes on March 25, 2011 and recalculated the 2010 Access Lines in Service after implementing the new logic. The revised numbers differ by 0.5 percent or less (0.1 percent on average) from the originally reported 2010 monthly Access Lines in Service.[79]

3. Repair Measurements Calculated in CAMP

a. Customer Trouble Report Rate per 100 Lines – Network

FairPoint defines Customer Trouble Report Rate per 100 Lines – Network as "the number of customer troubles per 100 access lines closed within the calendar month." This "include[s] repeat reports." FairPoint's business rules documentation[80] lists six exclusions for this measurement: [81]

- Reports of interexchange calls and non-regulated Customer Provided Equipment (CPE)
- Special Access
- Subsequent reports[82]
- Troubles outside of FairPoint's control:
  - Closed due to customer action
  - Closed to CPE issues

[75] FairPoint Communications New Hampshire SQI Metric Specifications for Regulatory Reporting, December 8, 2010.
[76] Response to Data Request #177. FairPoint has subsequently corrected this error and some of the other documentation errors Liberty uncovered during the course of this audit.
[77] Response to Data Request #145.
[78] Response to Data Request #195.
[79] Response to Data Request #212.
[80] FairPoint Communications New Hampshire SQI Metric Specifications for Regulatory Reporting, December 8, 2010.
[81] FairPoint Communications New Hampshire SQI Metric Specifications for Regulatory Reporting, December 8, 2010.
[82] "Subsequent reports" are additional calls from customers about a trouble while the trouble is pending.

- Troubles reported by FairPoint employees in the course of performing preventative maintenance where no customer has reported trouble
- Troubles reported that were not closed to (3) drop wire, (4) outside plant, (5) central office, (7) test okay, (8) found okay in, (9) found okay out.

The numerator of this measurement is the number of all trouble reports in the reporting period with network troubles. The denominator is the number of access lines in service at month end. The calculated fraction is then multiplied by 100. The performance standard is 1.12 troubles per 100 access lines.[83]

FairPoint's business rules documentation indicates that this measurement is limited to POTS; however, FairPoint restated the 2010 results to include additional products in this measurement. According to FairPoint, these products were added to be consistent with the results as they were reported by Verizon. Customer Trouble Report Rate per 100 Lines – Network is the only New Hampshire QoS measurement that contains non-POTS lines. FairPoint currently includes the following products in the calculation of this measurement:[84]

- Residential POTS
- Business POTS
- Lifeline
- WATS
- Centrex
- Private Branch Exchange (PBX)
- Official Service
- 2-Wire Digital
- Coin
- Customer Owned Coin Operated Telephone (COCOT).

CAMP receives source data for the calculation of this measurement from two operational source systems, Remedy and Siebel.

FairPoint's process for identifying the retail product associated with a trouble report requires a complex joining process in CAMP involving the matching of data in four different tables in the CAMP Staging module. Appendix A describes this process. FairPoint includes wholesale trouble reports for resold service in the calculation of this measurement's results.[85] The implications of this are addressed in Conclusion #20.

FairPoint only includes reported troubles that were closed with a fault (disposition) code indicating a network trouble: '03' (drop wire), '04' (outside plant), '05' (central office), '07' (test okay), '08' (found okay in), '09' (found okay out). FairPoint uses the fault codes found in the trouble reports to exclude reports of interexchange calls, non-regulated CPE, troubles outside

[83] FairPoint Communications New Hampshire SQI Metric Specifications for Regulatory Reporting, December 8, 2010.
[84] Response to Data Request # 122 and Interview #6, February 8, 2011.
[85] Responses to Data Requests #184 and #185.

of FairPoint's control, and troubles not closed to one of the network fault codes.[86] The process FairPoint uses to exclude troubles reported by FairPoint employees in the course of performing preventative maintenance work is described in Appendix A. The exclusion listed for subsequent reports is not applicable to this measure. According to FairPoint, subsequent reports do not generate a trouble ticket to exclude.[87]

As noted in the discussion of Access Lines in Service, FairPoint discovered a problem with incorrect identification of some access lines in the Siebel source system. This issue also affects Customer Trouble Report Rate per 100 Lines – Network, because the denominator of this measurement is the number of access lines. After implementing code changes to address these source system errors, FairPoint's revised calculations of the monthly 2010 Customer Trouble Report Rate per 100 Lines – Network show an increase of 5.2 percent or less from the originally reported results; the increase was 2.4 percent (from 1.24 to 1.27) for the full year 2010 results.[88] Because the originally reported full year 2010 results of this measurement already missed the 2010 benchmark, the revised reported results do not affect the measurement's annual compliance status.[89]

b. Percent Repair Commitments Met

FairPoint defines Percent Repair Commitments Met as "the percentage of customer trouble reports cleared by the committed date and time." FairPoint's business rules documentation lists the following six exclusions for this measurement: [90]

- End-user-caused delays including no access
- Reports of interexchange calls and non-regulated CPE
- Subsequent reports
- Special access
- Troubles outside of FairPoint's control:
  - Closed due to customer action
  - Closed to CPE issues.
- Troubles reported by FairPoint employees in the course of performing preventative maintenance when no customer has reported trouble.

The numerator used to calculate this measurement is the number of trouble reports for which the clear date and time is less than or equal to the committed time for network troubles (fault or disposition codes of '03', '04', '05', '07', '08' and '09'). The denominator is the total number of

[86] Response to Data Request #82 and Interview #6, February 8, 2011.
[87] Response to Data Request #80 and Interview #6, February 8, 2011.
[88] Response to Data Request #212. Liberty notes that Customer Trouble Report Rate per 100 Lines – Network contains troubles on both POTS and non-POTS lines while Access Lines in Service contains only POTS lines. This may account for the larger effect of the changes on the trouble report rate measurement.
[89] The monthly increases affected the compliance status of only one month, September; the revised September result of 1.15 changes the status from just meeting the benchmark of 1.12 to missing the benchmark.
[90] FairPoint Communications New Hampshire SQI Metric Specifications for Regulatory Reporting, December 8, 2010.

network trouble reports cleared in the reporting period. The performance standard for this measurement during 2010 was 89 percent. It changes to 90 percent on July 31, 2011.[91]

Appendix A describes the process FairPoint uses for implementing the stated exclusions. With the exception of the exclusion for end-user-caused delays, FairPoint implements all of the exclusions listed for this measurement in the same manner as those for Customer Trouble Report Rate per 100 Lines – Network.

Appendix A also provides FairPoint's method for selecting troubles for the measurement, including the method for determining the repair commitment date. Aside from the method used to determine the commitment date, the logic used to identify the trouble reports to be included in this measurement's calculation is the same as that for Customer Trouble Report Rate per 100 Lines – Network.[92] For this measurement, FairPoint includes trouble reports on POTS lines only. When identifying POTS lines for this and the other repair measurements calculated in CAMP, FairPoint sometimes does not include POTS lines with DSL service.[93] The implications of this are addressed in Conclusion #19.

c. Number of Repeat Trouble Reports

FairPoint defines Number of Repeat Trouble Reports as the "total number of lines with a recurring service problem a customer reports within 30 days of the initial trouble report." FairPoint lists six exclusions to this measure in its documentation:[94]

- Subsequent reports (additional customer calls while the trouble is pending)
- CPE troubles
- Troubles closed due to customer action
- Troubles reported by FairPoint employees in the course of performing preventative maintenance where no customer reported a trouble.
- An initial trouble may only be closed to No Access disposition code if access is not available within the appointment window[95]
- An original trouble report that was closed to No Trouble Found (NTF), Found OK (FOK), or Customer Premises Equipment (CPE) is deemed to have been misdirected if the trouble is found in the opposite direction from the direction reported by the customer.

[91] FairPoint Communications New Hampshire SQI Metric Specifications for Regulatory Reporting, December 8, 2010.
[92] Interview #6, February 8, 2011.
[93] Responses to Data Requests #180 and #180 clarification (#180A). The measurements affected by this problem include Customer Trouble Reports, Percent Repair Commitments Met, Number of Repeat Trouble Reports, and Mean Time to Repair.
[94] FairPoint Communications New Hampshire SQI Metric Specifications for Regulatory Reporting, December 8, 2010.
[95] In its response to Data Request #34, FairPoint clarified that this is not a valid exclusion but rather an explanation of when the no-access disposition code can be used. FairPoint subsequently removed this exclusion in an update to its business rules documentation provide in response to Preliminary Finding #5.

This measurement is a count of the number of trouble reports for lines that had a previous trouble cleared within the last 30 days. It is a diagnostic measure and therefore has no performance standard. [96]

FairPoint explained the exclusion for an original trouble report that was closed to NTF, FOK, or CPE and deemed to have been misdirected if the trouble is found in the opposite direction from the direction reported by the customer as follows:

> "*NH-7.14 # Repeat Trouble Reports" is a measure of repeat troubles that are a result of a trouble being closed to a network fault code (03XX, 04XX, 05XX, 07XX, 08XX and 09XX) after a trouble was previously closed to a network fault code within 30 days. Any Customer Premises Equipment (CPE) troubles are not network fault codes (typically 12XX). Similarly, codes for No Trouble Found (NTF) and Found OK (in which the initial test was okay but the customer demanded a dispatch but the trouble was closed because the problem corrected itself without technician repair).* [97]

FairPoint later noted that "in practice, the retail 'misdirected' troubles are not distinguishable from other retail troubles." Therefore, the last exclusion on FairPoint's list of exclusions for this measurement is not a valid exclusion and is listed in error in FairPoint's business rules documentation.[98]

FairPoint's methods for identifying the other exclusions listed for this measurement are discussed in Appendix A. Appendix A also describes how FairPoint identifies repeat troubles. As noted in that appendix, Liberty could not fully examine FairPoint's logic for determining repeat troubles because the company provided insufficient information to do so.

d. Mean Time to Repair

FairPoint defines Mean Time to Repair as "the average duration in hours to resolve and close customer trouble reports." FairPoint lists seven exclusions to this measure in its documentation:[99]

- End-user-caused delays including no access
- Business trouble reports where the customer has requested a later commitment[100]
- Subsequent reports
- Reports of interexchange calls and non-regulated CPE
- Special access
- Troubles outside of FairPoint's Control

[96] FairPoint Communications New Hampshire SQI Metric Specifications for Regulatory Reporting, December 8, 2010.
[97] Response to Data Request #35.
[98] Response to Preliminary Finding #11.
[99] FairPoint Communications New Hampshire SQI Metric Specifications for Regulatory Reporting, December 8, 2010.
[100] Such requests for delayed repairs are intended to avoid interference with business operations and are generally not supported for residential service customers.

- Closed due to customer action.
- Closed to CPE issues

- Troubles reported by FairPoint employees in the course of performing preventative maintenance where no customer reported a trouble.

The numerator of this measurement is the difference between the trouble clear date and time and the trouble receipt date and time summed across all network troubles (*i.e.,* troubles with fault codes '03,,', '04,', '05,', '07,', '08,', or '09') in hours. The denominator is the number of network troubles during the report period. This is a diagnostic measure and therefore has no performance standard.[101] FairPoint identifies the exclusion for end-user-caused delays by specific disposition codes in the closed trouble report. FairPoint also excludes trouble reports with codes indicating that a customer canceled the original trouble report ('0715') or that there was no access to the premises or some other customer-caused delay (codes beginning '12XX').[102] FairPoint accomplishes the exclusion for business trouble reports where the customer has requested a later commitment by identifying business customer records where the date found in the "given commitment" field is later than the date found in the "offered commitment" field. The logic for this exclusion was introduced in April of 2010. Prior to that date, FairPoint did not exclude these records from the results.[103] FairPoint's methods for identifying the other exclusions listed for this measurement are described in the discussion in Appendix A.

C. Service Quality Measurements Calculated outside of the CAMP System

1. Percent Out of Service Cleared within 24 Hours

FairPoint calculates Percent Out of Service Cleared within 24 Hours manually using Remedy data collected in FireStage. FireStage is a FairPoint-developed staging data warehouse; the only documentation available is a data dictionary and a one-page diagram of the architectural design. FairPoint uses FireStage mainly for internal management reporting. It imports source data from many different FairPoint operations support systems, but only data imported from Remedy is used for Percent Out of Service Cleared within 24 Hours. The Remedy tables in FireStage are refreshed every night starting at 9:00 pm. FairPoint indicated that FireStage takes the data "as is" from Remedy with no derived data fields or data transformations.[104] FairPoint also indicated that it archives FireStage data each month to tape and these tapes are available starting from February 2009.[105]

Percent Out of Service Cleared within 24 Hours differs from all other New Hampshire QoS repair measurements in that it uses Remedy data collected in FireStage instead of CAMP. FairPoint indicated that CAMP has code that calculates the Percent Out of Service Cleared

[101] FairPoint Communications New Hampshire SQI Metric Specifications for Regulatory Reporting, December 8, 2010.
[102] Response to Data Request #213.
[103] Response to Data Request #214.
[104] Interview #3, January 21, 2011.
[105] Response to Data Request #60.

within 24 Hours measurement. However, the company chose to calculate Percent Out of Service Cleared within 24 Hours manually using an SQL query to select the FireStage-stored Remedy trouble data instead of using the Remedy data collected in CAMP and the CAMP code for the calculation. FairPoint stated that it does so to be consistent with its internal management reports,[106] and claims that the results should be the same if the measurement were calculated in CAMP.[107]

FairPoint identifies out-of-service trouble reports by codes entered into a free-form data field of the trouble report used by technicians and service representatives to keep notes on progress in resolving a reported trouble.[108] FairPoint's process counts as out-of-service troubles for inclusion in this measurement only those with trouble reports containing a code of CBC ("cannot be called"), CCO ("cannot call out"), or NDT ("no dial tone") in this data field. Although there is no formal quality control process to ensure that this field is correctly populated for all out-of-service trouble reports, FairPoint claims that the contents of the field accurately determine out-of-service conditions because its "retail representatives have been instructed to include CBC, CBO, or NDT to describe customer out of service conditions."[109] Appendix A provides further details of the process FairPoint uses to identify out-of-service troubles. The implications of FairPoint's process are addressed in Conclusion #22.

FairPoint's documentation of the business rules[110] used for Percent Out of Service Cleared within 24 Hours lists the following exclusions to the calculation:

- Sunday 24-hour time period
- Subsequent reports
- End-user-caused delays
- Reports of interexchange calls and non-regulated Customer Premises Equipment (CPE)
- Special Access
- Troubles outside of FairPoint's control:
  - Closed due to customer action
  - Closed to CPE issues
- Troubles reported by FairPoint employees in the course of performing preventative maintenance where no customer has reported a trouble.

Sundays are excluded from the results regardless of when the trouble report was received. For example, a trouble report received on Saturday at noon and repaired on Monday at 9:00 AM would have met the objective because of the Sunday exclusion. The Sunday exclusion is identified in the SQL query used to select the data in FireStage. End-user-caused delays are

[106] Response to Data Request #114.
[107] Interview #1, January 4, 2011.
[108] Response to Data Request #130.
[109] Response to Data Request #59. A service affecting trouble includes conditions such as noise on the line, cross-talk, clipping, etc.
[110] FairPoint Communications New Hampshire SQI Metric Specifications for Regulatory Reporting, December 8, 2010.

excluded by subtracting pending time from the total time in the calculation.[111] FairPoint uses the fault (disposition) code to identify reports of interexchange calls, non-regulated CPE and troubles outside of FairPoint's control for exclusion.[112]

The exclusions listed for subsequent reports, special access, and troubles reported by FairPoint employees in the course of performing preventative maintenance where no customer has reported a trouble are not applicable to this measure and are incorrectly listed as exclusions in FairPoint's documentation. According to FairPoint, subsequent reports do not generate a trouble ticket and therefore do not need to be explicitly excluded.[113] All products besides POTS are excluded from this measurement making it unnecessary to list special access as a unique exclusion in the business rules. Additionally, FairPoint currently does not exclude records from this measurement for troubles reported by FairPoint employees in the course of performing preventative maintenance when no customer has reported a trouble. FairPoint indicated that the criteria for performing this exclusion are under development.[114]

Appendix A provides the details of FairPoint's procedure for identifying New Hampshire trouble reports, trouble reports associated with retail POTS lines, and the trouble report creation and repair dates and times for determining whether the 24-hour interval has been met.

2. Measurements Calculated in the "New Metrics" System

FairPoint uses the New Metrics system to calculate the following measurements:

- Percent Toll and Local Assistance Operator Calls Answered within 10 Seconds
- Percent Directory Assistance Intercept Calls Answered within 10 Seconds.

According to FairPoint, New Metrics is the same system Verizon used to report its operator services (OS) and directory assistance (DA) performance. New Metrics serves as an interface to FairPoint's operator services switch and is used to collect performance data. New Metrics collects OS and DA data throughout the day, every day of the week. These daily results are loaded and tracked in an Excel spreadsheet which is transmitted to FairPoint IT Data Management at the end of the month to be manually loaded into CAMP for reporting purposes.[115]

FairPoint measures Percent Toll and Local Assistance Operator Call Answered within 10 Seconds and Percent Directory Assistance and Intercept Calls Answered within 10 Seconds from the time the call is forwarded to an operator position until the time the operator answers the call. According to FairPoint, calls that are served entirely by the automated interactive voice response (IVR) system are not counted in the measurement; only calls that require operator assistance are included. FairPoint indicated that 44 percent of the operator and directory assistance calls it

[111] Response to Data Request #57. Pending time is the amount of time that a FairPoint technician was delayed due to a customer caused reason, such as no access to the customer's premises.
[112] Responses to Data Requests #57 and #134.
[113] Responses to Data Requests #80 and #133.
[114] Response to Data Request #57.
[115] Interview #4, January 21, 2011.

receives are served automatically by the IVR.[116] FairPoint identifies the state by the area code and exchange of the calling customer's line for the purpose of reporting these measurements.[117]

The key data fields found in New Metrics used to calculate these two measurements are "calls offered," which is the denominator of the measurements, and "calls answered within objective," which is the numerator. There are no derived fields or data transformations in New Metrics, only original data is used for the calculations.[118]

FairPoint's business rules documentation for Percent Toll and Local Assistance Operator Call Answered within 10 Seconds and Percent Directory Assistance and Intercept Calls Answered within 10 Seconds list the following two exclusions to the measurement calculation:[119]

- Abandoned calls
- Natural disasters.

In response to Liberty's inquiry about the exclusion of abandoned calls, FairPoint initially indicated that it excludes such calls because it has no control over a customer's behavior aside from the length of time a customer waits for an operator to answer. FairPoint stated that the low customer wait times shown in its New Metrics' queues indicate that customers are abandoning calls for reasons other than frustration for being on hold for too long.[120] FairPoint stated that it excludes all abandoned calls regardless of the length of time the customer is on the line before deciding to abandon the call.[121] Subsequently, FairPoint stated, "after further review, FairPoint has determined that it does include abandoned calls" in the calculation of these measurements, indicating that it includes these calls in the denominator of the calculations and it will update its documentation to reflect this.[122] Liberty has not validated this recently updated information.

FairPoint does not have a systematic method of identifying the records that should be excluded in the event of a natural disaster. In the event of a disaster, FairPoint would issue a waiver request to the Commission Staff requesting an exclusion of the results for the period of the disaster and perform the exclusions manually if the waiver was granted.[123]

3. Measurements Calculated in the Genesys System

FairPoint uses Genesys to calculate the following measurements:

- Percent Repair Service Calls Answered within 20 Seconds
- Percent Abandoned Repair Calls
- Percent Business Office and Other Calls Answered within 20 Seconds.

[116] Response to Data Request #44.
[117] Response to Data Request #47.
[118] Interview #4, January 21, 2011 and response to Data Request #39.
[119] FairPoint Communications New Hampshire SQI Metric Specifications for Regulatory Reporting, December 8, 2010.
[120] Response to Data Request #38.
[121] Response to Data Request #109.
[122] Response to Preliminary Finding #11.
[123] Interview #4, January 21, 2011 and response to Data Request #40.

Genesys serves as an intelligent call router and reporting tool for the FairPoint call centers. All calls to the call centers are initially answered by the Genesys IVR unit. Once the customer selects an option based on the IVR menu, the customer's call is routed to the next available agent.[124] These queues are for the consumer call center, the business call center, and the repair call center. Calls are default routed to these queues based on the toll free number dialed by the caller. In addition to performing this routing function, Genesys tracks the status of the calls based on predefined criteria identified by FairPoint.[125]

The Genesys system consists of the source data server, an Operational Data Source (ODS) database, an "Extract, Transform, and Load" (ETL) Runtime module, a Data Mart database, and a Hyperion report generator. Genesys source data is transferred to the Genesys ODS database every 15 minutes. ETL Runtime is used to transport the data from the ODS database into the Genesys Data Mart also on a 15-minute interval. The data found in the ODS database provides call-specific detail. Once the data is moved to the Data Mart, where it is aggregated to show the results for all calls in the last 15-minute period, call-specific detail is lost. Historical reports can be run out of the Data Mart only; no historical data is available in ODS. FairPoint uses Hyperion Report Generation, which is a Graphical User Interface (GUI) report-generation tool, to extract the data from the Data Mart for report generation. All report calculations are performed in Hyperion using the data found in the Data Mart. The Operations Performance Metrics organization receives a daily report from Hyperion and retypes the results into an Excel spreadsheet. At the end of the month, the daily results are used to calculate the month's aggregated results which are sent to FairPoint IT Data Management to be loaded into CAMP.[126]

Data is retained in Genesys for one year. Data for the previous years are archived and available from storage if needed.[127] The only Genesys documentation that FairPoint has available is the training documents that the company received from Genesys.[128]

According to FairPoint, the 20-second clock for Percent Repair Service Calls Answered within 20 Seconds and Percent Business Office and Other Calls Answered within 20 Seconds starts when a call enters one of the service representative queues and ends when the call is answered by a service representative. This time does not include the time it took the call to be answered by the IVR or the time that the call remained in the IVR. FairPoint indicated that the elapsed time while on the IVR is highly customer dependent, with some customers taking much longer than others to select the IVR options that they desire. FairPoint indicated that it has made efforts to make its IVR menu more user-friendly to minimize the time it takes a customer to reach the appropriate service representative. FairPoint has no data on how long customer calls are in the IVR before being routed to the service representative queue.[129]

[124] FairPoint indicated that calls not answered by the IVR within 20 seconds, such as during an ice storm or another peak calling event, are default routed to appropriate service representative queues for customer assistance.
[125] Interview #2. January 21, 2011 and responses to Data Requests #54 and #55.
[126] Interview #2, January 21, 2011 and responses to Data Requests #50, #52 and #53.
[127] Response to Data Request #51.
[128] Interview #2, January 21, 2011.
[129] Interview #2, January 21, 2011 and response to Data Request #56.

The state in which FairPoint reports repair call center performance is identified by the area code and exchange of the phone line calling into the repair center. The measurement for calls to the business office is reported on a regional, not state, level.[130]

FairPoint's documentation of the business rules used for all three measurements calculated in Genesys lists natural disaster circumstances as an exclusion to the measurement calculations. As is the case for the OS and DA call answer timeliness measurements, the exclusion for natural disasters for these three measurements is only applied in cases where the Commission grants FairPoint a waiver to exclude the calls to its call centers during the period of the disaster. FairPoint has no systematic method of identifying these calls, and the exclusions, if granted, are performed manually.[131] Percent Repair Service Calls Answered within 20 Seconds and Percent Business Office and Other Calls Answered within 20 Seconds also have an exclusion for calls directed to and answered by dedicated Enterprise Service Group (ESG) representatives.[132] According to FairPoint, this exclusion does not involve POTS calls. All calls directed to these ESG representatives are for large business customers only. These customers have their own toll free number to use for business center or repair calls. However, if one of these large business customers mistakenly contacts the consumer/small business repair or business center numbers, that call will be included in the measurement. FairPoint does not exclude any calls to these service centers.[133]

For the calculation of Percent Abandoned Repair Calls an abandoned call is defined as a call that made it to the service representative queue but was dropped by the customer before a service representative could answer the call.[134]

4. Measurements Calculated in the Previsor System

Previsor is used by FairPoint to calculate the following measurements:

- Percent Dial Tone Speed within 3 Seconds
- Percent Call Completion.

Previsor is a data collection system that obtains its source data from FairPoint's network switches. Previsor collects data from the switches every 15 minutes. Standard Previsor reports providing data on dial-tone delay and call-completion results are manually extracted at the end of each month. FairPoint manually populates an Excel spreadsheet with the data from the Previsor reports and this spreadsheet is sent to FairPoint IT Data Management to be populated into CAMP for New Hampshire results reporting.[135] Previsor retains the source data used for reporting for 62 days. FairPoint archives older data with a retention period of one year for detailed data and seven

[130] Response to Data Request #54.
[131] Interview #2, January 21, 2011.
[132] Per FairPoint's response to Data Request #30, ESG representatives are a specialized group of employees established to assist FairPoint's large business customers who have complex services and account structures with their repair problems.
[133] Interview #2, January 21, 2011.
[134] Interview #2, January 21, 2011.
[135] Interview #5, January 25, 2011.

years for summarized data. FairPoint did not define the difference between the detailed data and the summarized data.[136]

FairPoint collects data for the dial-tone timeliness measurement from all the circuit switches in FairPoint's New Hampshire network except the five New Hampshire DMS-10 switches. These switches, which according to FairPoint account for approximately three percent of the total lines served by FairPoint in New Hampshire, are not capable of reporting dial-tone delay and are shown as a valid exclusion in FairPoint's business rules for this measure.[137] Dial-tone timeliness is measured starting from the time the customer's off-hook signal is received by the switch. The data Previsor provides each month consists of a daily summary by central office switch of the total number of call attempts, the total number of calls that did not get a dial tone within three seconds, and the percentage of calls that did not receive a dial tone within three seconds.[138]

For the call completion data, Previsor provides data for each hour of each day, by central office switch. All switches, including the five New Hampshire DMS-10 switches, are included in this report. The results data provided each month includes total outgoing calls served by the switch, total calls completed, and the call completion percentage.[139] Calls that terminate to a vacant code announcement are included in the call completion result.[140] The implications of this are addressed in Conclusion #23.

The only exclusion listed in FairPoint's business rules for the Previsor-calculated measurements, besides the previously mentioned exclusion for the DMS-10 switches for Percent Dial Tone Speed within 3 Seconds, is abandoned calls. However, FairPoint has indicated that abandoned calls are not excluded from the calculations; this was an error in their documentation.[141]

The state in which FairPoint reports results for these two reports is based on the location of the switch. Therefore, calls made by Maine and Vermont customers served by New Hampshire switches are counted in calculating the New Hampshire results. Likewise, some small New Hampshire communities are served by switches in Vermont. Traffic from these customers is counted in the Vermont results, not in New Hampshire.[142]

[136] Responses to Data Requests #68 and #207.
[137] Response to Data Request #31 and Interview #5, January 25, 2011.
[138] Interview #5, January 25, 2011.
[139] Interview #5, January 25, 2011.
[140] Response to Data Request #65.
[141] Response to Data Request #66.
[142] Response to Data Request #70.

III. Conclusions

1. FairPoint's documentation of the New Hampshire Quality of Service measurements is incomplete, inconsistent, and sometimes inaccurate. *(See Recommendation #1)*

FairPoint has developed and maintains documentation of the New Hampshire QoS measurements. This documentation is helpful and in some cases is sufficient. For example, FairPoint has adequate documentation to support the manual changes it makes to the CAMP-calculated results as part of its "scrub" process. This documentation contains an explanation of why the changes were made and provides the supporting records that were either added to or removed from the measurement's calculation.[143]

However, in general, Liberty found the documentation provided by FairPoint in support of its New Hampshire QoS measurement process and procedures to be inadequate. FairPoint documentation is missing key details needed to clearly define each of the measurements and describe how the measurement is to be calculated. Some examples of incomplete documentation include the following:

- No documentation exists that identifies the key data fields used in the calculation of the measurement results and describes how these fields are used. FairPoint has a data dictionary, but this only provides general descriptions of the data fields found in the CAMP system tables without any explanation of how those fields are used.[144]
- The initial list of derived data fields in CAMP supplied by FairPoint did not include all of the data fields in the ODS dataset that have derived values.[145] During its review, Liberty identified additional derived data fields that were not included in the list provided by FairPoint.[146] Although FairPoint provided Liberty three different documents listing derived field values, Liberty determined that the latest list provided was not complete and accurate.[147]
- FairPoint's documentation does not always indicate whether Saturdays and Sundays are included or excluded for those measurements that involve interval calculations.[148]
- The list of activity codes provided by FairPoint is missing valid activity codes.[149]

[143] Documentation provided in responses to Data Requests #115 and #116, also responses to Data Requests #196-#201.
[144] Data dictionaries provided in response to Data Requests #10 and #11.
[145] Initial derived data fields logic provided in response to Data Request #12.
[146] Responses to Data Requests #105, #106, #124, and #137.
[147] Responses to Data Requests #12, #166 first clarification (166A), and #166 second clarification (166B). Liberty observed, for example, that the latest list was missing the derived "previous_trouble_SQI" field used to identify repeat trouble reports.
[148] These measurements include Mean Time to Repair, Percent Installation Service Orders Met within 30 days, and the Average Days to Install measurements. Responses to Data Requests #23, #26, and #36.
[149] These codes are in a table called "Activity_CD," which FairPoint provided in response to Data Request #13. The activity codes that were missing from the "Activity_CD" table provided were 'M' for an inside move of service and 'T' for an outside move of end user service. Response to Data Request #139.

- FairPoint uses a complex process of joining and comparing values found in four different tables to identify retail POTS trouble reports in CAMP; however, Liberty could not find the logic used for this process in any of the documentation FairPoint provided.[150]

Liberty found inaccuracies with FairPoint documentation that make it unreliable. Some of these inaccuracies include the following:

- FairPoint's documentation lists exclusions to the measurements that are either: i) not valid exclusions or ii) exclusions that FairPoint is not taking into account in the calculation of its results.[151]
- The description of the numerator and denominator for Percent Repair Commitments Met was missing a complete list of valid fault (disposition) codes.[152]
- The business rules for Customer Trouble Reports indicate that the measurement is limited to POTS service; however, FairPoint calculates this measurement based on trouble reports and lines in service for POTS, Centrex, Private Branch Exchange (PBX), Official, 2-Wire Digital, Coin, and Customer Owned Coin Operated Telephone (COCOT) services.[153]
- FairPoint's definition of Average Days to Install – Mechanized is misleading in light of the fact that FairPoint includes non-mechanized service orders in the calculation.[154]
- The business rules documentation for Percent Business Office and Other Calls Answered within 20 Seconds indicates that it is reported at a state level, which is incorrect. FairPoint reports this measurement at a regional level.[155]
- FairPoint's documentation defines the Number of Access Lines Installed measurement as "the number of service orders for Inward Access Lines Completed in the reporting period."[156] Yet, for this measurement, FairPoint reports the actual number of access lines that were installed during the reporting period, not the number of "service orders" as indicated in the definition.[157]
- FairPoint's documentation lists official lines as a valid exclusion to the Access Lines in Service measurement; however, FairPoint includes official lines in its monthly access line counts.[158]

[150] Interview #6 and response to Data Request #147.
[151] Responses to Data Requests #27, #28, #34, #66, #79, #90, and #135.
[152] Response to Data Request #94.
[153] Response to Data Request #122.
[154] Response to Data Request #204.
[155] Response to Data Request #54.
[156] FairPoint Communications New Hampshire SQI Metric Specifications for Regulatory Reporting, December 8, 2010.
[157] Response to Data Request #29.
[158] Response to Data Request #177

Liberty found inconsistencies between the documented measurement business rules and FairPoint's process for calculating the measurement results. Examples of these inconsistencies include the following:

- FairPoint's business rules for the Percent Out of Service Cleared within 24 Hours measurement state that the denominator is based on the "total out of service troubles completed in the calendar month." However, FairPoint determines the trouble reports to be included in the current month's calculation based on trouble cleared date, not on the closed (or completed) date of the trouble report.[159] The cleared date is the date on which the technician indicates that the trouble has been resolved. The closed date is the date on which the trouble report is closed out with the customer. These dates are often the same, but the closed date can be later than the cleared date.
- FairPoint's business rules for all provisioning service quality measurements state that the denominator of these measurements will be based on the "orders completed in the reporting period." However, when FairPoint calculates the results of these measurements, it is using a derived order "completion" date based on the date service was turned up, which is often a date that is earlier than the date the order was fully complete.[160] The non-documentation implications of this are discussed in Conclusion #8.
- FairPoint has not clearly documented when and how record change and suspend service orders are excluded from the measurements calculation.[161]
- FairPoint lists Subsequent Trouble Reports as an exclusion to its repair measurements, yet FairPoint's operational practice does not create a trouble ticket when a customer calls in with a subsequent report on an outstanding trouble. As such, there is nothing to exclude from the measurements.[162]

The lists of documentation errors provided above are only examples. Other examples are noted in the Findings sections of this report. Liberty has not attempted to provide an exhaustive list of all FairPoint documentation deficiencies.

FairPoint has characterized "Liberty's findings as relatively minor when taken in the context of the effort taken to develop" its documentation.[163] However, Liberty notes that a primary component of any service quality measurement plan is documentation that is complete, accurate, and easy to use. Without such documentation, internal calculations are subject to error. The lack of clear and complete documentation also makes the task of performing audits, both internal and external, more difficult and time consuming.

[159] Response to Data Request #148.
[160] Responses to Data Requests #143, 172, and #173.
[161] Responses to Data Requests #118, #174, #196, and clarifications to #174 (#174A, #174B and #174C)
[162] Response to Data Request #80.
[163] Response to Preliminary Finding #5. FairPoint provided as part of this response updated documentation correcting errors Liberty specifically noted. However, Liberty did not attempt to develop an exhaustive list of the many documentation errors, and FairPoint's thorough review and correction of the documentation is still warranted.

2. FairPoint has insufficient quality checks to ensure that all necessary source data is loaded into the systems used in the calculation of the New Hampshire Quality of Service measurements. *(See Recommendation #2)*

FairPoint does not perform basic record count verifications between the following source and reporting systems:

- Service order data from M6 to the CAMP reporting system
- Trouble report data from Remedy to the CAMP reporting system
- Trouble report data from Remedy to the FireStage reporting system.

FairPoint indicated that it has a notification system to alert FairPoint if there is a data exchange failure for the daily Remedy inputs to CAMP and FireStage; however, the company does not perform data validations between the systems. The same is true for the monthly data exchange of the service order data between M6 and CAMP.[164] Lack of sufficient quality checks to ensure complete transfer of transaction records from these source systems (M6 and Remedy) can affect the completeness and accuracy of all 12 CAMP-calculated service installation measures, the four CAMP calculated customer trouble report and repair measurements, and the Percent Out of Service Cleared within 24 Hours measurement, which is manually calculated using data imported into FireStage.

FairPoint cannot guarantee that its reporting systems receive all records needed for the calculation of the New Hampshire QoS measurements without at least performing basic record count checks between all the required source and reporting systems. An example of this is discussed in Conclusion #18: FairPoint erroneously excluded some Remedy data from the CAMP data loads. Missing source data of this nature could have been identified through a check of the basic record counts as part of the data extraction process.[165]

FairPoint indicated that it implemented a validation tool during the first quarter of 2011 that "will enhance the controls that monitor the data load process" into CAMP.[166] Liberty did not review these tools and therefore cannot comment on their effectiveness.

3. FairPoint's data retention practices prevent the ability to trace the details of the calculations supporting reported results for most of the quality of service measurements. This prevents the reliable validation of the data used in the calculations. *(See Recommendation #3)*

The CAMP data files FairPoint uses to calculate most New Hampshire Service Quality measurements are not frozen at the time of the measurement calculation.[167] This makes it

[164] Responses to Data Requests #63 and #126.
[165] In FairPoint's July 29, 2011 response to Liberty's Draft Final Report, the company argues that this "exclusion was a result of CAMP logic -- Liberty has incorrectly associated the data quality validation processes to this exclusion documented in Conclusion #18." However, if FairPoint had instituted a record count check between CAMP and Remedy, it should have been able to identify that there were between 13 and 17 percent more trouble reports each month in Remedy than in CAMP. This would have helped the company identify the CAMP logic error causing the record mismatch. Instead, this error persisted until it was uncovered as part of Liberty's audit.
[166] Response to Preliminary Finding #1.

impossible for FairPoint to supply the files as they existed at the time of the monthly measurement calculations, and, as a result, it is impossible to reliably validate the data used in the calculations and replicate most reported results.[168]

FairPoint's CAMP system consists of three modules: Staging, Operational Data Source (ODS), and the Data Warehouse. FairPoint uploads data from the source operations support systems into the Staging module each month to use for measurement calculations. This source data is fed into the ODS module where the data is processed to prepare it for the measurement calculations, derived quantities (such as time intervals) are calculated, and the business rule logic is applied to identify the records that qualify for each measurement's calculation. The qualifying records are transferred to the Data Warehouse where the results are calculated.[169]

Once the results are calculated and reported, FairPoint does not freeze and retain any interim files created during the calculations except the final calculated numerator and denominator values in the CAMP Data Warehouse, the ratio of which provides the reported result. In particular, FairPoint does not freeze and retain a file of the individual transaction records (*e.g.*, orders, trouble reports, *etc.*) in the CAMP Staging, ODS, or Data Warehouse modules that were used to calculate the numerator and denominator values. Furthermore, FairPoint does not retain a frozen copy of the actual source system data that is imported into CAMP, either in CAMP or in the source systems.

Because there are no frozen files of the data transferred from the source systems at the time the calculations were initiated and no frozen files of the selected source system data and derived quantities used in the measurement calculations, FairPoint must attempt, when trying to validate any past month's reported results, to "recreate" the files used by re-identifying the source system transactions, reselecting the transactions, and reconstructing the derived fields in CAMP that would have been used to calculate that month's report. This is an inherently inaccurate process, as FairPoint's unsuccessful repeated attempts to do so for Liberty has demonstrated. Despite the fact that using "recreated" rather than actual data files necessarily undermines the integrity of an audit, Liberty attempted to use FairPoint's "recreated" files to audit the reported results. However, Liberty found during the course of this audit that FairPoint cannot accurately recreate the CAMP datasets used to calculate its reported results; FairPoint has provided various reasons for this inability, including changes made to the original source data after the results were reported and changes in the logic FairPoint used to identify records included in the measurement calculations.[170]

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[167] Interview #9, May 5, 2011 and Data Request #191 requirements conference call, April 21, 2011.

[168] In its July 29, 2011 response to Liberty's Draft Final Report, FairPoint argues that "[t]he single issue of the August 2010 data files related to two installation measurements does not substantiate a general statement 'FairPoint cannot accurately recreate the CAMP datasets.'" However Liberty used the detailed issues uncovered in August 2010 data merely as an illustration of the inherent problems with a data regeneration process. Liberty noted more issues in this month because that month was chosen for the intensive investigation of FairPoint's measurement data integrity. In fact, Liberty noted and informed FairPoint of issues in other months as well (*e.g.*, Data Requests #189, #193, and #199; Interview #9; and Preliminary Finding #9). Liberty's point in this conclusion is that a "data regeneration" process cannot provide a reliable starting point for validating reported results.

[169] "CAMP Reporting Overview" presented during Interview #1, January 4, 2011.

[170] Responses to Data Requests #188, #188 clarification (188A), #189, #190, #190 clarification (190A), #191, #191 clarification (191A), #193, #199 Clarification (199A), Data Request #191 requirements conference call on April 21,

As an example of this problem, Liberty found instances of service orders that appeared in the numerator files but not in the denominator files in FairPoint's recreated CAMP Data Warehouse dataset for the August 2010 results of two measurements, Percent Installation Service Orders Met Commitment and Percent Installation Service Orders Met within 30 Days.[171] In response to Liberty's questions about the reasons for these discrepancies, FairPoint responded that the files provided to Liberty "did not contain all the records included in the reported results for August 2010 … Liberty was advised during Interview #1 that certain data requests (i) would require FairPoint to regenerate the data view and (ii) regenerating the data view would require recreating detailed data files from CAMP." FairPoint accompanied the response with updated CAMP Data Warehouse files.[172] When reviewing the updated files FairPoint provided, Liberty found that the denominator files for Percent Installation Service Orders Met Commitment and Percent Installation Service Orders Met within 30 Days both contained the same number (6,710) of unique service orders, which is expected because the denominators of the two measurements should be identical; however, there were differences in some of the specific service orders included in the two files. Liberty asked FairPoint to confirm that the denominator files for these two measurements should contain the same service orders and, if so, to explain why these two files contained the same number of service orders but not the same specific service orders. FairPoint's response to Liberty's inquiry was, "while FairPoint agrees that the data detail files for the denominators of Percent Installation Service Orders Met 30 Days (7.2) and Percent Installation Service Orders Met Commitment (7.19) should align for a given month, these two regenerated data detail files did not align for the extract date August 2010."[173] FairPoint never provided an explanation of the differences between the two denominator files.

Liberty also found that FairPoint's failure to freeze and make a copy of the source system records used in the measurement calculations prevents FairPoint from providing a reliable facsimile of the source data files used to update CAMP for each report month's calculations.[174] FairPoint's inability to accurately and completely recreate these source files prevents Liberty from being able to reliably validate the integrity of the data as it is moved from the source system to CAMP. It is impossible to reliably determine if any discrepancies Liberty has observed between the reported results and these "recreated" source system and CAMP data files are due to errors in FairPoint's data processing and calculations or simply errors in FairPoint's attempt to "recreate" the data files used in the calculations.

2011, and Interview #9, May 5, 2011. In its July 29, 2011 response to Liberty's Draft Final Report, FairPoint argues that "FairPoint is only aware of the August 2010 installment metric issues, and Liberty failed to advise of 'discrepancies' other than August 2010 installment metrics." In fact, the references listed above include data associated with other months besides August. Furthermore, during a call on April 21, 2011 to discuss the requirements for Data Request #191 and during Interview #9 on May 5, 2011, FairPoint described the difficulty of recreating source data files and noted the types of events, such as changes in the logic FairPoint uses to identify records included in the measurement calculations, that prevent the recreated files from being identical to the files that had been used for calculating the reported QoS results.

[171] The original Camp Data Warehouse dataset was provided by FairPoint in response to Data Request #113.

[172] Response to Data Request #188

[173] Response to Data Request #188 clarification (#188A).

[174] Responses to Data Requests #190, #191, and Data Request #191 requirements conference call, April 21, 2011.

The lack of frozen data files is apparently not as critical for the Access Lines in Service data that is sourced from Siebel. Liberty was able to match 99.85 percent of the active lines shown in the Siebel source system with the data in the CAMP Staging database for August 2010, which was the test month selected by Liberty to conduct its source system-to-CAMP data validation. Also as indicated later in this report, Liberty had reasonable success replicating the Access Lines in Service results reported by FairPoint.

FairPoint's data retention practices are inadequate for other systems besides CAMP involved in New Hampshire QoS measurement calculations. FireStage data is archived to tape monthly and Genesys data is retained within the system for one year with the previous year's data available in storage.[175] However, FairPoint has no formal data retention policy for the source data found in the New Metrics system used for the calculation of Percent Toll and Local Assistance Operator Calls Answered within 10 Seconds and Percent Directory Assistance and Intercept Calls Answered within 10 Seconds. Data is retained based on system capacity with the oldest data overwritten when the system's capacity has been met. FairPoint did not indicate how long the source data is preserved before it is overwritten.[176] FairPoint did state that New Metrics system data is currently available from February 2009 to the present time.[177] For Previsor, which is used for the calculation of Percent Dial Tone Speed within 3 Seconds and Percent Call Completion, FairPoint retains detailed data for one year and "summarized" data for seven years. FairPoint did not define what level of detail can be found in its summarized data.[178]

Without access to the actual CAMP and source system records used by FairPoint to calculate most of the reported New Hampshire Service Quality measurements, it is impossible for FairPoint to fully support or for a third party to reliably and comprehensively audit the reported 2010 Service Quality Reports. Liberty notes that Exhibit 3 of the 2008 Settlement Agreement to which FairPoint was a party and which was adopted by the Commission in approving transfer of the New Hampshire local service franchise to FairPoint, requires, in reference to the retail service quality measurements, that "[r]ecords of these measurements and summaries will be retained by the utility for a period of at least five years for audit purposes."[179] However, based on FairPoint's data request responses regarding its data retention policies and practices for these systems, it appears that FairPoint does not retain sufficient historical data to be in compliance with the Commission's data retention requirements.

For the CAMP-calculated measurements, FairPoint has indicated that "there would have been (or should have been) no need to recreate intermediate data files from CAMP" for Liberty to recalculate results and that Liberty's access to extracts from the FairPoint operations support systems should have been sufficient for Liberty to audit the accuracy of the reported results.[180] However, Liberty reiterates that FairPoint also does not retain a copy of the data in the operations support systems as it existed at the time of New Hampshire QoS measurement

[175] Responses to Data Requests #51 and #60.
[176] Response to Data Request #41.
[177] FairPoint's response to Preliminary Finding #10 and July 29, 2011 response to Liberty's Draft Final Report,
[178] Response to Data Request #209.
[179] 2008 Settlement Agreement, Exhibit 3, paragraph 3.1.
[180] Response to Preliminary Finding #9.

calculations; as a result, FairPoint also could not provide a complete set of this source data when Liberty requested it.[181]

For the reports calculated by New Metrics and Previsor, FairPoint indicated that "the data that has been used to calculate the measurements is accessible from FairPoint's inception of reporting the metrics in 2009 to the current reporting date."[182]

Replicating measurement calculations is a standard technique used to assess the accuracy of reported service quality measurements. Otherwise, an auditor, whether internal or external, is forced to rely on a paper review of measurement systems, processes, and codes. In effect, FairPoint is suggesting that to perform such replications it is necessary for an auditor to fully recreate FairPoint's systems and processes, which is unrealistic. Even then, changes to system data since the time of measurement reporting would likely prevent replication of reported results without freezing the data. In Liberty's experience, telecommunications companies typically retain such copies of the data used for monthly performance reporting. Had FairPoint been able to produce a dataset that could be used to reproduce the reported measurements, it might have been a different matter. However, FairPoint's inability to provide such a dataset after repeated attempts, demonstrates, if nothing else, the relevance of Liberty's conclusion.

4. FairPoint has an adequate change management process for the New Hampshire Quality of Service measurements.

FairPoint has a documented process for managing changes to the New Hampshire QoS measurements that appears to provide adequate controls. FairPoint's "CAMP Governance Process" document provides a high-level overview of the CAMP system architecture, the development process flow for new measurements or changes to existing measurements, the monthly schedule of events for reporting results, a schedule identifying the measurements that are monitored internally on a daily basis versus the measurements that are monitored weekly, and a list of the FairPoint Business Owners by measurement family (*i.e.*, Call Centers, Wholesale, Repair, Provisioning and Engineering). FairPoint also indicated that changes to the source systems that may affect measurement reporting are managed through a separate change control process. According to FairPoint, this process includes a step in the requirements review

[181] Data Requests #190 and #191. In the July 29, 2011 response to Liberty's Draft Final Report, FairPoint asserted that "Liberty incorrectly states that FairPoint does not retain a copy of the data in the operations support systems. Liberty, in their multiple data requests, has had access to extracts from the Operational Support Systems. FairPoint has a seven year retention policy on the Operation Support System data." In fact, Liberty requested source data only once from each source OSS investigated (Data Request #190 for Remedy, Data Request #191 for M6, and Data Request #192 for Siebel); all other data Liberty requested was from CAMP rather than from the source operational support systems. FairPoint initially responded to Liberty's requests for source system data by asking for a conference call to explain the difficulties in obtaining the requested data. The M6 source data FairPoint ultimately supplied consisted of only four of the more than sixty M6 data fields for each service order record. In a statement accompanying the M6 data FairPoint indicated, "Providing additional detail will require further discussion with Liberty on data requirements." Liberty also alerted FairPoint about problems found with the Remedy source data in a clarification to Data Request #190 (#190A). Liberty does not question FairPoint's assertion that it retains its OSS data for seven years; however, if this data is not readily available and retrievable in the same format that was used for calculating the reported QoS measurements, it is of little use to FairPoint or to an external auditor for verifying the reported measurement results.

[182] Response to Preliminary Finding #10.

to determine potential impact to the performance measurements. If FairPoint determines that the change request may affect the data used for reporting, the request is sent to the Operations Performance Metrics organization for its review. Changes that will affect measurement calculations require a change to the CAMP system that coincides with the change in the source systems.[183]

5. The look-up tables FairPoint used to identify the products associated with service orders, trouble tickets, and access lines for the CAMP-calculated New Hampshire Quality of Service measurements were unreliable during 2010. *(See Recommendation #4)*

FairPoint uses a look-up table[184] to identify POTS service orders, access lines, and trouble reports for inclusion in the CAMP measurement calculations. FairPoint includes transactions in the calculations based on a match between the USOC found in the service order or associated with the access line and a USOC-to-product association found in the table.[185] Liberty has found errors in the look-up tables used during 2010 that have resulted in improper inclusion or exclusion of records from the service quality calculations.

FairPoint indicated that the USOC tables it uses are time sensitive and updates to these tables are made to "further enhance reporting quality." FairPoint provided the tables used during 2010 to Liberty.[186] Liberty compared the January 2010 and December 2010 tables to determine the changes made during the course of the year.[187] This comparison identified the following changes that could have affected 2010 reported results, assuming, as is likely, that prior to the changes, the tables represented incorrect or incomplete listings of available products:

- 23 business POTS USOCs in the December look-up table were not found in the January table.[188]
- Eight residence POTS USOCs in the December look-up table were not found in the January table.
- 47 USOCs misclassified as Centrex service in the January table were identified as business POTS service in the December table.[189]

[183] Response to Data Request #4.
[184] The table is called "Product_USOC."
[185] For trouble reports, FairPoint matches the line identification ("line_id" field) in the trouble report with the line identification found in the Access Lines in Service table ("Access_Lines_in_Service") to identify the USOCs associated with the line that is in trouble. Once this association is made, the "Product_USOC" table is used to identify the product associated with the trouble report.
[186] Response to Data Request #178 clarification (178A).
[187] The names of the tables Liberty used for this analysis are "USOC_UNTIL_04JAN2010" and "USOC_UNTIL_20DEC2010." This is FairPoint's naming convention for specific instances of the Product_USOC table to indicate the effective date.
[188] In response to Data Request #178, FairPoint indicated that the three USOCs Liberty identified in the "Access_Lines_In_Service" table "were not part of the USOC table at that point in time." Liberty did not investigate every USOC added to the table during the course of 2010 to determine how many were omitted from the USOC table in error.
[189] Many of these USOCs (*e.g.*, "1MB" and "1FB") are clearly POTS USOCs. All are shown as POTS USOCs on the master USOC table provided in the response to Data Request #179 clarification (179A).

- The January table has USOC "LW3" mapped to the residence POTS product; the December table has it mapped to two products, residence POTS and Lifeline.[190]
- The January table has USOCs "RW3" and "RWT" mapped to Lifeline service; the December table has these USOCs mapped to two products, residence POTS and Lifeline.

Liberty discovered two other look-up table errors:

- A USOC ("G5971") was added to the table for the first time in March 2010 and incorrectly mapped to the residence POTS product. This error was corrected with the June 2010 version of the table.[191]
- A misclassification in the product hierarchy for Centrex service incorrectly included Centrex service orders in the calculation of the service provisioning measurements.[192]

FairPoint has noted that its analysis shows that the missing USOCs Liberty identified had no material effect on the reported results for the Percent Installation Service Orders Met Commitment and the Percent Installation Appointments Met within 30 Days measurements. FairPoint also indicated that it "currently has in place ongoing monitoring processes which include USOC table reviews which insure table updates are completed as required. In the first quarter 2011, change management processes were implemented improving the documentation for these requested changes and their deployment."[193] Even if there has not been a significant impact of the table errors on FairPoint's reported results, errors such as these undermine the integrity of FairPoint's QoS report and should be corrected.

6. FairPoint improperly includes official company lines in all measurement calculations. *(See Recommendation #5)*

FairPoint indicated that it includes official company lines among the USOCs the company classifies as POTS for measurement calculations.[194] Lines for official company services are typically not counted toward performance results, because these lines do not involve FairPoint's retail or wholesale customers and thus do not affect customer service. The inclusion of these lines is likely not to have a material impact on the reported results, yet they undermine the integrity of FairPoint's QoS report.

According to FairPoint, the inclusion of official company lines in the measurements is appropriate "based on prior practices in New Hampshire and is consistent with Verizon's reporting practices." FairPoint also indicated that the inclusion of these lines was in the data used

[190] There should always be a one-for-one relationship between USOCs and products.
[191] Response to Data Request #175.
[192] Response to Data Request #165 clarification (165A). FairPoint uses the product hierarchy found in the "Product_USOC" table to classify the product associated with a service order when multiple products are being provisioned on the same order.
[193] Response to Preliminary Finding #8.
[194] Responses to Data Requests #169 and #177.

to establish the performance benchmarks and any change to the treatment of official company lines would also need to address changes to the measurement benchmarks.[195] However, Liberty notes that the volume of activity on these lines is typically insufficient to warrant revisiting and adjusting the benchmark standards.

7. FairPoint's process can misclassify a wholesale service order as a retail order in calculating the service provisioning measurements. *(See Recommendation #6)*

FairPoint identifies retail service orders for the provisioning measurements[196] by those records that contain a value in the Purchase Order Number (PON) field of the service order that begins with either '1-'or with 'N5'.[197] However, FairPoint has indicated that there are no filters in its Wisor gateway system that will prevent a wholesale carrier from using '1-'or 'N5' as the first two characters of the PON field.[198] If a wholesale carrier service representative sends FairPoint a service order with a PON that begins with these characters, FairPoint would count that order as a retail service order in calculating the New Hampshire Service Quality measurements.[199] If such misclassifications occur, they are not likely to have a material effect on the reported results, yet they undermine the integrity of FairPoint's QoS report.

8. FairPoint's method for defining order completion when calculating the service provisioning measurements uses an order completion date different from, and often prior to, that at which all steps for provisioning a service order have been finished. *(See Recommendation #7)*

FairPoint's "New Hampshire SQI Metric Specifications for Regulatory Reporting" documentation defines Percent Installation Service Orders Met Commitment as follows: "[t]his metric measures the percent of ***total completed orders*** [emphasis added] where FairPoint met the committed due date." Percent Installation Service Orders Met within 30 Days has the following definition: "[t]his metric measures the percent of ***total completed orders*** [emphasis added] where FairPoint completes the installation within 30 days of application date." However, Liberty has found that FairPoint defines completion date to be the service installation completion date, that is, the date when all the provisioning in the field and/or central office is complete; it is not, however, the time when all required steps in the provisioning process are completed. As described in Appendix A, FairPoint derives the service installation date and uses it as the completion date for the purpose of these measurements instead of using the service order completion date found in the source operational support system data.

[195] Response to Preliminary Finding #11.
[196] These measurements include the Average Days to Install measurements, Percent Installation Service Orders Met Commitment, Percent Service Orders Met within 30 Days, the three Held Orders measurements, and Number of Installation Orders Completed.
[197] Response to Data Request #137.
[198] Response to Data Request #153 clarification (153A).
[199] In response to Preliminary Finding #11, FairPoint indicated that it has recently updated the CAMP processes with a March 2011 code deployment to exclude such wholesale orders.

Technically, as described in Appendix A, FairPoint calculates the service installation completion date to be the date of the earliest completion of two tasks in the "provisioning plan." .FairPoint's provisioning process takes an order through various tasks that must be completed to provision the service order. These tasks differ depending on the nature of the order (*e.g.*, new service, disconnect of existing service, move of existing service) and the type of service ordered. FairPoint stated that all orders are assigned a "due date" task ("DD").[200] The "appointments" ("APPTS") task is only assigned to orders that have provisionable components in the central office or in the field. The function of the APPTS tasks is to notify system users that all central office and field work orders have been completed in FairPoint's dispatch application (Service Suite). According to FairPoint's response to Data Request #171, when dates are found in both the APPTS and the DD tasks on an order, FairPoint selects the earliest date of the two tasks as its order completion date. Unless DD always occurs after APPTS, there is no guarantee this definition even provides a service installation completion date.

According to FairPoint, its derived service installation completion date is the date the customer "has service," that is, the customer can make and receive phone calls. It is not, however, the date when all the provisioning tasks required for the customer to have the full ordered service are complete.[201] This occurs on the service order completion date, which is the date consistent with the wording of business rules documentation, as noted above, that refers to "completed orders" and can be found in the source data without any special calculation. This issue also applies to other New Hampshire Service Quality measurements that focus on provisioning results, specifically, the Average Days to Install measures, Average Delay Days for Installation of Service, Number of Installation Orders Completed, Number of Access Lines Installed, and Held Orders – Average Total Delay Days – Facility Reasons. FairPoint's business rules documentation for all these measurements refer to "completed orders" in at least part of their definitions.

A number of key tasks necessary for customers to have the full ordered service generally will remain incomplete at the time of the service installation completion date. The specific tasks remaining depend on the nature of the order. For example, an order for new POTS service requires an update to the billing system as well as external databases such as E911, LIDB, and CNAM with the customer's account information, whereas an order for a simple feature change generally only requires an update to the billing records.[202] Until these final provisioning tasks are completed, the service order remains open as a pending service order. Furthermore, it is necessary to complete these tasks in order to fulfill the requirements for the provision of basic service found in Part 412.01(b) of the New Hampshire Code of Administrative Rules; these requirements include E911 service and a blocking option for pay-per-call calls, both of which are not fully in place on the service installation date.

[200] Response to Data Request #173
[201] Responses to Data Requests #142 and #143.
[202] Responses to Data Requests #172 and #173.

The following table shows the effect on Percent Installation Service Orders Met Commitment for each month during 2010 when the order completion date rather than the service installation completion date is used.[203]

Month	FairPoint's Reported Results	Liberty's Recalculated Results
January	96%	57%
February	97%	68%
March	95%	60%
April	95%	68%
May	95%	80%
June	96%	81%
July	96%	29%
August	94%	85%
September	97%	70%
October	98%	66%
November	98%	74%
December	98%	70%

As shown in the table above, Liberty's recalculated results have a particularly large deviation from FairPoint's reported results in a few cases. These large deviations may result from the following factors:

- FairPoint made extensive manual adjustments to this measurement in January through April.
- Data from the CAMP Staging dataset for July 2010 show that a majority (68 percent) of the service orders in this month had an order completion date of 7/29/10, regardless of the order's due date (*i.e.*, due dates were various dates earlier in the month). This data anomaly is probably the cause of the low percentage calculated by Liberty.[204]

Because FairPoint considered the data month to be the month of the service installation completion date while Liberty used the service order completion date, some orders were assigned to different reporting months in the two calculations (*e.g.*, an order included in the July results for which the full provisioning process actually completed in a month later than July). Liberty identified an average of 150 orders per month (a fraction of a percent) that FairPoint included in a data month before the order was completed in calculating Percent Installation Service Orders Met Commitment.

FairPoint confirmed that it "is measuring the interval for these metrics from the point of the order receipt to the installation completion," but believes its calculation methods are consistent with

[203] To provide a like-for-like comparison Liberty used in its recalculation only those orders that FairPoint indicated were included in the denominator of its reported results. Liberty has noted other discrepancies that were not resolved at the time of this analysis, and chose to ignore this for the purposes of this calculation to isolate the effect of the completion date.

[204] It is plausible that some portion of these orders completed prior to July 29 but the actual order completion date was not recorded until July 29 due to some system problem. Liberty did not ask FairPoint to explain this data irregularity.

the intent of these measurements. The company believes that using the service installation completion date is appropriate because this is "the date the customer has service and is able to complete (initiate and receive) telephone calls." The company asserts that the remaining tasks to be completed are "administrative tasks after delivering the customer's requested access to the network" and that "the significant point in time is when the customer does have access to the network." Furthermore, "FairPoint, to the best of its understanding, mirrors the measurements Verizon had in place for the metrics." The company also points out that many of the remaining tasks are accomplished through batch processing after service is established and "the time to perform these functions is not incorporated in the service delivery commitment time offered to the customer."[205]

Liberty understands that the issue addressed in this conclusion involves interpretation of the Commission's intended definition of these two measurements, a matter that may need resolution between FairPoint and Staff. Nevertheless, Liberty notes that some of the remaining tasks after the service installation completion date that the company calls "administrative" can have significant implications for the customer. For example, until the E911 database is updated, a customer would be able to make a call to 911; however, the customer's name and address information would not be made available to the Public Safety Answering Point representative receiving the call.

9. FairPoint's definition of "installation" in Percent Installation Service Orders Met Commitment and Percent Installation Service Orders Met within 30 Days includes mechanized orders in the calculation. *(See Recommendation #7)*

FairPoint has indicated that it includes mechanized service orders for activities such as PIC changes and feature changes in its calculation of Percent Installation Service Orders Met Commitment and Percent Installation Service Orders Met within 30 Days.[206] Typically measurements that focus on the company's ability to meet its committed due dates do not combine mechanized orders that involve nothing more than a simple update to the switch translations with orders requiring a dispatch to establish service to a customer's premises. It is more appropriate to measure these order types separately and apply different performance standards.

The standards for Percent Installation Service Orders Met Commitment and Percent Installation Service Orders Met within 30 Days are 90 percent and 95 percent respectively. By including mechanized feature and PIC change orders in the calculation of these two measurements, FairPoint may be masking poor performance on orders that require physical provisioning activity to provide service with its performance on mechanized orders. Mechanized orders require limited effort to provision on time and hence almost all should be able to meet the committed provisioning date.[207]

[205] Response to Preliminary Finding #4
[206] Response to Data Request #187. According to FairPoint, this reporting method is consistent with the reporting method used by Verizon.
[207] Liberty also notes that there appears to be some confusion over the intended definition of Percent Installation Orders Met Commitment. Verizon's corresponding measurement was called "Percent Meet Installation Appointment Company Reasons." Exhibit 3 of the 2008 Settlement Agreement defines the measurement by stating

FairPoint has indicated that it measures Percent Installation Service Orders Met Commitment "consistent with the measurement criteria utilized by Verizon." FairPoint has also noted that the "Percent Installation Service Orders Met within 30 Days metric first appeared as a requirement of Exhibit 3 to the Settlement Agreement incorporated into Order 24823 in Commission Docket DT 07-011. FairPoint believes it to be most logical to apply the same base definition to this metric as to the Percent Installation Service Orders Met Commitment metric."[208] Furthermore, FairPoint notes that Exhibit 3 to the Settlement Agreement describes the benchmarks to use for these two measurements as applying to "all orders," which FairPoint states "must be given its plain and ordinary meaning, and the metric must include both mechanized and premise installations." Finally, FairPoint believes the distinction between mechanized service orders and those requiring dispatch "is adequately provided for with the creation of new metrics 7.2.1a (POTS Premise Installation Average Days to Install) and 7.2.1b (POTS Mechanized Installation Average Days to Install) as required in Section 3.2a to Exhibit 3."[209]

10. FairPoint incorrectly includes number port-out orders to other carriers in the calculation of Percent Installation Service Orders Met Commitment and Percent Installation Service Orders Met within 30 Days. *(Recommendation #5)*

Liberty's review of the data provided by FairPoint revealed what appeared to be disconnect orders included in the calculation of these two measurements. FairPoint confirmed that the orders Liberty identified were number port-out orders that were incorrectly included in the calculation. FairPoint indicated that "additional logics needs to be added" to exclude these orders from the measurement calculation. According to FairPoint, this error did not affect the reported 2010 results.[210]

FairPoint initially identified these orders as Hot Cut orders.[211] The company subsequently indicated that these orders were number port out orders.[212] In its latest response to this issue FairPoint states:

> *The port-out orders Liberty identified are Hot Cuts, and FairPoint provided analysis in its response to Data Request 166A that illustrated the impact in 2010 of removing these orders. FairPoint's analysis demonstrated that removing Hot Cut orders from the metric for each month of 2010 resulted in no change to the reported New Hampshire Service Quality metrics. FairPoint agrees that number port-out orders can be excluded from the Percent Installation Service Orders Met Commitment and Percent Installation Service Orders Met within 30 Days*

that "FairPoint shall make commitments to customers as to the date of installation of all service orders and ninety percent (90%) of such commitments shall be met." There may be some confusion as to what "appointments" and "commitments" means in the two cases.

[208] Response to Preliminary Finding #7

[209] Response to Preliminary Finding #7

[210] Responses to Data Requests #166 and #166 clarification (166A).

[211] Response to Data Request #166.

[212] Response to Data Request #166 clarification (166A)

> *measurements and it deployed logic in the CAMP system in June 2011 to reflect this exclusion.*[213]

Liberty has not verified this recently added code nor has Liberty verified whether it was number-port orders or Hot Cut orders (or both) that were improperly included in the reported results during 2010.

11. FairPoint includes some but not all bundled POTS and data services in the calculation of the Percent Installation Service Commitment Met and Percent Installation Service Orders Met within 30 Days measurements. *(See Recommendation #5)*

FairPoint's product hierarchy scheme excludes orders for POTS and DSL service bundles from the calculation of Percent Installation Service Commitment Met and Percent Installation Service Orders Met within 30 Days. The logic for this product hierarchy scheme was apparently to avoid including the same orders in both the POTS and DSL provisioning measurements. However, FairPoint includes orders for POTS and High Speed Internet service[214] in the calculation of the service provisioning measurements, stating that it was more desirable to include the POTS request than to exclude the order entirely from the reported QoS results.[215] FairPoint originally stated that because dial-up Internet service is offered by FairPoint Internet, not by FairPoint Communications NNE, order activity initiated by FairPoint Internet does not qualify for the New Hampshire QoS results.[216] FairPoint later clarified that it only excludes orders for dial-up Internet when the order is for standalone Internet service.[217]

FairPoint noted that an order for both POTS and DSL service is counted as a DSL service order and therefore not entirely excluded from QoS calculations. This was true prior to 2011. However, because FairPoint no longer reports its DSL service performance as part of the New Hampshire QoS reports beginning in 2011, bundled POTS-DSL orders are being entirely excluded from the performance reporting. Recently, FairPoint stated:

> *The high speed internet via fiber product has not been included in the CAMP products and therefore it is not subject to the product hierarchy logic of CAMP. The DSL (copper) product is defined in CAMP and is subject to the product hierarchy logic of CAMP.*
>
> *To report the POTS/High Speed Internet (fiber) installation orders consistent with the reporting of the POTS/DSL (copper) installation orders FairPoint would need to add the high speed internet (fiber) product to CAMP and update the product hierarchy appropriately.*

[213] Response to Preliminary Finding #11.
[214] In the July 29, 2011 response to Liberty's Draft Final Report, FairPoint defined High Speed Internet "[i]n the context of this discussion" as "the FairPoint high speed internet product that is provided via fiber to the home as opposed to being provided via copper."
[215] Response to Data Request #167 and #167 clarification (167A).
[216] Response to Data Request #200.
[217] Response to Preliminary Finding #11.

> *FairPoint no longer reports its DSL service performance as part of the New Hampshire QoS reports beginning in 2011. Bundled POTS/DSL orders are being excluded from the performance reporting. For consistency it would be appropriate that POTS/High Speed Internet (fiber) should also be excluded from the performance reporting also.*[218]

FairPoint appears to agree that it is being inconsistent in treating orders bundling POTS with data services in the calculation of Percent Installation Service Commitment Met and Percent Installation Service Orders Met within 30 Days. Whether these orders should be excluded entirely from QoS reporting, as FairPoint appears to suggest, or should be consistently included is a matter to be resolved between FairPoint and Staff.

12. FairPoint incorrectly includes orders for which the customer requested a due date later than the date offered by FairPoint in the Average Days to Install measurements. *(See Recommendation #5)*

FairPoint includes in the Average Days to Install measurements orders for which the customer requested a due date later than the date FairPoint offered.[219] Inclusion of such orders could have a negative effect on FairPoint's average interval. FairPoint should not be held accountable for meeting the customer's requirements to install service on a date later than the standard interval or the date FairPoint offered.

FairPoint indicated that it agrees with Liberty's assessment of this conclusion and "is planning to implement new processes that will allow the identification and exclusion of situations when the customer requests an install date later than the company's standard interval."[220]

13. FairPoint is inconsistent in treating retail move orders in calculating the provisioning measurements. *(Recommendation #5)*

FairPoint stated that it uses an activity code of 'M' in service orders to designate an inside move of the physical termination within a building and an activity code of 'T' to designate an outside move of an end-user location.[221] Liberty found that the CAMP code FairPoint uses for the identification of orders in the calculation of the Average Days to Install measurements does not include orders containing these two activity codes ('M' and 'T'). Liberty also confirmed that there were no orders with these codes included in the Average Days to Install measurement calculations in any month during 2010. Yet, Liberty identified service orders containing these two activity codes that were included in the calculation of other retail provisioning measurements, such as the Percent Installation Service Orders Met Commitment measurement. According to FairPoint, a review of the orders for 2010 indicated that none of the orders that contained these codes would have qualified for the New Hampshire Average Days to Install measurement, indicating that the vast majority of these orders were for "wholesale or network

[218] FairPoint July 29, 2011 response to Liberty's Draft Final Report.
[219] Responses to Data Requests #22 and #79.
[220] Response to Preliminary Finding #11.
[221] Response to Data Request #139.

requests" or were record update orders. [222] Given this explanation, these same orders should have been excluded from the calculation of the other provisioning measures as well, but they were not.

14. FairPoint's logic for selecting only orders that involve a dial-tone installation and distinguishing premises dispatch from mechanized service orders in calculating Average Days to Install – Premises Dispatch and Average Days to Install - Mechanized appears to be accurate.

Liberty's review of the code FairPoint uses to identify those service orders that involve a dial-tone installation or a move of customer service and the code used to distinguish orders that require a premises dispatch from "mechanized" orders indicates that the code should provide the appropriate selection of orders for Average Days to Install – Premises Dispatch and Average Days to Install - Mechanized. As noted in the Findings section of this report, FairPoint includes both fully mechanized service orders and service orders that require a technician to perform work in the central office in the calculation of Average Days to Install – Mechanized. If this is a correct interpretation, FairPoint's documentation of this measurement needs clarification.

15. FairPoint incorrectly excludes orders from the calculation of Total Held Orders On Hand Month End –Facility Reasons, Held Orders Over 30 Days – Facility Reasons, and Held Orders – Average Total Delay Days – Facility Reasons, when the original due date was missed due to customer reasons but subsequent information reveals there is a facility issue. *(See Recommendation #5)*

FairPoint's hierarchy for selecting orders with multiple jeopardy codes for inclusion in the facility delay measurement calculations gives precedence to a customer-caused jeopardy over a FairPoint facilities-caused jeopardy.[223] That is, for circumstances where a customer requested a delay in an order and it was later determined that there was a facility problem preventing the completion of the order, that order would not be counted toward any of the three measurements related to facility delays.[224] Even if the original due date was delayed due to a customer reason, a subsequent activity revealing that FairPoint cannot complete the order due to a FairPoint facility problem means that the order should not be excluded from the measurement calculation. In such a case, the FairPoint facility problem rather than the customer is the cause of the delay.

FairPoint has recently indicated that in its "standard business practices, even if an order is not completed for 'customer' reasons, technicians are to complete as much of the order as possible, including verification of facilities."[225] However, even with this "standard business practice," when a technician codes an order with a customer-delay jeopardy code, FairPoint's jeopardy code hierarchy will cause that order to be excluded from the calculation of these measurements despite the unavailability of FairPoint facilities even when facilities are unavailable after the customer requested due date passes.

[222] Responses to Data Requests #208.
[223] Response to Preliminary Finding #11.
[224] Responses to Data Requests #27 and #89.
[225] Response to Preliminary Finding #11.

16. FairPoint improperly counts the same access line multiple times for records that erroneously contain multiple USOCs for the POTS product when calculating Access Lines in Service. *(See Recommendation #5)*

Liberty found that for instances where FairPoint's systems inventory the same line with different POTS USOCs (*e.g.*, Liberty observed POTS lines which were miscoded with both 1FR and 1MR USOCs), these lines are treated as separate and distinct lines for each USOC when calculating the access lines in service count. Such records with multiple POTS USOCs appear to be data quality errors in FairPoint source systems. For example, USOCs of 1FR and 1MR are for flat rate and measured rate service, which cannot exist on the same line. Although this problem undermines the integrity of FairPoint's reported results, FairPoint indicates that the number of lines that were counted more than once was insignificant and therefore believes that this concern requires no action or response on its part. [226]

17. Despite some errors in FairPoint's identification of access lines, FairPoint's reported results for the Access Lines in Service measurement during 2010 appear to be sufficiently accurate.

Liberty used its own algorithm and the Siebel source data found in CAMP to attempt to replicate the Access Lines in Service results reported each month during 2010 by FairPoint. Liberty's calculated results agreed with FairPoint's reported results to within 0.3 percent. Liberty did not attempt to correct for the error noted in Appendix A that FairPoint discovered in Siebel's identification of the state in which the access lines are found. Liberty therefore compared calculated Access Lines in Service with those FairPoint originally reported before the recent correction to account for the Siebel error. As noted in the Findings section, FairPoint's recalculated results differ from the originally reported results by less than 0.5 percent.

Liberty found that the differences between Liberty's calculated results and the FairPoint-reported results were often the result of the USOC table problems discussed in Conclusion #5. The double counting of access lines discussed in Conclusion #16 would also contribute to the difference between Liberty's calculated results and those reported by FairPoint. Liberty did not explore the reason behind other differences, as the numbers were not significant.

18. FairPoint's process for extracting source trouble report data into CAMP erroneously excludes some POTS trouble reports that qualify for the New Hampshire Quality of Service repair measurements. *(See Recommendation # 8)*

FairPoint should import all Remedy source trouble report data in CAMP, but it does not. When comparing trouble report data imported from Remedy into CAMP and FireStage, Liberty found that the FireStage database contained 14 percent more total trouble reports (9 percent more POTS troubles) during 2010 than the CAMP Staging database. The following table reflects the total number of New Hampshire source data closed trouble reports found by Liberty that

[226] Response to Data Request #195 and Preliminary Finding #11.

appeared in FireStage but were missing from the CAMP dataset. This table also shows the subset of this total that FireStage classifies as POTS trouble reports that could not be found in the CAMP data.[227]

2010 Data Month	NH trouble reports found in FireStage but not found in CAMP for all service types	Percent of all trouble reports missing out of total found in FireStage	Total NH trouble reports identified as POTS troubles in FireStage but not found in CAMP	Percent of POTS trouble reports missing out of total found in FireStage
January	1,282	17.1%	437	10.7%
February	1,248	16.7%	429	10.2%
March	1,466	10.5%	504	5.8%
April	1,373	15.1%	430	8.7%
May	1,239	13.5%	447	9.0%
June	1,364	13.4%	533	9.5%
July	1,471	13.5%	569	9.4%
August	1,632	16.1%	518	10.1%
September	1,287	14.4%	499	10.8%
October	1,292	14.1%	421	8.6%
November	1,055	13.9%	441	10.6%
December	1,133	15.3%	365	9.9%

After a review of the CAMP logic used to select the trouble reports to be loaded from Remedy, FairPoint found that it has been erroneously excluding trouble reports with no associated work order from the CAMP data load. FairPoint stated that it would fix this error beginning in the March 2011 data month.[228] FairPoint has indicated that only Customer Trouble Report Rate per 100 Lines – Network, Percent Repair Commitments Met, and Mean Time to Repair are affected by this issue, and that only Customer Trouble Report Rate – Network was affected materially.[229] Liberty has not attempted to verify FairPoint's recalculations; however, even if the impact on the final calculated results is small, that does not obviate the fact that all the CAMP-calculated repair measurements have been incompletely reported because of the missing trouble reports in CAMP.

[227] Liberty did not attempt to perform a record check validation between Remedy data and FireStage; therefore, Liberty cannot be certain that FireStage contains a complete set of Remedy data. As a result, the figures in this table represent a lower bound on total number of trouble reports that may be missing from CAMP.
[228] Responses to Data Requests #150 and #150 clarification (150A). In the July 29. 2011 response to Liberty's Draft Final Report, FairPoint noted, "For the year 2010, 4,731 additional tickets should have been included in the analysis for the period of 2010. Based on the total trouble ticket count of 2010, that would have represented an additional 10% of troubles (2010 total troubles equaled 46,737.)" Although the numbers FairPoint quotes appear to differ from those Liberty shows in the Conclusion #18 table, the percentage of missing POTS trouble reports is approximately the same.
[229] Response to Preliminary Finding #3

19. FairPoint incorrectly excludes some trouble reports on lines that have both POTS and DSL service in the CAMP-calculated New Hampshire Quality of Service repair measurements. *(See Recommendation #9)*

FairPoint uses a complex and potentially error-prone process of joining and comparing values found in four different tables to identify the product associated with trouble report records found in CAMP. Liberty found that the logic used in this process does not reliably identify and include in the measurement calculation lines having both POTS and DSL service. The details are provided in Appendix A.

In attempting to replicate FairPoint's reported 2010 results for the repair QoS measurements using data in CAMP, Liberty identified POTS trouble reports using a different process from FairPoint's,[230] and obtained monthly counts of trouble reports that ranged from 9.1 to 23.0 percent higher than FairPoint's.[231] Thus, Liberty estimates that FairPoint has erroneously excluded between about 9 and 23 percent of the trouble reports from the New Hampshire QoS calculations in CAMP each month by not properly identifying all qualifying trouble reports.[232] A scan of the records that differed between Liberty's and FairPoint's calculations of the number of trouble reports revealed that most, if not all, of the records in Liberty's but not in FairPoint's calculations were for lines with both POTS and DSL service.

FairPoint concurs that its process for identifying the product associated with trouble reports will at times not include trouble tickets on lines that contain both POTS and DSL service. FairPoint did not provide an estimate of the impact of these erroneous exclusions.[233]

This conclusion applies to the following measurements:

- Customer Trouble Report Rate per 100 Lines – Network
- Percent Repair Commitments Met
- Number of Repeat Trouble Reports
- Mean Time to Repair.

20. FairPoint's inclusion of wholesale resold service lines in the calculation of Customer Trouble Report Rate per 100 Lines – Network prevents this measurement from focusing solely on retail performance. *(See Recommendation #5)*

According to FairPoint, the definition of switched access troubles and lines includes resale as well as retail, and this is consistent with FairPoint's understanding of how this measurement was reported by Verizon.[234] The inclusion of resold wholesale service is not noted in FairPoint's business rules for this measurement. The inclusion of these lines and troubles is inconsistent with

[230] Specifically, unlike FairPoint, Liberty did not reject lines with both POTS and DSL service when "last update" field indicated a DSL order or for which the DSL USOC was listed first on the "access_lines_in_service" table.
[231] Liberty notes in Conclusion #18 that there is also an issue with Remedy data missing from CAMP.
[232] FairPoint's July 29, 2011 response to Liberty's Draft Final Report suggests that FairPoint might have misinterpreted this estimate of the erroneous exclusion of trouble reports as referring to the missing Remedy data in CAMP discussed in Conclusion #18 rather than resulting from the incorrect exclusion of trouble reports on some lines with bundled POTS and DSL service that were successfully transferred from Remedy to CAMP.
[233] Response to Preliminary Finding #6.
[234] Responses to Data Requests #184 and #185.

the other trouble report measurements; resold wholesale service is not included in any of the QoS measurements other than Access Lines in Service.[235] The inclusion of these lines is not likely to have a material effect on the reported results; however, it undermines the integrity of FairPoint's reported results.

FairPoint recently noted in response to this concern:

> *Based on prior practices in New Hampshire, resold lines are properly included in the calculation of the Customer Trouble Report Rate per Lines measurement. FairPoint understands that this treatment of wholesale resold services in calculating the Customer Trouble Report Rate per 100 Lines measurement is consistent with prior Verizon reporting requirements practices and therefore were included in the data used to establish metric benchmarks underlying the NH SQI. Therefore, any change to the treatment of wholesale resold services would also need to address changes to the metric benchmarks. Thus, FairPoint believes Liberty's concern requires no action or response.*[236]

If FairPoint is correct and removing resold lines from the calculation of this measurement would require revisiting the performance benchmark, it would be appropriate to do so. Such a review would help to assure that the benchmark is appropriately set for retail customers rather than a mix of retail and wholesale customers, for whom the performance should already be measured in FairPoint's wholesale Performance Assurance Plan.

21. FairPoint's process for identifying POTS trouble reports for the New Hampshire Quality of Service repair measurements is inconsistent. *(See Recommendation #10)*

FairPoint uses two different systems to calculate New Hampshire Quality of Service repair measurements. To calculate Percent Out of Service Cleared within 24 Hours, FairPoint uses trouble report data from FairPoint's trouble management system Remedy imported into the company's FireStage system. The company uses Remedy source data imported into CAMP to calculate all the other New Hampshire Service Quality repair measurements:

- Customer Trouble Report Rate per 100 Lines – Network
- Percent Repair Commitments Met
- Number of Repeat Trouble Reports
- Mean Time to Repair.

According to FairPoint, the company calculates Percent Out of Service Cleared within 24 Hours using data from FireStage because it uses this system for internal management reports and wants to ensure consistency between the internal and external reports. FairPoint contends that results calculated using CAMP should be no different from results calculated using FireStage, if both calculations are performed correctly.[237]

[235] Response to Data Request #211.
[236] Response to Preliminary Finding #11
[237] Interview #1, January 4, 2011.

Liberty has identified the following inconsistencies between the repair measurement calculations using CAMP and using FireStage:

a) FairPoint uses a different process for importing trouble reports from Remedy into CAMP and FireStage.

As noted in Conclusion #18, Liberty found that the FireStage database contained 14 percent more total trouble reports (9 percent more POTS troubles) during 2010 than the CAMP Staging database. After a review of the CAMP logic used to select the trouble reports to be loaded from Remedy, FairPoint found that it has been erroneously excluding trouble reports with no associated work order from the CAMP data load. FairPoint stated that it will fix this error for the March 2011 data month.[238]

b) FairPoint is inconsistent in how it identifies the product associated with a trouble report.

As noted in Conclusion #19, FairPoint uses a more complex and potentially error-prone process of joining and comparing values found in four different tables to identify retail POTS trouble reports in CAMP. FairPoint uses a simple and straightforward process to identify retail POTS trouble reports in FireStage: including all records with consumer and business POTS designations in a specific Remedy field ("fld_requesttype").[239] Appendix A provides the details of these two different processes. According to FairPoint, the "fld_requesttype" field in CAMP does not provide a sufficient level of detail to identify all the products CAMP is designed to report. FairPoint stated that although the "fld_requesttype" field could be used "to identify Retail POTS services in CAMP, FairPoint could not use that field to identify other products, as those product designations do not exist in that field."[240]

c) FairPoint uses different data dates for identifying the trouble reports that are to be included in the reporting month.

For Percent Out of Service Cleared within 24 Hours, which is based on data imported into FireStage, FairPoint uses the date that the trouble was *cleared* to identify the trouble reports to be included in the data month (*e.g.,* troubles with a January date in this field are included in the reported January result).[241] For all other repair measurements, which are calculated in CAMP, FairPoint uses the date the trouble report was *closed* to identify the trouble reports to be included in the reporting month. (The distinction between cleared and closed dates is noted in Conclusion #1 above.) FairPoint has indicated that this difference happened because the development of FireStage reporting "took place separately from the

[238] Responses to Data Requests #150 and #150 clarification (150A).
[239] Specifically, FairPoint selects all records with the values 'Customer | POTS' or 'Business | POTS' in the "fld_requesttype" field.
[240] Response to Data Request #149.
[241] According to the business rules for Percent Out of Service Cleared within 24 Hours, the denominator for this measurement is "total out of service troubles *completed* [emphasis added] in the calendar month, not including excluded items."

development of the CAMP reporting" and that this difference should cause only a few trouble tickets to be reported in different months.[242]

d) FairPoint is inconsistent in how it identifies the state (*e.g.*, New Hampshire or Vermont) associated with a trouble report.

FairPoint identifies the state where a POTS line with a trouble report is located using the same field populated from Remedy in both FireStage and CAMP. When this field is not populated in CAMP, FairPoint uses an alternate process involving a match of the telephone number in the trouble report with an access-lines-in-service table that matches lines with the state.[243] When the field is not populated in FireStage, however, FairPoint drops the record from the calculation, rather than use this or an alternate process to identify the state.[244]

Issues a) and b) listed above are addressed in Conclusions #18 and #19, respectively. Liberty's analysis of the data in CAMP indicates that issues c) and d) each affect less than one percent of the CAMP trouble ticket records; however, because CAMP is missing some trouble ticket records, Liberty cannot determine the number of trouble tickets that might be affected if the CAMP database were complete.

FairPoint stated that the use of the trouble "cleared" date by FireStage as opposed to the trouble "closed" date "would only impact the month a repair ticket is reported in the service quality measurements; it would not affect the accuracy of the performance metric measured for that ticket. Therefore, there is no reason to make any change." FairPoint confirmed that the exclusion of tickets with a null state identification field in FireStage has negligible impact.[245]

22. FairPoint's method for identifying trouble reports that involved an out-of-service condition for the calculation of Percent Out of Service Cleared within 24 Hours is unreliable. *(See Recommendation #11)*

FairPoint runs an SQL query against the trouble report data imported from Remedy into its FireStage system to select trouble report records for calculating Percent Out of Service Cleared within 24 Hours. Liberty reviewed the logic of this query and found that it should correctly identify most characteristics of the records necessary for calculating the measurement. However, Liberty found that the process FairPoint uses to identify out-of-service trouble reports fails to properly distinguish out-of-service trouble reports from other trouble reports.[246]

FairPoint's process identifies out-of-service trouble reports by looking for one of three values in a particular "Description of Symptom" data field[247] from Remedy: CBC ("cannot be called"), CCO ("cannot call out"), or NDT ("no dial tone"). FairPoint includes a trouble ticket in the

[242] Response to Data Request #148.
[243] Response to Data Request #155.
[244] Response to Data Request #127.
[245] Response to Preliminary Finding #3
[246] SQL query provided to Liberty in response to Data Request #57.
[247] FairPoint calls this field "C777031007" or "Fld-DescriptionOfSympton" [sic].

measurement calculation only when one of these three values is found in this data field.[248] The "Description of Symptom" field is a free-form notes field in the Remedy trouble report; FairPoint's service representatives and technicians use the field to describe the trouble condition on the line and to track the progress on the trouble report. FairPoint's systems do not include checks to require that one of the three required conditions (CBC, CCO, or NDT) be specified when the trouble causes a line to be out of service. FairPoint relies, instead, on its employees remembering to accurately populate the field with one of these three values when a line is out of service. FairPoint's quality control process to ensure the correct population of this field for out-of-service conditions, is simply that its "retail representatives have been instructed to include CBC, CCO or NDT to describe customer out of service conditions."[249]

In reviewing the FireStage data,[250] Liberty found trouble reports that should have been but were not included in the calculation of Percent Out of Service Cleared within 24 Hours because these trouble reports did not contain one of the three specified out-of-service values in the "Description of Symptom" field even though other data suggest the line was out of service. For example, Liberty found trouble reports with the values CBC, CCO, and NDT in another field but not in the "Description of Symptom" field. [251] Liberty also found descriptions in the "Description of Symptom" field that appear to describe out-of-service conditions without using the values CBC, CCO, or NDT. These descriptions include text such as:

- "Business-drop wire has been cut"
- "Drop line down – OOS"[252]
- "service out"
- "OOS"
- "SUB SAW TECHS WORKING ON A POLE NEAR HIS HOUSE AND NOW HE HAS NO PHONE OR INTERNET MLT=41 OPEN OUT AND BALANCED"
- "DW DOWN OOS"
- "repeater again still clicks then loses dial tone. per sub has been on going trbl since last month, sub irate pays for maint plan and still oos"
- "NI RIPPED OFF HOUSE, PER SUB TORN APPART...OOS"
- "DROP TORN OFF BY DUMP TRUCK..OOS"
- "drop line down @ prop sub is oos"
- "drop line down from pole to house oos"
- "W DOWN RUNNING ACROSS STREET BLOCKING TRAFFICE OOS.. BUT PRIOR TO DW COMING DOWN CUSTOMER HAD HVY SOL"
- "drp dwn, truk tk dwn. sub is oos."
- "DW DOWN OOS."

[248] Responses to Data Requests #58, #130, and #152.
[249] Response to Data Request #59.
[250] Data provided in response to Data Request #87.
[251] This other field is "C777031000" (also known as "Fld-RequestTitle").
[252] "OOS" is an industry term meaning "out of service."

Liberty also found cases where the technician populated the "Description of Symptom" field with spaces between the letters (*e.g.*, 'N D T'). Liberty's analysis of the SQL code used to identify these values indicates that such trouble reports would not be included in the measurement calculations.[253] Liberty also found cases where FairPoint had identified a trouble as out of service but that designation was questionable based on the information available on the trouble report (*e.g.*, a trouble that was classified as out of service but had a "test okay" fault code).

To obtain some estimate of the significance of this issue, Liberty examined a random sample of approximately five percent of the New Hampshire POTS trouble reports in a January 2010 FireStage dataset provided by FairPoint. Of this sample, Liberty found a significant percent of the troubles that appeared to be misidentified based on the information available in the trouble report data. In particular:

- FairPoint failed to identify 7.7 percent of the troubles as out of service
- FairPoint identified 8.2 percent of the troubles as out of service that appeared not to be out of service
- 8.2 percent of the troubles had insufficient information available to indicate whether or not they were out of service.

FairPoint asserts that it reviewed the calculation of Percent Out of Service Cleared within 24 Hours for 2010 and determined that "the year-to-date results changed less than one-tenth of one percent (i.e., less than 0.1%)" and that the January 2010 measurement "would change from the reported result of 75.48% to 75.66%."[254] Liberty has not reviewed FairPoint's analysis and therefore cannot comment on its accuracy except to note that it is possible to fail to include a substantial number of trouble reports in the calculation but not affect the results significantly. In any case, incomplete calculations of measurements by failing to include the necessary transactions inherently undermine the reliability and credibility of the measurements and should not be dismissed by FairPoint.

23. FairPoint incorrectly includes calls that are routed to a vacant code announcement as incomplete calls in the calculation of Percent Call Completion. *See Recommendation 12)*

Calls routed to a vacant code announcement are typically caused by customer dialing errors. Although the volume of these calls may be small and are likely to have a negligible effect on the results, FairPoint should not be held accountable for customer behavior over which it has no control.

24. The process FairPoint used to calculate the three measurements that use Genesys data appear to meet the stated objective for each of these measurements.

It appears that FairPoint's process for calculating Percent Business Office and Other Calls Answered within 20 Seconds, Percent Repair Calls Answered within 20 Seconds, and Percent

[253] These examples came from a review of a sample of records found in the January 2010 FireStage data.
[254] Response to Preliminary Finding #2

Abandoned Repair Calls is compliant with each measurement's definition. Liberty's conclusion is based on interviews, FairPoint's data request responses, and Liberty's review of the available documentation. Liberty did not perform a review of the Genesys data.

25. The process FairPoint uses to calculate the two measurements that use Previsor data appear to meet the stated objective for each of these measurements.

Aside from the inclusion of calls routed to a vacant code announcement discussed in Conclusion #23, it appears that FairPoint's process for the calculation of Percent Dial Tone Speed within 3 Seconds and Percent Call Completion is compliant with each measurement's definition. Liberty's conclusion is based on interviews, FairPoint's data request responses, and Liberty's review of the available documentation. Liberty did not perform a review of the Previsor data.

26. The process FairPoint uses to calculate the two measurements that use New Metrics data appear to meet the stated objective for each of these measurements.

It appears that FairPoint's process for the calculation of Percent Toll and Local Assistance Operator Calls Answered within 10 Seconds and Percent Directory Assistance and Intercept Calls Answered within 10 Seconds is compliant with each measurement's definition. Liberty's conclusion is based on interviews, FairPoint's data request responses, and Liberty's review of the available documentation. Liberty did not perform a review of the New Metrics data.

27. Percent Installation Service Orders Met within 30 Days is not a good indicator of customer satisfaction with FairPoint's performance. *(Recommendation #13)*

Customers generally want their service provisioned on the committed due date and are dissatisfied when that date is not met. A customer is not likely to be satisfied if service is not installed until day 29, although that would meet the requirement to satisfy the Percent Installation Service Orders Met within 30 Days measurement. Service orders that are delayed for this length of time are typically the result of a lack of company facilities to provision the service, which is measured by Held Orders Over 30 Days – Facility Reasons. Additionally, by including mechanized orders in this measurement, as discussed in Conclusion #9, it would be practically impossible for FairPoint not to meet the current 95 percent standard for this measurement except in extraordinary circumstances. The current Percent Installation Service Orders Met Commitment and the Average Delay Days for Installation of Service measurements are more meaningful indicators of a customer's experience with the timeliness of FairPoint's service provisioning performance.

28. Currently there are no measurements that provide information on the quality of FairPoint's installations. *(Recommendation #14)*

All of the current service provisioning measurements focus on the timelines of FairPoint's provisioning performance; however there are no measurements that focus on the quality of FairPoint's provisioning work. Having service provisioned that is defective or inferior can be just as, if not more, dissatisfying as having service provisioned late by FairPoint.

29. There appear to be too many measurements that focus on performance involving missed due dates due to a lack of FairPoint facilities. *(Recommendation #15)*

Of the nine measurements that report different aspects of FairPoint's service provisioning performance, three are focused on measurements that involved due dates missed due to a lack of facilities.[255] Only one of these three measurements, Held Orders – Average Total Delay Days – Facility Reasons, has a performance standard that FairPoint must meet; the other two measurements are diagnostic only.

30. Currently there are no measurements that provide information on the accuracy of FairPoint's customer billing. *(Recommendation #16)*

After the cutover to FairPoint's new operation support systems, FairPoint's customers experienced a number of billing errors and issued complaints about FairPoint's billing quality.[256] Given this history, it would be helpful for FairPoint to report each month on the accuracy of the bills it submits to its retail customers.

31. Many of the measurements that report performance factors key to customer satisfaction do not have a performance standard. *(Recommendation #17)*

Liberty found that there were no performance standards that FairPoint has to meet for any of the Average Days to Install measurements, Average Delay Days for Installation of Service, Number of Repeat Trouble Reports, and Mean Time to Repair. All these measurements report on aspects of performance that are critical to customer satisfaction and all should have a performance benchmark that FairPoint is required to meet.

[255] The three measurements are: Total Held Orders on Hand at Month End –Facility Reasons, Held Orders Over 30 Days – Facility Reasons, and Held Orders – Average Total Delay Days – Facility Reasons

[256] See, for example, Liberty's FairPoint Post-Cutover Status Reports dated April 1, 2009; September 8, 2009; October 28, 2009; December 23, 2009; and September 30, 2010. See also Liberty's July 13, 2009 Assessment of FairPoint's Stabilization Plan Status Report**.**

IV. Recommendations

A. Measurement System and Process Improvements

1. **Review the current New Hampshire Quality of Service measurement system and process documentation to correct all errors and make the documentation complete and consistent with the calculation processes.** *(See Conclusion #1)*

FairPoint needs to review its current documentation to correct all errors and ambiguities, and make the documentation complete and consistent with its calculation processes. This documentation should be created with the notion that anyone, such as an external auditor, who is unfamiliar with the performance measurements can pick it up and understand the process used to arrive at the measurements' result each month.

FairPoint corrected many of the documentation errors highlighted by Liberty during the course of this audit. In referencing its documentation FairPoint characterized the matter as "relatively minor when taken in the context of the effort undertaken to develop them." FairPoint also stated:

> *The reporting of FairPoint's service performance is complex and involves thousands of transactions from multiple source systems. The plan and documentation detail multiple tasks with various time stamps, capturing task completion data for each transaction. In addition, applicable filters must be utilized (e.g., product, geographical, order statuses, jeopardy codes) to insure the correct data is captured for each metric. The reporting of these performance measurements requires an understanding of the metrics, the processes being measured and the underlying operational systems.*[257]

Liberty doesn't disagree that this is a complex process, which is why accurate, complete and comprehensive documentation is mandatory.[258]

2. **Implement additional data quality validation checks, including record count verifications, between the source systems and the performance measurement reporting systems to help ensure that the reporting systems have a complete set of source data records for accurate performance calculations.** *(See Conclusion #2)*

Without at least performing basic record count checks between all required source and reporting systems FairPoint cannot guarantee that its reporting systems receive all records needed for the calculation of the New Hampshire service quality measurements. FairPoint has indicated that it has implemented or will be implementing during 2011 such source-to-reporting-system data quality checks as record count comparisons, trending reviews, and validations of successful

[257] Response to Preliminary Finding #5.

[258] After Liberty noted documentation errors in the course of this audit, FairPoint has made some corrections to the documentation, as noted in FairPoint's Response to Preliminary Finding #5. Liberty observed that the changes made by FairPoint did correct specific errors and deficiencies Liberty identified. However, Liberty did not attempt to catalogue all documentation errors and deficiencies. Thus, FairPoint's documentation corrections do not comprise the thorough review and correction of the documentation Liberty recommends.

process completion.[259] Although this initiative appears to address the concerns Liberty has raised, examining the results of the initiative to determine the actual results of the initiative is outside the scope of this audit.

3. **Comply with the data retention requirements of the 2008 Settlement Agreement.** *(See Conclusion #3)*

FairPoint has no policy for freezing and retaining the source data imported into CAMP and FireStage. FairPoint also does not freeze and maintain the CAMP data files used at the time of the measurement calculations. FairPoint has no formal data retention policy for the New Metrics system, and retains detailed data in Previsor for only one year and "summarized" data for seven years. Without access to the actual records FairPoint used to calculate the measurements, it is impossible for FairPoint to fully support or for a third party to reliably and comprehensively audit the reported 2010 Service Quality Reports.

Exhibit 3 of the 2008 Settlement Agreement, to which FairPoint was a party and which was adopted by the Commission in approving transfer of the New Hampshire local service franchise to FairPoint, requires that records of the retail service quality measurements "will be retained by the utility for a period of at least five years for audit purposes."[260] Accordingly, FairPoint should make the following changes to its data management processes:

- The original, detailed CAMP Data Warehouse files used in the calculation of the performance results each month must be frozen and archived for audit access for at least five years.
- All CAMP Staging database records and ODS database records for each data month must be frozen and archived for audit access for at least five years.
- All original source data, without exclusions and derived data fields, used as the basis for each month's measurement calculations must be: i) preserved in a file (within the CAMP Staging database, for example), ii) readily available for auditing and report verification purposes, and iii) retained for at least five years. All original Previsor and New Metrics source data used for the New Hampshire QoS measurements should be copied and archived for a period of five years.

4. **Make the "Product_USOC" table relatively static, requiring updating only when FairPoint introduces a new product or retires a product.** *(See Conclusion #5)*

Errors in the look-up tables FairPoint used during 2010 have resulted in improper inclusion or exclusion of records from the QoS calculations. The changes made to the look-up table during the course of 2010 appear to have been made for the most part to correct errors in the table. FairPoint should review each USOC currently in use to ensure that it is in the table and mapped to the appropriate product and product hierarchy. FairPoint should also determine the impact of errors in the USOC tables on its 2010 reported results and restate the results if necessary.

[259] Response to Preliminary Finding #1
[260] 2008 Settlement Agreement, Exhibit 3, paragraph 3.1.

FairPoint indicated that "given Liberty has not substantiated any material impact on the New Hampshire SQI results due to the changes FairPoint has made over time to refine the 'Product_USOC' table, no restatement of 2010 reported results is warranted."[261]

5. **Review the measurement system code to ensure it is only including valid records in the calculation of the New Hampshire Quality of Service measurements.** *(See Conclusions #6, #10, #11, #12, #13, #15, #16, and #20)*

Liberty found a number of instances in which FairPoint has measurement system coding errors or interpretation of the QoS measurement requirements that have caused records to be incorrectly included or excluded from the reported results. In particular, Liberty noted that FairPoint has:

- Included official company lines in all measurement calculations (Conclusion #6)
- Included number port-out orders to other carriers in the calculation of Percent Installation Service Orders Met Commitment and Percent Installation Service Orders Met within 30 Day (Conclusions #10)
- Included some but not all bundled POTS and data services in the calculation of the Percent Installation Service Commitment Met and Percent Installation Service Orders Met within 30 Days measurements (Conclusion #11)
- Included orders for which the customer requested a due date later than the date offered by FairPoint in the Average Days to Install measurements (Conclusion #12)
- Inconsistently treated retail move orders in calculating the provisioning measurements (Conclusion #13)
- Excluded orders from the calculation of Total Held Orders On Hand Month End –Facility Reasons, Held Orders Over 30 Days – Facility Reasons, and Held Orders – Average Total Delay Days – Facility Reasons, when the original due date was missed due to customer reasons but subsequent information reveals there is a facility issue (Conclusion #15)
- Counted the same access line multiple times for records that erroneously contain multiple USOCs for the POTS product when calculating Access Lines in Service (Conclusion #16)
- Included wholesale resold service lines in the calculation of Customer Trouble Report Rate per 100 Lines – Network (Conclusion #20).

Although most of these issues appear to have a limited effect on the reported results taken in isolation, the accumulation of such errors can have an effect on results and certainly undermines the integrity of the reported results. FairPoint should review its interpretation of the reporting requirements for each measurement with Staff to verify there is agreement with FairPoint's implementation practices. Once agreement is reached, FairPoint's code should be modified to account for any changes that must be made and its business rules documentation should be updated to clearly reflect how FairPoint is calculating each of the measurements.

Liberty notes that FairPoint has taken steps to address the issue raised in Conclusion #10 and plans to do so for Conclusion #12.[262]

[261] Response to Preliminary Finding #8.
[262] Response to Preliminary Finding #11.

6. **Implement a code change that will prevent wholesale orders from being misclassified as retail orders in FairPoint's QoS calculations.** *(See Conclusion #7)*

Liberty found that the process used by FairPoint to identify retail service orders has the potential for misclassifying a wholesale order as a retail service order and incorrectly including it in the calculation of the measurements. FairPoint's implementation of a code change in CAMP to its process for identifying retail service orders should be implemented to prevent this from happening.

FairPoint agrees that wholesale orders with the PON convention described in Conclusion #7 could be misclassified as retail orders and stated that it updated the CAMP processes with a March 2011 code deployment to exclude such wholesale orders.[263] Liberty has not validated the code change.

7. **Meet with Staff to determine the appropriate order completion date to use for calculating service provisioning measurements, the types of orders that should be included in each measurement, and the appropriate performance benchmark for each.** *(See Conclusions #8 and #9)*

As noted, FairPoint believes it is interpreting the service provisioning measurements correctly. In particular, FairPoint believes that it is correct to:

- Define the completion of the order when the field and central office provisioning steps are complete although not all provisioning steps are complete and the order is still active[264]
- Include all orders (*i.e.*, fully mechanized and orders that require a dispatch) in the Percent Installation Service Orders Met Commitment and Percent Installation Service Orders Met within 30 Days results.[265]

Even if FairPoint's interpretation of the "completion date" used in the calculation of the service provisioning measurements is appropriate, at a minimum FairPoint should update its business rules documentation to make it clear that it is calculating these measurements using the order installation date, not the actual order completion date. However, Liberty also notes that there are some key provisioning steps, including the update of the E911 database, that are not included in FairPoint's approach within the interval used to determine completion of provisioning. As a result, if FairPoint's definition is appropriate, Liberty believes that additional measurements should be added to the New Hampshire QoS reports that measure FairPoint's timeliness in fully completing all steps of service orders. It has been Liberty's experience that such a definition of order completion is often used to measure order completion timeliness, for example, in both wholesale and retail analog measurements in wholesale performance assurance plans; this

[263] Response to Preliminary Finding #11.
[264] Response to Preliminary Finding #4.
[265] Response to Preliminary Finding #7.

includes Verizon's performance assurance plan, a version of which was used in New Hampshire prior to the change of ownership to FairPoint.

By including mechanized feature and PIC change orders in the calculation of Percent Installation Service Orders Met Commitment and Percent Installation Service Orders Met within 30 Days, FairPoint may be masking poor performance on orders that require physical work to provision service, such as a dispatch to a customer's premises, with its performance on mechanized orders that require limited effort to provision on time. Thus, if FairPoint's interpretation as to the inclusion of mechanized orders in these measurements is appropriate, Liberty recommends that Staff consider implementing a change in the definition of the measurements to separate mechanized from dispatch orders with a more stringent standard for the mechanized orders. Alternatively, the Staff should consider simply implementing more stringent standards than those currently in place for these two measurements to recognize the preponderance of mechanized orders in the mix of orders included in the measurements.

8. **Modify the process of identifying troubles in CAMP to assure that all appropriate transactions are included in the CAMP repair measurement calculations.** *(See Conclusion #18)*

In order for CAMP to provide accurate repair measurement calculations, FairPoint must improve its data extraction process to ensure that all source data needed for calculating and reporting service quality results is loaded into CAMP each month.[266] In addition to the code change FairPoint indicated it will make in the CAMP logic to extract this data from Remedy beginning in the March 2011 data month, the company needs to review earlier months to determine the impact of the missing trouble reports on its reported results. FairPoint should also implement data quality validation checks recommended in Liberty's Recommendation #2.

Liberty recommends that FairPoint take the simplest approach to identifying retail POTS trouble reports. FairPoint acknowledges that there is a single field in the Remedy source data that can be used to reliably identify retail POTS trouble reports. Although FairPoint may need a complex joining-and-matching process to identify products other than POTS for other regulatory reporting requirements, it is unnecessary to do so to identify POTS. Assuming the CAMP "fld_requesttype" field can be used to make a reliable identification of POTS trouble reports, Liberty recommends that FairPoint calculate the New Hampshire Service Quality measurements using this field rather than the joining-and-matching process currently used.[267]

Finally, Liberty recommends that FairPoint restate all CAMP-calculated New Hampshire Service Quality repair measurements (Customer Trouble Report Rate per 100 Lines – Network, Repeat Trouble Reports, Mean Time to Repair, and Percent Repair Commitments Met), as necessary, once these changes have been made.

[266] Conclusion #3 discusses the insufficient quality checks to ensure that all of the necessary source system data is loaded into the CAMP system.

[267] If FairPoint believes there is some flaw involved in using the data found in the CAMP "fld_requesttype" field to identify POTS trouble reports, the company should use the joining process for all performance measurements and determine the impact of this flaw on past results reported for Percent Out of Service Cleared within 24 Hours.

FairPoint did acknowledge the missing trouble reports in CAMP by indicating that it will discuss with Staff the impact of these missing records on the CAMP-calculated repair measurements during 2010.[268] FairPoint indicated that it implemented an enhancement to CAMP on April 4, 2011 to include the trouble reports that were previously not being included in the download from Remedy. FairPoint has also stated that it "cannot consider changing the methodology for identifying product classifications in the CAMP system on the premise that the CAMP system is used for multiple purposes in addition to the preparation of the Service Quality Metric reporting, and therefore it is not an option at this time to consider this recommendation." Furthermore, FairPoint asserts that the product identification methodology used in CAMP method is "accurate."[269]

9. **Change the logic used by CAMP to include troubles on all lines associated with a POTS service in the calculation of the New Hampshire Service Quality results.** *(See Conclusion #19)*

FairPoint's process for identifying POTS trouble reports is not reliable for instances when a customer has both POTS and DSL service and often does not include valid trouble reports for these customers in the results.

10. **Calculate all New Hampshire Quality of Service repair measurements in the same system.** *(See Conclusion #21*)

FairPoint has not offered compelling explanations for its use of: i) a different system (*i.e.*, FireStage instead of CAMP) for the calculation of Percent Out of Service Cleared within 24 Hours, ii) different processes to identify POTS trouble reports, and iii) different reporting dates in its calculation of the repair measurements.

The most efficient approach would be to calculate all repair measurements in CAMP, once the process for identifying all appropriate transactions has been corrected, as addressed in Recommendations #8 and #9 above. FairPoint should eliminate the use of FireStage for calculating Percent Out of Service Cleared within 24 Hours and begin to calculate and report this measurement entirely using CAMP. This will eliminate the differences in the data used for the reporting month as well as the other differences described above.

11. **Implement a flag in the Remedy system to indicate whether the trouble report involves an out-of-service condition before the technicians are permitted to close a trouble report.** *(See Conclusion #22)*

FairPoint's current process of relying on its technicians to populate a free-form field with one of three codes to identify an out-of-service trouble is unreliable and should be replaced with a system flag. This flag could be one that must be populated by FairPoint's technicians with a simple "yes" or "no." Liberty acknowledges that such a flag is not a perfect solution and is still subject to human error; however, requiring the technicians to populate a simple required field

[268] Response to Preliminary Finding #3
[269] Response to Preliminary Finding #3

with a "yes" or "no" value to indicate whether the reported trouble is an out-of-service condition will be much more dependable and error free than FairPoint's current process. Other carriers in the industry use similar flags to identify out-of-service trouble reports.

FairPoint indicated that the company has submitted a change request for consideration to introduce an out-of service ("OOS") indicator at the repair ticket entry point in Siebel and Remedy, including "guard rails" to require an employee entering a trouble report to populate this field.[270]

12. Exclude calls that are routed to a vacant code announcement from the calculation of Percent Call Completion. *(See Conclusion #23)*

Calls routed to a vacant code announcement are typically caused by customer dialing errors. FairPoint should not be held accountable for customer behavior over which it has no control. FairPoint has indicated that it "agrees with Liberty's assessment and is researching options for excluding calls that are routed to a vacant code announcement in the calculation of the Percent Call Completion measurement."[271]

B. Measurement Changes

13. Drop the Percent Installation Service Orders Met within 30 Days measurement. *(See Conclusion #27)*

This measurement provides information only on particularly poor performance, and its existing benchmark of 95 percent is much too loose a standard for such performance.

14. Add a measurement calculating the percent of installation troubles reported within a given number of days of installation to the New Hampshire Quality of Service Measurements. *(See Conclusion #28)*

A measurement such as "Percent Installation Troubles Reported within X Days" that calculates the percent of POTS lines installed on which a reported trouble was found in FairPoint's network within 'X' days of the order completion would provide a good indicator of the quality of FairPoint's service installations. The number of days ('X') to use in the measurements is negotiable, but Liberty recommends that it not be any less than three or more than 30.

[270] Response to Preliminary Finding #2
[271] Response to Preliminary Finding #11.

15. **Drop one or more of the current provisioning measurements that focus on service orders that missed the due date as a result of a lack of FairPoint facilities.** *(See Conclusion #29)*

Currently three of the nine service provisioning measurements focus on orders that are late for facility reasons. Given the current rate of wireline access line loss that FairPoint has experienced, missing service orders due to the lack of facilities should become less of an issue than it may have been in the past.

16. **Add billing accuracy measurements to the New Hampshire Quality of Service Measurements.** *(See Conclusion #30)*

Currently there are no measurements that focus on FairPoint's billing performance. Liberty recommends measurements that calculate and report the percentage of customer bills that needed to be adjusted each month due to billing errors[272] and the total dollars that FairPoint had to adjust for the month.

17. **Establish performance benchmarks for the three POTS Average Days to Install measurements, Average Delay Days for Installation of Service, Number of Repeat Trouble Reports, and Mean Time to Repair.** *(See Conclusion #31)*

Many of the measurements that report key customer satisfaction indicators are diagnostic measurements with no benchmark standards. Setting standards for the three POTS Average Days to Install measurements, Average Delay Days for Installation of Service, Number of Repeat Trouble Reports, and Mean Time to Repair will help to keep FairPoint on target to meet customer expectations.

[272] This measurement can be reported either as the percent of the total bills rendered that needed to be adjusted or the percent of the total dollars billed that needed to be adjusted.

IV. Summary

FairPoint has developed processes and systems and established a team responsible for reporting the New Hampshire QoS measurements. FairPoint also appears to use adequate change management processes for its measurements (Conclusion #4). However, there are some inadequacies in the measurement systems and processes that have prevented FairPoint from assuring reliable reporting of many of the QoS measurements. The principal inadequacies are:

- Poor existing FairPoint systems and process documentation (Conclusion #1)
- Poor data extraction and other data management practices (Conclusion #2)
- Inaccurate identification and selection of some transactions for measurement calculations, in part because of the inadequate systems design (Conclusions #5, #6, #7, #10, #11, #12, #13, #15, #16, #18, #19, #20, #21, #22, #23)
- Questionable interpretations of how some of the measurements should be calculated that need to be reviewed and verified in discussions with Staff (Conclusions #8 and #9).

Liberty also identified one other major issue with FairPoint's service quality measurement processes that has significantly affected the ability to fully audit the measurements: insufficient data retention policies and practices (Conclusion #3). FairPoint does not retain frozen copies of the source operational support system data used to populate CAMP and FireStage or of the processed data and files in the CAMP measurement reporting system. Because of this, Liberty was unable to obtain from FairPoint a reliable set of data to use for verifying the reported results that rely on CAMP and FireStage, which FairPoint uses for calculating and reporting most of the New Hampshire QoS measurements.

Because of the difficulty in obtaining a reliable set of data for verifying the results, Liberty was forced to draw inferences about the QoS measurements based on code reviews, interviews, and various forms of data analysis short of measurement replication. It was not possible to reliably replicate the reported results of any measurement except Access Lines in Service, which appears to have reasonably reliable reported results during 2010 (Conclusion #17). Aside from Access Lines in Service, Liberty cannot determine with any degree of certainty whether FairPoint's reported New Hampshire QoS results during 2010 are accurate. This includes the five measurements whose 2010 reported results affect FairPoint's 2009 penalty liability through the 2010 Settlement Agreement:

- Percent Installation Service Orders Met Commitment
- Percent Installation Service Orders Met within 30 Days
- Customer Trouble Reports Rate - Network
- Percent Out of Service Cleared within 24 Hours
- Percent Repair Commitments Met.

Despite the inability to replicate most 2010 measurement reports, Liberty identified through code and data reviews several specific issues that call into question the reliability of the reported 2010 results. At least one of these issues, and frequently more than one, affects each of the five measurements subject to the 2010 Settlement agreement. In particular, Liberty observed:

- From 15 to 34 percent of troubles[273] were missing from CAMP, which affects the following CAMP-reported repair measurement calculations (Conclusions #18 and #19; Conclusions #5, #6 , #20, and #21 also affect these measurements[274]):
  - Customer Trouble Report Rate per 100 Lines – Network
  - Percent Repair Commitments Met
  - Number of Repeat Trouble Reports
  - Mean Time to Repair
- Approximately 16 percent[275] of trouble reports were incorrectly categorized in calculating out-of-service conditions (Conclusion #22) for:
  - Percent Out of Service Cleared within 24 Hours
- Various data and calculation logic problems whose cumulative effect may have undermined the accuracy of the CAMP-calculated provisioning measurements (Conclusions #5, #6, #7, #10, #11, #12, #13, and #15; some conclusions apply to only a subset of the provisioning measurements[276] and also apply to the CAMP-calculated repair measurements):
  - Percent Installation Service Orders Met Commitment
  - Percent Installation Service Orders Met within 30 Days
  - Average Days to Install – Total (POTS)
  - Average Days to Install – Premises Dispatch
  - Average Days to Install – Mechanized
  - Average Days to Install – Total (DSL)
  - Total Held Orders On Hand Month End – Facility Reasons
  - Held Orders for Over 30 Days – Facility Reasons
  - Average Delay Days for Installation of Service
  - Held Orders – Average Total Delay Days – Facility Reasons
  - Number of Installation Orders Completed
  - Number of Access Lines Installed

[273] This estimate combines the effects of: (a) incomplete extraction of trouble tickets from Remedy into CAMP (Conclusion #18), which causes 6 and 11 percent of troubles to be lost in the calculations on a monthly basis, and (b) the effect of not counting troubles on lines containing both POTS and DSL service that were correctly imported into CAMP but lost from the calculations as a result of an improper exclusion (Conclusion #19), which appears to cause between 9 and 23 percent additional troubles on a monthly basis to be missing from the calculations.

[274] Conclusion #20 applies only to Customer Trouble Report Rate per 100 Lines – Network.

[275] This combines estimates from the sample analysis described in Conclusion #22 that FairPoint failed to identify 7.7 percent of the troubles as out of service and misidentified 8.2 as out of service that appeared not to be. These two numbers appear superficially to balance each other. However, if, for example, none of the 7.7 percent of troubles FairPoint failed to include in the measurement were cleared in 24 hours and all the 8.2 percent FairPoint incorrectly included were cleared in 24 hours, the reported results could be significantly different. Additionally, there was insufficient information for Liberty to determine whether FairPoint correctly classified an additional 8.2 percent of the troubles.

[276] Conclusions #10 and #11 apply only to Percent Installation Service Orders Met Commitment and Percent Installation Service Orders Met within 30 Days. Conclusions #12 and #13 apply to the four Average Days to Install measurements. Conclusion #15 applies only to Total Held Orders On Hand Month End – Facility Reasons. Held Orders for Over 30 Days – Facility Reasons, and Held Orders – Average Total Delay Days – Facility Reasons. In Conclusion #14 Liberty noted that FairPoint's logic for selecting only orders that involve a dial-tone installation and distinguishing premises dispatch from mechanized service orders in calculating the Average Days to Install measurements appears to be sound.

- Questionable interpretations of the following provisioning measurements (Conclusions #8 and #9[277]):
  - Percent Installation Service Orders Met Commitment
  - Percent Installation Service Orders Met within 30 Days
  - Average Days to Install – Total (POTS)
  - Average Days to Install – Premises Dispatch
  - Average Days to Install – Mechanized
  - Average Days to Install – Total (DSL)
  - Average Delay Days for Installation of Service
  - Held Orders – Average Total Delay Days – Facility Reasons
  - Number of Installation Orders Completed
  - Number of Access Lines Installed.

Liberty's limited review of the remainder of the measurements, which are not calculated in CAMP or using FireStage data, uncovered few specific issues (Conclusions #24, #25, and #26). Liberty also identified some measurements that would be useful to change, add, or drop (Conclusions #27, #28, #29, #30, and #31).

Liberty has 12 recommendations to address the deficiencies in FairPoint's systems and processes and five recommendations for suggested changes or additions to existing measurements. FairPoint has already taken steps to address some of the recommendations concerning the deficiencies. In particular, FairPoint has:

- Made some updates to its documentation (Recommendation #1)
- Begun implementing some source-to-reporting-system data quality checks (Recommendation #2)
- Implemented a code change to exclude hot cut orders from the calculation of the Percent Installation Orders Met Commitment and the Percent Service Orders Met within 30 Days measurements (Recommendation #5)
- Plans to implement a new process that will identify and exclude orders where the customer requests an interval that is greater than FairPoint's standard interval from the calculation of the Average Days to Install measurements (Recommendation #5)
- Introduced edits that can prevent some wholesale orders from being misclassified as retail orders (Recommendation #6)
- Implemented an enhancement to CAMP to include the trouble reports that were previously not being included in the download from Remedy (Recommendation #8)
- Submitted a change request for consideration that would introduce an out-of service indicator at the repair ticket entry point in Siebel and Remedy (Recommendation #11)
- Begun researching options for excluding calls that are routed to a vacant code announcement in the calculation of the Percent Call Completion measurement (Recommendation #12).

[277] Conclusion #9 applies only to Percent Installation Service Orders Met Commitment and Percent Installation Service Orders Met within 30 Days.

Appendix A: Details of FairPoint's Calculation Procedures

1. Procedures for CAMP-Calculated Provisioning Measurements

The primary table FairPoint uses to calculate the provisioning measurements is a CAMP Staging Module table called "Stg_Service Order." FairPoint populates this table with service order source data from the M6 operational support system. The data from this table and other reference tables is used by downstream CAMP processes in the provisioning measurement calculations.

a. Selecting POTS Orders

To identify POTS orders, FairPoint compares the USOCs found in the "USOC_value" field of the CAMP "Stg_Service_Order" table to a USOC look-up table.[278] The look-up table identifies the products corresponding to the USOC codes. Each unique service order is identified by the "document_number" field found in "Stg_Service_Order."[279] FairPoint includes USOCs associated with the following codes[280] in the look-up table field, "product_id":

- '180' (POTS Business)
- '19' (POTS Residence)
- '302' (WATS)
- '203' (Lifeline)
- '88' (Official Services) in the measurement calculation.

When an order contains USOCs for multiple products, FairPoint uses a product hierarchy built into the USOC look-up table to identify the orders it considers to be POTS orders. The most complex product in an order with multiple products takes precedence in categorizing the order for reporting purposes. POTS orders are the lowest level orders in the FairPoint hierarchy table (*i.e.*, the least complex orders to provision).[281] Thus, for example, an order that contains USOCs for POTS and DSL service is identified as DSL and not included in the measurement's calculation.

b. Selecting New Hampshire Orders

FairPoint identifies the New Hampshire orders using the CAMP Staging module table, "Stg_Service_Order." New Hampshire orders are identified with a value of 'NH' in the "instance_value_abbrevation" field of this table.[282] Because of inaccuracies FairPoint identified in this data field as populated from the original M6 source data, the value in this field is "corrected" in CAMP from its original value and populated with a 'NH' whenever the "line_id" field of the "Stg_Service_Order" table begins with characters associated with New Hampshire

[278] Responses to Data Requests #74 and #93.
[279] Response to Data Request #99.
[280] Responses to Data Requests #74 and #93.
[281] Interview #6, February 8, 2011 and response to Data Request #121.
[282] Response to Data Request #97.

telephone numbers or special service circuits: '603', '73/', '74/' or '83/'.[283] Service orders that contain multiple lines with area codes for two different states (*e.g.,* 603 and 207) are counted in the performance results for both states. FairPoint asserted that retail POTS orders never involve multiple states; however, Liberty found isolated cases where this appears to be happening.[284] FairPoint later clarified that there are extremely rare occurrences where such a dual classification will occur on cross border orders, such as a customer with a Maine address and a distinctive ring feature on a 603 area code phone number.[285]

c. Distinguishing Retail from Wholesale Orders

FairPoint distinguishes retail orders from wholesale orders using the CAMP Staging module table, "Stg_Service_Order," and a look-up table "DIM_Company." The company compares value found in the field "CCNA_name" of the "Stg_Service_Order" table with values in the "DIM_Company" look-up table. Service orders with a null value or a value of '100' in "CCNA_name" are considered to be retail records.[286] FairPoint populates "CCNA_name" with a value of '100' whenever the Purchase Order Number (PON) (which FairPoint takes from the "PON" field) found in the "Stg_Service_Order" table begins with '1-' or with 'N5'.[287] Prior to March 2011, FairPoint did not have an edit in its Wisor wholesale gateway system to prevent the Competitive Local Exchange Carriers (CLECs) from issuing an order with a PON that begins with '1-' or with 'N5'; therefore, any order issued by a CLEC with a PON beginning with either of these two values was classified as a retail order by FairPoint.[288] The implications of this are addressed in Conclusion #7.

d. Identifying Orders for Exclusion

FairPoint identifies disconnect orders using two fields in the "Stg_Service_Order" table, "activity indicator" ("activity_ind") and "activity code" ("activity_cd"). These fields contain, respectively, the M6 service order activity indicator (*e.g.*, 'N' for new service installation) and the M6 service order activity code, which indicates the required action for a specific line in the order (*e.g.*, 'D' for disconnect). FairPoint uses the CAMP "Stg_Service_Order" table to identify disconnect orders as those orders with either: (1) a value of 'D' in the "activity_ind" field or (2) a value of 'C' in "activity_ind" field and a value of 'D' in "activity_cd field."[289] The value 'C' means a change to an existing service; the value 'D' means a disconnection of service.

According to FairPoint, "record change" orders, such as orders that change a customer's listing or orders that are issued to make a correction to internal inventory records, are identified by the

[283] Responses to Data Requests #98 and #137. The code 603 is the area code for New Hampshire and is the first three characters on the telephone number found in the "line_id" field for New Hampshire POTS service orders. The characters '73/', '74/' and '83/' are used by FairPoint as the first three characters of the "line_id" to identify New Hampshire special service circuits.
[284] Responses to Data Requests #154 and #181.
[285] Response to Data Request # 181 clarification (#181A).
[286] Response to Data Request #120. "DIM_Company" look-up table provided in response to Data Request #91.
[287] Response to Data Request #137.
[288] Response to Data Request #153 clarification (153A)
[289] Response to Data Request #119.

provisioning plans[290] assigned to the order. Any order assigned to a provisioning plan associated with a record change is currently excluded in the download of the M6 data to CAMP; therefore such records do not appear in CAMP for inclusion in the performance calculation.[291] However, the logic to exclude record change orders was only introduced in December 2010. From March 2010 to December 2010, these records were found in CAMP and excluded in the Staging to ODS load process by referencing a look-up table found in M6. Prior to March 2010, these records required manual identification and exclusion using FairPoint's monthly "scrub" process.[292]

FairPoint identifies test and administrative orders for exclusion as those that contain a value of 'administration' or '-' in the "project_name" field found in the CAMP service order tables.[293] As was the case for record changes, test records are also excluded before being downloaded into CAMP from M6 by the identification of specific "user_ids" found in M6. These "user_ids" are found in the test service order records that were loaded into M6 prior to and during cutover.[294]

FairPoint identifies the exclusion for orders where the due date is missed because of the end user by the value found in the "jeopardy_reason_code" field in the CAMP "Stg_Service_Orders" table.[295] This field is populated with coded values by FairPoint that indicate the reason why an order's due date was missed (*e.g.*, "customer not ready" or "defective facilities"). Specific codes are used in this field to identify delays that were the result of a customer action.[296]

FairPoint identifies cancelled orders for exclusion as those orders that contain a value of '1' in the "supplement_type" field found in the CAMP "Stg_Service_Orders" table.[297] This field identifies the reason why a supplemental order was issued against a pending service order. A supplement value of '1' indicates that the order has been cancelled.

The exclusion for Saturday and Sunday is coded into the CAMP logic used to calculate intervals such as the interval for the Average Days to Install measurements[298].

e. Special Rules for Selecting Orders for Average Days to Install Measurements

FairPoint's business rule documentation does not explicitly note that the Average Days to Install measurements include only those orders that involve an installation of dial tone or a move of

[290] FairPoint's M6 system assigns a "provisioning plan" to each order based on requirements of the order. The provisioning plan contains the ordered steps required to complete the order.
[291] Interview #6, February 8, 2011 and response to Data Request #118.
[292] Responses to Data Request #174 second clarification (174B) and third clarification (174C).
[293] Response to Data Request #77. This field is found both in the Staging module table "Stg_Service_Order" and the ODS module table "ODS_Service_Order." The administrative order exclusion is applied in the ODS module.
[294] Response to Data Request #156.
[295] Interview #6, February 8, 2011. The jeopardy codes used by FairPoint were provided in responses to Data Requests #13 and #140.
[296] The code that are used to indicate a customer caused delay include 1C, 1E, 1F, 1G, 1R, 1S, 1W, 1Z, C01, C09, C19, C20, C21, C22, C23, D01, D23, DD, G33, C40 and C41. Response to Data Request #140.
[297] Interview #6, February 8, 2011.
[298] Interview #10, May 16, 2011.

customer service to a new location. FairPoint identifies the orders to be included in these measurements using the "activity_ind" and "linecount" fields in the CAMP Staging module table, "Stg_Service_Orders." The required condition for the orders is that: (1) "activity_ind" contains a value of 'N' (*i.e.*, new customer) or 'C' *(i.e.*, change to an existing line) and (2) "linecount" contains a value greater than zero.[299] The "linecount" field is a derived data field that is determined by records in the CAMP "Stg_Service_Orders" table that contain: (1) a value of 'N' (*i.e.*, new) in the "activity_cd" field[300] and (2) one of five values in the "serv_item_type_cd" field:

- 'LINEN'
- 'CIRCUITN'
- 'CIRCUIN'
- 'CIRCUN'
- 'CIRCUN'.

These field combinations indicate that the service order involves the addition of a new line or circuit. The "linecount" field is incremented by one for each record within a service order that meets these criteria, with each record representing a different line or circuit being installed (*e.g.*, if a service order contains two rows that have an "activity_cd" = 'N' and a "serv_item_type_cd" = 'LINEN', the service order involves the installation of two access lines and the "linecount" value will be populated with a '2').[301]

FairPoint uses the CAMP "Stg_Service_Orders" table to identify premises dispatch orders by a value of 'out' in the "dispatch_complete" field. The "dispatch_complete" field is a derived field that is populated based on combinations of variables in the "job_code" and "service_pk" fields found in the M6 "OM_WFM_Workorder" table.[302] The "job_code" field represents the type of work involved on the technician's work order and the "service_pk" field contains the work order identifier for FairPoint's Ventyx work management system.[303] Only orders that require a premises or central office dispatch appear in the M6 "OM_WFM_Workorder" table.[304] FairPoint identifies non-premises dispatch orders (*i.e.*, orders that require a central office dispatch only) by a null value in the "dispatch_complete" field.[305] Orders that do not appear in this table are also classified as non-dispatch orders with a null value in the "dispatch_complete" field.[306] Orders that are identified with a value of 'out' in the "dispatch_complete" field are included in the calculation of the Average Days to Install – Premises Dispatch measurement. Orders with a null value in this field are included in the Average Days to Install – Mechanized measurement. Both dispatch and non-dispatch orders are included in the Average Days to Install – Total (POTS) measurement.

[299] "FRP_NH_SQI_RegulatoryReportingDataElementsDefinitions_120810" provided in response to Data Request #1.
[300] If "activity_ind" equals 'N', "activity_cd" must also equal 'N' and indicates than a line is to be added to a new account. If "activity_ind" equals 'C', then an "activity_cd" of 'N' means an additional line is to be added to an existing customer account.
[301] Response to Data Request #166 second clarification (166B) and Interview #10, May 16, 2011.
[302] Response to Data Request #166 second clarification (166B) and Interview #8, April 13, 2011.
[303] Responses to Data Requests #202 and #203.
[304] Response to Data Request #205.
[305] Response to Data Request #166 second clarification (166B) and Interview #8, April 13, 2011.
[306] Response to Data Request #206.

f. Determining Service Order Commitment Date

FairPoint uses the desired due date on the service order as the commitment date. The company identifies the value in the field called "desired_due_date" in CAMP Staging module table "Stg_Service_Order" as the desired due date. In cases where a customer requests a due date change, the desired due date is overwritten in the M6 source data as well as in the "Stg_Service_Order" table. CAMP maintains a history of due date changes in the ODS database where the "desired_due_date_last" field is used to reflect the most current commitment date. FairPoint has indicated that the desired due date changes only upon request by the customer; a date change initiated by FairPoint does not cause a change in the desired due date.[307] If the customer is not ready to accept service ordered from FairPoint on the due date, FairPoint puts the service order on hold with a future due date (*e.g.*, a due date in the year 2025) until the customer is ready, at which time the desired due date in the order will be updated with the new installation date.[308]

g. Determining the Order Start Date

FairPoint uses the "create_date" field in the CAMP "Stg_Service_Orders" table to designate the start date of an order for measuring installation intervals. This field contains the date the order was created in M6.

h. Determining Completion Date

In the provisioning measurements, FairPoint uses a derived completion date as the completion date rather than using the service order completion data, which can be found in the operational support system source data imported into CAMP. FairPoint's derived completion date is the latest completion date found in either the "due date" ("DD") or the "appointments" ("APPTS") provisioning task data fields found in the CAMP "Stg_Service_Orders" table. When both of these fields are populated in a service order and the completion date for each task is different, FairPoint selects the earlier of the two dates and populates the "order_complete" field in the CAMP "Stg_Service_Orders" table with this date.[309] The "DD" task is found in all orders and represents the "due date" provisioning task. The "APPTS" task is the "appointment" provisioning task and is found in orders that have "provisionable" components.[310] An order with "provisionable" components is one where some portion of the order requires physical provisioning in either the field or the central office, as opposed to orders such as feature changes that can be fully implemented via a software change.

As noted in Conclusion #8, this procedure for deriving the completion date means that the derived date corresponds to the service installation completion date rather than the service order completion date. In some cases, it is appropriate to use the service installation completion date, as for example in the numerators of the Average Days to Install measurements. However, most

[307] Interview #6, February 8, 2011 and responses to Data Requests #76 and #176.
[308] Response to Data Request #101.
[309] Responses to Data Requests #78 and #171.
[310] Responses to Data Requests #95 and #173.

the definitions of the provisioning measurements refer to service order completion for some aspect of the calculation, including the denominators of the Average Days to Install measurements. Most service orders have additional remaining tasks remaining to be implemented to provide full service after the service installation tasks are complete.

i. Calculating Time Intervals

For measurements where an interval calculation is required, FairPoint determines the interval for each order by subtracting the date found in the "order_create" field from the date found in the "order_complete" field. FairPoint considers the day that the order was received as day zero. Orders that are completed on the same day they are received are included in the calculation of the average day results with a zero-day interval. Intervals are calculated in units of days with no consideration of time of day (*e.g.,* an order that is completed at 12:01 AM on the day after it was received will be considered to have a one-day interval). When calculating the interval for the Average Days to Install measurements, FairPoint excludes Saturday and Sunday from the calculation.[311]

j. Special Rules for Selecting Orders for Measurements Involving Delays for Facility Reasons

FairPoint identifies the orders to be included in Total Held Orders On Hand Month End – Facility Reasons and the Held Orders Over 30 Days – Facility Reasons by a value of 'N' (*i.e.*, new service) or 'C' (*i.e.*, a change to an existing service) in the "activity_ind" field, a null value in the "order_complete" field, and a value in the "jeopardy_reason_code" field that indicates the order missed the due date for facility reasons.[312] The logic is the same for identifying the orders to be included in Held Orders – Average Total Delay Days – Facility Reasons with the exception that the "order_complete" field must be populated with a date to allow for the calculation of the average delay and the "activity_ind" field is not used for order identification. For Held Orders Over 30 Days – Facility Reasons, FairPoint identifies the orders that have been held over 30 days by the number of days, including Saturdays and Sundays, that have elapsed from the date found in the "desired_due_date" field.[313] All of these data fields are found in the CAMP "Stg_Service Orders" table and each field has been previously defined.

k. Determining the Number of Installation Orders Completed

To calculate Number of Installation Orders Completed, FairPoint counts the quantity of unique "document-numbers" found in the CAMP "Stg_Service_Orders" table that have a value of 'N' (*i.e.*, new service), 'T' (*i.e.*, a move of an existing service to a new location), or 'C' (*i.e.*, a change to an existing service) in the "activity_ind" field and a date in the "order_complete" field

[311] Interview #10, May 16, 2011.
[312] "FRP_NH_SQI_RegulatoryReportingDataElementsDefinitions_120810" provided in response to Data Request #1. The values found in this field that would indicate a delay for facility reasons are '1A,' '1D,' '1H,' '1J,' '1T,' '1Y,' '2B,' 'B08,' 'F08,' 'F10,' 'G07,' 'G08,' 'G10,' 'G23,' 'H08,' or 'H10.'
[313] Response to Data Request #26.

that falls within the reporting month.[314] The definition of these data fields and the other logic used to identify the service orders in the calculation of this measurement has been previously discussed.

l. Determining the Number of Access Lines Installed

For the calculation of Number of Access Lines Installed, FairPoint totals the values found in the "linecount" field for all orders that have a date in the "order_complete" field that is equal to the report month.[315] These data fields, which have been previously defined, are found in the CAMP "Stg_Service_Order" table. All other logic used to identify the service orders in the calculation of this measurement has been discussed above.

m. Procedures for Access Lines In Service

The data used to determine the number of access lines in service is populated in the CAMP Staging module table "Stg_Access_Lines_In_Service" using source data from the Siebel operational system.

Lines that are in service are identified by a value of 'Active' in the "asset_status" field in the "Stg_Access_Lines_In_Service" table. Other allowed values in this field are 'Suspended' or 'Inactive,' which are not included in the reported in-service line counts.[316] This data field provides the status of each line inventoried in FairPoint's Siebel system.

FairPoint identifies New-Hampshire-specific access lines by a value of 'NH' in the "service_address_state" field of the CAMP "Stg_Access_Lines_In_Service" table.[317] This field is supposed to identify the state where the access line is located. However, FairPoint indicated that it discovered a problem with incorrect state information populated in this Siebel field. As a result, FairPoint has recently changed the logic used to identify the state associated with each access line. FairPoint indicated that the new logic updates "service_address_state" with the correct state identifier when the state code does not match the area code found in the "line_id" field of the CAMP "Stg_Access_Lines_In_Service" table. For POTS lines, the "line_id" field is populated with the end user's telephone number; for special services it is populated with the circuit identification number. With FairPoint's new logic, if a record contains, for example, a "service_address_state" value of 'VT' and the first three characters of the "line_id" field are '603', then the "service_address_state" field will be updated with a value of 'NH'.[318]

[314] "FRP_NH_SQI_RegulatoryReportingDataElementsDefinitions_120810" provided in response to Data Request #1. Orders that contain a value of 'C' in the "activity_ind" field and a value of 'D' in the "activity_cd" field identify disconnect orders to be excluded from the calculation.
[315] "FRP_NH_SQI_RegulatoryReportingDataElementsDefinitions_120810" provided in response to Data Request #1.
[316] Response to Data Request #102.
[317] Response to Data Request #103.
[318] Response to Data Request #158. In particular, as noted in FairPoint's July 29, 2011 response to Liberty's Draft Final Report, because the "service_address_state" from Siebel is not always correct, CAMP now uses the following logic to validate and update the state information: for records with a "line_id" starting with '603%', '73/%', '74/%', '83/%', or '%NH%', and for which "dw_state" is not equal to 'NH', the "service_address_state" is updated to 'NH'.

FairPoint also indicated that Siebel source data showed records for lines that have been ported out to another carrier as active retail lines. FairPoint is changing its logic to identify these lines by a value of 'WS-CB' in the "product_name" field of the CAMP "Stg_Access_Lines_In_Service" table and exclude them from the total lines-in-service count.[319] The "product_name" field provides information on the type of product associated with the access line. A value of 'WS-CB' in this field indicates that the line is associated with a wholesale service.

FairPoint completed the programming changes to account both for the incorrect state information and in the inclusion of lines ported out to another carrier on March 25, 2011. As a result of these errors, FairPoint completed a re-run of its 2010 results for Customer Trouble Report Rate per 100 Lines – Network and Access Lines in Service.[320]

To identify POTS access lines, FairPoint matches the value found in the "class_of_service" field of the "Stg_Access_Lines_In_Service" table to the value in the "USOC" look-up table to identify the product associated with the line. The "class_of_service" field identifies the USOC codes associated with each access line. The "USOC" look-up table provides the USOC codes to product identification. To determine whether the line is retail or wholesale, the value in the "wholesale_ccna_acna" field of the "Stg_Access_Lines_In_Service" table is matched to the value in the "DIM_Company" look-up table to identify the operating company that provides service to the specific access line.[321] The "wholesale_ccna_acna" field provides the Customer's Carrier Name Abbreviation code or the Access Customer Name Abbreviation code for wholesale customers. Lines that contain a null value in this field are considered retail lines.[322]

2. Procedures for CAMP-Calculated Repair Measurements

The primary table used by FairPoint to calculate the repair measurements is the CAMP Staging Module "Stg_Trouble_Tickets" table. This table is populated by trouble report source data from FairPoint's Remedy operational support system. The data from this table and other reference tables is used by downstream CAMP processes for the repair measurement calculations.

a. Identifying Retail POTS Trouble Reports

To identify the retail product associated with a trouble report, FairPoint's process requires a complex joining process involving the matching of data in four different tables. To identify the product, FairPoint matches the value in the "customerassetprimaryattrib" field of the CAMP "Stg_Trouble_Tickets" table with the value found in the "line_id" field of the CAMP "Stg_Access_Access_Lines_in_Service" table to first identify the specific access line associated with the trouble report. The "customerassetprimaryattrib" field identifies the telephone number or circuit identification number of the line/circuit associated with the trouble report. Once this

[319] Response to Data Request #158.
[320] Response to Data Request #212.
[321] Responses to Data Requests #72, #81, 104, 123, and #149, and Interview #6, February 8, 2011.
[322] Response to Data Request #104.

association between trouble reports and access lines is made, the value found in the "class_of_service" field of the "Stg_Access_Access_Lines_in_Service" table is matched to the value in the "USOC" look-up table to identify the product associated with the line. The "class_of_service" field identifies the USOC codes associated with the access line. The "USOC" look-up table identifies the products associated with the USOC codes. To determine whether the line is retail or wholesale, the value in the "wholesale_ccna_acna" field of the "Stg_Access_Access_Lines_in_Service" table is matched to the value in the "DIM_Company" look-up table thereby identifying the operating company that provides service to the specific access line.[323]

When an access line has multiple appearances in the CAMP "Access_Lines_In_Service" table FairPoint's process identifies the product based on the "last update" date found in this table. For example, an access line with both POTS and DSL service will appear in two rows in the "Access_Lines_In_Service" table; one row shows the USOC in the "class_of_service" field for the POTS service and the other row shows the USOC in the "class_of_service" field for the DSL service. In each of these rows, the "last update" field contains the date the latest completed change were made to the service. If the POTS row contains a more recent "last update" date than that in the DSL row, any trouble report on the line is considered a POTS trouble and included in the New Hampshire Service Quality results. Conversely, if the DSL row has the more recent "last update" date, all trouble reports on the access line are considered to be DSL troubles and are not included in the service quality results. When the "last update" dates are identical in both rows, FairPoint uses whatever USOC is on the first record found in the "Access_Lines_In_Service" table to identify the product associated with the trouble report; in this case, the trouble report is included in the measurement calculation only if the POTS USOC happens to be the first record, otherwise it is excluded.[324]

This same process is used to identify the trouble reports and access lines for the other products needed for the calculation of the Customer Trouble Reports Measurement. In addition to POTS the products[325] FairPoint includes in this measurement are Centrex, PBX, Official Services, 2-Wire digital, Coin and COCOT.[326] FairPoint also includes wholesale trouble reports (numerator) and access lines (denominator) for resold service in the calculation of this measurement's results.[327] FairPoint identifies these resold lines by a value of '229' in the "wholesale_ccna_acna" field of the "Stg_Access_Access_Lines_in_Service" table for the access line associated with the trouble report.[328]

b. Selecting New Hampshire Trouble Reports

FairPoint identifies New Hampshire specific trouble reports by a value of 'NH' in the "fld_customerstate" field found in the CAMP "Stg_Trouble_Tickets" table.[329] This field

[323] Responses to Data Requests #72, #81, 104, 123, and #149, and Interview #6, February 8, 2011.
[324] Response to Date Requests #180 and #180 clarification (180A) and response to Preliminary Finding #11.
[325] These include Lifeline and WATS.
[326] Response to Data Request # 122 and Interview #6, February 8, 2011.
[327] Responses to Data Requests #184 and #185.
[328] FRP_NH_SQI_RegulatoryReportingDataElementsDefinitions_120810
[329] Response to Data Request #108.

identifies the state location of the customer's line/circuit reported on the trouble ticket. When this field is not populated in CAMP, FairPoint uses an alternate process involving a match of the telephone number in the trouble report with an access-lines-in-service table that matches lines with the state.[330]

c. Identifying Trouble Reports for Exclusion

FairPoint uses the fault codes found in the trouble reports to exclude reports of interexchange calls, non-regulated CPE, troubles outside of FairPoint's control, and troubles not closed to one of the FairPoint fault (disposition) codes shown in the exclusion list.[331] These codes can be found in the "fld_faultcode" field of the "Stg_Trouble_Tickets" table. A fault code is assigned by FairPoint's technicians when clearing a trouble report to indicate the reason the customer's service was in trouble. FairPoint also identifies the exclusion for the end-user-caused delays by specific fault codes in the closed trouble report. Trouble reports with codes of '0715' or '12XX' are excluded from the results. A code of '0715' is used when a customer cancels the original trouble report; codes beginning with '12' are used when there is no access to the premises provided by the customer or for other customer caused delays. [332]

The exclusion for troubles reported by FairPoint employees in the course of performing preventative maintenance work is identified by trouble reports that contain a value of "information" or "planned" in the "fld_category" field of the CAMP "Stg_Trouble_Tickets" table.[333] The fld_category" field is used to describe the type of trouble associated with the trouble report and contains values such as "trouble," "planned," or "information" in this field. FairPoint excludes special access by the product selection process described above.

FairPoint identifies the exclusion for business trouble reports when the customer has requested a later commitment by records where the date found in the CAMP "Stg_Trouble_Tickets" table "fld_commitmenttime_x" field is later than the date found in the "fld_offeredcommitmenttime" field. The "fld_commitmenttime_x" field identifies the date FairPoint committed to repair the customer's service. The "fld_offeredcommitmenttime" field identifies the date that was offered by FairPoint to the customer for service repair. FairPoint introduced the logic to implement this exclusion in April of 2010. Prior to that date, FairPoint did not exclude these records from the results.[334]

d. Determining the Repair Commitment Date

FairPoint uses the date found in the "fld_commitmenttime_x" field from the CAMP "Stg_Trouble_Ticket" table to identify the repair commitment date.[335] This data field is defined above.

[330] Response to Data Request #155.
[331] Response to Data Request #82 and Interview #6, February 8, 2011.
[332] Response to Data Request #213.
[333] Response to Data Request #83.
[334] Response to Data Request #214.
[335] Response to Data Request #85.

e. Determining Trouble Cleared Date

FairPoint used the date found in the "fld_cleareddatetime" field of the CAMP "Stg_Trouble_Tickets" table to identify when the trouble was closed for reporting purposes and for determining whether the repair commitment was met.[336] This field is populated to reflect the date and time that the customer's trouble was cleared by the FairPoint technician.

f. Identifying Repeat Trouble Reports

FairPoint identifies a repeat trouble that occurred within 30 days of the last trouble report on the same line/circuit by records that contain a value of 'Y' in the "previous_trouble_SQI" field of the CAMP ODS module "ODS_Trouble_Reports" table.[337] This is commonly known as a "flag" field; it "flags" trouble reports that meet the criteria to qualify as a repeat trouble within 30 days with a 'Y' to indicate "yes." This is a derived data field. Liberty could not examine the logic for populating this field because it was not included in the latest list of derived fields provided by FairPoint.[338]

3. Procedures for FireStage-Calculated Percent Out of Service Cleared within 24 Hours

FairPoint uses trouble report data in FireStage pulled from the Remedy operational support system to calculate Percent Out of Service Cleared within 24 Hours. FireStage takes the data "as is" from Remedy with no derived data fields or data transformations.[339]

FairPoint identifies out-of-service trouble reports by codes entered into the "DescriptionofSympton" field of the trouble report.[340] This is a free-form data field used by the technicians and service representatives to keep notes on the progress of a trouble report. FairPoint's process counts as out-of-service troubles for inclusion in this measurement only those with trouble reports containing a code of CBC ("cannot be called"), CCO ("cannot call out"), or NDT ("no dial tone") in this data field.

Similar to the process described above in the section on the CAMP-calculated repair measurements, FairPoint uses fault codes found in the "FaultCode" field in FireStage to identify reports of interexchange calls, non-regulated CPE and troubles outside of FairPoint's control for exclusion.[341] FairPoint excludes all records that contain a fault code other than the network trouble codes: '03XX', '04XX', '05XX', '07XX', '08XX' and '09XX'.

[336] Response to Data Request #84.
[337] "FRP_NH_SQI_RegulatoryReportingDataElementsDefinitions_120810" provided in response to Data Request #1. This data field is found in the CAMP ODS module and not in the Staging Module because it is a derived data field and is not sourced from original data.
[338] Latest derived values and logic documentation provided in the second clarification response to Data Request #166 (166B).
[339] Interview #3, January 21, 2011.
[340] Response to Data Request #130.
[341] Responses to Data Requests #57 and #134.

FairPoint identifies New-Hampshire-specific trouble reports by a value of 'NH' in the "customerstate" field in FireStage. Records with a null value in this field are excluded from consideration for calculation.[342] FairPoint identifies retail POTS trouble reports by a value of 'Business|POTS' or 'Customer|POTS' in the "Fld-RequestType" field found in FireStage.[343] This field is used to identify the source of or type of product associated with a trouble reports. Values found in this field include 'Business|POTS', 'Customer|POTS', Network, 'Business|Specials', and 'Wholesale|Specials'. The "Fld-RequestDate" and "ClearedDateTime" fields in FireStage identify respectively the date and time that the trouble report was created and the date and time the trouble was repaired.[344]

[342] Response to Data Request #127.
[343] Responses to Data Request #128 and #129.
[344] Responses to Data Requests #131 and #132.