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ORIGINAL

November 13, 2000

Arizona Corporation Commission
DOCKETED

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DOCKET CONTROL
Arizona Corporation Commission
1200 West Washington Street
Phoenix, Arizona 85007

Re: Docket No. T-00000A-97-0238

To the Commission:

Enclosed for filing with the Arizona Corporation Commission, please find an original and fifteen (15) copies of docket workshop materials in conjunction with the above-referenced proceeding. In an effort to facilitate productive discussion at the workshop on November 21 and 22, 2000, Z-Tel Communications submits the following documents to the record in docket. The attached documents include a modified version of the Qwest Performance Assurance Plan ("PAP") including a red-lined copy of the document (as requested by Commission staff). Also included is a more general, and more thorough, discussion of the modifications Z-Tel recommends for any Southwestern Bell Texas-style performance plan (like the Qwest PAP).

Please date-stamp the additional copy, and return it to me in the enclosed self-addressed, stamped envelope.

Respectfully submitted,

Michael B. Hazzard
Counsel to Z-Tel Telecommunications, Inc.

Attachments

cc: Service List

DC01/HAZZM/131921.1

ATTACHMENT 1

THE MOD-QWEST PERFORMANCE ASSURANCE PLAN

1.0 Introduction

~~In conjunction with its applications to State Commissions for approval under Section 271 of the Telecommunications Act of 1996 (the "Act") to offer in-region long distance service, Qwest Corporation ("Qwest") proposes the following Performance Assurance Plan ("PAP"). Qwest is committed to continued compliance with its 271 obligations. As proof of that commitment, Qwest is prepared to voluntarily enter into this post-271 approval monitoring and enforcement mechanism, as outlined below, as a demonstration of its commitment to continue to satisfy Section 271 of the Act.~~

~~The Qwest PAP mirrors the performance assurance plan approved by the Federal Communications Commission ("FCC") for Southwest Bell Telephone Company Texas.[1] Qwest believes that controversy can be avoided and the resources of the State Commissions and the Company can be best utilized by avoiding a drawn out process of creating a performance assurance plan from scratch. Therefore, Qwest has taken the extraordinary step of duplicating key elements of the approved Texas plan.~~

~~The FCC has recognized that performance assurance plans may vary widely from state to state, but that the key elements of any plan should fall within a "zone of reasonableness" such that the plans provide incentives sufficient to foster ongoing satisfaction of 271 requirements.[2] Rather than "reinvent" key elements, the Qwest PAP adopts the Texas enforcement plan structure, including its statistical tables and payment schedules. Furthermore, the Qwest PAP puts at risk 36% of the Company's "net revenues" derived from local exchange services.~~[INTENTIONALLY LEFT BLANK]

2.0 Plan Structure

The MOD-Qwest PAP is a two-tiered, self-executing remedy plan. The plan is developed to provide individual CLECs with Tier-1 payments if Qwest does not provide parity between the service it provides to the CLEC and that which it provides to its retail customers, or if Qwest fails to meet applicable benchmarks. In addition, the PAP provides Qwest with additional incentives to satisfy parity and benchmark standards by requiring Qwest to make Tier-2 payments--payments to State Funds established by the State Commissions--if Qwest fails to

~~[1] *In the Matter of the Application by SBC Communications, Inc.*, CC Docket No. 00-65, Memorandum Opinion and Order, June 30, 2000.~~

~~[2] *Id.*, para. 423.~~

meet parity and benchmark standards on an aggregate CLEC basis. Tier-2 payments are over and above the Tier-1 payments made to individual CLECs. [3]

In the MOD-Qwest PAP, performance measurements are given different weightings to reflect relative importance by the designations of High, Medium, and Low. Each CLEC shall classify each measure as High, Medium, or Low at the initiation of the PAP. No more than one-third of the measures shall be classified as High, Medium, or Low.[4]

Payment is generally on a per occurrence basis, i.e., a ~~set~~base dollar payment times the number of non-conforming service events. To discourage non-conformance against small order counts (which, by their nature, produce only small payments), a minimum payment of $5,000 applies to all non-conforming measures. For the performance measurements ~~which~~that do not lend themselves to per occurrence payment, payment is on a per measurement basis, i.e., a set dollar payment. Base level per occurrence and per measure payments are summarized in Table 1.

~~The~~

Two features of the payment structure discourage severe or repeated non-conformance. First, the level of payment depends on the severity of non-conformance with the dollar payments escalating as the level of non-conformance increases. Payment escalation is defined by the severity factors provided in Table 2. Second, the level of payment also depends upon the number of consecutive months of non-conforming performance, i.e., an escalating payment the longer the duration of non-conforming ~~performance.~~

performance. Payment escalation for repeated non-conformance is defined by the duration factors provided in Table 2. Payments are returned to the initial, un-factored level after two-months of compliant performance. If either the severity or duration escalation factors are invoked a second time, the highest factored payment becomes the new base penalty (i.e., the initial payment level) and the severity and duration factors are applied to this base penalty for severe or repeated non-conformance. Both severity and duration factors apply to per occurrence payments, per measure payments, and the minimum "per occurrence" payment of $5,000.

The parity standard is met when the service Qwest provides to CLECs is equivalent to that which it provides to its retail customers. Statistically, parity exists when performance results for the CLEC and for the Qwest retail analogue result in a ~~Z-value~~*z*-value that is no greater than the ~~Critical Z-values listed in the Critical Z Statistical~~critical *z*-value of 1.65 (a significance level of 5%). ~~Table in section 5.0.[5] The Qwest~~For parity measures, the MOD-

[3] It is anticipated that each state fund will be established concurrently with the ~~FCC's approval of the respective State's 271 application.~~State Commission's approval of a PAP.

[4] Classifications are only relevant only to the initial determination of the base payments, which will change over time with severity and duration factors.

[5] ~~The standard Z-test is based on normal statistical theory. If the sample size is large enough, the sample mean will follow a known normal distribution that is dependent on the variance of the data and on the sample size. A sample size of 30 is generally considered sufficient, although the required minimum sample size is dependent on the statistical skewness of the data being sample. The assumption of a normal distribution is what allows the Z-test. When the sample size becomes too small, the distribution of the sample mean is no longer normal and the Z-test may not be reliable. In that event, other methods, as described below, may be appropriate.~~

Qwest PAP relies upon statistical ~~scoring~~testing, in the form of the modified z-test or permutation analysis, to determine whether any difference between CLEC and Qwest performance results is statistically significant, that is, not attributable to simple random variation.

For performance measurements that have no Qwest retail analogue, agreed upon benchmarks are used. ~~Because variation may occur around the benchmark, a~~Benchmarks are evaluated on a "stare and compare" basis (i.e., they are fixed standards) and no statistical test is ~~used to determine whether the variation is within a statistical range.~~ performed for such measures. During the first six-months of implementation, the benchmarks shall be adjusted downward by 1% and rounded down to the nearest whole percentage. After the initial six-month period, the benchmarks shall return to the agreed upon values.

3.0 Performance Measurements

~~The Qwest PAP incorporates performance measurements that will ensure Qwest's service performance to competitors can be measured and monitored so that any degradation of the agreed upon level of service is detected and corrected. CLECs operating in Qwest's region offer services through several modes, including resale, interconnection, and the purchase of unbundled network elements. The performance measurements incorporated into the Qwest PAP are broad based enough to cover all the modes of entry.~~

~~Performance measurements have been developed in the 271 collaborative workshops. Each of the measurements have been given a precise definition, called a Performance Indicator Definition ("PID"), that includes specification of the unit of measure, the data to be utilized in the measurement, and the standard. The standard may be a parity comparison of CLEC service performance with the Qwest retail analogue. When no retail analogue exists, the standard is a benchmark. The PIDs have been agreed to among Qwest, the CLECs, and participating State Commission staff members.~~

~~The performance measurements incorporated into the Qwest PAP are shown on Attachment 1. Similar to the approved Texas plan, the measurements are designated as Tier-1, Tier-2, or both Tier-1 and Tier-2. The measurements are also given a High, Medium, or Low designation, reflective of relative importance. Of the 51 measurements that the parties have agreed to in the ROC PID workshops, Qwest incorporates 31 of the measurements into the PAP.~~[6]

[INTENTIONALLY LEFT BLANK]

4.0 Statistical Measurement

[6] ~~Of the 20 PIDs not included in Qwest's PAP, 14 are diagnostic or parity by design. As such, it is not appropriate to include them in a performance assurance plan. The remaining 6 measurements are not included because they were not requested by the CLECs in the Arizona 271 performance assurance workshops that are underway or are duplicative of other measurements that are included.~~

MOD-Qwest proposes the use of a statistical test, namely the modified ~~"Z-test,"~~"*z*-test," for evaluating the difference between two means (i.e., Qwest and CLEC service or repair intervals) or two percentages (e.g., Qwest and CLEC proportions), to determine whether a parity condition exists between the results for Qwest and the CLEC(s). The modified ~~Z-tests are applicable~~*z*-test is employed if the number of data points are greater than 30 for a given measurement. For testing measurements for which the number of data points are 30 or less, Qwest ~~may~~will use a permutation test to determine the statistical significance of the difference between Qwest and CLEC.[7]

Qwest will be in conformance when the monthly performance results for parity~~and benchmark~~ measurements (whether in the form of means, percents, or proportions and at the equivalent level of disaggregation) are such that the calculated ~~Z~~*z* test statistics are not greater than the~~Critical Z-values. Critical Z-values are listed in Table 1, section 5.0.~~

1.65. The following is the formula for determining parity using the ~~Z-test:~~

~~$z = DIFF / \sigma_{DIFF}$~~

~~Where;~~

~~$DIFF = M_{Qwest} - M_{CLEC}$~~

~~M_{QWEST} = Qwest average or proportion~~

~~M_{CLEC} = CLEC average or proportion~~

~~$\sigma_{DIFF} = SQRT [\sigma^2 Qwest (1/ n_{CLEC} + 1/ n_{Qwest})]$~~

~~σ^2_{Qwest} = Calculated variance for Qwest~~

~~n_{Qwest} = number of observations or samples used in Qwest measurement~~

~~n_{CLEC} = number of observations or samples used in CLEC measurement~~

~~The following is the formula for determining conformance when the performance measurement is a benchmark:~~

~~$z = (DIFF) / 1$~~

~~Where;~~

~~$DIFF = R_{CLEC} - B$~~

~~R_{CLEC} is the CLEC result~~

[7] If the modified *z*-test indicates conformance for samples smaller than 30 data points, permutation test will be performed.

~~B is the benchmark~~z test:

$$z = \frac{M_{ILEC} - M_{CLEC}}{\sigma_{ILEC}\sqrt{1/n_{ILEC} + 1/n_{CLEC}}} \qquad (1)$$

~~The Z~~where M_{ILEC} is the Qwest average or proportion, M_{CLEC} is the CLEC average or proportion, σ_{ILEC} is the variance for Qwest, and the n are the respective sample sizes for the ILEC and CLEC. The z tests will be applied to reported measurements that contain more than 30 data~~points.~~

points. In calculating the difference between Qwest and CLEC performance, the above formulae apply when a larger Qwest value indicates a better level of performance. In cases where a smaller Qwest value indicates a higher level of performance, the order is reversed, i.e., ~~$M_{QWEST} - M_{CLEC}$~~ $M_{CLEC} - M_{ILEC}$. Conformance with the parity-standard is indicated as follows:

$$\text{Non} - \text{Conforming}: \quad z \geq 1.65$$
$$\text{Conforming}: \quad z < 1.65$$

where z is the modified z-statistic.

Statistical testing is not required for benchmark measures. The following is the formula for determining conformance when the performance measurement is a benchmark:

$$\text{Non} - \text{Conforming}: \quad R_{CLEC} < B$$
$$\text{Conforming}: \quad R_{CLEC} \geq B$$

where R_{CLEC} is the CLEC result, B is the benchmark, and larger B values indicate better performance. If smaller values of B indicate better performance, non-conformance is indicated by $R_{CLEC} > B$.

For measurements where the performance delivered to a CLEC is compared to Qwest performance and for which the number of data points is 30 or less, Qwest will apply a permutation test to test for statistical significance. Permutation analysis will be applied to calculate the z statistic using the following ~~logic:~~algorithm:

Calculate the z statistic for the actual arrangement of the data
Pool and mix the CLEC and Qwest data sets
Perform the following no fewer than 1000 times:
Randomly subdivide the pooled data sets into two pools, one the same size as the original CLEC data set (n_{CLEC}) and one reflecting the remaining data points~~, and one reflecting the remaining data points,~~ (which is equal to the size of the original Qwest data set or ~~n_{QWEST}~~) n_{ILEC}).
Compute and store the ~~Z-test~~z-test score ~~(Z_S)~~(z_S) for this sample.

Count the number of times the ~~Z~~z statistic for a permutation of the data is greater than the actual ~~Z~~z statistic
Compute the fraction of permutations for which the statistic for the rearranged data is greater than the statistic for the actual samples

If the fraction is greater than α, or one minus the ~~significance~~confidence level, the hypothesis of ~~no difference is not rejected,~~parity is not rejected and the test is passed.

~~5.0 Critical Z-value and K value~~

~~The Critical Z-value and K-value table seeks to account for statistical error arising from the natural variation in the performance results. Together, the Critical Z-value and K-value result in an adjustment for these statistical errors. The following table will be used to determine the Critical Z-value and the K-value that is referred to in section 6.0. In each instance, they are based on the total number of performance measurements that are applicable to a CLEC in a particular month.~~

~~TABLE 1: CRITICAL Z-VALUE AND K-VALUE~~

~~Total Number of CLEC Performance Measurements~~	~~K Values~~	~~Critical Z-Value~~
~~1~~	~~0~~	~~1.65~~
~~2~~	~~0~~	~~1.96~~
~~3~~	~~0~~	~~2.12~~
~~4~~	~~0~~	~~2.23~~
~~5~~	~~0~~	~~2.32~~
~~6~~	~~0~~	~~2.39~~
~~7~~	~~0~~	~~2.44~~
~~8~~	~~1~~	~~1.69~~
~~9~~	~~1~~	~~1.74~~
~~10-19~~	~~1~~	~~1.79~~
~~20-29~~	~~2~~	~~1.73~~
~~30-39~~	~~3~~	~~1.68~~
~~40-49~~	~~3~~	~~1.81~~
~~50-59~~	~~4~~	~~1.75~~
~~60-69~~	~~5~~	~~1.7~~
~~70-79~~	~~6~~	~~1.68~~
~~80-89~~	~~6~~	~~1.74~~
~~90-99~~	~~7~~	~~1.71~~
~~100-109~~	~~8~~	~~1.68~~
~~110-119~~	~~9~~	~~1.7~~
~~120-139~~	~~10~~	~~1.72~~
~~140-159~~	~~12~~	~~1.68~~
~~160-179~~	~~13~~	~~1.69~~
~~180-199~~	~~14~~	~~1.7~~
~~200-249~~	~~17~~	~~1.7~~
~~250-299~~	~~20~~	~~1.7~~

300-399	26	1.7
400-499	32	1.7
500-599	38	1.72
600-699	44	1.72
700-799	49	1.73
800-899	55	1.75
900-999	60	1.77
1000 and above	Calculated for Type-1 Error Probability of 5%	Calculated for Type-1 Error Probability of 5%

6.0 Tier-1 Payments to CLECs

Tier-1 payments to CLECs relate solely to the performance measurements designated as Tier-1 on Attachment 1. For purposes of calculating the amount of payments,apply to all Tier-1 measurements that are not diagnostic. For purposes of establishing the base payment, the Tier-1 performance measurements are categorized as High, Medium, and Low by the CLEC. The amount of payments for non-conforming service varies depending upon the High, Medium, and Low designations and upon the duration of the non-conforming condition, as described below. "Non-conforming" service is defined in section 4.0.The level of non-conformance (*d*) is measured by

6.1 Determination of Non-conforming Measurements: The number of performance measurements that are determined to be "non-conforming" and, therefore, eligible for Tier-1 payments, are limited according to the K value and Critical Z value shown in Table 1, section 5.0. The Critical Z values becomes the statistical standard that determines for each CLEC performance measurement whether Qwest has met parity or the benchmark. The K value determines the number of measurements that are excluded from the payment calculation described in section 8.0. The K value and Critical Z value are determined from Table 1 by totaling the number of performance measurements applicable to a CLEC during a month where the sample size is 10 or greater. For instance, if the total number of measurements that capture the service provided by Qwest to a CLEC in a particular month was 100, the K value would 8 and the Critical Z value would be 1.68. $d_M = \frac{M^* - M_{CLEC}}{M^*}$ (2)

for all parity measures defined as means where

$$M^* = M_{ILEC} + 1.65\sigma_{ILEC}\sqrt{1/n_{ILEC} + 1/n_{CLEC}} \quad (3)$$

Equations (2) and (3) are valid when higher percentages indicate better service. For parity measures defined as proportions/percentages and benchmark measures defined as proportions/percentages (respectively), the level of non-conformance is measured by

$$d_P = M^* - M_{CLEC} \quad \text{or} \quad d_B = B - R_{ILEC} \qquad (4)$$

where higher values of M and B indicate better quality.

Equation (2) measures the severity level of non-conformance for all parity measures defined as means ($s_M = d_M$). For benchmark measures and parity measures defined as proportions, the severity level is defined as

$$s_B = \frac{d_P}{1 - M^*} \quad \text{or} \quad s_B = \frac{d_P}{1 - B}. \qquad (5)$$

6.2 Determination of the Amount of Payment: Tier-1 payments to CLECs are calculated and paid monthly ~~based on the number of~~for every non-conforming performance measurements ~~exceeding the Critical Z-value and the K value~~. Payments will be made on either a per occurrence or per measurement basis, depending upon the ~~performance~~classification of the measure. The total payment for per occurrence ~~measurement, using the dollar amounts specified in Table 2 below. The dollar amounts vary depending upon whether the performance measurement is designated High, Medium, or Low and escalate depending upon the number of consecutive months for which Qwest has not met standard for the particular measurement.~~measurements is

$$F = n_{CLEC} \cdot d \cdot f \cdot x_s \cdot x_d \qquad (6)$$

where F is the total payment for the measure and f is the per-occurrence payment that is based on classification, x_s is the severity factor, and x_d is the duration factor. If Equation (6) is less than $5,000, then F = $5,000.

For those performance measurements listed on Attachment 2 as "Performance Measurements Subject to Per Occurrence Payments With a ~~Cap," payment to a~~ Cap" or "Performance Measurements Subject to Per Measure Payments," payment to a CLECs in a single month shall not exceed the ~~amount listed in Table 2 below for the "Per Measurement" category. For those performance measurements listed on Attachment 2 as "Performance Measurements Subject to Per Measure Payments," payment to a CLEC will be the amount set forth in Table 2 below under the section labeled "per measure."~~

~~**TABLE 2: TIER-1 PAYMENTS TO CLECs**~~

~~Per occurrence~~						
~~Measurement Group~~	~~Month 1~~	~~Month 2~~	~~Month 3~~	~~Month 4~~	~~Month 5~~	~~Month 6 and each following month~~
~~High~~	~~$150~~	~~$250~~	~~$500~~	~~$600~~	~~$700~~	~~$800~~

Medium	$ 75	$150	$300	$400	$500	$600
Low	$ 25	$ 50	$100	$200	$300	$400

Per Measure/Cap						
Measurement Group	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6 and each following month
High	$25,000	$50,000	$75,000	$100,000	$125,000	$150,000
Medium	$10,000	$20,000	$30,000	$ 40,000	$ 50,000	$ 60,000
Low	$ 5,000	$10,000	$15,000	$ 20,000	$ 25,000	$ 30,000

7.0 Tier-2 Payments to State Funds

Payments to State Funds established by the State Regulatory Commissions under Tier-2 of the Qwest PAP provide additional incentive to correct ongoing non-conformance. The payments are limited to the performance measurements designated as Tier-2 on Attachment 1. Similar to the Tier-1 structure, Tier-2 measurements are categorized as High, Medium, and Low and the amount of payments for non-conformance varies according to this categorization.

7.1 Determination of Non-conforming Measurements: The determination of non-conformance will be based upon the aggregate of all CLEC data for each Tier-2 performance measurements. "Non-conforming" service is defined in section 4.0. The number of performance measurements determined to be "non-conforming" and, therefore, eligible for Tier-2 payments, is limited according to the Critical Z-value shown in Table 1, section 5.0. The Critical Z-value is determined from Table 1 by totaling the number of performance measurements applicable to any CLEC during a month where the sample size is 10 or greater. The Critical Z-value becomes the statistical standard that determines for each performance measurement whether Qwest has met parity or the benchmark.

7.2 Determination of the Amount of Payment: Tier-2 payments are calculated and paid monthly based on the number of performance measurements exceeding the Critical Z-value for three consecutive months. Payment will be made on either a per occurrence or per measurement basis, whichever is applicable to the performance measurement, using the dollar amounts specified in Table 3 below. The dollar amounts vary depending upon whether the performance measurement is designated High, Medium, or Low.

For those Tier-2 measurements listed on Attachment 2 as "Performance Measurements Subject to Per Occurrence Payments With a Cap," payment to a State Fund in a single month shall not exceed the amount listed in Table 3 for the "Per Measurement" category.

For those Tier-2 measurements listed in Attachment 2 as "Performance Measurements Subject to Per Measurement Payment," payment to a State Fund will be the amount set forth in Table 3 under the section labeled "per measure".

7.3 Use of the Funds: Qwest payments to the State Funds shall be used to reimburse customers' share of fees to extend telephone service within Qwest service territory, to extend Qwest telephone service into adjacent, unassigned service territory, and for any other purposes that relates to the Qwest service territory that may be determined by the State Commission.

TABLE 3: TIER-2 PAYMENTS TO STATE FUNDS

Per occurrence

Measurement Group	
High	$500
Medium	$300
Low	$200

Per Measurement/Cap

Measurement Group	
High	$75,000
Medium	$30,000
Low	$20,000

8.0 Step by Step Calculation of Tier-1 Payments to CLECs

The following describes step by step the calculation of Tier-1 payments. The calculation will be performed monthly for each CLEC.

8.1 Application of the K Value Exclusions:

For each CLEC, determine the total number of Tier-1 performance measurements[8] that measure the service provided by Qwest for the month in question. From Table 1 in section 5.0, determine for each CLEC the K value and Critical Z value to be used below.

For each CLEC, identify the Tier-1 performance measurements with a minimum sample size of 10 that Qwest's service performance is "non-conforming" for the month in question, using the Critical Z value.

For the performance measurements that are identified as non-conforming, group the measurements according to the High, Medium, and Low categories shown on Attachment 1.

[8] For the purpose of determining the K value and Critical Z values, each disaggregated category of a performance measurement with a minimum sample size of 10 counts as "one" measure. For instance, a performance measurement that is disaggregated into 10 products, each further disaggregated into two geographic areas would count as "20" measurements.

Within each High, Medium, and Low group, sort the performance measurements in ascending order based on the number of data points or transactions used to develop the performance measurement result (e.g., service orders, collocation requests, installations, trouble reports).

Exclude the first "K" measurements designated as Low, starting with the performance measurement that has the fewest number of underlying data points. If the number of performance measurement in the Low category is less than "K," repeat the process next with the Medium category and then the High category until a total of "K" performance measurements have been excluded. If all Low, Medium and High measurements are excluded by this process, then those measurements with sample sizes less than 10 may be excluded until "K" measurements are reached. (For example, if the K value is 6 and there are 7 Low measurements, 1 Medium, and 1 High, the 6 Low measurements with the smallest sample sizes are excluded from the calculation of payments to the CLEC.) The remaining "non-conforming" performance measurements, if any, are used to calculate Tier-1 payments to each CLEC.

The following qualifications apply to the general rule of excluding performance measurements as described above. A performance measurement, for which the payment is on a per measure basis, will not be excluded unless the amount of that measure's payment is less than the payment that would result for each remaining measure. A performance measure, whose payment is on a per occurrence basis subject to a cap, will be excluded whenever the cap is reached and the payments for the remaining measurements are greater than the amount of the cap.

8.2 Performance Measurements for which Payment is Per Occurrence:

The following describes the calculation of Tier-1 payments to CLECs in which payment is based upon a per occurrence dollar amount.

8.2.1 Performance Measurements that are Averages or Means:

Step 1: For each performance measurement, calculate the average or the mean that would yield the Critical Z-value. Use the same denominator as the one used in calculating the Z-statistic for the measure. (For benchmark measurements, calculate the value that would yield the critical Z-value by adding or subtracting the critical Z-value to the benchmark as appropriate.)

Step 2: Calculate the percentage differences between the actual averages and the calculated averages.

Step 3: For each performance measurement, multiply the total number of data points by the percentage calculated in the previous step and the per occurrence dollar amounts taken from the Tier-1 Payment Table to determine the payment to the CLEC for each non-conforming performance measurement.

8.2.2 Performance Measurements that are Percentages:

Step 1: For each performance measurement, calculate the percentage that would yield the Critical Z-value. Use the same denominator as the one used in calculating the Z-statistic for the measure. (For benchmark measurements, calculate the value that would yield the critical Z-value by adding or subtracting the critical Z-value to the benchmark as appropriate.)

Step 2: Calculate the difference between the actual percentages for the CLEC and the calculated percentages.

Step 3: For each performance measure, multiply the total number of data points by the difference in percentage calculated in the previous step and the per occurrence dollar amount taken from the Tier-1 Payment Table to determine the payment to the CLEC for each non-conforming performance measurement.

8.2.3 Performance Measurements that are Ratios or Proportions:

Step 1: For each performance measurements, calculate the ratio that would yield the Critical Z-value. Use the same denominator as the one used in calculating the Z-statistic for the measure. (For benchmark measurements, calculate the value that would yield the critical Z-value by adding or subtracting the critical Z-value to the benchmark as appropriate.)

Step 2: Calculate the percentage difference between the actual ratios for the CLEC and the calculated ratios.

Step 3: For each performance measure, multiply the total number of data points by the percentage calculated in the previous step and the per occurrence dollar amount taken from the Tier-1 Payment Table to determine the payment to the CLEC for each non-conforming performance measurement.

8.3 Performance Measurements for which Payment is Per Measure:

For each performance measurement that Qwest fails to meet the standard, the payment to the CLEC is the dollar amount shown on the "per measure" portion of the Tier-1 Payment Table.

9.0 Step by Step Calculation of Tier-2 Payments

The following describes step by step the calculation of Tier-2 payments. The calculation will be performed monthly using the aggregate CLEC performance results. All Tier-2 payments will be made to a designated state fund.

Determine the total number of Tier-2 performance measurements[9] that measure the service provided by Qwest to all CLECs for the month in question. From Table 1 in section 5.0, determine the Critical Z-value to be used below.

[9] For the purpose of determining the Critical Z-value, each disaggregated category of a performance measurement with a minimum sample size of 10 counts as "one" measure. For instance, a performance

~~Identify the Tier-2 performance measurement for which Qwest's service performance is non-conforming for the month in question, using the Critical Z-values.~~

~~For each performance measurements that is identified as non-conforming, determine if the non-conformance has continued for three consecutive months. If it has, a Tier-2 payment will be calculated as described below and will continue in each succeeding month until Qwest's performance meets the applicable standard. For example, Tier-2 payments will continue on a "rolling three month" basis, one payment for the average number of occurrences for months 1-3, one payment for the average number of occurrences for months 2-4, one payment for the average number of occurrences for months 3-5, and so forth, until satisfactory performance is established.~~

~~**9.1** Performance Measurements for which Payment is Per Occurrence:~~

~~The following describes the calculation of Tier-2 payments to the State Fund in which payment is based upon a per occurrence dollar amount.~~

~~**9.1.1** Performance Measurements that are Averages or Means:~~

~~Step 1: Calculate the average or the mean for each performance measurement that would yield the Critical Z-value for the third consecutive month. Use the same denominator as the one used in calculating the Z-statistic for the measure. (For benchmark measurements, calculate the value that would yield the Critical Z-value by adding or subtracting the Critical Z-value to the benchmark as appropriate.)~~

~~Step 2: Calculate the percentage difference between the actual averages and the calculated averages for the third consecutive month.~~

~~Step 3: For each performance measure, multiply the total number of data points by the percentage calculated in the previous step. Calculate the average for three months and multiply the result by the per occurrence dollar amounts taken from the Tier-2 Payment Table to determine the payment to the State Fund for each non-conforming performance measurement.~~

~~**9.1.2** Performance Measurements that are Percentages:~~

~~Step 1: For each performance measurement, calculate the percentage that would yield the Critical Z-value for the third consecutive month. Use the same denominator as the one used in calculating the Z-statistic for the measure. (For benchmark measurements, calculate the value that would yield the critical Z-value by adding or subtracting the Critical Z-value to the benchmark as appropriate.)~~

~~measurement that is disaggregated into 10 products, each further disaggregated into two geographic areas would count as "20" measurements.~~

Step 2: Calculate the difference between the actual percentages and the calculated percentages for each of the three non-conforming months.

Step 3: For each performance measurement, multiply the total number of data points for each month by the difference in percentage calculated in the previous step. Calculate the average for three months and multiply the result by the per occurrence dollar amounts taken from the Tier-2 Payment Table to determine the payment to the State Fund for each non-conforming performance measurement.

9.1.3 Performance Measurements that are Ratios or Proportions:

Step 1: For each performance measurement, calculate the ratio that would yield the Critical Z-value for the third consecutive month. Use the same denominator as the one used in calculating the Z-statistic for the measure. (For benchmark measurements, calculate the value that would yield the Critical Z-value by adding or subtracting the Critical Z-value to the benchmark as appropriate.)

Step 2: Calculate the percentage difference between the actual ratios for the CLEC and the calculated ratios for each month of the non-conforming three-month period.

Step 3: For each performance measurement, multiply the total number of data points by the percentage calculated in the previous step for each month. Calculate the average for three months and multiply the result by the per occurrence dollar amounts taken from the Tier-2 Payment Table to determine the payment to the State Fund for each non-conforming performance measurement.

9.2 Performance Measurements that Payment is Per Measure:

For each performance measurement that Qwest fails to meet the standard, the payment to the State Fund is the dollar amount shown on the "per measure" portion of the Tier-2 Payment Table.

10.0 Payment

Payments to CLECs or the State Fund shall be madeone month following the due date of the performance measurement report for the month for which payment is being made.

Payment to CLECs will be made via bill credits. To the extent that a monthly payment owed to a CLEC under this PAP exceeds the amount owed to Qwest by the CLEC on a monthly bill, Qwest will issue a check or wire transfer to the CLEC in the amount of the overage. Payment to the State Fund will be made via check or wire transfer.

11.0 Cap on Tier-1 and Tier-2 Payments

There shall be acap on the total payments by Qwest during a calendar year for each of the 14 states. The cap amounts by state are shown on Attachment 3. The cap represent 36% of the "net revenues" as defined in the FCC's order approving the Bell Atlantic New York 271 application and affirmed in the FCC order approving the Southwest Bell Telephone Texas 271 application.[10] Thecap applies to the aggregate of Tier 1payments to CLECs, including payments made pursuant to any other alternative performance obligations pursuant to an interconnection agreement with a CLEC, Tier 2 payments to State Funds, and any other payments required by State Commissions pursuant to service quality rules, orders or other agreements that relate to the same or analogous service.

The individual state amounts shown on Attachment 3 were calculated based upon Qwest's 1999 ARMIS results, adjusted to reflect the full annual effect of general rate case orders of the respective state regulatory commissions.

A monthly cap will be determined by dividing the amount of the annual cap by twelve. The monthly cap shall be calculated by applying all payments or credits made by Qwest under this PAP as well as all payments made or credits applied for wholesale service performance pursuant to interconnection agreements, state rules or orders. To the extent in any given month the monthly cap (i.e., the annual cap divided by 12) is not reached, the subsequent month's cap will be increased by an amount equal to the unpaid portion of the previous month's cap. At the end of the year, if the aggregate of all payments for which the cap applies equals or exceeds the annual cap, but Qwest has paid less than that amount due to the monthly cap, Qwest shall be required to pay an amount equal to the annual cap. In such an event, Tier 1 payments shall be paid first on a pro rata basis to CLECs, and any remainder within the annual cap, shall be paid as Tier 2 payments. In the event the total of Tier 1 and Tier 2 payments is less than the annual cap, Qwest shall be obligated to pay only the actual calculated amount of Tier 1 and Tier 2 payments.

In the event the annualcap is reached within a calendar year and Qwest continues to deliver non conforming performance during the same year to any CLEC or to all CLECs, the Commission may recommend to the FCC that Qwest should cease offering in region interLATA services to new customers.

12.0 Limitations

12.1 Qwest's PAP shall not become available in a State unless and until the FCC approves Qwest's 271 application for that State.

12.2 Qwest will not be liable for Tier 1 or Tier 2 payments to a specific CLEC in an FCC approved state until the Commission has approved an interconnection agreement between the CLEC and Qwest that adopts the provisions of this PAP.

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[10] Federal Communications Commission, CC Docket No. 99 404, Memorandum Opinion and Order, December 22, 1999, Para. 436 and footnote 1332; Federal Communications Commission, CC Docket No. 00 65, Memorandum Opinion and Order, June 30, 2000, Para 424.

~~**12.3** Qwest shall not be obligated to make Tier-1 or Tier-2 payments for any measurement if and to the extent that non-conformance for that measurement was the result of any of the following: a Force Majeure event; an act or omission by a CLEC that is contrary to any of its obligations under its interconnection agreement with Qwest or under the Act or State law;an act or omission by a CLEC that is in bad faith[11]; non-Qwest problems associated with third-party systems or equipment, which could not have been avoided by Qwest in the exercise of reasonable diligence, provided, however, that this third party exclusion will not be raised more than three times within a calendar year. Qwest will not be excused from Tier-1 or Tier-2 payments on any other grounds, except as described in paragraph 12.7. Qwest will have the burden to demonstrate that its non-conformance with the performance measure was excused on one of the grounds described in this PAP.~~

~~**12.4** Any CLEC accepting this PAP agrees that Qwest's performance with respect to this remedy plan may not be used as an admission against Qwest's interest. Nor may it be used as an admission by Qwest of liability in any legal, regulatory, or other proceeding, used as evidence that Qwest has discriminated in the provision of any facilities or services under Section 251 or 252 or has violated any state or federal law or regulation. Any Qwest conduct underlying the performance measurements and the performance data provided under the performance measurements are not made inadmissible by these terms.~~

~~**12.5** By incorporating these liquidated damages terms into the PAP, Qwest and CLECs accepting this PAP agree that proof of damages from any non-conforming performance measurements would be difficult to ascertain and, therefore, liquidated damages are a reasonable approximation of any contractual damages that may result from a non-conforming performance measure. Qwest and CLEC further agree that payments made pursuant to this PAP are not intended to be a penalty.~~

~~**12.6** If a CLEC agreeing to this PAP receives payments or credits pursuant to a Commission rule, order or any other contract with Qwest for the same or analogous wholesale performance covered by this PAP, CLEC agrees to waive any claim to credits or payments under this PAP.~~

~~**12.7** Qwest shall not be liable for any Tier-2 payments if Qwest has been assessed or made payments for the same or analogous performance pursuant to any Commission order or service quality rules.~~

~~**12.8** Whenever a Qwest Tier-1 payment to an individual CLEC exceeds $3 million in a month, or when all CLEC Tier-1 payments in any given month exceed the monthly cap (section 11.0), Qwest may commence a show cause proceeding. Upon timely commencement of the show cause proceeding, Qwest must pay the balance of payments owed in excess of the threshold amount into escrow, to be held by a third party pending the outcome of the show cause proceeding. To invoke these escrow provisions, Qwest must file with the Commission,~~

~~[11] Examples of bad faith conduct include, but are not limited to: unreasonably holding service orders and/or applications, "dumping" orders or applications in unreasonable large batches, "dumping" orders or applications at or near the close of a business day, on a Friday evening or prior to a holiday, and failing to provide timely forecasts to Qwest for services or facilities when such forecasts are required to reasonably provide services or facilities.~~

not later than the due date of the Tier-1 payments, an application to show cause why it should not be required to pay any amount in excess of the procedural threshold. Qwest will have the burden of proof to demonstrate why, under the circumstances, it would be unjust to require it to make the payments in excess of the applicable threshold amount. If Qwest reports non-conforming performance to a CLEC for three consecutive months on 20% or more of the measurements reported to the CLEC and has incurred no more than $1 million in liability to the CLEC, the CLEC may commence a similar show cause proceeding. In any such proceeding the CLEC will have the burden of proof to demonstrate why, under the circumstances, justice requires Qwest to make payments in excess of the amount calculated pursuant to the terms of the PAP.

13.0 Reporting

Upon FCC 271 approval for a state, Qwest will provide CLECs which have approved interconnection agreements with Qwest a monthly report of Qwest's performance for the measurements identified in the PAP by the 25th day of the month following the month for which performance results are being reported. Qwest will collect, analyze, and report performance data for the measurements listed on Attachment 1 in accordance with the most recent version of the Service Performance Indicator Definitions (PID). Upon a CLEC's request, data files of the CLEC's raw data, or any subset thereof, will be transmitted, without charge, to the CLEC in a mutually acceptable format, protocol, and transmission medium.

Qwest will also provide the Commission a monthly report of aggregate CLEC performance results pursuant to the PAP by the 25th day of the month following the month for which performance results are being reported. Individual CLEC reports will also be available to the Commission upon request. Upon the Commission's request, data files of the CLEC raw data, or any subject thereof, will be transmitted, without charge, to the Commission in a mutually acceptable format, protocol, and transmission form. By accepting this PAP, each CLEC consents to Qwest providing that CLEC's report and raw data to State Commissions upon the Commission's request.

14.0 Reviews

Every six (6) months, Qwest, CLECs, and the Commission shall review the performance measurements to determine whether measurements should be added, deleted, or modified; whether the applicable benchmark standards should be modified or replaced by parity standards; and whether to move a classification of a measure to High, Medium, or Low or Tier-1 to Tier-2. The criterion for reclassification of a measure shall be whether the actual volume of data points was less or greater than anticipated. Criteria for review of performance measurements, other than for possible reclassification, shall be whether there exists an omission or failure to capture intended performance, and whether there is duplication of another measurement. The first six-month period will begin upon the FCC's approval of Qwest's 271 application for that particular state. Qwest Any changes to existing performance measurements and this PAP shall be by mutual agreement of the parties.

~~Qwest will make the PAP available for CLEC interconnection agreements until such time as Qwest eliminates its Section 272 affiliate. At that time, the Commission and Qwest shall review the appropriateness of the PAP and whether its continuation is necessary. However, in the event Qwest exists the interLATA market, that state PAP shall be rescinded immediately.~~

~~15.0 Voluntary Performance Assurance Plan~~

~~This plan represents Qwest's voluntary offer to provide performance assurance. Nothing in this plan or in any conclusion of non-conformance of Qwest's service performance with the standards defined in this plan shall be construed to be, of itself, non-conformance with the Act.~~

Attachment 1: Tier 1 and Tier 2 Performance Measurements

Performance Measurement		Tier 1 Payments			Tier 2 Payments		
		Low	Med	High	Low	Med	High
GATEWAY AVAILABILITY							
Availability of IMA – IMA GUI	GA-1						X
Gateway Availability – IMA EDI	GA-2						X
PRE-ORDER/ORDERS							
Pre-Order/Order Response Time	PO-1	X				X	
LSR Rejection Notice Interval	PO-3	X					
Firm Order Confirmations On Time	PO-5	X				X*	
Billing Completion Notification Timeliness	PO-7	X					
Jeopardy Notice Interval	PO-8	X					
ORDERING AND PROVISIONING							
Calls Answered within Twenty Seconds	OP-2						X
Installation Commitments Met	OP-3			X			X
Installation Intervals	OP-4			X			X
New Service Installation Only	OP-5			X			X
Number Portability Timeliness	OP-8		X			X	
Coordinated Cuts On Time – Unbundled Loops	OP-13a		X			X	
MAINTENANCE AND REPAIR							
Calls Answered within 20 seconds Interconnect	MR-2						X
Out of Service Cleared within 24 hours	MR-3		X				
All Troubles Cleared within 4 hours	MR-5		X				
Repair Repeat Report Rate	MR-7			X			X
Trouble Rate	MR-8			X			X
Repair Appointments Met	MR-9			X			X
BILLING							
Time to Provide Recorded Usage Records	BI-1	X					
Invoices Delivered within 10 Days	BI-2	X					X
Billing Accuracy-Adjustments for Errors	BI-3	X					
Billing Completeness	BI-4	X				X	
NETWORK PERFORMANCE							
Trunk Blocking	NI-1			X			X
NXX Code Activation	NP-1			X			X
COLLOCATION							
Installation Interval	CP-1	X					
Installation Commitments Met	CP-2			X			X
Feasibility Study Interval	CP-3	X					
Feasibility Study Commitments Met	CP-4	X					
Quote Interval	CP-5	X					
Quote Commitment Met	CP-6	X					

* Some PID Sub-Measurements are Tier1 only.

~~Attachment 2~~

~~Performance Measurements Subject to Per Occurrence Payments With a Cap~~

- ~~Pre-Order/Orders~~
  - ~~Pre-Order/Order Response Time – PO-1 (Tier-1/Tier-2)~~
  - ~~LSR Rejection Notice Interval – PO-3 (Tier-1)~~
  - ~~Firm Order Confirmation on Time – PO-5 (some sub-measurements do not have caps) (Tier-1/Tier-2)~~
  - ~~Billing Completion Notification Timeliness – PO-7 (Tier-1)~~
- ~~Billing~~
  - ~~Invoices Delivered within 10 Days – BI-2 (Tier-1/Tier-2)~~
  - ~~Billing Accuracy – Adjustments for Errors – BI-3 (Tier-1)~~
  - ~~Billing Completeness – BI-4 (Tier-1/Tier-2)~~
- ~~Network Performance~~
  - ~~Trunk Blocking – NI-1 (Tier-1/Tier-2)~~

~~Performance Measurements Subject to Per Measure Payments~~

- ~~Gateway Availability~~
  - ~~Availability of IMA – IMA-GUI – GA-1 (Tier-2)~~
  - ~~Gateway Availability – IMA-EDI – GA-2 (Tier-2)~~
- ~~Ordering & Provisioning~~
  - ~~Calls Answered within Twenty Seconds – OP-2 (Tier-2)~~
- ~~Maintenance & Repair~~
  - ~~Calls Answered within Twenty Seconds – MR-2 (Tier-2)~~

~~Attachment 3~~

~~Annual Cap on Qwest Payments~~

~~State ($ Millions)~~	~~1999 ARMIS Net Return~~	~~Adjustment for Commission Rate Orders~~	~~Annual Cap~~
~~Arizona*~~	~~260~~	~~(59)*~~	~~72~~
~~Colorado~~	~~288~~	~~(10)~~	~~100~~
~~Idaho~~	~~68~~		~~24~~
~~Iowa~~	~~85~~		~~31~~
~~Minnesota~~	~~246~~	~~(18)~~	~~82~~
~~Montana~~	~~44~~		~~16~~
~~Nebraska~~	~~84~~		~~30~~
~~New Mexico~~	~~89~~	~~(10)**~~	~~28~~
~~North Dakota~~	~~35~~		~~13~~
~~Oregon~~	~~132~~	~~(32)~~	~~36~~
~~South Dakota~~	~~42~~		~~15~~
~~Utah~~	~~128~~		~~46~~
~~Washington~~	~~225~~		~~81~~
~~Wyoming~~	~~34~~		~~12~~
~~Total Qwest~~			~~588~~

~~* The Arizona adjustment reflects Commission's represcription Decision No. 62507, Docket No. T-01051B-97-0689. Docket No. T-01051B-99-105 is the general rate case in which revenue recover of the increased depreciation expense is at issue. Upon final order in the rate case, the annual cap will be revised to reflect the offsetting revenues.~~

~~** The New Mexico adjustment reflects the New Mexico Commission's interim rate order in Docket No. 3007. Permanent rates will be set in Docket No. 3008 and will be reflected in this adjustment when rates are final.~~

amount:

$$CAP = \begin{cases} 25{,}000 \cdot 2 \cdot x_s \cdot x_d & if \quad High \\ 10{,}000 \cdot 2 \cdot x_s \cdot x_d & if \quad Medium \\ 5{,}000 \cdot 2 \cdot x_s \cdot x_d & if \quad Low \end{cases} . \qquad (7)$$

TABLE 1:
Tier-1 Base Payments to CLECs

Measurement Classification	Per-Occurrence Base Payment	Per-Measure Base Payment
High	$150	$25,000
Medium	$ 75	$10,000
Low	$ 25	$ 5,000

TABLE 2.
Duration and Severity Factors

Duration Factors							
	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month *m*
$x_d \rightarrow$	1	2	3	4	5	6	*m*
Severity Factors							
	$s \geq 25\%$	$s \geq 50\%$	$s \geq 75\%$	$s \geq 100\%$	$s \geq 1.25\%$	$s \geq 1.5\%$	$s \geq X\%$‡
$x_s \rightarrow$	1.25	1.5	1.75	2	2.25	2.5	$1 + X$

‡ Severity factors are based on 25% increments. Alternatively, severity factors could be "smoothed" by setting the factor equal to $(1 + X)$ after a 25% difference.

7.0 Tier-2 Payments to State Funds

Payments to State Funds established by the State Regulatory Commissions under Tier-2 of the MOD-Qwest PAP provide additional incentive to correct ongoing non-conformance. For each measure, the base Tier-2 payment for per-occurrence measures shall equal the average per-occurrence payment (across all CLECs) for the month.[12] For per-measure performance measurements, the per-measure payment shall equal the average per-measure payment (across all CLECs) multiplied by the total number of populated measures divided by the total number of CLECs.[13] All measures that evaluate individual CLEC performance for Tier 1 payments are included in Tier 2 calculations. Conformance is identified in the same manner as for Tier 1.

Qwest payments to the State Funds shall be used in a competitively neutral manner. Payments shall not affect positively the financial condition of Qwest.

8.0 Step by Step Calculation of Tier-1 Payments to CLECs

8.2 Performance Measurements for which Payment is Per Occurrence:

8.2.1 Performance Measurements that are Averages (or Means) or Ratios:

Step 1: For each performance measurement, calculate M^*.

[12] Payments may vary across CLECs due to the application of severity and duration factors.
[13] This calculation is a proxy for the number of identically sized CLECs in the market.

Step 2: Calculate the percentage differences between the actual averages and the calculated averages using Equation (2).

Step 3: For each performance measurement, multiply the total number of data points by the percentage calculated in the previous step and the per occurrence dollar amounts; include any relevant severity and/or duration factors to determine the payment to the CLEC for each non-conforming performance measurement. If the total payment is calculated to be less than $5,000, the minimum payment of $5,000 applies.

8.2.2 Performance Measurements that are Percentages:

Step 1: For each performance measurement, calculate *M**.

Step 2: Calculate the difference between the actual percentages for the CLEC and the calculated percentages using Equation (3).

Step 3: For each performance measurement, multiply the total number of data points by the percentage calculated in the previous step and the per occurrence dollar amounts, including any relevant severity and/or duration factors, to determine the payment to the CLEC for each non-conforming performance measurement. For percentage measures, severity factors are based on the percent difference defined in Equation (4). If the total payment is calculated to be less than $5,000, the minimum payment of $5,000 applies.

8.3 Performance Measurements for which Payment is Per Measure:

For each performance measurement that Qwest fails to meet the standard, the payment to the CLEC is the base dollar amount adjusted by severity and duration factors if necessary.

8.4 Performance Measurements that are Benchmarks

Step 1: For each performance measurement, calculate the difference between the benchmark and the actual performance to the CLEC using Equation (3).

Step 2: For each performance measurement, multiply the total number of data points by the percentage calculated in the previous step and the per occurrence dollar amounts, including any relevant severity and/or duration factors, to determine the payment to the CLEC for each non-conforming performance measurement. For percentage measures, severity factors are based on the percent difference defined in Equation (4). If the total payment is calculated to be less than $5,000, the minimum payment of $5,000 applies.

9.0 Step by Step Calculation of Tier-2 Payments

The calculation of Tier-2 payments proceeds in an identical manner as Tier-1 payments except the aggregate of CLEC data is used. All measures that evaluate individual CLEC performance for Tier 1 payments are included in Tier 2 calculations. Conformance is identified in the same manner as for Tier 1. For each measure, the base Tier-2 payment for

per-occurrence measures shall equal the average per-occurrence payment (across all CLECs) for the month for each measure. For per-measure performance measurements, the per-measure payment shall equal the average per-measure payment (across all CLECs) multiplied by the total number of populated measures divided by the total number of CLECs.[14] Apply severity and duration factors as required. If the total payment is calculated to be less than $5,000, the minimum payment of $5,000 applies.

10.0 Payment

Payments to CLECs or the State Fund shall be made via direct payment one month following the due date of the performance measurement report for the month for which payment is being made.

11.0 Cap on Tier-1 and Tier-2 Payments

There shall be a procedural cap on the total payments by Qwest during a calendar year for each of the 14 states. The cap amounts by state are shown on Attachment 3. The cap represents 44% of the "net revenues," where net revenues are defined in the FCC's order approving the Bell Atlantic-New York 271 application and affirmed in the FCC order approving the Southwest Bell Telephone-Texas 271 application.[15] The procedural cap applies to the aggregate of Tier-1 and Tier-2 payments to CLECs, excluding payments made pursuant to any other alternative performance obligations pursuant to an interconnection agreement with a CLEC and any other payments required by State Commissions pursuant to service quality rules, orders or other agreements that relate to the same or analogous service. If the procedural cap is reached during any consecutive 12 month period Qwest shall, within 30 days, file a petition with the State Commission for an expected hearing showing why it should not be required to pay remedies in excess of the procedural cap. Payments shall be made to escrow during this proceeding.

In the event the annual procedural cap is reached within a calendar year or one-sixth of the cap is reached in a single month and it is determined that poor performance alone is the cause of such payments, Qwest shall cease offering in-region interLATA services to new customers.

12.0 Limitations

12.1 Qwest's PAP shall not become available in a State upon approval by the State Commission. The PAP shall be in place six-months prior to a 271 application by Qwest.

12.2 Qwest shall be liable for Tier-1 or Tier-2 payments to any CLEC offering services in the state using unbundled elements.

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[14] This calculation is a proxy for the number of identically sized CLECs in the market.

[15] Federal Communications Commission, CC Docket No. 99-404, Memorandum Opinion and Order, December 22, 1999, Para. 436 and footnote 1332; Federal Communications Commission, CC Docket No. 00-65, Memorandum Opinion and Order, June 30, 2000, Para 424.

12.3 Qwest shall not be obligated to make Tier-1 or Tier-2 payments for any measurement if and to the extent that non-conformance for that measurement was the result of any of the following: a Force Majeure event; an act or omission by a CLEC that is contrary to any of its obligations under its interconnection agreement with Qwest or under the Act or State law; or an act or omission by a CLEC that is in bad faith.[16] Qwest will not be excused from Tier-1 or Tier-2 payments on any other grounds, except as described in paragraph 12.7. Qwest will have the burden to demonstrate that its non-conformance with the performance measure was excused on one of the grounds described in this PAP.

12.8 Whenever a Qwest Tier-1 payment to an individual CLEC exceeds $3 million in a month, or when all CLEC Tier-1 payments in any given month exceed the monthly cap (section 11.0), Qwest may commence a show cause proceeding. Upon timely commencement of the show cause proceeding, Qwest must pay the balance of payments owed in excess of the threshold amount into escrow, to be held by a third party pending the outcome of the show cause proceeding. To invoke these escrow provisions, Qwest must file with the Commission, not later than the due date of the Tier-1 payments, an application to show cause why it should not be required to pay any amount in excess of the procedural threshold. Qwest will have the burden of proof to demonstrate why, under the circumstances, it would be unjust to require it to make the payments in excess of the applicable threshold amount. If Qwest reports non-conforming performance to a CLEC for three consecutive months on 20% or more of the measurements reported to the CLEC and has incurred no more than $1 million in liability to the CLEC, the CLEC may commence a similar show cause proceeding. In any such proceeding the CLEC will have the burden of proof to demonstrate why, under the circumstances, justice requires Qwest to make payments in excess of the amount calculated pursuant to the terms of the PAP.

13.0 Reporting

Upon FCC 271 approval for a state, Qwest will provide CLECs a monthly report of Qwest's performance for the measurements identified in the PAP by the 25th day of the month following the month for which performance results are being reported. The report shall include a complete description of how all payments are calculated. Qwest will collect, analyze, and report performance data for the measurements in accordance with the most recent version of the Service Performance Indicator Definitions (PID). Upon a CLEC's request, data files of the CLEC's raw data, or any subset thereof, will be transmitted, without charge, to the CLEC in a mutually acceptable format, protocol, and transmission medium.

Qwest will also provide the Commission a monthly report of aggregate CLEC performance results pursuant to the PAP by the 25th day of the month following the month for which performance results are being reported. Individual CLEC reports will also be available to the Commission upon request. Upon the Commission's request, data files of the CLEC raw data,

[16] Examples of bad faith conduct include, but are not limited to: unreasonably holding service orders and/or applications, "dumping" orders or applications in unreasonable large batches, "dumping" orders or applications at or near the close of a business day, on a Friday evening or prior to a holiday, and failing to provide timely forecasts to Qwest for services or facilities when such forecasts are required to reasonably provide services or facilities.

or any subject thereof, will be transmitted, without charge, to the Commission in a mutually acceptable format, protocol, and transmission form. By accepting this PAP, each CLEC consents to Qwest providing that CLEC's report and raw data to State Commissions upon the Commission's request.

14.0 Reviews

Every six (6) months, Qwest, CLECs, and the Commission shall review the performance measurements to determine whether measurements should be added, deleted, or modified; whether the applicable benchmark standards should be modified or replaced by parity standards; and whether to move a classification of a measure to High, Medium, or Low or Tier-1 to Tier-2. Criteria for review of performance measurements, other than for possible reclassification, shall be whether there exists an omission or failure to capture intended performance, and whether there is duplication of another measurement. The first six-month period will begin upon the State Commission's approval of the performance plan. Any changes to existing performance measurements and this PAP shall be by mutual agreement of the parties.

Qwest will make the PAP available for CLEC interconnection agreements until such time the State Commission deems it unnecessary due to widespread facilities-based competition for all unbundled elements.

Attachment 3 Annual Cap on Qwest Payments (millions)		
State	1999 ARMIS Net Return	Annual Procedural Cap
Arizona*	260	114
Colorado	288	126
Idaho	68	30
Iowa	85	37
Minnesota	246	108
Montana	44	20
Nebraska	84	37
New Mexico	89	39
North Dakota	35	15
Oregon	132	58
South Dakota	42	18
Utah	128	56
Washington	225	99
Wyoming	34	15
Total Qwest	1,760	772

ATTACHMENT 2

THE MOD-QWEST PERFORMANCE ASSURANCE PLAN

1.0 Introduction

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2.0 Plan Structure

The MOD-Qwest PAP is a two-tiered, self-executing remedy plan. The plan is developed to provide individual CLECs with Tier-1 payments if Qwest does not provide parity between the service it provides to the CLEC and that which it provides to its retail customers, or if Qwest fails to meet applicable benchmarks. In addition, the PAP provides Qwest with additional incentives to satisfy parity and benchmark standards by requiring Qwest to make Tier-2 payments--payments to State Funds established by the State Commissions--if Qwest fails to meet parity and benchmark standards on an aggregate CLEC basis. Tier-2 payments are over and above the Tier-1 payments made to individual CLECs. [1]

In the MOD-Qwest PAP, performance measurements are given different weightings to reflect relative importance by the designations of High, Medium, and Low. Each CLEC shall classify each measure as High, Medium, or Low at the initiation of the PAP. No more than one-third of the measures shall be classified as High, Medium, or Low.[2]

Payment is generally on a per occurrence basis, i.e., a base dollar payment times the number of non-conforming service events. To discourage non-conformance against small order counts (which, by their nature, produce only small payments), a minimum payment of $5,000 applies to all non-conforming measures. For the performance measurements that do not lend themselves to per occurrence payment, payment is on a per measurement basis, i.e., a set dollar payment. Base level per occurrence and per measure payments are summarized in Table 1.

Two features of the payment structure discourage severe or repeated non-conformance. First, the level of payment depends on the severity of non-conformance with the dollar payments escalating as the level of non-conformance increases. Payment escalation is defined by the severity factors provided in Table 2. Second, the level of payment also depends upon the number of consecutive months of non-conforming performance, i.e., an escalating payment the longer the duration of non-conforming performance. Payment escalation for repeated non-conformance is defined by the duration factors provided in Table 2. Payments are returned to the initial, un-factored level after two-months of compliant performance. If either the severity

[1] It is anticipated that each state fund will be established concurrently with the State Commission's approval of a PAP.

[2] Classifications are only relevant only to the initial determination of the base payments, which will change over time with severity and duration factors.

or duration escalation factors are invoked a second time, the highest factored payment becomes the new base penalty (i.e., the initial payment level) and the severity and duration factors are applied to this base penalty for severe or repeated non-conformance. Both severity and duration factors apply to per occurrence payments, per measure payments, and the minimum "per occurrence" payment of $5,000.

The parity standard is met when the service Qwest provides to CLECs is equivalent to that which it provides to its retail customers. Statistically, parity exists when performance results for the CLEC and for the Qwest retail analogue result in a *z*-value that is no greater than the critical *z*-value of 1.65 (a significance level of 5%). For parity measures, the MOD-Qwest PAP relies upon statistical testing, in the form of the modified z-test or permutation analysis, to determine whether any difference between CLEC and Qwest performance results is statistically significant, that is, not attributable to simple random variation.

For performance measurements that have no Qwest retail analogue, agreed upon benchmarks are used. Benchmarks are evaluated on a "stare and compare" basis (i.e., they are fixed standards) and no statistical test is performed for such measures. During the first six-months of implementation, the benchmarks shall be adjusted downward by 1% and rounded down to the nearest whole percentage. After the initial six-month period, the benchmarks shall return to the agreed upon values.

3.0 Performance Measurements

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4.0 Statistical Measurement

MOD-Qwest proposes the use of a statistical test, namely the modified "*z*-test," for evaluating the difference between two means (i.e., Qwest and CLEC service or repair intervals) or two percentages (e.g., Qwest and CLEC proportions), to determine whether a parity condition exists between the results for Qwest and the CLEC(s). The modified *z*-test is employed if the number of data points are greater than 30 for a given measurement. For testing measurements for which the number of data points are 30 or less, Qwest will use a permutation test to determine the statistical significance of the difference between Qwest and CLEC.[3]

Qwest will be in conformance when the monthly performance results for parity measurements (whether in the form of means, percents, or proportions and at the equivalent level of disaggregation) are such that the calculated *z* test statistics are not greater than the 1.65. The following is the formula for determining parity using the *z* test:

$$z = \frac{M_{ILEC} - M_{CLEC}}{\sigma_{ILEC}\sqrt{1/n_{ILEC} + 1/n_{CLEC}}} \qquad (1)$$

[3] If the modified *z*-test indicates conformance for samples smaller than 30 data points, permutation test will be performed.

where M_{ILEC} is the Qwest average or proportion, M_{CLEC} is the CLEC average or proportion, σ_{ILEC} is the variance for Qwest, and the n are the respective sample sizes for the ILEC and CLEC. The z tests will be applied to reported measurements that contain more than 30 data points. In calculating the difference between Qwest and CLEC performance, the above formulae apply when a larger Qwest value indicates a better level of performance. In cases where a smaller Qwest value indicates a higher level of performance, the order is reversed, i.e., $M_{CLEC} - M_{ILEC}$. Conformance with the parity-standard is indicated as follows:

$$\text{Non} - \text{Conforming}: \quad z \geq 1.65$$
$$\text{Conforming}: \quad z < 1.65$$

where z is the modified z-statistic.

Statistical testing is not required for benchmark measures. The following is the formula for determining conformance when the performance measurement is a benchmark:

$$\text{Non} - \text{Conforming}: \quad R_{CLEC} < B$$
$$\text{Conforming}: \quad R_{CLEC} \geq B$$

where R_{CLEC} is the CLEC result, B is the benchmark, and larger B values indicate better performance. If smaller values of B indicate better performance, non-conformance is indicated by $R_{CLEC} > B$.

For measurements where the performance delivered to a CLEC is compared to Qwest performance and for which the number of data points is 30 or less, Qwest will apply a permutation test to test for statistical significance. Permutation analysis will be applied to calculate the z statistic using the following algorithm:

Calculate the z statistic for the actual arrangement of the data
Pool and mix the CLEC and Qwest data sets
Perform the following no fewer than 1000 times:
    Randomly subdivide the pooled data sets into two pools, one the same size as the original CLEC data set (n_{CLEC}) and one reflecting the remaining data points (which is equal to the size of the original Qwest data set or n_{ILEC}).
    Compute and store the z-test score (z_S) for this sample.
Count the number of times the z statistic for a permutation of the data is greater than the actual z statistic
Compute the fraction of permutations for which the statistic for the rearranged data is greater than the statistic for the actual samples

If the fraction is greater than α, or one minus the confidence level, the hypothesis of parity is not rejected and the test is passed.

6.0 Tier-1 Payments to CLECs

Tier-1 payments to CLECs apply to all Tier-1 measurements that are not diagnostic. For purposes of establishing the base payment, the Tier-1 performance measurements are categorized as High, Medium, and Low by the CLEC. The amount of payments for non-conforming service varies depending upon the High, Medium, and Low designations and upon the duration of the non-conforming condition, as described below. The level of non-conformance (d) is measured by

$$d_M = \frac{M^* - M_{CLEC}}{M^*} \tag{2}$$

for all parity measures defined as means where

$$M^* = M_{ILEC} + 1.65\sigma_{ILEC}\sqrt{1/n_{ILEC} + 1/n_{CLEC}}\ . \tag{3}$$

Equations (2) and (3) are valid when higher percentages indicate better service. For parity measures defined as proportions/percentages and benchmark measures defined as proportions/percentages (respectively), the level of non-conformance is measured by

$$d_P = M^* - M_{CLEC} \qquad or \qquad d_B = B - R_{ILEC} \tag{4}$$

where higher values of M and B indicate better quality.

Equation (2) measures the severity level of non-conformance for all parity measures defined as means ($s_M = d_M$). For benchmark measures and parity measures defined as proportions, the severity level is defined as

$$s_B = \frac{d_P}{1 - M^*} \qquad or \qquad s_B = \frac{d_P}{1 - B}. \tag{5}$$

6.2 Determination of the Amount of Payment: Tier-1 payments to CLECs are calculated and paid monthly for every non-conforming performance measurement. Payments will be made on either a per occurrence or per measurement basis, depending upon the classification of the measure. The total payment for per occurrence measurements is

$$F = n_{CLEC} \cdot d \cdot f \cdot x_s \cdot x_d \tag{6}$$

where F is the total payment for the measure and f is the per-occurrence payment that is based on classification, x_s is the severity factor, and x_d is the duration factor. If Equation (6) is less than \$5,000, then F = \$5,000.

For those performance measurements listed on Attachment 2 as "Performance Measurements Subject to Per Occurrence Payments With a Cap" or "Performance Measurements Subject to Per Measure Payments," payment to a CLECs in a single month shall not exceed the amount:

$$CAP = \begin{cases} 25{,}000 \cdot 2 \cdot x_s \cdot x_d & if \quad High \\ 10{,}000 \cdot 2 \cdot x_s \cdot x_d & if \quad Medium \\ 5{,}000 \cdot 2 \cdot x_s \cdot x_d & if \quad Low \end{cases}. \tag{7}$$

TABLE 1:
Tier-1 Base Payments to CLECs

Measurement Classification	Per-Occurrence Base Payment	Per-Measure Base Payment
High	$150	$25,000
Medium	$ 75	$10,000
Low	$ 25	$ 5,000

TABLE 2.
Duration and Severity Factors

Duration Factors							
	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month *m*
$x_d \rightarrow$	1	2	3	4	5	6	*m*
Severity Factors							
	$s \geq 25\%$	$s \geq 50\%$	$s \geq 75\%$	$s \geq 100\%$	$s \geq 1.25\%$	$s \geq 1.5\%$	$s \geq X\%$‡
$x_s \rightarrow$	1.25	1.5	1.75	2	2.25	2.5	$1 + X$

‡Severity factors are based on 25% increments. Alternatively, severity factors could be "smoothed" by setting the factor equal to $(1 + X)$ after a 25% difference.

7.0 Tier-2 Payments to State Funds

Payments to State Funds established by the State Regulatory Commissions under Tier-2 of the MOD-Qwest PAP provide additional incentive to correct ongoing non-conformance. For each measure, the base Tier-2 payment for per-occurrence measures shall equal the average per-occurrence payment (across all CLECs) for the month.[4] For per-measure performance measurements, the per-measure payment shall equal the average per-measure payment (across all CLECs) multiplied by the total number of populated measures divided by the total number of CLECs.[5] All measures that evaluate individual CLEC performance for Tier 1 payments are included in Tier 2 calculations. Conformance is identified in the same manner as for Tier 1.

Qwest payments to the State Funds shall be used in a competitively neutral manner. Payments shall not affect positively the financial condition of Qwest.

8.0 Step by Step Calculation of Tier-1 Payments to CLECs

[4] Payments may vary across CLECs due to the application of severity and duration factors.
[5] This calculation is a proxy for the number of identically sized CLECs in the market.

8.2 Performance Measurements for which Payment is Per Occurrence:

8.2.1 Performance Measurements that are Averages (or Means) or Ratios:

Step 1: For each performance measurement, calculate *M**.

Step 2: Calculate the percentage differences between the actual averages and the calculated averages using Equation (2).

Step 3: For each performance measurement, multiply the total number of data points by the percentage calculated in the previous step and the per occurrence dollar amounts; include any relevant severity and/or duration factors to determine the payment to the CLEC for each non-conforming performance measurement. If the total payment is calculated to be less than $5,000, the minimum payment of $5,000 applies.

8.2.2 Performance Measurements that are Percentages:

Step 1: For each performance measurement, calculate *M**.

Step 2: Calculate the difference between the actual percentages for the CLEC and the calculated percentages using Equation (3).

Step 3: For each performance measurement, multiply the total number of data points by the percentage calculated in the previous step and the per occurrence dollar amounts, including any relevant severity and/or duration factors, to determine the payment to the CLEC for each non-conforming performance measurement. For percentage measures, severity factors are based on the percent difference defined in Equation (4). If the total payment is calculated to be less than $5,000, the minimum payment of $5,000 applies.

8.3 Performance Measurements for which Payment is Per Measure:

For each performance measurement that Qwest fails to meet the standard, the payment to the CLEC is the base dollar amount adjusted by severity and duration factors if necessary.

8.4 Performance Measurements that are Benchmarks

Step 1: For each performance measurement, calculate the difference between the benchmark and the actual performance to the CLEC using Equation (3).

Step 2: For each performance measurement, multiply the total number of data points by the percentage calculated in the previous step and the per occurrence dollar amounts, including any relevant severity and/or duration factors, to determine the payment to the CLEC for each non-conforming performance measurement. For percentage measures, severity factors are based on the percent difference defined in Equation (4). If the total payment is calculated to be less than $5,000, the minimum payment of $5,000 applies.

9.0 Step by Step Calculation of Tier-2 Payments

The calculation of Tier-2 payments proceeds in an identical manner as Tier-1 payments except the aggregate of CLEC data is used. All measures that evaluate individual CLEC performance for Tier 1 payments are included in Tier 2 calculations. Conformance is identified in the same manner as for Tier 1. For each measure, the base Tier-2 payment for per-occurrence measures shall equal the average per-occurrence payment (across all CLECs) for the month for each measure. For per-measure performance measurements, the per-measure payment shall equal the average per-measure payment (across all CLECs) multiplied by the total number of populated measures divided by the total number of CLECs.[6] Apply severity and duration factors as required. If the total payment is calculated to be less than $5,000, the minimum payment of $5,000 applies.

10.0 Payment

Payments to CLECs or the State Fund shall be made via direct payment one month following the due date of the performance measurement report for the month for which payment is being made.

11.0 Cap on Tier-1 and Tier-2 Payments

There shall be a procedural cap on the total payments by Qwest during a calendar year for each of the 14 states. The cap amounts by state are shown on Attachment 3. The cap represents 44% of the "net revenues," where net revenues are defined in the FCC's order approving the Bell Atlantic-New York 271 application and affirmed in the FCC order approving the Southwest Bell Telephone-Texas 271 application.[7] The procedural cap applies to the aggregate of Tier-1 and Tier-2 payments to CLECs, excluding payments made pursuant to any other alternative performance obligations pursuant to an interconnection agreement with a CLEC and any other payments required by State Commissions pursuant to service quality rules, orders or other agreements that relate to the same or analogous service. If the procedural cap is reached during any consecutive 12 month period Qwest shall, within 30 days, file a petition with the State Commission for an expected hearing showing why it should not be required to pay remedies in excess of the procedural cap. Payments shall be made to escrow during this proceeding.

In the event the annual procedural cap is reached within a calendar year or one-sixth of the cap is reached in a single month and it is determined that poor performance alone is the cause of such payments, Qwest shall cease offering in-region interLATA services to new customers.

12.0 Limitations

[6] This calculation is a proxy for the number of identically sized CLECs in the market.

[7] Federal Communications Commission, CC Docket No. 99-404, Memorandum Opinion and Order, December 22, 1999, Para. 436 and footnote 1332; Federal Communications Commission, CC Docket No. 00-65, Memorandum Opinion and Order, June 30, 2000, Para 424.

12.1 Qwest's PAP shall not become available in a State upon approval by the State Commission. The PAP shall be in place six-months prior to a 271 application by Qwest.

12.2 Qwest shall be liable for Tier-1 or Tier-2 payments to any CLEC offering services in the state using unbundled elements.

12.3 Qwest shall not be obligated to make Tier-1 or Tier-2 payments for any measurement if and to the extent that non-conformance for that measurement was the result of any of the following: a Force Majeure event; an act or omission by a CLEC that is contrary to any of its obligations under its interconnection agreement with Qwest or under the Act or State law; or an act or omission by a CLEC that is in bad faith.[8] Qwest will not be excused from Tier-1 or Tier-2 payments on any other grounds, except as described in paragraph 12.7. Qwest will have the burden to demonstrate that its non-conformance with the performance measure was excused on one of the grounds described in this PAP.

12.8 Whenever a Qwest Tier-1 payment to an individual CLEC exceeds $3 million in a month, or when all CLEC Tier-1 payments in any given month exceed the monthly cap (section 11.0), Qwest may commence a show cause proceeding. Upon timely commencement of the show cause proceeding, Qwest must pay the balance of payments owed in excess of the threshold amount into escrow, to be held by a third party pending the outcome of the show cause proceeding. To invoke these escrow provisions, Qwest must file with the Commission, not later than the due date of the Tier-1 payments, an application to show cause why it should not be required to pay any amount in excess of the procedural threshold. Qwest will have the burden of proof to demonstrate why, under the circumstances, it would be unjust to require it to make the payments in excess of the applicable threshold amount. If Qwest reports non-conforming performance to a CLEC for three consecutive months on 20% or more of the measurements reported to the CLEC and has incurred no more than $1 million in liability to the CLEC, the CLEC may commence a similar show cause proceeding. In any such proceeding the CLEC will have the burden of proof to demonstrate why, under the circumstances, justice requires Qwest to make payments in excess of the amount calculated pursuant to the terms of the PAP.

13.0 Reporting

Upon FCC 271 approval for a state, Qwest will provide CLECs a monthly report of Qwest's performance for the measurements identified in the PAP by the 25th day of the month following the month for which performance results are being reported. The report shall include a complete description of how all payments are calculated. Qwest will collect, analyze, and report performance data for the measurements in accordance with the most recent version of the Service Performance Indicator Definitions (PID). Upon a CLEC's

[8] Examples of bad faith conduct include, but are not limited to: unreasonably holding service orders and/or applications, "dumping" orders or applications in unreasonable large batches, "dumping" orders or applications at or near the close of a business day, on a Friday evening or prior to a holiday, and failing to provide timely forecasts to Qwest for services or facilities when such forecasts are required to reasonably provide services or facilities.

request, data files of the CLEC's raw data, or any subset thereof, will be transmitted, without charge, to the CLEC in a mutually acceptable format, protocol, and transmission medium.

Qwest will also provide the Commission a monthly report of aggregate CLEC performance results pursuant to the PAP by the 25th day of the month following the month for which performance results are being reported. Individual CLEC reports will also be available to the Commission upon request. Upon the Commission's request, data files of the CLEC raw data, or any subject thereof, will be transmitted, without charge, to the Commission in a mutually acceptable format, protocol, and transmission form. By accepting this PAP, each CLEC consents to Qwest providing that CLEC's report and raw data to State Commissions upon the Commission's request.

14.0 Reviews

Every six (6) months, Qwest, CLECs, and the Commission shall review the performance measurements to determine whether measurements should be added, deleted, or modified; whether the applicable benchmark standards should be modified or replaced by parity standards; and whether to move a classification of a measure to High, Medium, or Low or Tier-1 to Tier-2. Criteria for review of performance measurements, other than for possible reclassification, shall be whether there exists an omission or failure to capture intended performance, and whether there is duplication of another measurement. The first six-month period will begin upon the State Commission's approval of the performance plan. Any changes to existing performance measurements and this PAP shall be by mutual agreement of the parties.

Qwest will make the PAP available for CLEC interconnection agreements until such time the State Commission deems it unnecessary due to widespread facilities-based competition for all unbundled elements.

Attachment 3 Annual Cap on Qwest Payments (millions)		
State	1999 ARMIS Net Return	Annual Procedural Cap
Arizona*	260	114
Colorado	288	126
Idaho	68	30
Iowa	85	37
Minnesota	246	108
Montana	44	20
Nebraska	84	37
New Mexico	89	39
North Dakota	35	15
Oregon	132	58
South Dakota	42	18
Utah	128	56
Washington	225	99
Wyoming	34	15
Total Qwest	1,760	772

ATTACHMENT 3

The Modified Texas Performance Plan

George S. Ford, Z-Tel Communications

I. Introduction

A number of ILECs have submitted to various state regulatory commissions a proposal for a performance assurance plan ("PAP") based on the PAP included in the 271 application approved by the Federal Communications Commission ("FCC") for Southwest Bell Telephone Company-Texas ("SBTX").[1] These ILECs have adopted, in near unaltered form, the Texas enforcement plan structure, including its statistical tables and payment schedules. Despite approval of the SBTX 271 application by the FCC, the Texas PAP -- including all of the versions (to date) submitted to by the ILECs to various state commissions - has a number of shortcomings that substantially weaken its effectiveness at ensuring non-discriminatory provision of unbundled elements as mandated by the 1996 Telecommunications Act.

The purpose of this document is to outline a modified Texas-bases performance plan (MOD-TX Plan) that remedies the major shortcomings of the plan. All of the suggested changes are incorporated easily into the Texas-based PAP, as they do not require major structural changes. While no serious modification of the Texas PAP is required, the effectiveness of the PAP is increased substantially. The MOD-TX Plan takes as its foundation the Texas PAP and, where possible, relies on the fundamental features of that plan. This approach minimizes the differences between the MOD-TX Plan and the Texas PAP and allows the ILECs, State Commissions, and the FCC to evaluate more readily the impact of the modifications. Furthermore, by modifying the ILECs' PAP rather than proposing an entirely different alternative, the PAPs proposed by the ILEC and Z-Tel Communications are more similar than dissimilar.

The discussion in this document is not comprehensive, but focuses only on the major statistical and payment components of the PAP. This limited focus is intentional and desirable, allowing this document to be relevant in different states where the performance measurements, or other factors, may vary.

Z-Tel Communication's support of the MOD-TX Plan is conditioned on the incorporation of all modifications to the Texas-style PAP suggested herein.

II. Assessing the Level of Performance

Like the Texas Plan, the MOD-TX PAP is a two-tiered, self-executing remedy plan. The plan provides individual CLECs with Tier-1 payments if the ILEC does not provide parity or benchmark service to the CLEC. In addition, the PAP provides additional incentives to satisfy parity and benchmark standards by including Tier-2 payments to a State Fund if the

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[1] *In the Matter of the Application by SBC Communications, Inc.*, CC Docket No. 00-65, Memorandum Opinion and Order, June 30, 2000.

ILEC fails to meet parity and benchmark standards on an aggregate CLEC basis. Tier-2 payments are over and above the Tier-1 payments made to individual CLECs.[2]

As in the Texas PAP, the MOD-TX Plan uses a classification system for performance measurements (High, Medium, and Low) to determine base payment amounts. Measurements with a High classification have the highest payments and "Low" the lowest payments, at least initially. Each CLEC shall classify each measure as High, Medium, or Low at the initiation of the PAP. The CLEC's classification of measurements is restricted in that no more than one-third of the measures shall be classified as High, Medium, or Low.[3] By allowing the CLEC (as opposed to the ILEC) to classify the measures, the MOD-TX Plan adjusts to the different business requirements of the CLECs. Because the classification of measures is relevant only to the determination of base payment levels and because the MOD-TX Plan allows payment levels to adjust dynamically to the effective level, the classification of measurements is not as critical as with the Texas PAP.

Any performance measurement assessing performance for a service that is subject to end-user quality of service standards shall be defined as a benchmark measure. The benchmark standard shall not exceed the quality of service standard.

1. THE PARITY STANDARD

Following the Texas PAP, the MOD-TX Plan uses the modified "z-test" to determine the statistical significance of means differences between the ILEC and CLEC level of performance. The modified *z*-test is employed if the number of data points are greater than 30 for a given measurement. For testing measurements for which the number of data points are 30 or less, the ILEC will use (some version of) a permutation test to evaluate performance levels. The modified z-test is defined as:

$$z = \frac{M_{CLEC} - M_{ILEC}}{\sigma_{ILEC}\sqrt{1/n_{ILEC} + 1/n_{CLEC}}} \qquad (1)$$

where M_{CLEC} is the CLEC average or proportion, M_{ILEC} is the ILEC mean or proportion, σ_{ILEC} is the variance for the ILEC, and the n are the respective sample sizes for the ILEC and CLEC. Equation (1) applies when a smaller ILEC value indicates a better level of performance. In cases where a larger ILEC value indicates a higher level of performance, the numerator of Equation (1) becomes $M_{ILEC} - M_{CLEC}$. The goal is to produce a positive z-score that is then compared to the critical z-value. Conformance with the parity-standard is indicated as follows:

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[2] It is anticipated that each state fund will be established concurrently with the State Commission's approval of a PAP.

[3] Classifications are only relevant only to the initial determination of the base payments, which will change over time with severity and duration factors.

$$\text{Non} - \text{Conforming}: \quad z \geq 1.65$$
$$\text{Conforming}: \quad z < 1.65$$

where z is the modified z-statistic and 1.65 is the critical z-score for the 5% significance (95% confidence) level. The Texas PAP allows the critical z-score to change with the number of statistical tests performed in a single month. Appendix A describes why this approach is inappropriate and not incorporated into the MOD-TX Plan.

While the modified z-test can determine statistical significance, it does not measure the size of the disparity. Following the Texas PAP, the magnitude of disparity (d) is defined as

$$d_M = \frac{M_{CLEC} - M^*}{M^*} \tag{2}$$

where M^* is defined as

$$M^* = M_{ILEC} + 1.65\sigma_{ILEC}\sqrt{1/n_{ILEC} + 1/n_{CLEC}}\,, \tag{3}$$

which is the value of M that just produces a statistically significant means difference relative to M_{ILEC}. Equation (2) is applicable only to measurements measured as means or ratios and when smaller values of M indicate better performance. For measurements defined as percentages or proportions, the degree of disparity is

$$d_P = M^* - M_{CLEC} \tag{4}$$

when larger values of M indicate better performance (e.g., percent success rate).

Finally, the severity of the non-conformance for measurements defined as means or ratios is identical to Equation (2) so that $s_M = d_M$. For measurements defined as percentages or proportions, the severity of the miss is

$$s_P = \frac{d_P}{1 - M^*} \tag{5}$$

for measurements where a larger M indicates better service. The need for a different measure of severity for measurements defined as percentages is obvious. Consider the case where the ILEC has a success rate of 95% so that 5% of the ILEC's orders are "failures."[4] If the CLEC has a success rate of 90%, then 10% of its orders are "failures." The failure rate for the CLEC is twice that of the ILEC or 100% worse [(0.95 - 0.90)/(1 - 0.95)= 0.05/0.05 = 1.0 = 100%].

[4] For illustrative purposes, assume M^* = 95%.

For measurements with 30 data points or less, a permutation test will be used. Permutation analysis will be applied to calculate the z statistic using the following algorithm or a suitable alternative acceptable to both the ILEC and CLECs:

Step 1) Calculate the z statistic for the actual arrangement of the data

Step 2) Pool and mix the CLEC and ILEC data sets

Step 3) Perform the following 10,000 times:

> Randomly subdivide the pooled data sets into two pools, one the same size as the original CLEC data set (n_{CLEC}) and one reflecting the remaining data points (which is equal to the size of the original Qwest data set or n_{ILEC}).
>
> Compute and store the z-test score (z_S) for this sample.

Step 4) Count the number of times the z statistic for a permutation of the data is greater than the actual z statistic

Step 5) Compute the fraction of permutations for which the statistic for the rearranged data is greater than the statistic for the actual samples

Step 6) If the fraction is greater than α, or one minus the confidence level, the hypothesis of parity is not rejected and the test is passed.

The speed of the permutation calculation depends on the number of ILEC and CLEC observations, but as a practical matter, only the number of ILEC observations poses a computation cost. If the ILEC sample size makes 10,000 permutations computationally expensive, then the number of permutations shall be reduced to 1,000 or an appropriate sampling procedure shall be applied to the ILEC data.

2. THE BENCHMARK STANDARD

For performance measurements that have no ILEC retail analogue, benchmarks are established. Benchmarks are evaluated on a "stare and compare" basis (i.e., they are fixed standards) and no statistical test is performed. During the first six-months of implementation, the benchmarks shall be adjusted downward by 1% and rounded down to the nearest whole percentage. After the initial six-month period, the benchmarks shall return to the initial agreed upon values unless both the ILEC and CLEC agree to a different benchmark level. By applying an invalid "statistical" procedure, the Texas PAP reduces the (percentage) benchmarks by 1.65 percentage points. The temporary 1% reduction (round down) in the benchmark also reduces the benchmark, but does not do so under the guise of a "statistical" procedure that lacks any validity.

The following is the formula for determining conformance when the performance measurement is a benchmark:

$$\text{Non} - \text{Conforming}: \quad R_{CLEC} < B$$
$$\text{Conforming}: \quad R_{CLEC} \geq B$$

where R_{CLEC} is the CLEC result, B is the benchmark, and where larger B values indicate better performance. If smaller values of B indicate better performance, non-conformance is indicated by $R_{CLEC} > B$.

Once a benchmark is determined to be non-conforming, the disparity level is defined as

$$d_B = B - R_{ILEC} \tag{6}$$

when larger B values indicate better performance. As in the case of parity measures defined as percentages or proportions, for benchmark measures defined as percentages the severity level is defined as

$$s_B = \frac{d_P}{1 - B}. \tag{7}$$

For benchmark measures not defined as percentages or proportions, disparity and severity are measured as

$$d_B = s_B = \frac{B - R_{CLEC}}{B}. \tag{8}$$

where larger values of B indicate better performance.

III. Payments for Non-Conforming Performance

Following the Texas PAP, payment is generally on a per occurrence basis where the payment amount is multiplied by the number of "non-conforming events" as defined below. For the performance measurements that do not lend themselves to per occurrence payment, payment is on a per measurement basis.[5] Base level per occurrence and per measure payments are summarized in Table 1 and are identical to the payment levels of the Texas PAP.

[5] This statement is borrowed from the Texas-based PAPs. Why some measures should be per-measure and others per-occurrence is left to the imagination. In an effort to avoid more serious modification to the Texas PAP, the MOD-TX Plan accepts the per-measure and per-occurrence distinction of particular measures.

TABLE 1. Tier-1 Base Payments to CLECs		
Measurement Classification	Per-Occurrence Base Payment	Per-Measure Base Payment
High	$150	$25,000
Medium	$ 75	$10,000
Low	$ 25	$ 5,000

One major shortcoming of a per-occurrence payment structure is that discrimination against small order counts necessarily produces small payments. However, discrimination against small order counts may not have small consequences so that the remedy payment may not equal either the gain to the ILEC or damage to the CLEC. Thus, MOD-TX Plan includes a minimum (total) per-occurrence payment of $5,000. This minimum payment for per-occurrence measures is equivalent to the per-measure payment for a "Low" per-measure measurement in the Texas PAP. Establishing a minimum payment for per-occurrence measurements resolves a critical shortcoming of a per-occurrence payment structure. It also is reasonable to apply the minimum payment of $5,000 to larger sample sizes. As sample sizes grow, the need for reliability becomes more important to the CLEC. Even small deviations from parity or benchmark service can have widespread effects on reputation.

1. Severity and Duration Factors

Two features of the MOD-TX Plan discourage severe or repeated non-conformance. First, the level of payment depends on the severity of non-conformance with the dollar payments escalating as the level of non-conformance increases. This feature of the Plan discourages the ILEC from providing very poor service, but does not levy large payments for lower levels of disparity. As a practical matter, larger levels of disparity impose higher costs on the CLEC and provide larger benefits to the ILEC.[6] Thus, as a theoretical matter, the payment should increase with the level of disparity. The severity factors are summarized in Table 2.

In the Texas PAP, the payments increase linearly with disparity up to a 100% disparity level. This Texas PAP approach has the undesirable property of invoking no more severe a payment for a disparity level of 200%, or even 500%, than for a disparity level of 100%. The severity factor approach incorporated in the MOD-TX Plan corrects this flaw.

[6] The benefits to the ILEC are in the form of increased profits or the costs avoided in creating systems and processes that ensure parity performance.

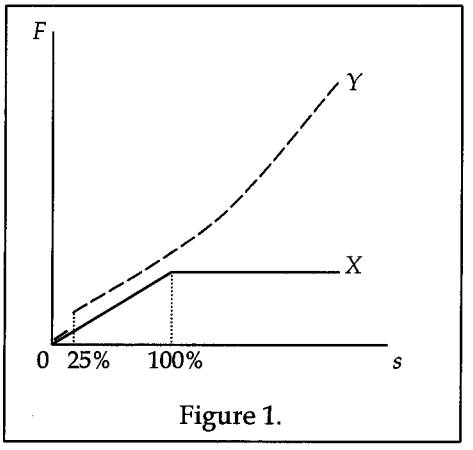

Figure 1.

Figure 1 illustrates the effect of the severity factors on the payments across varying levels of disparity (or severity). In the figure, the total per-occurrence payment (F) is measured along the vertical axis and the degree of severity (s) is measured along the horizontal axis. The payment-severity relationship of the Texas PAP is illustrated by the line labeled **0X** and for the MOD-TX Plan the dashed line **0Y**.[7] For low levels of disparity, the Texas PAP and MOD-TX Plan prescribe the same level of payment. At higher levels of severity, however, the MOD-TX Plan provides for larger payments and, as a consequence, a stronger incentive for better performance than does the Texas PAP.

Second, as in the Texas PAP the level of payment also depends upon the number of consecutive months of non-conforming performance. Payment escalation for repeated non-conformance is defined by the duration factors provided in Table 2.

Either severe or repeated non-conformance indicates that payment levels are inadequate to ensure parity or benchmark performance. With the use of severity and duration factors, the payments continue to rise until the ILEC's cost of non-conformance (i.e., payments) incents the ILEC to provide adequate service. With large enough payments, the ILEC will choose to provide parity or benchmark service. This dynamic adjustment of the payments to the effective level is an important feature of the MOD-TX Plan.

In the Texas PAP, once the ILEC is in conformance, the payments (raised by duration factors) return to the initial level. As a theoretical matter, this feature of the Texas PAP is inappropriate. The severity and duration factors allow payments to dynamically adjust to the effective level. To return the payment to its base level is to ensure that the payment is no longer effective. The MOD-TX Plan allows payments to return to the initial, un-factored level after two-months of compliant performance. However, if either the severity or duration escalation factors are invoked a second time, the highest factored payment becomes the new base penalty (i.e., the initial payment level) and the severity and duration factors are applied to this base penalty for severe or repeated non-conformance. Both severity and duration

[7] The continuous relationship between total payments and severity for the MOD-TX Plan is illustrated as a continuous curve, but in fact is discontinuous due to the specification of the severity factors.

factors apply to per occurrence payments, per measure payments, the minimum "per occurrence" payment of $5,000, and any monthly caps placed on individual measurements.

TABLE 2.

Duration and Severity Factors

Duration Factors							
	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month *m*
$x_d \rightarrow$	1	2	3	4	5	6	*m*
Severity Factors							
	$s \geq 25\%$	$s \geq 50\%$	$s \geq 75\%$	$s \geq 100\%$	$s \geq 125\%$	$s \geq 150\%$	$s \geq s^*\%$‡
$x_s \rightarrow$	1.25	1.5	1.75	2	2.25	2.5	$1 + s^*$

‡ Severity factors are based on 25% increments. Alternatively, severity factors could be "smoothed" by setting the factor equal to $(1 + s^*)$ after a 25% difference.

In summary, the payment for per occurrence measurements is

$$F = n_{CLEC} \cdot d \cdot f \cdot x_s \cdot x_d \tag{9}$$

where F is the total payment for the measure, f is the per-occurrence payment, x_s is the severity factor, and x_d is the duration factor. Equation (9) applies only if $F >$ $5,000, which is the minimum total per-occurrence payment. Example payment calculations are provided in Attachment 2.

2. MEASUREMENT CAPS

The Texas PAP places monthly payment caps on a number of measures. However, these caps are often too low. While the severity and duration factors, over time, correct for inadequate payments, the initial measurement caps should be set so that the factor approach reaches the effective payment sooner rather than later. The MOD-TX Plan allows for monthly caps on particular measures, but those caps should equal, at least, twice the per-measure payment for an equivalent class of measure (High, Medium, Low). Both severity and duration factors apply to the cap as follows:

$$CAP = \begin{cases} 25{,}000 \cdot 2 \cdot x_s \cdot x_d & \text{if High} \\ 10{,}000 \cdot 2 \cdot x_s \cdot x_d & \text{if Medium} \\ 5{,}000 \cdot 2 \cdot x_s \cdot x_d & \text{if Low} \end{cases}. \tag{10}$$

By adjusting the caps by severity and duration factors, the undesirable effects of a cap are reduced while the alleged benefits of the cap remain intact. Ideally, measurement caps should be used sparsely, if at all.

IV. Tier-2 Payments to State Funds

Payments to State Funds established by the State Regulatory Commissions under Tier-2 of the MOD-Qwest PAP provide additional incentive to correct ongoing non-conformance. All

measures that evaluate *individual* CLEC performance for Tier 1 payments are included in Tier 2 calculations. Conformance is identified for the aggregate of CLEC data in the same manner as for Tier 1. For each measure, the base Tier-2 payment for per-occurrence measures shall equal the average per-occurrence payment (across all CLECs) for the month.[8] For per-measure performance measurements, the per-measure payment shall equal the average per-measure payment (across all CLECs) multiplied by the total number of populated measures divided by the total number of CLECs.[9]

The ILEC payments to the State Funds shall be used in a competitively neutral manner. Payments shall not affect positively the financial condition of the ILEC.

V. Payment

Payments to CLECs or the State Fund shall be made via direct payment one month following the due date of the performance measurement report for the month for which payment is being made. The Texas PAP, and those like it, propose payments be made with bill credits. Bill credits, however, can incent the ILEC to discriminate more rather than less, which is an undesirable property of that approach. Making direct payment for any payments that exceed the CLEC's monthly bill remedies, in part, this problem. However, if the procedures to make direct payment for Tier-2 payments and above-bill Tier-1 payments must be undertaken, setting up a bill credit process is unnecessary and redundant. Given that the CLECs prefer direct payment and it poses no more expense on the ILEC than bill credit - in fact, it is less costly - then direct payment should be used.

VI. Cap on Tier-1 and Tier-2 Payments

There shall be a procedural cap on the total payments by the ILEC for during a concurrent 12-month period. The procedural cap is set at 44% of the ILEC's "net revenues," where net revenues are defined in the FCC's order approving the Bell Atlantic-New York 271 application and affirmed in the FCC order approving the Southwest Bell Telephone-Texas 271 application.[10] The procedural cap applies to the aggregate of Tier-1 and Tier-2 payments, and excludes payments made pursuant to any other alternative performance obligations pursuant to an interconnection agreement with a CLEC and any other payments required by State Commissions pursuant to service quality rules. If the procedural cap is reached during any consecutive 12 month period, or one-sixth of the cap is reached in a single month, a expedited proceeding shall be initiated to review the performance level and performance plan and assess the cause of reaching the procedural cap. Payments shall be made to escrow during this proceeding.

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[8] Payments may vary across CLECs due to the application of severity and duration factors.

[9] This calculation is a proxy for the number of identically sized CLECs in the market.

[10] Federal Communications Commission, CC Docket No. 99-404, Memorandum Opinion and Order, December 22, 1999, Para. 436 and footnote 1332; Federal Communications Commission, CC Docket No. 00-65, Memorandum Opinion and Order, June 30, 2000, Para 424.

In the event the annual procedural cap is reached within a calendar year or one-sixth of the cap is reached in a single month and it is determined that poor performance alone is the cause of such payments, the ILEC shall cease offering in-region interLATA services to new customers.

Whenever a Qwest Tier-1 payment to an individual CLEC exceeds $3 million in a month, or when all CLEC Tier-1 payments in any given month exceed the monthly cap (section 11.0), Qwest may commence a show cause proceeding. Upon timely commencement of the show cause proceeding, Qwest must pay the balance of payments owed in excess of the threshold amount into escrow, to be held by a third party pending the outcome of the show cause proceeding. To invoke these escrow provisions, Qwest must file with the Commission, not later than the due date of the Tier-1 payments, an application to show cause why it should not be required to pay any amount in excess of the procedural threshold. Qwest will have the burden of proof to demonstrate why, under the circumstances, it would be unjust to require it to make the payments in excess of the applicable threshold amount. If Qwest reports non-conforming performance to a CLEC for three consecutive months on 20% or more of the measurements reported to the CLEC and has incurred no more than $1 million in liability to the CLEC, the CLEC may commence a similar show cause proceeding. In any such proceeding the CLEC will have the burden of proof to demonstrate why, under the circumstances, justice requires Qwest to make payments in excess of the amount calculated pursuant to the terms of the PAP.

VII. Availability

The PAP shall not become available in a State upon approval by the State Commission. The PAP shall be in place six-months prior to a 271 application by the ILEC so that the PAP is well tested and the benchmarks are returned to the agreed upon level.

The ILEC shall be liable for Tier-1 or Tier-2 payments to any CLEC offering services in the state using unbundled elements. The ILEC will make the PAP available for CLEC interconnection agreements until such time the State Commission deems it unnecessary due to widespread facilities-based competition across unbundled elements.

VIII. Reviews

Every six (6) months, the ILEC, CLECs, and the Commission shall review the performance measurements to determine whether measurements should be added, deleted, or modified; whether the applicable benchmark standards should be modified or replaced by parity standards; and whether to move a classification of a measure to High, Medium, or Low or Tier-1 to Tier-2. The first six-month period will begin upon the State Commission's approval of the performance plan. Any changes to existing performance measurements and this PAP shall be by mutual agreement of the parties.

The author would like to thank Drs. John D. Jackson and T. Randolph Beard for helpful comments and suggestions. Any remaining errors are the responsibility of the author.

Attachment 1.

Any time a statistical test is conducted, there is a chance of making two types of errors: Type I and Type II errors. In some cases, a disparity does not exist but the statistical test indicates incorrectly that it does. This error is called a Type I error and may require payments for "false positives." In an effort to reduce payments based on Type I error or "false positives," Qwest proposes that it be forgiven a specified number of statistical significant means differences. The number of "forgivenesses" varies by the number of tests performed and is intended to equal the expected number of "incorrect" findings of means differences so that the probability of a "false positive" is held constant at 5% (ignoring Type II error).[11]

The first problem with the Texas PAP K-Table is that our attempt to reproduce (what we believe is intended by) the K-Table was unsuccessful. It is possible that the Texas PAP K-Table is based on proposals made by AT&T's statistician Collin Mallows. However, the K-Table calculations proposed by Dr. Mallows are not compatible with the Texas PAP. Based on the description of the K-Table, the table has been re-constructed and the "correct" values provided in Table A-1. In an effort to facilitate the Commission's review of the K-Tables, the Excel Spreadsheet used to produce Table 2 can be downloaded at www.egroupassociates.com/download.htm.

The second problem with the K-Table is that the "forgivenesses", or K-values, are based on the assumption that the null hypothesis is true for all the statistical tests performed for the CLEC. If, in fact, there are true means differences between the ILEC and CLEC performance data, then the K-Table offers too much forgiveness. It is inappropriate to assume that the ILEC performance and CLEC performance are always equal.

A Type II error is said to occur when the statistical test fails to detect a disparity - a "false negative." Type II errors allow the ILEC to avoid remedy payments when a payment rightfully is due. The K-Table proposed by the Texas PAP (and those like it) ignores Type II error altogether. For the typical sample sizes experienced with performance data, the probability of Type II error likely exceeds Type I error. AT&T has presented evidence illustrating that Type II error is larger than Type I for actual performance data.

Table A-2 summarizes the number of adjustments the ILEC is subject to by holding the probability of a "false negative" constant at 5% and ignoring Type I error (this is the opposite of the K-Table proposal by the Texas PAP). Accounting for Type II error requires the ILEC to make remedy payments even if all z-tests indicate non-discrimination. For example, if a CLEC populates 100 metrics in a given month, the ILEC would make payments on 67 (statistically insignificant) measures based on "false negatives" while receiving only 8 credits for "false positives." The "false negative" probabilities are computed assuming that the payment calculation of the Texas PAP plan requires payment to 100% of the orders in the measure because the CLEC mean is twice the "threshold mean," or M^* as defined in the text.

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[11] The 5% is not the probability of Type I error because the K-Table is not a statistical test.

A K-Table that computes both "forgivenesses" and "adjustments" that balance the testing impact of Type I and Type II errors is summarized in Table A-3. Across all number of tests performed, the testing impact of Type II errors exceed that of Type I errors. As previously mentioned, benchmark measures are not subject to Type I or Type II error so should be excluded when using the balanced K-Table.

The MOD-TX Plan does not include a K-Table, either balanced or unbalanced. While it is true that statistical tests are subject to error, the error cuts both ways. The size of these errors depends on sample size and true differences in actual performance, the latter of which is nearly impossible to assess. Recognizing that both Type I and Type II error exist and that the testing impact of Type II likely will exceed Type I error, it seems reasonable, particularly from the perspective of a CLEC, to assume the two errors offset each other and the statistical test can proceed simply by using a critical *z*-value of 1.65.

Table A-1. K-Table Based on Type I Error Only

	Texas Proposed K-Table			*"Corrected" K-Table*		
Measures	*K Value*	*Critical Z*	*Probability of False Positive**	*K Value*	*Critical Z*	*Probability of False Positive*
1	0	1.65	0.049	0	1.64	0.051
2	0	1.96	0.049	0	1.95	0.051
3	0	2.12	0.050	0	2.12	0.050
4	0	2.23	0.051	0	2.23	0.051
5	0	2.32	0.050	0	2.32	0.050
6	0	2.39	0.049	0	2.39	0.049
7	0	2.44	0.050	0	2.44	0.050
8	1	1.69	0.048	1	1.68	0.050
9	1	1.74	0.050	1	1.74	0.050
10-19	1	1.79	0.050	1	1.79	0.050
20-29	2	1.73	0.049	2	1.73	0.049
30-39	3	1.68	0.049	3	1.68	0.049
40-49	3	1.81	0.051	3	1.81	0.051
50-59	4	1.75	0.049	4	1.75	0.049
60-69	5	1.70	0.051	5	1.70	0.051
70-79	6	1.68	0.044	6	1.67	0.048
80-89	6	1.74	0.046	6	1.73	0.050
90-99	7	1.71	0.043	7	1.70	0.048
100-109	8	1.68	0.043	8	1.67	0.048
110-119	9	1.70	0.025	8	1.71	0.052
120-139	10	1.72	0.014	9	1.69	0.048
140-159	12	1.68	0.014	10	1.70	0.049
160-179	13	1.69	0.015	12	1.66	0.048
180-199	14	1.70	0.015	13	1.67	0.049
200-219	17	1.70	0.004	14	1.68	0.048
250-299	20	1.70	0.004	17	1.67	0.053
300-399	26	1.70	0.000	20	1.67	0.051
400-499	32	1.70	0.001	26	1.66	0.054
500-599	38	1.72	0.000	32	1.66	0.047
600-699	44	1.72	0.000	38	1.65	0.053
700-799	49	1.73	0.000	43	1.66	0.050
800-899	55	1.75	0.000	49	1.65	0.057
900-999	60	1.77	0.000	54	1.66	0.049

* Probability levels were not included in the Texas K-Table and are computed by the author.
K-values, z-scores, and probability levels based on the lower bound of the range.

Table 3. K-Table Based on Type II Error Only

Measures	*K Value*	*Critical Z*	*Probability of False Negative*
1	1	1.65	0.0000
2	2	1.96	0.0000
3	3	2.12	0.0000
4	4	2.23	0.0000
5	5	2.32	0.0000
6	6	2.39	0.0000
7	7	2.44	0.0000
8	7	1.69	0.0153
9	8	1.74	0.0120
10-19	9	1.79	0.0093
20-29	15	1.73	0.0596
30-39	22	1.68	0.0370
40-49	30	1.81	0.0405
50-59	36	1.75	0.0444
60-69	42	1.70	0.0404
70-79	48	1.68	0.0382
80-89	55	1.74	0.0577
90-99	61	1.71	0.0505
100-109	67	1.68	0.0404
110-119	74	1.70	0.0531
120-139	80	1.72	0.0466
140-159	93	1.68	0.0479
160-179	104	1.69	0.0430
180-199	117	1.70	0.0422
200-219	130	1.70	0.0427
250-299	160	1.70	0.0462
300-399	190	1.70	0.0555
400-499	250	1.70	0.0536
500-599	311	1.72	0.0492
600-699	370	1.72	0.0451
700-799	432	1.73	0.0467
800-899	489	1.75	0.0514
900-999	552	1.77	0.0486

Table 4. Balanced K-Table

Measures	*Critical Z*	*Forgivenesses*	*Adjustments*
1	1.65	0	1
2	1.96	0	2
3	2.12	0	3
4	2.23	0	4
5	2.32	0	5
6	2.39	0	6
7	2.44	0	7
8	1.69	1	7
9	1.74	1	8
10-19	1.79	1	9
20-29	1.73	2	15
30-39	1.68	3	22
40-49	1.81	3	30
50-59	1.75	4	36
60-69	1.70	5	42
70-79	1.68	6	48
80-89	1.74	6	55
90-99	1.71	7	61
100-109	1.68	8	67
110-119	1.70	8	74
120-139	1.72	9	80
140-159	1.68	10	93
160-179	1.69	12	104
180-199	1.70	13	117
200-219	1.70	14	130
250-299	1.70	17	160
300-399	1.70	20	190
400-499	1.70	26	250
500-599	1.72	32	311
600-699	1.72	38	370
700-799	1.73	43	432
800-899	1.75	49	489
900-999	1.77	54	552

Attachment 2. Example Payment Calculations

Parity - Mean or Average		
	ILEC	CLEC
Mean	5.00	7.00
Standard Deviation	10.00	
Sample Size	10,000	500
z-statistic (Eq. 1)	4.36	
*M** (Eq. 3)	5.76	
Disparity (Eq. 2)	21.6%	
Severity (Eq. 2)	21.6%	
Occurrences	109	
Severity Factor	1.25	
Per Occurrence Payment	$25.00	
Unadjusted Payment	$3,406	
Total Payment	$5,000	

Parity - Mean or Average		
	ILEC	CLEC
Mean	5.00	7.00
Standard Deviation	10.00	
Sample Size	10,000	1,000
z-statistic (Eq. 1)	6.03	
*M** (Eq. 3)	5.55	
Disparity (Eq. 2)	26.2%	
Severity (Eq. 2)	26.2%	
Occurrences	262	
Severity Factor	1.25	
Per Occurrence Payment	$25.00	
Unadjusted Payment	$8,188	
Total Payment	$8,188	

Parity - Percentage or Proportion		
	ILEC	CLEC
Mean	0.90	0.78
Standard Deviation	0.30	
Sample Size	10,000	500
z-statistic (Eq. 1)	8.73	
*M** (Eq. 3)	0.92	
Disparity (Eq. 4)	12.0%	
Severity (Eq. 5)	120.0%	
Occurrences	60	
Severity Factor	2	
Per Occurrence Payment	$25.00	
Unadjusted Payment	$3,000	
Total Payment	$5,000	

Parity - Percentage or Proportion		
	ILEC	CLEC
Mean	0.90	0.78
Standard Deviation	0.30	
Sample Size	10,000	1,000
z-statistic (Eq. 1)	12.06	
*M** (Eq. 3)	0.92	
Disparity (Eq. 4)	12.0%	
Severity (Eq. 5)	120.0%	
Occurrences	120	
Severity Factor	2	
Per Occurrence Payment	$25.00	
Unadjusted Payment	$6,000	
Total Payment	$6,000	

Benchmark - Percentage or Proportion		
	ILEC	CLEC
Performance Level	0.95	0.90
Sample Size	10,000	1,000
Disparity (Eq. 6)	5.0%	
Severity (Eq. 7)	100.0%	
Occurrences	50	
Severity Factor	2	
Per Occurrence Payment	$25.00	
Unadjusted Payment	$2,500	
Total Payment	$5,000	

Benchmark - Percentage or Proportion		
	ILEC	CLEC
Performance Level	0.95	0.90
Sample Size	10,000	10,000
Disparity (Eq. 6)	5.0%	
Severity (Eq. 7)	100.0%	
Occurrences	500	
Severity Factor	2	
Per Occurrence Payment	$25.00	
Unadjusted Payment	$25,000	
Total Payment	$25,000	

ORIGINAL

CERTIFICATE OF SERVICE

I, Charles M. Hines III, hereby certify that a true and correct copy of the foregoing **"Docket Workshop Materials; AZ Docket No. T-00000A-97-0238"** was delivered by overnight delivery or first-class mail this 13th day of November, 2000 to the individuals on the following list:

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