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BEFORE THE ARIZONA CORPORATION COMMISSION RECEIVED

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Arizona Corporation Commission  
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AZ CORP COMMISSION  
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DOCKETED BY  
IN THE MATTER OF U S WEST )  
COMMUNICATIONS, INC.'S ) JM )  
COMPLIANCE WITH SECTION 271 OF THE ) DOCKET NO. T-00000A-97-238  
TELECOMMUNICATIONS ACT OF 1996 )  
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COMMENTS OF WORLDCOM, INC. REGARDING  
QWEST'S PERFORMANCE ASSURANCE PLAN

WorldCom, Inc., submits the attached paper prepared by Dr. John Jackson  
addressing use of K tables in Qwest Corporation's performance assurance plan.

Dated: February 2, 2001

WORLDCOM, INC.

By: THOMAS F. DIXON (JC)  
Thomas F. Dixon  
707 -17<sup>th</sup> Street, #3900  
Denver, Colorado 80202  
303-390-6206

**Arizona Corporation Commission  
Qwest's Application To Obtain Section 271 Authority  
Docket Number T-00000A-97-0238  
December 18 and 19, 2000**

**Performance Assurance Plan**

Issues List

<b>Issue No.</b>	<b>Issue</b>	<b>Action/Status as of 12/19</b>	<b>WCom Comments</b>
PAP-1	Several additional AZ PID measurements were proposed (by CLECs) for inclusion in the Qwest PAP, including MR-6, OP-6a, OP-6b, CP-3, CP-5, PO-2, PO-4, PO-6, and PO-10	CP-3 and 5: Qwest is willing to adopt them as long as they do not become diagnostic and that they do not become part of the AZ PMA. PO-2, 4, 6, and 10: These measures are diagnostic, Qwest opposes using any diagnostic measures in the PAP. WorldCom may be OK with this as long as the diagnostic measures are evaluated relatively soon. MR-6 and OP-6a and b: Open issue. Parties should provide comment.	A. CP-3 and 5: WCom accepts Qwest willingness to adopt these measures as noted. In doing so, WCom requests documentation on how and when these measures will be included. B. As discussed WCom is willing to consider holding these measures with the understanding that as these measures are re-evaluated and changed from diagnostic to parity or benchmark that the diagnostic measures requested by WCom will then become affective in the plan. WCom wants to assure that the diagnostic measures are evaluated in a reasonable time frame and that the PBD measures are completely audited and released by the OSS PMA. C. <u>MR-6 – Mean Time to Restore</u> This measure is needed to ensure that Qwest has the proper incentive to complete trouble reports even after it has missed the expected repair time (24 hours for out of service conditions for non-

design services, 48 hours for all trouble reports for non-design services, and 4 hours for trouble reports for design services). The measure is needed to ensure that Qwest provides nondiscriminatory treatment to all customers even after it has missed the repair commitment. Other measures may track how well Qwest does in meeting repair commitments. This is the only measure that tracks how well Qwest does after Qwest misses the appointment.

**OP-6A & B Delayed Days due to non-facility and facility reasons**

When Qwest has missed an installation commitment, this measurement monitors the average time it takes Qwest to eventually complete that order. The results are disaggregated by misses caused by non-facility and facility reasons. The OP-6 measurement supplements the OP-3 Commitments Met measurement. A late order as a result of a Qwest problem will result in a missed commitment that will be captured in the OP-3 Measurement. However, the OP-6 measure was intended to provide Qwest with an incentive to complete that order as quickly as possible even after it has already missed the original commitment. An installation that is completed one day late may not result in a lost customer. However, an installation that is ten days

late may result in a lost customer and a damaged CLEC reputation. While not a true held order measurement, the OP-6 measurement does provide an indication of how long customers must wait after Qwest has missed its original commitment date and does Qwest eventually complete late orders as quickly for CLECs as it does for itself and its customers.

Qwest has argued that late orders will be captured in the OP-4 Installation Interval results. That argument is only partially true. The OP-4 measurement results in many more CLEC and retail orders being excluded from the results for the OP-3 measurement. In the OP-4 measurement, orders with CLEC requests that are longer than the standard interval are excluded from the results. In the OP-3 results, those orders are excluded. This results in higher quantities of results in OP-3 than OP-4 for the same service. For example, in the Qwest region in October of 2000, 46% of the unbundled analog loop orders in the OP-3 results were excluded from the OP-4 results. To ensure that Qwest's total performance in completing delayed orders is monitored, the OP-4 measurement is a poor and incomplete substitute for the OP-6 measurement. Including the OP-6 measurement in the performance incentive plan is necessary

		<p>Qwest should propose change management measurements for the PIDs that will be utilized for the PAP. AZ TAG should review and adopt change management PIDs. Qwest has committed to develop these PIDs.</p>	<p>to ensure that Qwest has the proper incentives to complete late orders. WCom would like to get a reasonable date as to when Qwest will have proposed Change Management measures for the PIDs that will be utilized for the PAP.</p>
<p>PAP-2 Measurement of change management process has not been discussed. Texas has two measurements: 1. % of timely and compliant change notices 2. Timely resolution of significant software failures related to releases</p>		<p>Qwest has agreed to all changes from the Texas 6-month review except one: the provision for root cause analysis after missing a measure for 2 consecutive months. WorldCom wants some kind of root cause analysis/investigation. This is still an open issue. What should the trigger be? What kind of investigation is needed? Parties should comment on this.</p>	<p>WCom believes the root cause analysis after two months of failure is appropriate. It would also be in Qwest's interest to want to stem the problem before remedies increase into third-month duration levels. The root cause of what is causing the performance failure is needed to resolve it. The investigation needs to be thorough to the extent that it uncovers whether this is a problem with a system, lack of human resources, training deficiencies or other cause of non-parity performance.</p>
<p>PAP-3 Six months review in Texas has led to changes in the SBC PAP.</p>		<p>Open issue. Parties are to comment further on this. Qwest will attempt to obtain data from Randy Disart that can demonstrate how the K-table actually works in Texas. Qwest will provide additional comment on why K-table as specified in Texas should be adopted. Z-Tel and WCOM will offer proposal for a "balanced K-table" and file comments on it.</p>	<p>As previously stated Qwest's proposed use of the K Table allows for excessive forgivenesses. Qwest's use of the K Table ignores the statistical underpinnings that determine the "appropriate" number of forgivenesses, and inflate the number of forgivenesses they demand with no obvious basis whatsoever. Random variation and its associated forgivenesses exploit Type I error but ignore the possibility of Type II error. This would lead to Qwest not having to pay any penalty when they are actually providing CLECs with discriminatory service levels.</p>
<p>PAP-4 Appropriateness of the K-table.</p>			

			<p>If one accepted the K Table concept, then CLECs should be able to demand an adjustment monthly for the 5% or greater chance of Type II errors through a similar table. In that case, WCom would support the balanced K table in Z-Tel's proposal. However, in light of weighing the complexity versus the actual forgivenesses that would be allowed with the balanced k, WCom proposes that the best approach is to reject the K Table in its entirety.</p> <p>If the commission decides not to reject the k table and not to use a balanced k table (including both type I and type II errors) then it should consider limits on sample sizes, z score levels, or means differences that should not be forgiven. No repeated failure for a measure should be forgiven as the repetition makes it unlikely that the failure was random.</p> <p>Again, these arguments and a more detailed analysis of forgivenesses is presented in WCom's filing of Dr. John Jackson's paper on "Random Variation, Forgivenesses, and K-Tables".</p>
<p>PAP-5</p>	<p>Dispute concerning use of cap for penalties. Z-Tel argues against a cap, or at least for an increase. WorldCom is against a fixed CAP but would accept a CAP of 44% of net revenues. Qwest argues for cap proposed</p>	<p><b>Impasse.</b> Z-Tel will provide basis for statement "you can't reach cap". CLECs to provide support for a proposed increase.</p>	<p>Again, WCom proposes an initial review threshold of 44%. This is based on the post-271 remedial actions of the FCC and New York Public Service Commission that raised the total remedies for Verizon (Bell Atlantic)</p>

	<p>in plan (based on SBC).</p>		<p>New York poor performance to 44% of net revenue. If and when the review threshold is reached, the Commission would then have the opportunity to apply additional remedies. Our plan does not propose a remedy cap because a cap can reduce the effectiveness of the remedy plan with no offsetting benefits. A firm cap makes it easier for Qwest to judge whether the costs and benefits of not fixing the problem outweigh the remedies at risk. The review threshold approach makes it harder for Qwest to quantify its risks, yet still protects Qwest with the commission's judgement about what remedy level is reasonable in light of the specific circumstances involved.</p>
<p>PAP-6</p>	<p>Other proposed PAP changes:</p> <ul style="list-style-type: none"> <li>• Unused monthly cap should roll forward</li> <li>• There should be a minimum per occurrence penalty.</li> <li>• Penalties for repeat monthly occurrences should be accelerated.</li> <li>• There should be direct payment to CLEC in lieu of bill credits.</li> </ul>	<ul style="list-style-type: none"> <li>• Unused monthly cap should roll forward: WorldCom will take this back.</li> <li>• There should be a minimum per occurrence penalty. Z-Tel and WorldCom have questions about how penalty is applied they will take this back.</li> <li>• Penalties for repeat monthly occurrences should be accelerated. Parties agree on first 6 months, should penalties increase after that? Open issue. Parties should comment. WCOM and Ztel agreed to take back.</li> <li>• There should be direct payment to CLEC in lieu of bill credits. CLECs want payments, Qwest wants credits, this issue is at <b>impasse</b>.</li> </ul>	<p>A. If the Qwest language means that the unused monthly balance keeps rolling forward beyond just the subsequent month, then this is acceptable to WCom.</p> <p>Again, WCom opposes the use of any fixed caps. The Qwest plan is further weakened by the imposition of caps on the per-occurrence payments (in addition to the overall plan cap). To the extent that per-occurrence payments amount to an appreciable amount, a per-measurement cap would reduce the impact to Qwest. The reason for rejecting a remedy cap is because a cap can reduce the effectiveness of the remedy plan with</p>

			<p>no offsetting benefits. A firm cap makes it easier for the ILEC to judge quickly whether the costs and benefits of not fixing the problem outweigh the remedies at risk. WCom opposes per measure or monthly caps that ensure the full force of even a capped plan are never reached because the available monies do not carry over into subsequent months.</p> <p>Even with no caps or firm caps set very high with no per measure or per CLEC caps that limit the ability to reach these caps, per occurrence remedies can be set so low that the cap would never be reached based on the level of the remedy and the amount of activity in the marketplace because of past hindrances to competition</p> <p>B. The problem with discriminating against small order counts is that they will never produce much in the way of remedy payments. However, this discrimination may not have small consequences and may be a potent impediment to competition. A simple solution is to incorporate a minimum remedy.</p>
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WorldCom accepts the minimum penalty level with no restrictions on sample size or products as set out by Z-Tel's proposal.

Qwest's 11/13 proposed changes in section 10.0 are a step in the right direction but is very limited. Monthly volumes are limited to less than 100. In addition, the qualify performance sub-measurements are limited to 7 measures and 3 product types.

C. This is an issue that the CLECs brought up as a shortcoming of the Qwest plan. It is unclear why Qwest would be ok with escalating payments but limited these escalating payments to 6 months. Therefore, it seems that Qwest is the party that needs to address this issue. WCom's plan addresses duration in an effort to discourage repeated non-conformance. Payment levels depend upon the number of consecutive months of non-conforming performance. Repeated non-conformance indicates that payment levels are too low to ensure parity or benchmark performance. By using duration factors, the payments will continue to increase, incenting Qwest to provide conforming performance. Duration factors allow for payments to adjust to the appropriate effective level. It would no longer be effective, if we

allowed payments to stop escalating after the sixth month as in Qwest's plan. A cap of this nature would reduce the effectiveness of the remedy plan with no offsetting benefits. Stopping escalating payments after 6 months makes it easier for Qwest to judge whether the costs and benefits of not fixing the problem outweigh the remedies at risk and severely reduces the effectiveness of having escalating payments.

D. WCom does believe that payments to CLECs should be made by check by the end of the month following the data report (e.g. June data, reported in July, remedies paid by August 31). An invoice would accompany the payment explaining the calculation of each submetric missed (base and any minimum, magnitude or duration remedies would be specified). Payment by check is necessary in order to ensure certain payment and is easier for the CLECs to administer and track. Bill credits are inappropriate because they are not easily traceable back to a specific CLEC account for credit, are less visible and hence less motivating to Qwest executives, and are hard to track when Qwest billing is erratic or

			<p>subject to numerous billing disputes. Remedies for prior periods also can potentially be greater than the bill for a given month. It is counterintuitive to require CLECs to buy additional services from a vendor to receive full compensation for past inferior performance. Why have two different payment systems if Qwest is able to make direct payment if greater than bill and for Tier 2 payments?</p>
PAP-7	<p>Three plans have been presented: Qwest, CLEC and Z-Tel (Also SBC, on which Qwest plan is based)</p>	<p>Parties have agreed to use Qwest's (SBC based) plan as the starting point for discussion.</p>	<p>Agreed for this collaborative.</p>
PAP-8	<p>What would penalty results be if a simulation using Qwest performance data were run?</p>	<p>Qwest should apply its data to its proposed plan to see results (ACC request) (Z-Tel offered to simulate Qwest.) Parties are still working on this.</p>	<p>As discussed in the last workshop, WCom would like to see Qwest apply its data to its proposed plan to see actual results.</p>
PAP-9	<p>How are measurements determined to be Tier-1 or Tier-2? How are measurements determined to be Low, Med., or High?</p>	<p>SBC to find out how Texas was determined. CLECs and Qwest to agree on assignments of measurements to categories. Parties agree to look at this issue when simulation data is available and/or at the 6-month review. WorldCom take back to review current measurement classifications.</p>	<p>WCom proposes that CLECs resolve this jointly and get back to the commission with a proposal. The priority of various metrics and products is constantly changing. If the CLECs must rank these product, the commission must reserve the right to reclassify measures when it sees that the "low" and "medium" weighted metrics are subject to chronic problems that are not being fixed because the remedies are too low even with the duration ramp ups.</p>
PAP-	<p>Is a severity factor needed? How should it</p>	<p>Open issue. Parties should provide</p>	<p>As discussed, Qwest's plan does not</p>

<p>10</p>	<p>apply to the proposed plan?</p>	<p>comments.</p>	<p>adequately take into account the severity of poor performance. Payment levels in the CLEC plans depend on the severity of the non-conformance with payments escalating as the level of non-conformance increases. Severe or repeated non-conformance indicates that payment levels are too low to ensure parity or benchmark performance. By using severity factors, the payments will continue to increase, incenting Qwest to provide the required conforming performance. WCom support's Z-Tel's proposal for increasing remedies for severity and duration in its Modified Qwest proposal.</p>
<p>PAP-11</p>	<p>Audits. WorldCom wants audits per their 9/26/00 Joint Proposal filing. Qwest believes that 6-month reviews will serve the purpose of audits.</p>	<p>Open issue. Qwest has requested more detail on WorldCom's proposal. WorldCom take back: what do they want relative to the audit CGE&amp;Y is now doing, what should be audited, and how often?</p>	<p>Annual comprehensive metric audits and occasional mini-audits of a few metrics or metric domains are needed to ensure the reliability of reporting. The third-party OSS generally only checks the math of calculations, exclusions, adherence to business rules, etc. As KPMG states below in the executive summary to its recently released Pennsylvania OSS test final report, p. 5:</p> <p><i>We have not conducted an audit or review of the historical data provided to us in accordance with generally accepted auditing procedures and/or standards promulgated by the American Institute of Certified Public Accountants (AICPA). We express no opinion or offer any assurance with respect to the accuracy of the</i></p>

			<p><i>aforementioned historical data. KPMG Consulting makes no representation nor has any obligation with reference to any events or transactions occurring subsequent to the date of this report.</i></p> <p><i>Final Report as of December 22, 2000 Published by KPMG Consulting</i></p> <p>Even though Telcordia reviewed selected SBC-TX metric reporting in its third-party OSS test, an FCC required audit of metric reporting by Ernest and Young found that a subset of the Texas metrics reported to the FCC as an SBC-Ameritech merger condition did not adhere to business rules. Leading to the Commission's issuance of a notice of forfeiture (See attachment I).</p> <p>None of the Third-Party OSS tests so far have examined the accuracy of the data reported. Are the exclusions coded properly? A few wrongly coded "customers not ready" or CPE problems can lead to passing results for a metric that should have been failures. Is the data reported complete or are the worse cases missing? This clearly can lead to misreporting of results.</p> <p>As one can see from the attached CWA survey (Attachment II), required by the New York PSC as part of its end user</p>
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			<p>performance improvement plan, there are many ways that data can be made to show better performance than what actually occurred. Therefore, WorldCom requests comprehensive annual audits involve CLECs in developing of the audit plan at which concerns about accuracy and getting to the underlying issues are addressed. This would be in addition to checking if the reporting is true to business rules, calculations, exclusions and disaggregation requirements of the PIDs. WCom stands by the audit proposal outlined in detail in our 9/25/00 filing. The Florida staff recently went beyond WCom's proposal that the first three annual audits be paid for by the ILEC subject to reevaluation of whether future ILEC-funded audits are required. The staff proposed that the first five audits be paid for by BST (See Attachment III). Also included is the IN partial settlement where AIT agreed to pay for the first audit and to the same mini-audit proposal as proposed by WCom. (See Attachment IV).</p>
<p>PAP-12</p>	<p>Tier 2 payments. WorldCom and Z-Tel oppose Qwest's Tier 2 proposal.</p>	<p>Open issue. WorldCom take back: Exactly how does WorldCom want the Tier 2 penalties structured? This includes the escalation of Tier 2 payments, the calculation of the per-occurrence amounts, and other proposed changes.</p>	<p>Assessing Tier II remedies, paid to the State, is identical in structure to the Tier I remedies only that the aggregate (or pool) of CLEC data is used. The pooled CLEC is treated as any other CLEC, but all remedy dollars go directly to the State Treasury or Corporation Commission for administrative costs of the performance plan, including audits. In no case should Qwest benefit by receiving any</p>

<p>PAP-13</p>	<p>Should penalties fall back to their original amount after 2 months of compliance? Should repeated occurrences cause fall backs to escalate to higher levels?</p>	<p>Open issue. Parties should provide comments.</p>	<p>funding from the state allocation.</p> <p>Plans submitted by CLECs address both severity and duration in an effort to discourage severe or repeated non-conformance. Payment levels depend on the severity of the non-conformance with payments escalating as the level of non-conformance increases. In addition, payment levels depend upon the number of consecutive months of non-conforming performance. Severe or repeated non-conformance indicates that payment levels are too low to ensure parity or benchmark performance. By using severity and duration factors, the payments will continue to increase, incenting Qwest to provide conforming performance. Severity and duration factors allow for payments to adjust to the appropriate effective level. It would no longer be effective, if we allowed payments to return to their original base amount. It is important to show that Qwest has actually fixed the problem rather than achieving a single one-month fix or a fluke. Therefore, WCom requires more than just one month of compliant performance before falling back to their original levels. WCom has already reduced the number of consecutive months of compliant performance needed before falling back to the initial, un-factored level from 3 months to 2 months. Again, if repeated disparity is observed, the remedy amount is still not</p>
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<p>PAP-14</p>	<p>Limitations of plan.</p>	<p>WorldCom take back: clarify WorldCom's position on this issue.</p>	<p>adequate to incent compliant performance. Therefore, if either the severity or duration factors are invoked again, the highest factored payment needs to become the base penalty to be effective.</p>
<p>13.1 WCom believes that there should be acceptance of plan by the state prior to requesting 271 approval to enforce market opening obligations and to test plan the plan. However, at a minimum a plan should be established and accepted by the state prior to recommending 271 approval and the plan would then be enforced simultaneously with 271 approval. The GA Commission recently decided that BST's self-executing remedy plan should go into effect 45 days from issuance of order.</p> <p><i>BellSouth maintains that remedies should only be adopted to prevent backsliding once BellSouth has entered the long distance market. Yet avoiding backsliding is only one of the purposes served by a remedies plan. By delaying adoption of a penalty plan until BellSouth enters the long distance market, the Commission would forego the opportunity to enable more rapid development of competition. At the hearing, many</i></p>			<p>13.1 WCom believes that there should be acceptance of plan by the state prior to requesting 271 approval to enforce market opening obligations and to test plan the plan. However, at a minimum a plan should be established and accepted by the state prior to recommending 271 approval and the plan would then be enforced simultaneously with 271 approval. The GA Commission recently decided that BST's self-executing remedy plan should go into effect 45 days from issuance of order.</p> <p><i>BellSouth maintains that remedies should only be adopted to prevent backsliding once BellSouth has entered the long distance market. Yet avoiding backsliding is only one of the purposes served by a remedies plan. By delaying adoption of a penalty plan until BellSouth enters the long distance market, the Commission would forego the opportunity to enable more rapid development of competition. At the hearing, many</i></p>

			<p><i>CLECs testified that they are currently experiencing problems with the quality of service they are receiving from BellSouth. These problems could make it more difficult for CLECs to attract and retain customers. An appropriate penalty plan will further encourage BellSouth to provide nondiscriminatory service during the critical early stages of competition, while providing some compensation to CLECs for the additional costs they incur when BellSouth's performance falls short. The Commission finds that the remedy plan shall go into effect 45 days from issuance of order. This time will allow BST to put statistical methods and the remedy plan into operation. (p. 22).</i></p> <p>Georgia PSC's DOCKET NO. 7892-U Order in re: Performance Measurements For Telecommunications Interconnection, Unbundling And Resale Released 1/16/01.</p> <p>13.2 Commission should make effective upon its order. Otherwise CLECs would experience delays if required to incorporate into Interconnection Agreements before becoming effective. It is not reasonable to expect that a CLEC receiving discriminatory service</p>
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from Qwest be obligated to take legal steps to receive restitution. The FCC has made it clear that Qwest provide only non-discriminatory service to allow CLECs a meaningful opportunity to compete.

13.3 The burden is on Qwest to prove Force Majeure events. Qwest should be responsible for all Qwest retained vendors issues but not CLEC or third party vendors. SWB TX included all vendors not just clearing house.

13.4 The results of the PAP are in fact evidence that Qwest has discriminated against CLECs. They may not prove that the discrimination was intentional but they do show the CLEC received worse service than Qwest or its affiliates.

13.5 Payments made pursuant to this PAP are in fact intended to be a remedy for harms to the CLEC and a counterweight to the incentive and ability of a near monopolist to discriminate.

13.6 WCom disagrees with limits on its right to pursue payments beyond the PAP when they are warranted by circumstances. Qwest is free to argue when we do so, that PAP payments are



Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, D.C. 20554

In the Matter of	)	
	)	File No. EB-00-IH-0432
SBC Communications, Inc.	)	
	)	NAL/Acct. No. 200132080011
Apparent Liability for Forfeiture	)	

**NOTICE OF APPARENT LIABILITY FOR FORFEITURE**

Adopted: December 19, 2000

Released: December 20, 2000

By the Chief, Enforcement Bureau:

**I. INTRODUCTION**

1. In this Notice of Apparent Liability for Forfeiture (NAL), we find that SBC Communications, Inc. (SBC) has apparently violated certain of the conditions that the Commission imposed pursuant to its approval of the merger application of Ameritech Corp. (Ameritech) and SBC.<sup>1</sup> In particular, it appears that, in seven of its in-region states and for a period of up to 13 months, SBC<sup>2</sup> failed to report certain performance data in accordance with the published Business Rules adopted in the Carrier-to-Carrier Performance Plan that SBC agreed to undertake as part of the merger conditions adopted in the *SBC/Ameritech Merger Order*.

2. The Carrier-to-Carrier Performance Plan is central to achieving the public interest goals enumerated in the *SBC/Ameritech Merger Order*, including that of ensuring open local markets by monitoring the quality of SBC's service to other telecommunications carriers.<sup>3</sup> The Commission adopted the Performance Plan as a means to ensure that "SBC/Ameritech's service to telecommunications carriers will not deteriorate as a result of the merger and the larger firm's increased incentive and ability to discriminate and to stimulate the merged entity to adopt 'best practices' that clearly favor public rather than private interests..."<sup>4</sup> Based upon our review of the facts and circumstances surrounding this matter, we find that SBC is apparently liable for a forfeiture in the amount of eighty eight thousand dollars (\$88,000.00).

<sup>1</sup> Applications of Ameritech Corp., Transferor, and SBC Communications, Inc., Transferee, For Consent to Transfer Control of Corporations Holding Commission Licenses and Lines Pursuant to Sections 214 and 310(d) of the Communications Act and Parts 5, 22, 24, 25, 63, 90, 95, and 101 of the Commission's Rules, CC Docket 98-141, *Memorandum Opinion and Order*, 14 FCC Rcd 14712, 14856 (1999) ("*SBC/Ameritech Merger Order*")

<sup>2</sup> SBC refers to SBC Communications, Inc. and all its affiliates, including its incumbent LECs.

<sup>3</sup> *SBC/Ameritech Merger Order*, 14 FCC Rcd 14856, 14867.

<sup>4</sup> *SBC/Ameritech Merger Order*, 14 FCC Rcd 14867.

## II. BACKGROUND

3. SBC is an incumbent local exchange carrier (ILEC) that provides local telephone service in 13 states, including Arkansas, Kansas, Missouri, Oklahoma, Texas, California, Nevada, Illinois, Michigan, Indiana, Ohio, Wisconsin, and Connecticut. At the end of 1999, SBC served nearly 60 million local exchange access lines in its 13-state region, and served customers in 23 countries.<sup>5</sup> SBC also provides in-region interLATA, wireless, Internet access, out-of-region interLATA, cable and wireless television, security monitoring, and directory publishing services.<sup>6</sup> In 1999, SBC had total operating revenues of more than \$49 billion.<sup>7</sup>

4. In the *SBC/Ameritech Merger Order*, the Commission concluded that the merger of SBC and Ameritech posed significant public interest harms that were not mitigated by the proposed transaction's potential public interest benefits.<sup>8</sup> The Commission, however, also found that the voluntary conditions submitted by the Applicants, and as modified by the Commission, would alter the public interest balance by mitigating substantially the potential public interest harms while providing additional public interest benefits.<sup>9</sup> The Commission explained that these merger conditions were designed to accomplish five primary public interest goals: (a) promoting equitable and efficient advanced services deployment; (b) ensuring open local markets; (c) fostering out-of-territory competition; (d) improving residential phone service; and (e) ensuring compliance with and enforcement of the conditions.<sup>10</sup> These conditions would remain in effect for 36 months after release of the *SBC/Ameritech Merger Order*.<sup>11</sup>

5. The Carrier-to-Carrier Performance Plan is part of the package of conditions designed to foster the public interest goal of opening local markets to competition by ensuring that SBC's service to competitors does not deteriorate as a result of the merger.<sup>12</sup> The Performance Plan requires SBC to file with the Commission and each of the relevant state commissions, on a monthly basis, performance data reflecting 20 different categories for each of SBC's 13 in-region states.<sup>13</sup> The data in the 20 categories reflect SBC's performance in responding to requests for

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<sup>5</sup> SBC 1999 Annual Report at 6.

<sup>6</sup> *SBC 1999 Annual Report* at 4.

<sup>7</sup> *SBC 1999 Annual Report* at 76.

<sup>8</sup> *SBC/Ameritech Merger Order*, 14 FCC Rcd 14854.

<sup>9</sup> *SBC/Ameritech Merger Order*, 14 FCC Rcd 14855.

<sup>10</sup> *SBC/Ameritech Merger Order*, 14 FCC Rcd 14856.

<sup>11</sup> *SBC/Ameritech Merger Order*, 14 FCC Rcd 14868.

<sup>12</sup> *SBC/Ameritech Merger Order*, 14 FCC Rcd 14867.

<sup>13</sup> See *SBC/Ameritech Merger Order*, 14 FCC Rcd 14867, Appendix C at ¶ 24, and Attachment A at ¶ 13. The categories cover key aspects of pre-ordering, ordering, provisioning, maintenance and repair associated with UNEs, interconnection, and resold services. *Id.* SBC is required to file this report on the 20<sup>th</sup> of each month. The filing of performance data for the states in the original Southwestern Bell Telephone (SWBT) region (Texas,

facilities and services from its rivals, as well as its end-user customers.<sup>14</sup> The Business Rules accompanying the Carrier-to-Carrier Performance Plan describe the specific data requirements and measurement standards for each performance measurement.<sup>15</sup> This condition also requires that SBC make voluntary incentive payments to the U.S. Treasury in the event that it fails to meet designated performance thresholds.<sup>16</sup> The merger conditions also require SBC to retain an independent auditor to provide a thorough and systematic review of SBC's compliance with the conditions and to determine the sufficiency of its internal controls.<sup>17</sup> The Commission approved SBC's retention of Ernst and Young, LLC as its independent auditor.<sup>18</sup>

6. On August 31, 2000, Ernst and Young submitted its attestation report regarding SBC's compliance with the Commission's merger conditions from October 8, 1999 through December 31, 1999.<sup>19</sup> The independent auditor's report is confined to the statements made by SBC in its assertion, in the accompanying Report of Management on Compliance with the Merger Conditions, that it had complied with the merger conditions set forth in the *SBC/Ameritech*

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Oklahoma, Kansas, Missouri, and Arkansas) was required beginning on November 1, 1999, for the months of August and September, on November 20<sup>th</sup> for the month of October, and then on 20<sup>th</sup> of each month thereafter for the previous month's data. The performance data for the Pacific Bell (PacBell) and Nevada Bell states of California and Nevada had to be filed beginning on December 1, 1999, for the months of September and October, on December 20<sup>th</sup> for the month of November, and on the 20<sup>th</sup> of each subsequent month. The Commission required SBC to file similar data for the states in the Ameritech region (Illinois, Ohio, Wisconsin, Indiana and Michigan) in two phases with the filing of the first set commencing on January 6, 2000, and the second set starting on March 6, 2000. The filing of performance data in the Southern New England Telephone region of Connecticut began on October 8, 2000. The subsequent monthly reports for the Ameritech states and Connecticut are also due on the 20<sup>th</sup> of each month. See *SBC/Ameritech Merger Order*, Appendix C at ¶ 24.

<sup>14</sup> *SBC/Ameritech Merger Order*, 14 FCC Rcd 14867.

<sup>15</sup> See *SBC/Ameritech Merger Order*, Appendix C, Attachments A-2a, "SBC/Ameritech Performance Measurements Business Rules (except California and Nevada)," and A-2b, "SBC/Ameritech Performance Measurements Business Rules (California and Nevada)." The applicable business rules for performance measures in all states except for California and Nevada are those developed in a Texas collaborative process involving SBC's application for in-region, interLATA authorization. The performance measures in California and Nevada are reported using rules that were developed in a collaborative process in California. *SBC/Ameritech Merger Order* at ¶ 379.

<sup>16</sup> See *SBC/Ameritech Merger Order*, Appendix C, Attachment A-3, "Calculation of Parity and Benchmark Performance and Voluntary Payments," and Attachment A-4, "Voluntary Payments for Performance Measurements." The amount of the payments varies according to the level and significance of discrimination detected. *SBC/Ameritech Merger Order*, 14 FCC Rcd 14867. SBC is required to make its first payments to the U.S. Treasury for failing to meet the performance thresholds during the months of August, September, and October of 2000 no later than December 20, 2000. The reported data form the basis for calculating the payments.

<sup>17</sup> *SBC/Ameritech Merger Order*, Appendix C at ¶ 67.

<sup>18</sup> See Aug. 24, 1999 Letter from Robert C. Atkinson, Deputy Chief, Common Carrier Bureau, to Charles Foster, Group President, SBC.

<sup>19</sup> See Aug. 31, 2000 Report of Independent Auditors, Ernst & Young, LLP (*Auditor's Report on Compliance*). This report only covered SBC's conduct in Texas, Oklahoma, Kansas, Missouri, and Arkansas, California and Nevada.

*Merger Order*, except as noted therein, and had corrected the noted deficiencies.<sup>20</sup> The auditor's report, along with the underlying data in SBC's monthly filings, revealed numerous instances of SBC's failure to comply with the requirements of the Carrier-to-Carrier Performance Plan through the submission of inaccurate performance data.<sup>21</sup> In particular, the record shows that, in submitting data for 13 of the performance measurements for Texas, Oklahoma, Kansas, Missouri, Arkansas, California, and Nevada, SBC continuously used incorrect benchmarks and disaggregation levels, and also excluded key data for a period of up to 13 months.<sup>22</sup>

7. The performance measurements at issue in this NAL concern: Percent Firm Order Confirmations (FOCs) Returned Within "X" Hours (PM 1); Average Response Time for OSS Pre-Order Interfaces (PM 2); Order Process Percent Flow Through (PM 3); Percent SWBT Caused Missed Due Dates (PM 4); Average Delay Days for SWBT Caused Missed Due Dates (PM 7); Average Response Time for Loop Qualification Information (PM 9); Mean Time to Restore (PM 12); Trouble Report Date (PM 13); Average Trunk Restoration Interval (PM 14); Percent Trunk Blockage (PM 15); Percent Missed Collocation Due Dates (PM 17); Billing Timeliness (PM 18); and OSS Interface Availability (PM 19).

8. Because the Commission's ability to detect potential discriminatory conduct depends upon SBC's strict compliance with the approved terms and conditions of the Carrier-to-Carrier Performance Plan, failure to report the performance data in accordance with the published Business Rules could compromise the effectiveness of the merger conditions in ensuring open local markets.<sup>23</sup> The Carrier-to-Carrier Performance Plan is, therefore, a key aspect of the Commission's oversight of SBC's behavior towards its competitors.

### III. DISCUSSION

#### A. Violations

9. Based on the facts set forth below, we find that SBC is apparently liable for a forfeiture for willful and repeated violation of the merger conditions adopted in the

<sup>20</sup> See Aug. 31, 2000 Report of Management on Compliance with the Merger Conditions (*Management's Assertion on Compliance*). In its statement, SBC stated that it had corrected some of the deficiencies by the time of the release of the auditor's report and had scheduled correction of other deficiencies prospectively. Although the independent auditor has not provided us with confirmation of the implementation of any corrections to date, the Common Carrier Bureau has been able to confirm corrections of deficiencies in the use of incorrect benchmarks and disaggregation levels from SBC's monthly filings. The monthly filings, however, do not inform us whether the deficiencies involving the exclusion of data have been corrected. We are relying on SBC's representations in its statement regarding the date of correction of the deficiencies involving the exclusion of data.

<sup>21</sup> *Auditor's Report on Compliance* at 2. See also SBC's Initial, Monthly, and Interim Performance Data Submissions, Nov. 1, 1999, through Nov. 20, 2000.

<sup>22</sup> See *Management's Assertion on Compliance*, Attachment A. Although the Auditor's Report only covered SBC's performance in 1999, the attached Management's Assertion on Compliance covers SBC's correction of the deficiencies through August, 2000.

<sup>23</sup> *SBC/Ameritech Merger Order*, 14 FCC Rcd 14867, 14868.

*SBC/Ameritech Merger Order*. For a period of up to 13 months from November, 1999 through November, 2000, SBC apparently violated its obligation to report accurately the data sought by the performance measurements in the Carrier-to-Carrier Performance Plan for Texas, Oklahoma, Kansas, Missouri, Arkansas, California, and Nevada. We find that SBC's failure to report this information accurately is willful and repeated. The term "willful" means that the violator knew it was taking the action in question, irrespective of any intent to violate the Commission's rules, and repeated means more than once.<sup>24</sup> Furthermore, a continuing violation is "repeated" if it lasts more than one day.<sup>25</sup>

10. SBC, in its Assertion on Compliance, does not dispute that it gathered and reported the data sought by the specific performance measurements discussed below in a manner contrary to the Business Rules for those measurements.<sup>26</sup> Although we are aware that a few of the violations occurred as a result of SBC's application of different standards, which were required by the Texas and California business rules, SBC was, nevertheless, obligated to seek the Commission's advice and approval before modifying the Commission's Business Rules.<sup>27</sup> The merger conditions require that no changes be implemented until the Common Carrier Bureau is notified and directs SBC to implement such changes.<sup>28</sup> Given the importance of maintaining the integrity of the Carrier-to-Carrier Performance Plan, we cannot excuse SBC's failure to diligently follow the Business Rules set forth in the *SBC/Ameritech Merger Order*.

11. Consistent with the Commission's determination in the *SBC/Ameritech Merger Order* that our monitoring of SBC's performance through these measurements is a key tool in offsetting or preventing some of the potential harmful effects of that merger,<sup>29</sup> we find SBC's lack of diligence in following the Business Rules to be significant. One of the goals behind establishing detailed Business Rules at the outset was to have the Carrier-to-Carrier Performance Plan work in a self-executing manner in order to ensure timely disclosure of accurate performance data and submission of any required payments. This would enable Commission staff to focus its resources on analyzing the results of the data, rather than monitoring the gathering of the data. SBC's failure to follow the Business Rules could lead to inaccurate and unreliable results which would compromise the Commission's ability to monitor effectively

<sup>24</sup> See *Southern California Broadcasting Co.*, 6 FCC Rcd 4387, 4388 (1991); see also *Hale Broadcasting Corp.*, 79 FCC 2d 169, 171 (1980).

<sup>25</sup> *Southern California Broadcasting Co.*, 6 FCC Rcd 4388.

<sup>26</sup> *Management's Assertion on Compliance* at 1, 3, and Attachment A.

<sup>27</sup> *Management's Assertion on Compliance*, Attachment A at 13, ¶ e; 14, ¶ a; 15, ¶ b; 16, ¶¶ g and h. See also June 5, 2000 Letter from Chris Jines, Executive Director, Federal Regulatory, SBC, to Carol Matthey, Deputy Chief, Common Carrier Bureau. The Commission subsequently incorporated some aspects of the Texas Business Rules on May 1, 2000. See May 30, 2000 Letter from Carol Matthey, Deputy Chief, Common Carrier Bureau, to Marian Dyer, Vice President-Federal Regulatory, SBC.

<sup>28</sup> See *SBC/Ameritech Merger Order*, Appendix C, Attachment A at ¶ 4. See also May 30, 2000 Letter from Carol Matthey, Deputy Chief, Common Carrier Bureau, to Marian Dyer, Vice President-Federal Regulatory, SBC.

<sup>29</sup> *SBC/Ameritech Merger Order*, 14 FCC Rcd 14868.

SBC's conduct towards other carriers. For example, the use of less rigorous standards than those required under the designated business rules could mask material deficiencies in SBC's performance and ultimately undermine the voluntary payment scheme established in the merger conditions. The omission of key data could also lead to a "muddying" of the reported results. In addition, inaccurate results will make it difficult for CLECs to determine independently whether there are discrimination problems. Therefore, we must insist on rigorous adherence to the Carrier-to-Carrier Performance Plan.

12. The record evidences the following specific apparent violations by SBC of the Carrier-to-Carrier Performance Plan:

Apparent violations of PM 1 (Percent Firm Order Confirmations (FOCs) Returned Within "X" Hours) by SBC:

- For ten months from November 1, 1999, until August 31, 2000, SBC apparently violated the Business Rules for Performance Measurement 1<sup>30</sup> in the SWBT region by failing to report correctly the percent of FOCs timely returned by using the incorrect date, and standard (*i.e.*, 2:00), instead of military (*i.e.*, 14:00), time.<sup>31</sup> The use of standard time masked whether the return of FOCs occurred in the a.m. or p.m. and thereby potentially overstated the percent of FOCs timely returned.
- For three months from December 1, 1999, until February 20, 2000, SBC apparently violated the Business Rules for Performance Measurement 1<sup>32</sup> in the PacBell and Nevada Bell regions by overstating the percent of FOCs timely returned by excluding from the measurement the interval of time from the receipt of a fax request to the time the information was entered into the order entry system.<sup>33</sup>

Apparent violations of PM 2 (Average Response Time for OSS Pre-Order Interfaces)<sup>34</sup> by SBC:

<sup>30</sup> This performance measurement measures the percent of FOCs returned within a specific time frame from receipt of a complete and accurate service request to return of confirmation to CLEC. *SBC/Ameritech Merger Order*, Appendix C, Attachment A-2a at A-12.

<sup>31</sup> *Management's Assertion on Compliance*, Attachment A at 15, ¶ d. See also SBC Initial Performance Data Submission, Nov. 1, 1999; Aug. 31, 2000 letter and attached Interim Performance Data Submission, Aug. 31, 2000, from Chris Jines, Executive Director, Federal Regulatory, SBC, to Mark Stone, FCC.

<sup>32</sup> This performance measurement measures the average time from receipt of a service request to return of a FOC/Local Service Confirmation (LSC). *SBC/Ameritech Merger Order*, Appendix C, Attachment A-2b at A-52.

<sup>33</sup> *Management's Assertion on Compliance*, Attachment A at 16, ¶ f. See also SBC Initial Performance Data Submission, Dec. 1, 1999; SBC Monthly Performance Data Submission, Feb. 20, 2000.

<sup>34</sup> This performance measurement measures the average response time in seconds from the SWBT side of the Remote Access Facility (RAF) and return for pre-order interfaces (Verigate, DataGate and EDI where the pre-order functionality is integrated) by function. *SBC/Ameritech Merger Order*, Appendix C, Attachment A-2a at A-15.

- For six months from November 1, 1999, until April 17, 2000, SBC apparently violated the Business Rules for Performance Measurement 2 in the SWBT region by overstating its speed in assessing service availability by using a benchmark of 86,400 seconds, instead of 5.5 seconds.<sup>35</sup>
- For six months from November 1, 1999, until April 17, 2000, SBC apparently violated the Business Rules for Performance Measurement 2 in the SWBT region by failing to report accurately the response time for requests for customer service records by collecting the data into a single category, instead of disaggregating the data into two categories of "CSR Summary 1-30 Lines" and "CSR 31 Lines or more,"<sup>36</sup> thereby masking differences between the categories.

Apparent violation of PM 3 (Order Process Percent Flow Through)<sup>37</sup> by SBC:

- For nine months from November 1, 1999, until July 20, 2000, SBC apparently violated the Business Rules for Performance Measurement 3 in the SWBT region by failing to report accurately the percent of Mechanized Order Generator (MOG) eligible orders that progress through SBC's ordering system by disaggregating the data by OSS interface, rather than by service type,<sup>38</sup> thereby masking potential problems occurring within different types of services.

Apparent violations of PM 4 (Percent SWBT Caused Missed Due Dates) by SBC:

- For six months from November 1, 1999, until April 20, 2000, SBC apparently violated the Business Rules for Performance Measurement 4c<sup>39</sup> in the SWBT region by failing to report accurately the percent of missed due dates for installation of UNEs by disaggregating the data into two categories of field work and no field work, instead of a single UNE category.<sup>40</sup>

<sup>35</sup> *Management's Assertion on Compliance*, Attachment A at 13, ¶ b. See also SBC Initial Performance Data Submission, Nov. 1, 1999; SBC Interim Performance Data Submission, April 17, 2000.

<sup>36</sup> *Management's Assertion on Compliance*, Attachment A at 13, ¶ c. See also SBC Initial Performance Data Submission, Nov. 1, 1999; SBC Interim Performance Data Submission, April 17, 2000.

<sup>37</sup> This performance measurement measures the percent of orders or LSRs from entry to distribution that progress through SWBT ordering systems. *SBC/Ameritech Merger Order*, Appendix C, Attachment A-2a at A-17.

<sup>38</sup> *Management's Assertion on Compliance*, Attachment A at 13, ¶ d. See also SBC Initial Performance Data Submission, Nov. 1, 1999; June 20, 2000 letter and attached Interim Performance Data Submission, June 20, 2000, from Chris Jines, Executive Director, Federal Regulatory, SBC, to Anthony Dale, FCC.

<sup>39</sup> This performance measurement measures the percent of UNEs (8db loops are measured at an order level) where installations are not completed by the negotiated due date. *SBC/Ameritech Merger Order*, Appendix C, Attachment A-2a at A-20.

<sup>40</sup> *Management's Assertion on Compliance*, Attachment A at 13, ¶ e. See also SBC Initial Performance Data Submission, Nov. 1, 1999; SBC Monthly Performance Data Submission, April 20, 2000.

- For eight months from November 1, 1999, until June 20, 2000, SBC apparently violated the Business Rules for Performance Measurement 4c in the SWBT region by failing to report accurately the percent of missed due dates for installation of UNEs by excluding the data from two categories.<sup>41</sup>

Apparent violation of PM 7 (Average Delay Days for SWBT Caused Missed Due Dates) by SBC:

- For nine months from November 1, 1999, until July 20, 2000, SBC apparently violated the Business Rules for Performance Measurement 7c<sup>42</sup> in the SWBT region by failing to report accurately the average number of delay days on missed due dates for installation of UNEs by excluding the data from two categories.<sup>43</sup>

Apparent violations of PM 9 (Average Response Time for Loop Qualification Information) by SBC:

- For five months from December 1, 1999, until April 20, 2000, SBC apparently violated the Business Rules for Performance Measurement 9<sup>44</sup> in the PacBell and Nevada Bell regions by understating the average response time for providing loop qualification information for ADSL by excluding the data reflecting the time interval between receipt of a request for loop information and the submission of the request to the Outside Plant Engineer handling this request.<sup>45</sup>
- For four months from November 1, 1999, until February 20, 2000, SBC apparently violated the Business Rules for Performance Measurement 9<sup>46</sup> in the SWBT region by understating the average response time for providing loop qualification information for ADSL by excluding the data reflecting the time interval between receipt of a request for

<sup>41</sup> *Management's Assertion on Compliance*, Attachment A at 15, ¶ c. See also SBC Initial Performance Data Submission, Nov. 1, 1999; SBC Monthly Performance Data Submission, July 20, 2000.

<sup>42</sup> This performance measurement measures the average calendar days from due date to completion date on company missed UNEs (8db loops are measured at an order level). *SBC/Ameritech Merger Order*, Appendix C, Attachment A-2a at A-31.

<sup>43</sup> *Management's Assertion on Compliance*, Attachment A at 15, ¶ c. See also SBC Initial Performance Data Submission, Nov. 1, 1999; SBC Monthly Performance Data Submission, July 20, 2000.

<sup>44</sup> This performance measurement measures the average time required to provide loop qualification information to ADSL. *SBC/Ameritech Merger Order*, Appendix C, Attachment A-2b at A-84.

<sup>45</sup> *Management's Assertion on Compliance*, Attachment A at 16, ¶ g. See also SBC Initial Performance Data Submission, Dec. 1, 1999; SBC Monthly Performance Data Submission, April 20, 2000.

<sup>46</sup> This performance measurement measures the average time required to provide loop qualification for ADSL. *SBC/Ameritech Merger Order*, Appendix C, Attachment A-2a at A-33.

loop information and the submission of the request to the Outside Plant Engineer handling this request.<sup>47</sup>

Apparent violations of PM 12 (Mean Time to Restore) by SBC:

- For eight months from November 1, 1999, until June 5, 2000, SBC apparently violated the Business Rules for Performance Measurement 12b<sup>48</sup> in the SWBT region by failing to report accurately the mean time to restore design service by disaggregating the data into categories of dispatch and no dispatch, instead of a single category for design service.<sup>49</sup>
- For eight months from November 1, 1999, until June 5, 2000, SBC apparently violated the Business Rules for Performance Measurement 12c<sup>50</sup> in the SWBT region by failing to report accurately the mean time to restore UNE by disaggregating the data into categories of dispatch and no dispatch, instead of a single category for UNE service.<sup>51</sup>

Apparent violation of PM 13 (Trouble Report Date) by SBC:

- For nine months from December 1, 1999, until August 31, 2000, SBC apparently violated the Business Rules for Performance Measurement 13a<sup>52</sup> in the Nevada Bell region by failing to report accurately the frequency of customer trouble reports by using an incorrect number of UNEs in the denominator of the calculation of the trouble report rate.<sup>53</sup>

<sup>47</sup> *Management's Assertion on Compliance*, Attachment A at 14, ¶ a. See also SBC Initial Performance Data Submission, Nov. 1, 1999; SBC Monthly Performance Data Submission, Feb. 20, 2000.

<sup>48</sup> This performance measurement measures the average duration of network customer trouble reports for design service from the receipt of the customer trouble report to the time that the trouble report is cleared. *SBC/Ameritech Merger Order*, Appendix C, Attachment A-2a at A-40.

<sup>49</sup> *Management's Assertion on Compliance*, Attachment A at 13, ¶ e. See also SBC Initial Performance Data Submission, Nov. 1, 1999; June 5, 2000 letter and attached Interim Performance Data Submission, June 5, 2000, from Chris Jines, Executive Director, Federal Regulatory, SBC, to Carol E. Matthey, FCC.

<sup>50</sup> This performance measurement measures the average duration of network customer trouble reports for UNEs from the receipt of the customer trouble report to the time the trouble report is cleared excluding no access and delayed maintenance. *SBC/Ameritech Merger Order*, Appendix C, Attachment A-2a at A-41.

<sup>51</sup> *Management's Assertion on Compliance*, Attachment A at 13, ¶ e. See also SBC Initial Performance Data Submission, Nov. 1, 1999; June 5, 2000 letter and attached Interim Performance Data Submission, June 5, 2000, from Chris Jines, Executive Director, Federal Regulatory, SBC, to Carol E. Matthey, FCC.

<sup>52</sup> This performance measurement measures the total number of network customer trouble reports for POTS received within a calendar month per 100 access lines. *SBC/Ameritech Merger Order*, Appendix C, Attachment A-2b at A-99.

<sup>53</sup> *Management's Assertion on Compliance*, Attachment A at 14, ¶ i. See also SBC Initial Performance Data Submission, Dec. 1, 1999; Aug. 31, 2000 letter and attached Interim Performance Data Submission, Aug. 31, 2000, from Chris Jines, Executive Director, Federal Regulatory, SBC, to Mark Stone, FCC.

Apparent violation of PM 14 (Average Trunk Restoration Interval)<sup>54</sup> by SBC:

- For ten months, from December 1, 1999, until September 8, 2000, SBC apparently violated the Business Rules for Performance Measurement 14 in the PacBell region by failing to report accurately the average trunk restoration interval by disaggregating the data at a statewide level, rather than by market region,<sup>55</sup> thereby masking potential problems occurring at the market region level.

Apparent violation of PM 15 (Percent Trunk Blockage)<sup>56</sup> by SBC:

- For nine months from December 1, 1999, until August 31, 2000, SBC apparently violated the Business Rules for Performance Measurement 15 in the PacBell region by failing to report accurately the percent of trunk blockage by disaggregating the data at a statewide level, rather than by market region,<sup>57</sup> thereby masking potential problems occurring at the market region level.

Apparent violations of PM 17 (Percent Missed Collocation Due Dates)<sup>58</sup> by SBC:

- For eight months from November 1, 1999, until June 5, 2000, SBC apparently violated the Business Rules for Performance Measurement 17 in the SWBT region by failing to report accurately the percent of missed collocation due dates by disaggregating the data into additional categories of collocation (caged initial; caged augments; cageless initial; cageless augments; shared caged initial; shared caged augments; virtual initial; and virtual augments.), instead of limiting the disaggregation to the categories of physical, virtual, cageless, and additions.<sup>59</sup>

<sup>54</sup> This performance measurement measures the average time to restore service affecting new trunk groups. *SBC/Ameritech Merger Order*, Appendix C, Attachment A-2b at A-104.

<sup>55</sup> *Management's Assertion on Compliance*, Attachment A at 14, ¶ h. See also SBC Initial Performance Data Submission, Dec. 1, 1999; Sep. 8, 2000 letter and attached Interim Performance Data Submission, Sep. 8, 2000, from Chris Jines, Executive Director, Federal Regulatory, SBC, to Mark Stone, FCC.

<sup>56</sup> This performance measurement measures the percent of calls blocked on outgoing traffic from LEC end office to CLEC end office and from LEC tandem to CLEC end office. *SBC/Ameritech Merger Order*, Appendix C, Attachment A-2b at A-105.

<sup>57</sup> *Management's Assertion on Compliance*, Attachment A at 14, ¶ g. See also SBC Initial Performance Data Submission, Dec. 1, 1999; Aug. 31, 2000 letter and attached Interim Performance Data Submission, Aug. 31, 2000, from Chris Jines, Executive Director, Federal Regulatory, SBC, to Mark Stone, FCC.

<sup>58</sup> This performance measurement measures the percent of SWBT caused missed due dates for collocation projects. *SBC/Ameritech Merger Order*, Appendix C, Attachment A-2a at A-48.

<sup>59</sup> *Management's Assertion on Compliance*, Attachment A at 13, ¶ e. See also SBC Initial Performance Data Submission, Nov. 1, 1999; June 5, 2000 letter and attached Interim Performance Data Submission, June 5, 2000, from Chris Jines, Executive Director, Federal Regulatory, SBC, to Carol E. Matthey, FCC.

Apparent violation of PM 18 (Billing Timeliness)<sup>60</sup> by SBC:

- For 13 months from November 1, 1999, until at least November 20, 2000, SBC apparently violated the Business Rules for Performance Measurement 18 in the SWBT region by failing to report accurately billing timeliness by excluding the billing information for all provisioned UNEs.<sup>61</sup>

Apparent violations of PM 19 (OSS Interface Availability)<sup>62</sup> by SBC:

- For nine months from December 1, 1999, until August 30, 2000, SBC apparently violated the Business Rules for Performance Measurement 19 in the PacBell region by region by failing to report accurately on their web site the availability of OSS interface by failing to include the Z-scores for this measurement.<sup>63</sup>
- For three months from December 1, 1999, until March 20, 2000, SBC apparently violated the Business Rules for Performance Measurement 19 in the PacBell and Nevada Bell regions by overstating OSS interface availability by excluding system outage data.<sup>64</sup>

## B. Forfeiture Amount

13. In light of SBC's apparent willful or repeated failure to comply with the merger conditions in the *SBC/Ameritech Merger Order*, we find that a forfeiture is warranted. Section 503(b)(1) of the Act states that any person that willfully or repeatedly fails to comply with any provision of the Act or any rule, regulation, or order issued by the Commission, shall be liable to the United States for a forfeiture penalty.<sup>65</sup> For the time period relevant to this proceeding, section 503(b)(2)(B) of the Act authorizes the Commission to assess a forfeiture of up to \$110,000 for each violation, or each day of a continuing violation, up to a statutory maximum of \$1,100,000 for a single act or failure to act.<sup>66</sup> In determining the appropriate forfeiture amount,

<sup>60</sup> This performance measurement measures the length of time from the billing date to the time a wholesale bill is sent or transmitted (made available) to the CLECs. *SBC/Ameritech Merger Order*, Appendix C, Attachment A-2a at A-49.

<sup>61</sup> *Management's Assertion on Compliance*, Attachment A at 15, ¶ b. See also SBC Initial Performance Data Submission, Nov. 1, 1999.

<sup>62</sup> This performance measurement measures the percent of time OSS interface is available compared to scheduled availability. *SBC/Ameritech Merger Order*, Appendix C, Attachment A-2b at A-110.

<sup>63</sup> *Management's Assertion on Compliance*, Attachment A at 14, ¶ m. See also SBC Initial Performance Data Submission, Dec. 1, 1999; SBC Monthly Performance Data Submission, August 30, 2000.

<sup>64</sup> *Management's Assertion on Compliance*, Attachment A at 16, ¶ e. See also SBC Initial Performance Data Submission, Dec. 1, 1999; SBC Monthly Performance Data Submission, March 20, 2000.

<sup>65</sup> 47 U.S.C. § 503(b)(1)(B); see also 47 C.F.R. § 1.80(a)(2).

<sup>66</sup> 47 U.S.C. § 503(b)(2)(B); see also 47 C.F.R. § 1.80(b)(2).

we consider the factors enumerated in section 503(b)(2)(D) of the Act, including "the nature, circumstances, extent and gravity of the violation, and, with respect to the violator, the degree of culpability, any history of prior offenses, ability to pay, and such other matters as justice may require."<sup>67</sup>

14. SBC has submitted 13 monthly reports embodying one or more of the apparent violations detailed above and thus has committed 13 separate apparent violations of the *SBC/Ameritech Merger Order*. While several of the apparent violations discussed in this NAL clearly had the effect of casting SBC's performance in a more favorable light, all of the apparent violations we have discussed demonstrate that SBC repeatedly failed to implement the Business Rules as adopted by the Commission. Because section 503(b)(6) of the Act limits the Commission's jurisdiction over this cause of action to one year from the time the action accrued, our forfeiture calculation does not include a penalty for any violations that occurred during November and December of 1999. Therefore, for forfeiture purposes, SBC has committed 11 apparent violations of the *SBC/Ameritech Merger Order*.

15. Under the Commission's forfeiture guidelines, the base forfeiture amount for failure to file required forms or information is \$3000 per violation.<sup>68</sup> The Commission's rules, however, explicitly provide that the Commission and its staff may issue a higher or lower forfeiture than provided in the guidelines, as permitted by statute. We believe that an upward adjustment in the forfeiture amount is warranted in this case. As explained above, inaccurate reporting of performance data may compromise the effectiveness of the merger conditions in promoting open local markets. Moreover, we are faced here with noncompliance with a number of the reporting requirements in the *SBC/Ameritech Merger Order* over an extended period of time. Therefore, we will apply a forfeiture amount of \$8000 to each of the 11 violations described herein, and find SBC apparently liable for a forfeiture amount in the amount of \$88,000. We note that our imposition of a proposed forfeiture in this proceeding is independent of SBC's obligation to make voluntary payments for failure to perform according to the benchmarks and other parity guidelines set forth in Appendix C of the *SBC/Ameritech Merger Order*.<sup>69</sup>

#### IV. ORDERING CLAUSES

16. ACCORDINGLY, IT IS ORDERED THAT, pursuant to section 503(b) of the Act,<sup>70</sup> and section 1.80 of the Commission's Rules,<sup>71</sup> SBC Communications is HEREBY NOTIFIED of

<sup>67</sup> 47 U.S.C. § 503(b)(2)(D); see also *The Commission's Forfeiture Policy Statement and Amendment of Section 1.80 of the Commission's Rules*, 12 FCC Rcd 17087, 17100 (1997) ("*Forfeiture Policy Statement*"); recon. denied 15 FCC Rcd 303 (1999); 47 C.F.R. § 1.80(b)(4).

<sup>68</sup> *Forfeiture Policy Statement*, 12 FCC Rcd 17114.

<sup>69</sup> See *SBC/Ameritech Merger Order*, Appendix C, Attachment A-3, "Calculation of Parity and Benchmark Performance and Voluntary Payments," and Attachment A-4, "Voluntary Payments for Performance Measurements."

<sup>70</sup> 47 U.S.C. § 503(b).

<sup>71</sup> 47 C.F.R. § 1.80.

its APPARENT LIABILITY FOR FORFEITURE in the amount of eighty eight thousand dollars (\$88,000.00) for willfully or repeatedly violating the Commission's merger conditions in the *SBC/Ameritech Merger Order*.

17. IT IS FURTHER ORDERED THAT, pursuant to section 1.80 of the Commission's Rules, within thirty (30) days of the release date of this NOTICE OF APPARENT LIABILITY, SBC Communications SHALL PAY to the United States the full amount of the proposed forfeiture OR SHALL FILE a written statement showing why the proposed forfeiture should not be imposed or should be reduced.

18. Payment of the forfeiture amount may be made by mailing a check or similar instrument payable to the order of the Federal Communications Commission, to the Forfeiture Collection Section, Finance Branch, Federal Communications Commission, P.O. Box 73482, Chicago, Illinois 60673-7482. The payment should note the "NAL/ Acct. No." referenced above.

19. The response, if any, must be mailed to Charles W. Kelley, Chief, Investigations and Hearings Division, Enforcement Bureau, Federal Communications Commission, 445 12<sup>th</sup> Street S.W., Room 3-B443, Washington, D.C., 20554, and must include the "NAL/Acct. No." referenced above.

20. The Commission will not consider reducing or canceling a forfeiture in response to a claim of inability to pay unless the respondent submits: (1) federal tax returns for the most recent three-year period; (2) financial statements prepared according to generally accepted accounting practices ("GAAP"); or (3) some other reliable and objective documentation that accurately reflects the respondent's current financial status. Any claim of inability to pay must specifically identify the basis for the claim by reference to the financial documentation provided.

21. IT IS FURTHER ORDERED that a copy of this Notice of Apparent Liability shall be sent by Certified Mail/Return Receipt Requested to SBC Communications, c/o Sandra L. Wagner, Vice President-Federal Regulatory, 1401 I Street, N.W., Suite 1100, Washington, D.C. 20005.

FEDERAL COMMUNICATIONS COMMISSION

David H. Solomon  
Chief, Enforcement Bureau

Office of the Vice President  
November 1, 2000  
Janet Hand Deixier, Secretary  
New York Public Service Commission  
Three Empire State Plaza  
Albany, New York 12223-1350

Re: Case 92-C-0665, op. 95-12 (issued and effective August 16, 1995) "Performance Regulation Plan for New York Telephone Company," at Section III (K)

Dear Secretary Deixier:

Enclosed please find five (5) copies of a report "Service Quality and Service Quality Reporting at Verizon-NY" produced by CWA's Customer Service/Service Quality Program. The CS/SQ program was mandated by Section III K of the Performance Regulation Plan for New York Telephone.

The report identifies a number of serious and widespread service quality and service quality reporting problems at Verizon-NY. These problems have been verified through 2,000 surveys of Verizon-NY workers, 2,000 Hotline reports and a number of documented case studies.

The report serves two purposes. First, the report assists the PSC in its efforts to improve service quality by identifying and documenting specific problems at Verizon-NY. This is consistent with the purpose of the program as established by the PRP.

"The purpose of the CS/SQ program is to assist the Public Service Commission and New York Telephone in its efforts to improve customer service and service quality, to provide consistent and accurate service quality data reports, to meet the service quality targets provided by the Plan..."

Second, the report illustrates the importance of the CS/SQ program. It also supplements CWA's petition requesting that the PSC grant an extension of time, not any additional money, to continue to implement the CS/SQ program.

The report includes a number of recommendations to establish a process to rectify the service quality problems identified in the report. The CWA would like to participate in the formulation and implementation of any effort that the PSC establishes to correct service quality and service quality-reporting problems at Verizon-NY.

Please contact the District One Research Director, Kenneth Peres, in my office if you have any comments or questions about the report.

Sincerely,

Lawrence Mancino

CWA Vice President, District One

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OFFICE OF THE VICE PRESIDENT

DATE: NOV 1

TO: Verizon-New York Local Presidents

FROM: Larry Mancino, Vice President

SUBJECT: Release of Service Quality Report to the PSC

The enclosed service quality report was formally presented to the PSC at a meeting yesterday in Albany. As you will see, the report identifies a wide range of service quality and service quality reporting problems. The findings of the report are based on the results of 2,000 surveys, 2,000 Hotline reports and many individual case studies.

The Secretary of the PSC, the head of the Communications Division, two senior communications staff members and a senior lawyer represented the PSC at the meeting. Ken Peres, Patrick Welsh and Larry DeAngelis represented CWA. We described the history of the program and our unsuccessful efforts to get the company to cooperate in an effort to identify, verify and rectify the problems identified in the report. Most of the meeting involved a fairly detailed explanation of each of the service quality abuses identified in the report. The PSC representatives asked many questions.

The PSC representatives asked what actions CWA would like the PSC to take. Our report specifically recommends that the PSC:

- extend the CWA service quality program for the remainder of the PRP in order to continue to monitor Company performance and educate and train members;
- institute a remedial program - developed with the participation of CWA - to insure that proper procedures are followed to guarantee the future validity of service quality data;
- conduct a comprehensive reevaluation of New York Tel's performance in relation to service quality targets; and
- recalculate the penalties levied against the Company as part of the PRP.

Obviously, the proverbial ball is in the PSC's court. The PSC representatives stated that they would study the report and ask the company for its response. At that point, the PSC staff will determine the validity and extent of the problems and what recommendations to make to the PSC commissioners.

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Extend the Service Quality Program

Develop a Remedial Program with the Participation of CWA

Conduct a Comprehensive Reevaluation of Past Service Quality Performance In Relation  
to PRP Targets and Recalculate PRP Penalties

#### Executive Summary

CWA was directed by the Public Service Commission to institute a service quality program as part of the Performance Regulation Plan for New York Telephone. As part of this program CWA was to "examine and assess the delivery of service by the Company...and...and shall educate...employees regarding the importance of following proper procedures necessary for consistently accurate service quality data reporting."

CWA implemented this mandate by conducting workshops, distributing surveys, creating a Hotline and investigating cases of inaccurate service quality data reporting. Over 2,000 members attended workshops, over 2,000 surveys were returned, and 2,000 Hotline reports were received.

Based on the data gathered through surveys, interviews, and Hotline reports, CWA has identified-and documented-a number of management practices that result in the reporting of inconsistent and inaccurate data to the Department of Public Service.

CWA believes that the existence of widespread, inaccurate service quality data calls into question all service quality reports previously submitted by the Company to the PSC. Consequently, CWA recommends the following actions:

- extension of the CWA service quality program for the remainder of the PRP in order to continue to monitor Company performance and educate and train members.
- a remedial program-developed with the participation of CWA-to insure that proper procedures are followed to guarantee the future validity of service quality data;
- a comprehensive reevaluation of New York Tel's performance in relation to service quality targets; and
- the recalculation of the penalties levied against the Company as part of the PRP.

The CWA study identified three broad areas of service quality abuses by New York Tel management.

#### INACCURATE REPORTING OF SERVICE QUALITY DATA TO THE PSC

The CWA Service Quality Program has identified a number of management practices that result in the inaccurate reporting of service quality data to the PSC. Specifically, survey results, Hotline reports and case studies verify inaccurate reporting of data for Customer Trouble Reports, Out of Service over 24 hours, Missed Repair and Installation Appointments, Installations within 5 days, and Answer Time Performance. The misreporting of this data allows the Company to artificially improve its service quality performance and reduce its exposure to PRP penalties and PSC sanctions.

- **The Direct Falsification of Company Service Quality Data By Management.** Over 30% of those surveyed have directly seen management change the status of trouble reports. Representative examples from Hotline reports document these practices.
- **Management Directing Workers To Close Out Troubles Before They Are Really Completed.** Over 60% of those surveyed have been directed by management to code a trouble as completed before it is really cleared of the trouble. Representative examples from Hotline reports document these practices.
- **Management Directing Workers To Backtime.** Over 54% of those surveyed have been asked by management to backtime; that is, alter records identifying the date and time a trouble was completed. Representative examples from Hotline reports document these practices.
- **Management Directing Workers To Change Commitments Without A Customer Request To Do So.** 68% of Maintenance/dispatch Center workers surveyed were directed to change commitments without customer notification. Representative examples from Hotline reports document these practices.
- **Management Directing Workers To Inappropriately Code Troubles To CPE.** 40% of Maintenance/Dispatch Center workers surveyed were directed to code troubles to CPE without customer request or notification. One hundred and seventy eight Hotline reports

concerned the coding of a trouble as CPE even though the line test showed an obvious plant trouble. Representative examples from Hotline reports document these practices.

- **Passing Installations Before Completion.** 91% of field technicians surveyed reported that they were dispatched on repairs of recent installations only to find that dial tone had never been provided. Representative examples from Hotline reports document these practices.

- **Inaccurate Computer Tests.** 15% of surveyed Central Office Technicians were able to identify troubles that the computer reported as Test OKs but which, in fact, were not adequately cleared. Representative examples from Hotline reports document these practices.

- **Bypassing the PSC Reporting System.** 29% of Field Technicians surveyed were directed by management not to give the regular repair number but other numbers to customers such as the manager's number. Consequently, any subsequent trouble reports would not be included in data reported to the PSC. Representative examples from Hotline reports document these practices.

- **Adjusting Answer Time Performance.** An astounding 100% of surveyed operators and 93% of representatives receive customer complaints about the Automated Answering System. These systems actually lengthen the time a customer spends waiting on the phone.

#### POSSIBLE CONSUMER FRAUD - CPE AND INSIDE WIRE MAINTENANCE PLANS

Inside wire maintenance plans insure that the Company - not the customers - will be responsible for checking and fixing any inside wire or CPE problems in a timely manner. However, customers with inside wire maintenance plans are not receiving the services for which they are paying. For example:

- customers with plans are directed to check their own CPE rather than dispatching a technician - even after repeated calls;
- customers with plans are directed to check their CPE even when line tests reveal that there is a high probability that the trouble is located on the Company's system.

#### MANAGEMENT POLICIES WHICH HINDER THE ABILITY OF WORKERS TO DELIVER QUALITY SERVICES

Many of the Company's efforts to cut costs and boost productivity have interfered with the ability of workers to provide quality services.

- **Deteriorating Plant Equipment.** Due to a lack of investment in plant and equipment, workers do not have the plant or material needed to complete their jobs adequately and timely. Instead, the Company directs workers to fix problems with such "band aid" approaches as AMLs.

- **Productivity Programs Hurt Customer Service.** The Company's continuous push for more productivity produces company rules and regulations that not only put undue pressure on the worker but, in most cases, prevents the worker from spending the time needed to give customers the quality service they deserve and for which they have paid. For example, discipline related to performance, adherence, monitoring, poor training and

technological changes in both customer services and operator services adds more stress and does little to serve the customer.

- Pressures on MAs and CSAs Adversely Affect Service Quality. Backtiming, Lack of Training and Customer Call Outs also prevent workers from delivering quality services. For example, Customer Call Outs allow the Company the opportunity to close jobs that are still in trouble.
- Lack of Experienced Managers. New York Tel eliminated thousands of experienced managers and lowered the benefits of those remaining. Consequently, few skilled workers apply for management positions. The new managers have few if any technical skills and, therefore, are unable to properly respond to technical problems, coordinate the work force or train new workers.

## INTRODUCTION

Since the first year of the Performance Regulation Plan (PRP) the New York Telephone Company has apparently improved the level of service quality delivered to customers as measured by reports submitted to the New York Public Service Commission. Based on these reports, staff of the Department of Public Service have publicly expressed their general satisfaction with the progress the Company has exhibited in meeting the service quality targets specified in the PRP for New York Telephone and improving service throughout the state.

On an overall basis, after the third year of the Performance Regulation Plan, we are satisfied with the Company's overall service quality performance... Over the past two years, the Company has improved service quality and focused on meeting the targets of the 7-year incentive plan. (State of New York, Department of Public Service, "New York Telephone Company Third Plan Year Service Quality Report" issued November 6, 1998) Reflecting this reported improvement, New York Telephone's PRP penalties have dropped from \$72 million in Plan Year One to a range of \$3 to \$5 million in the following plan years.

However, this improvement in service performance is more apparent than real because it rests on a foundation of inaccurate and inconsistent service quality data reporting by New York Telephone. This conclusion is based on an analysis of a widely distributed survey of the New York Telephone workforce. Hotline reports and investigations of specific cases of service quality misreporting. This analysis by CWA is part of a service quality program mandated by the PSC as written in the Performance Regulation Plan for New York Telephone.

The presence of inconsistent and inaccurate service quality data allowed New York Tel to artificially improve the Company's service quality performance and, thus, minimize its exposure to the multi-million dollar penalties built into the PRP.

The following report briefly describes the PSC mandate for the service quality program and then examines three broad areas of management service quality abuse.

Inaccurate Reporting of Service Quality Data to the PSC. New York Tel management has engaged in a series of schemes which have resulted in the inaccurate reporting of performance data for Customer Trouble Reports, Out of Service Over 24 hours, Missed Repair Appointments, Missed Installation Appointments, Installations within 5 days, and Answer Time Performance.

Possible Consumer Fraud With Inside Wire Maintenance Plans. Customers with inside wire maintenance plans are not receiving the services for which they are paying.

Management Policies Which Hinder The Ability of Workers To Deliver Quality Services To Customers. A number of New York Telephone policies prevent workers from delivering the level of quality service that customers should obtain.

The final section contains specific recommendations to improve the accuracy of service quality reporting.

#### CWA's PSC MANDATED SERVICE QUALITY PROGRAM

Several years ago the New York Telephone Company successfully petitioned the New York Public Service Commission to deregulate its profits. Previously, both prices and a fair rate of return were set through a public hearing process between the PSC, the Telephone Company, and other interested parties including the CWA. Now the prices are set through a Performance Regulation Plan. The Company is now free to make as much profit as it can by increasing productivity, reengineering and other cost cutting techniques.

To help protect customers and workers from the negative impacts of cost cutting, the CWA and other parties successfully argued that the PSC also include a tough set of service quality targets and penalties in the Performance Regulation Plan.

As part of the PRP (Section K) the CWA received \$1 million for an independent multiyear membership education program.

The purpose of the... Program is to assist the Public Service Commission and New York Telephone in its efforts to improve customer service and service quality, to provide consistent and accurate service quality data reports, to meet the service quality targets provided by the Plan and to carry out the LifeLine, privacy and marketing programs provided by the Plan.

The PSC mandated that the program include various activities including

Program staff shall... examine and assess the delivery of service by the Company... shall educate... employees regarding the importance of following proper procedures necessary for consistently accurate service quality data reporting.

CWA implemented this program at three different levels.

Workshops. Two separate series of workshops were developed by a group of CWA members and staff representing the major crafts in the Company in consultation with Les Leopold of the Labor Institute. The small group activity method was utilized to stimulate worker participation in discussions. A three-day train the trainer session was conducted for 21 stewards from a number of our locals. More than 2,000 stewards and other members participated in a number of workshops held across the state in 1998, 1999 and 2000.

The Survey. A detailed survey was developed to allow us to obtain a statewide picture of Company service quality and data reporting practices. More than 2,000 surveys were returned and analyzed.

The CWA Hotline. CWA established a Hotline as mandated by the PRP. Over 2,000 Hotline reports have been received to date from workers reporting service quality data inaccuracies and inconsistencies. Investigations were conducted into a number of the reported instances of service quality data abuse.

#### THE INACCURATE REPORTING OF SERVICE QUALITY DATA

CWA conducted surveys and investigations in order to "examine and assess the delivery of service by the Company" and the provision of "consistently accurate service quality data" (PRP, Section K). A 38-question survey was developed and distributed throughout the state to field technicians, central office technicians, workers in dispatch and maintenance centers, service representatives and operators. The questions focused on service quality reporting abuses by the Company. Each question identified a potential service quality abuse, asked if the respondent had direct knowledge of such abuse and the frequency of the abuse. More than 2,000 surveys were filled out, returned and analyzed.

Examples of specific abuses were collected through the Service Quality Hotline and interviews with workers. Investigations were conducted into a number of specific cases.

An analysis of the information gathered from the surveys, Hotline calls, interviews and investigations has resulted in the identification and documentation of broad patterns of inaccurate reporting by the Company in a number of areas.

#### The Direct Falsification of Company Service Quality Data By Management

When customers call to report a problem the customer service attendant (CSA) enters a description of the problem into the computer system. As part of this process, the CSAs own pre-assigned Employee Code number is also entered. At each step in the life of this trouble, workers enter their Employee Codes to identify their actions.

However, management is able to enter the system at any point in time and override an individual employee's code and report. This can be done by entering the manager's own code, a generic management code, another worker's code or a fictitious code. Such

manipulation of data can enable managers to "improve" their clearance time for trouble reports or missed commitments.

We have found that, in some cases, managers have directly falsified trouble reports. This conclusion is based on survey results, Hotline reports, and direct investigation.

Survey Results. Field technicians, central office technicians and Maintenance/Dispatch Center workers were asked whether they had directly seen - as opposed to hearing about or suspecting -- management change the status of a job. The following chart states the results of the survey.

HAVE YOU EVER SEEN A FOREMAN OR SUPERVISOR CLOSING OUT OR CHANGING THE STATUS OF A JOB? TITLE TOTAL RESPONSES NO NOT SURE YES

Field Techs 1,047 67% 9% 24%

COTs 191 43% 10% 47%

Maintenance 122 39% 9% 52%

Overall, 30% of those surveyed have directly seen management change the status of a trouble report. And they have seen this happen with a high level of regularity. The apparent disparity in the YES column between field technicians and inside technicians can be attributed to the fact that field technicians work outside and thus have fewer opportunities to view managers at their computers.

Investigation and Hotline. The survey results have been corroborated with documentation supplied through the Hotline and investigations. The following cases were chosen as representative examples.

Example 1. A customer ordered an installation on 6/25/98. The Company has five business days to meet its installation commitment; in this case, July 2. The Company was not able to meet this commitment because of an engineering problem. A supervisor asked a service representative to falsely change the installation due date and code the reason as "customer other" rather than miss the commitment due to a lack of company facilities.

When the representative refused to falsify Company records an acting manager entered the computer system and changed the due date to 7/9/98 using the representative's EC code without her knowledge. In fact, the supervisor waited for the representative to go off duty before entering false information into the Company reporting records. The Company was able to meet the 5-day standard.

Example 2. On 2/12/98 a repair supervisor falsified Company records by changing the completion time on 26 jobs so the Company would not miss the PSC commitment time.

Most of these jobs were still testing a trouble on the line and none were dispatched unless the customer called back. At that time new trouble reports were issued.

Example 3. An IMC supervisor closed out thirteen troubles on 12/22/98 without dispatching the work. This was done so that the 24-hour commitment times established by the PSC would be met. Not one of the troubles was actually cleared. All 13 jobs reappeared as troubles at a later date.

Example 4. A manager told the technicians in his group that he needed to boost his production numbers. He directed the technicians to go to a cross box and black box (ID) telephone numbers and give them to the manager. The manager then falsely reported that these numbers had troubles. These troubles were then immediately closed out and their associated commitment times were met.

Example 5. COTs in a particular bureau dispatched technicians to service troubles on over 90 "No Premise Visit Installations." However, on 8/17/99 a bureau manager closed out the installation orders as completed even though the troubles still existed and were not yet cleared.

Example 6. On March 3, 2000 a job was closed out as a Test OK with an employee code of 383. Upon investigation, it was found that there is no employee with a 383-employee code in the downstate district in question.

Example 7. On or around April 13, 2000, Manhattan management, at the request of Nassau bureau management, closed out seventy customer complaints as "customer miss-dials" due to changes in the area code when in fact, the troubles were due to the Company's ANNC switching problems.

Example 8. On July 7, 2000 a supervisor tested and closed out a job with a narrative of "(supervisor spoke to sub TOK [TEST OK])." However, the trouble was not cleared. The customer called back the next day and insisted the trouble be dispatched. However, the job was not dispatched and cleared until July 15th.

Example 9. A technician returned a job "not complete" on Friday, July 9, 2000. The customer was told that the technician would be back on Monday to finish work. However, a supervisor closed out the job on Saturday, July 10th. The customer called back on Monday to complain that no technician ever showed up to finish job. The job was dispatched as a new trouble on July 13th.

#### Management Directing Workers To Close Out Troubles Before They Are Really Completed

When a customer's trouble is resolved, an entry is made in the reporting system identifying the date and time that the trouble was "cleared." The Company then compares this clearing time to the time the trouble was received to determine whether it met its repair appointment or repaired an out-of-service trouble within 24 hours.

However, in some cases the trouble is not repaired within 24 hours or a repair appointment is not made in time. In a number of these cases, management has directed

workers to report that a trouble is closed before it is actually cleared. This allows the Company to submit data to the PSC that shows it has met its commitments even though this is not what really happened.

These management directives place workers in a very difficult position. If they do not follow management's directions they can be disciplined or, at least, earn the enmity of their supervisor. If they do follow management's directions they are placed in jeopardy for falsifying records. However, management still continues to direct workers to falsify records on a wide-ranging basis throughout New York and across job titles.

Survey Results A. Field technicians, central office technicians, Maintenance/Dispatch Center workers and service representatives were asked whether they had been directed by management to status a job as complete before it was really completed. The following chart states the results of the survey.

DOES YOUR FOREMAN OR SUPERVISOR ASK YOU TO STATUS A JOB AS COMPLETE BEFORE IT'S REALLY COMPLETE?

TITLE	TOTAL RESPONSES	NO	NOT SURE	YES
Field Techs	1,034	37%	3%	60%
COTs	205	36%	2%	62%
Maintenance	74	58%	2%	39%
Representatives	107	32%	3%	65%

Overall, 60% of those surveyed have been directed by management to code a trouble as completed before it is really cleared. And this happens with a high level of regularity. Field Techs and COTs are asked to do this more frequently because most of the work of closing out jobs has gone to field technicians since the introduction of the Craft Access Terminal. Maintenance technicians have concentrated on checking the jobs in jeopardy (no access, held for cable, etc.) and dispatching work.

It is noteworthy that 65% of the Service Representatives who were surveyed have been asked to close out commitments or change follow-up dates without doing the work or speaking to the customer. The surveyed Representatives reported that these management directives occur very often.

Investigation and Hotline. The survey results have been corroborated with documentation supplied through the Hotline and investigations. The following cases were chosen as representative examples.

Example 1. On November 13, 1997, Central Office Technicians (COTs) were told by their supervisor to close out 67 jobs on a work status list (WSL) to meet the commitment times and go back to finish the job at a later time.

We have found that it is common management practice to direct frame personnel to do mass close-outs when the Company is close to missing their numbers for out-of-service over 24 hours. Thus, the Company appears to have made its PSC numbers even though the telephone troubles reported by customers have not been cleared.

Example 2. A job was due on 3/11/98. However, it appeared that the Company would miss its service quality commitment time. At this point, the Company's management directed the technician assigned to the job to close it out as complete to make the commitment. He was then told to issue a non-timing report to complete the job later. The technician's non-timing report was a "routine ticket" which is not regulated by the PSC.

Example 3. On 12/22/98 a technician was dispatched on a cable trouble. He was not able to fix the trouble and by proper procedure should have been allowed to issue a cable ticket so that a splicer would have been sent to clear the line. Instead, a supervisor directed the technician to close out the trouble even though it was not cleared. The technician was also directed to not write up the trouble but to verbally tell another supervisor so his group could clear the trouble on a pro-active ticket. Pro-active tickets are not reported to the PSC.

Example 4. On 2/9/99, a technician on desk duty was directed to retest and close out troubles without a dispatch - even if the jobs were still testing as service affecting troubles. When the technician refused the manager closed out the troubles.

Survey Results B. Management has also directed Central Office Technicians and Maintenance/dispatch workers to not only close out a trouble before it was cleared but to issue new trouble tickets on the same job.

ARE YOU EVER ASKED TO CLOSE OUT TROUBLES AND CREATE NEW TROUBLE TICKETS ON THE SAME JOB?

TITLE	TOTAL RESPONSES	NO	NOT SURE	YES
COTs	195	43%	6%	52%
Maintenance	166	50%	4%	46%

Overall, 49% of those surveyed have been directed by management to code a trouble as completed before it is really cleared of the trouble and to issue new trouble tickets. And they have seen this happen with a high level of regularity.

Investigation and Hotline. The survey results have been corroborated with documentation supplied through the Hotline and investigations. The following cases were chosen as representative examples.

Example 1. A manager told central office technicians to pre-test all the morning jobs then close them out so the commitment times would be met. The manager then told the technicians to issue frame tickets on the reported troubles to clear them. The frame tickets do not have commitment times and are not covered under the PSC service quality standards.

Example 2. A repair job due on 3/11/98 for a New York City Department was going to be missed. The technician was directed by his supervisor to close the service order as a "found ok" and create a non-timing report to clear the trouble so the Company would make the commitment.

Example 3. On 2/1/99 and again on 2/2/99 an IMC supervisor directed technicians to close out installations before dial tone was established at the premises and finish the jobs as repairs.

Example 4. In June, 2000, employees reported that on many occasions IMC supervisors have instructed them to code many troubles in Wafa as pending when the Company was close to missing their out-of-service numbers for a month. These jobs would then be dispatched the next month. We have found that this practice happens quite regularly across the entire state. Wafa is a company computer system that is not watched by the PSC. By placing current jobs as pending dispatch in Wafa the Company is free to change the due date to a time when they will not be in jeopardy of missing their out of service percentage reported to the PSC.

#### Management Directing Workers To Backtime

One widespread scheme that management uses to alter records is to direct workers to record that a trouble was cleared at an earlier date and time than the actual resolution of the trouble. Management also directs workers to record that appointments were met even though the technicians were not dispatched until much later. This practice is known as "backtiming." Backtiming allows the Company to submit data to the PSC that shows it has met its commitments even though this is not what really happened.

**Survey Results.** Field technicians, central office technicians and Maintenance/Dispatch Center workers were asked whether they had been directed by management to backtime. The following chart states the results of the survey.

DOES YOUR FOREMAN OR SUPERVISOR EVER ASK YOU TO BACKTIME --  
THAT IS, PUT A COMPLETION TIME JUST TO MAKE A COMMITMENT? TITLE  
TOTAL RESPONSES NO NOT SURE YES

Field Techs 1,035 42% 3% 55%

COTs 196 47% 7% 46%

Maintenance 134 31% 9% 60%

Overall, 54% of those surveyed have been asked by management to backtime. And they have been asked to do this with a high level of regularity, Backtiming provides an especially illustrative example of the lengths to which management will go - violating the Company's Codes of Conduct and directing others to change data -just to improve their service quality performance results.

Investigation and Hotline. The survey results have been corroborated with documentation supplied through the Hotline and investigations. The following cases were chosen as representative examples.

Example 1. A job was dispatched to a technician in the morning with a 12:00 PM commitment time. The technician completed the job at 1:00 PM. When the technician tried to close out the job in his C.A.T. (craft access terminal) the job was gone. We found that the dispatch center closed the job at 11:59 AM to meet the commitment - before the job was completed and without the technician's knowledge.

Example 2. A manager directed a technician to back-time the job he was dispatched on to make the commitment time. On the advice of the supervisor the technician closed out the job at 1:00 PM even though he did not finish the job until 1:20 PM. The technician back-timed the job to avoid a problem with the manager.

Example 3. When the Company's central office was in jeopardy of missing commitment times the technicians were told to check the computer every two hours and back time jobs that were missed then create frame tickets to cover the work.

Example 4. On 12/21/98 a technician was closing out a trouble at 4:00 PM when a supervisor directed him to backtime the closeout to 2:45 PM so the 3:00 PM commitment would be met.

Example 5. On 1/12/99 a technician was closing out a job at 2:30 PM when he was directed by his supervisor to backtime the closeout to 12:45 PM to make the 1:00 PM commitment.

Example 6. On 5/3/99 a manager directed a technician to backtime a job from 4/21/99 to 4/20/99 to make the commitment. The technician refused but later found out that the job was backtimed anyway.

Example 7. In January 2000, a technician uncovered 30 jobs in which data had been falsified. The technician did not want to be part of falsifying data and notified his first level manager. The first level manager stated that if such falsification is happening "I don't want to be part of it either." The first level manager then took the data to the second level manager. The technician then found another 22 jobs with falsified data and gave all the data to company security. The next day the technician was transferred to another location.

## Management Directing Workers To Change Commitments Without A Customer Request To Do So

Missed commitments are not charged against the company if they result from customer action or interaction. For example, the Company does not record a missed repair or installation appointment if the customer requests a change in time or date. Moreover, the Company counts an appointment as "met" if the technician cannot gain access to equipment on the customer's property. However, a "miss" should be ascribed to the Company if there is a company "fault" such as a lack of facilities or the technicians are late.

Management often inappropriately directs workers to ascribe changes in company service commitments to customer requests rather than Company Fault. In this way, the Company avoids missing commitments reported to the PSC.

Survey Results Central office technicians and Maintenance/Dispatch Center workers were asked whether they had been directed by management to change a commitment to customer request rather than Company load or fault -- without notifying the customer. The following chart states the results of the survey.

### ARE YOU EVER ASKED TO CHANGE SERVICE COMMITMENTS WITHOUT A CUSTOMER REQUEST TO DO SO?

TITLE TOTAL RESPONSES NO NOT SURE YES

COTs 98 58% 20% 21%

Maintenance 127 30% 2% 68%

A whopping 68% of the Maintenance/Dispatch Center workers surveyed were asked to change commitments without notifying the customer. And they have been asked to do this with a high level of regularity. Twenty-one percent of the COTs surveyed were also asked to miscode these commitments without notifying the customer - even though most COTs have little customer contact.

Investigation and Hotline. The survey results have been corroborated with documentation supplied through the Hotline and investigations. The following cases were chosen as representative example.

Example 1. Between 2/25/98 and 3/10/98 a supervisor in one of the Company's repair centers changed commitment dates on 17 jobs without the knowledge of the customer so that PSC commitment times would be met.

Example 2. On 1/9/99, a technician was unable to complete a job because he could not obtain access to the Company's feeder cable that was off the customer's premises.

However, the supervisor directed the worker to close the trouble as a Customer No Access and reappoint the job for 1/11/99 without advising the customer.

#### Management Directs Workers to Inappropriately Code Troubles To CPE

When a customer reports a problem, the customer service attendant (CSA) enters a description of the trouble and attempts to test the customer's line. This test can determine whether a trouble exists and whether it appears to be caused by the Company's system or the customer's telephone equipment or inside wiring.

CSAs have been directed to tell all customers to check their CPE and call back later if the problem persists. The same routine is followed even if the computer line test reported that the trouble was located in the Company's system. Troubles can also be coded as CPE when a technician goes to the Company's system. Troubles can also be coded as CPE when a technician goes to the premises and finds out that this is the case. Troubles ascribed to CPE do not count against the Company's service quality performance.

Management has directed workers to improperly code troubles to CPE even when the trouble is located in the Company's system. This is done without customer request or notification. In this way, the Company improperly adjusts its actual service quality performance.

Survey Results. Field technicians and Maintenance/Dispatch Center workers were asked whether they had been directed by management to status a job to CPE without customer verification. The following chart states the results of the survey.

#### ARE YOU EVER ASKED TO STATUS A JOB AS C.P.E. WITHOUT CUSTOMER VERIFICATION?

TITLE TOTAL RESPONSES NO NOT SURE YES

Field Techs 1,044 71% 6% 23%

Maintenance 126 54% 6% 40%

Forty percent of the Maintenance/Dispatch Center workers surveyed were asked to code troubles to CPE without customer request or notification. Even though the 23% figure for field technicians appears low it actually represents a high percentage of the jobs with detected troubles because they have already been screened and tested twice.

In a related survey question, 21% of the Maintenance/Dispatch Center workers were directed by management to ignore the "tech advises" codes placed by field technicians in their efforts (e.g., Company fault, shortage of facilities, etc.). In this way, the reports going to the PSC could be coded so those problems could be ascribed to customer, not Company actions.

Investigation and Hotline. The survey results have been corroborated with documentation supplied through the Hotline and investigations. The following cases were chosen as representative examples.

Example 1. Customer called in an out of service complaint on Friday 11/7/97. The line was testing a light short circuit. The subscriber was given: a commitment date of 11/8, the Company called the customer on 11/8 to change the appointment to 11/9.

Customer advised the Company that he would not be available on 11/9 but it would be OK to send a Service Technician out on Monday 11/10. The Company agreed with that arrangement then closed out trouble on Sunday 11/9 to a CPE code and narrative (1201-230 trouble to CPE/cancel report.)

Customer then called the Company back on Friday 11/14 (still out of service) wanting to know why a technician didn't come out on Monday 11/10. The Company didn't give subscriber a reason, but re-appointed the job for Sunday 11/16.

On 11/16 a Service Tech. proved the trouble was caused by the Company's cable facilities and wrote a cable ticket.

Sub's service was restored on Wed. 11/19 twelve days after original trouble was called in.

Example 2. A customer reported a static trouble on 1/27/98 and again on 1/29/98. The job was closed out both times to a CPE code. The customer called back on 1/30/98 and insisted that a technician be dispatched. The technician was dispatched on 1/30/98 and had to give the job to construction to clear a cable pair.

Example 3. A customer reported a static trouble on 11/09/98. This trouble was closed out to 1247-698-000 - the code designating that the subscriber was to check the CPE and there was no dispatch. The customer called again on 11/23/98 still complaining about static. Once again the job was closed out to the same CPE code. The customer called a third time on 12/7/98 reporting the same problem. The job was finally dispatched on 12/8/98. The technician assigned to the job had to change an underground cable pair to provide the customer with clear service. The trouble was not fixed until a full month after the initial call.

Example 4. A customer called repair on 2/3/99 to report no dial tone. The customer told the Company that it was a medical emergency and needed the line repaired ASAP. The job was closed out without dispatch to a code of 1247-698-000 - sub to check CPE. When the customer called back on 2/4/99, the job was dispatched. The technician was not able to fix the problem. A splicer had to be called in to clear a short circuit in the cable.

Example 5. On March 25, 2000 a customer reported a trouble and complained about static on the line. The job was closed with the customer during the call and coded as 000-0000-000. The accompanying narrative stated "(remove from hold - susp cpe)." It should

be noted that this customer was paying for a service plan (ECM-IWM). The customer called back in on April 8th still complaining about static. The job was dispatched on April 10th and cleared at the aerial terminal - on the Company's side of the demarcation point.

#### Passing Installations Before Completion

The PSC objective is to have installations completed within five days. According to proper procedures, the installation order is taken, sent to the correct department, and the installation is completed either in the office or out in the field. Once this is done the installation is coded as complete. However, survey and hotline reports have uncovered many installation orders that were closed out before they were actually completed. Instead, the orders were recoded as repair troubles directly or after the customer called repair complaining of no dial tone. In this way, the five-day installation commitment was met.

Survey Results. Field technicians were asked whether they had been dispatched on repairs of recent installations only to find that dial tone had never been provided. The following chart states the results of the survey.

#### ARE YOU DISPATCHED ON REPAIRS OF RECENT INSTALLATION ORDERS (ADDED LINES OR NON-PREMISE VISIT JOBS) THAT NEVER WORKED?

TITLE	TOTAL	RESPONSES	NO	NOT SURE	YES
Field Techs	1,049	7%	2%	91%	

A remarkable 91% of the field technicians surveyed answered yes to this question. Investigation and Hotline. The survey results have been corroborated with documentation supplied through the Hotline and investigations. The following cases were chosen as representative examples.

Example 1. On 10/10/99, an installation order due for completion on 10/8/99 was held for cable due to the lack of company facilities. Yet, the Company coded this installation as completed. The Company then routed the job to repair. On 10/12 a technician was dispatched and advised by the customer that the dial tone had never been provided. The technician was unable to provide the service due to the initial lack of cable facilities and turned the job over to the Company's engineering department.

Example 2. On 10/2/99, an installation order was coded as complete even though there were no spare cable facilities. One week later the customer reported that she never had service. A repair technician was dispatched and cleared a cable pair to provide dial tone. In this way, the Company made its PSC installation objective, its out of service over 24-hour objective and its missed appointment objective.

Example 3. On March 31, 2000 an installation job was improperly coded as completed even though it was not dispatched and did not test OK. In other words, the customer did not have service. On April 1st the job was sent to repair and closed out without a dispatch using a close out code of 1247-698-000 - sub to check equipment. The trouble was finally dispatched on April 8th~ The technician had to place a cross connect to provide the customer with service.

#### Inaccurate Computer Tests

Service quality measurement is largely dependent upon the Company's computer systems. When the Company receives a trouble report, the customer service attendant tests the customer's line. The results from these tests determine if the line appears to be functioning; if the trouble is caused by inside wiring or CPE; or if it is caused by the Company's system.

However, the computerized testing system employed by the Company does not always provide accurate results. In some instances, lines that test OK are in fact not OK. These inaccurate test OKs enable the Company to incorrectly report its performance in meeting trouble-related service quality measures.

Survey Results. Central Office Technicians were asked whether troubles reappeared even after they had been tested OK by the Company's "Auto Task Computer."

DO TROUBLES RETESED OK BY THE AUTO TASK COMPUTER COME BACK AS NEWLY REPORTED TROUBLES LATER?

TITLE TOTAL RESPONSES NO NOT SURE YES  
COTs 194 35% 51% 15%

15% of the surveyed COTs were able to identify troubles which tested OK but for which the troubles were not adequately cleared.

Investigation and Hotline. The survey results have been corroborated with documentation supplied through the Hotline and investigations. The following cases were chosen as representative examples.

Example 1. A field Technician was given a morning job by his supervisor. The trouble report was for a no dial tone and a Maintenance Service Charge was explained to the customer. It was also noted in the comments that the line was for bedridden seniors with medical emergency status. When tech tried to access the job in his C.A.T. the job was auto rejected by the system as a test ok. After further investigation by the tech, it was found that the line was still in trouble and he called the Repair Service Bureau to reissue the job. He got the job back as his second job for the day even though it was a medical emergency. The tech then got to the job at about 10:00 AM and had to reattach the outside wire at the block cable to provide the customer with service.

Example 2. This case involves a high volume business customer and shows that even when confronted with a problem by their employees the Company insists on using an inaccurate system to bypass the PSC reporting system.

A morning job was given to a field technician. When the technician went to receive the job in the CAT (craft access terminal) the job was auto-rejected by the system. The technician then followed up on the job and found it still in trouble. The technician also found that the system closed the job out as "sub to check CPE" even though no one had spoken to the customer. The technician insisted on being dispatched on the trouble. He worked on the block wire to clear a riser and provided the customer with service.

The union grieved the auto-reject because the Company was knowingly closing out work without it being completed and without the knowledge of the customer. The grievance is titled "not providing good customer service." The grievance was denied at first step. The Company stated that the "lines closed out by an access machine is part of everyday business" If technician had not followed up on this trouble a large business customer's service would not have been restored.

Example 3. On 1/30/99 a trouble was auto-rejected by the Company's IFAS system while still testing as a short circuit.

Example 4. On 2/01/99 a trouble was auto-rejected by the Company's IFAS system while still testing as an open out, i.e., a definite trouble.

Example 5. On 2/2/99 a trouble was auto-rejected by the Company's IFAS system while a technician was still on the job and had not cleared the trouble on which he was working.

Example 6. On 8/27/99 four jobs were auto-rejected by the Craft Access Testing System. A technician took it upon himself to conduct a retest and found that three of the jobs were still testing metallic (shorts, grounds, crossed batteries) troubles. The fourth job tested OK but the technician requested that the job be dispatched. He later found a defective jack at the customers premise.

### **Bypassing The PSC Reporting System**

One of the easiest ways to improve the service quality performance reported to the PSC is to bypass the reporting system altogether.

Survey Results. Field Technicians were asked whether management directed them to give customers callback numbers other than the Company's regular repair service numbers.

**ARE YOU TOLD TO GIVE CUSTOMERS A FORM WITH ANY CALLBACK NUMBER OTHER THAN 890-6611 OR 890-7711?**

TITLE TOTAL RESPONSES NO NOT SURE YES  
Field Techs 1,049 63% 8% 29%

Twenty-nine percent of the field technicians surveyed were asked to give other than regular repair numbers to customers. Most often, they were asked to leave their garage or beeper numbers. Calling these numbers, rather than the regular repair numbers, necessarily improves the Company's customer trouble report rate.

Investigation and Hotline. The survey results have been corroborated with documentation supplied through the Hotline and investigations. The following cases were chosen as representative examples.

Examples 1 & 2. In two cases a customer reported multiple lines out of service but reports were only issued on the customer's first line. The technician was directed to issue EO reports to clear the other lines. These ED reports do not count against the Company's performance for PSC service quality purposes.

Example 3. Participants at the CWA service quality workshops reported many instances when field technicians were told to leave their beeper number or the number of their garage with the customer so that any "subsequents" will not be recorded into the computer system and go to the PSC.

Example 4. The CWA Service Quality hotline has received reports that Supervisors were advising directory assistance operators to give the Company's Presidential hotline number to customers actually requesting the PSC number. This was only done for those customers wanting to file a complaint against the Company.

Example 5. On June 22 and 26, 2000 thirty-one troubles were taken out of LMOS and placed in WFC to hide the out of service reports. The only tickets that are supposed to be in WFC are designed circuits. All other ISDN reports are to be worked from LMOS. LMOS tickets are customer reported and PSC regulated. Since SARTS took over ISDN, they have closed, excluded or cancelled every LMOS ticket and put them in WFC - an unregulated database.

#### Adjusting Answer Time Performance

The PSC's rules and regulations establish service quality standards governing the speed with which certain types of customer calls are answered. There are standards for repair service, directory assistance and toll and assistance calls. Historically, all customers directly reached a representative or an operator. The amount of time that customers wait on the line is measured and included in the average speed of answer data reported to the PSC. However, with the introduction of automated answering systems many customers who previously would have been put on hold now pass through the automated system.

According to our surveys and interviews, the automated system actually lengthens the time a customer must wait before reaching a representative or operator. Yet, none of the time customers spend waiting in the automated system is included in speed of answer data reported to the PSC.

Survey Results. Customer dissatisfaction with the Automated Answering System is illustrated by questions posed to operators and representatives.

#### DO CUSTOMERS SOMETIMES COMPLAIN ABOUT THE AUTOMATED ANSWERING SYSTEM?

TITLE TOTAL RESPONSES NO NOT SURE YES

Representatives 107 6% 1% 93%

Operators 164 0% 0% 100%

An astounding 100% of surveyed operators and 93% of surveyed representatives receive customer complaints about the Automated Answering System. And these complaints occur very often.

#### POSSIBLE CONSUMER FRAUD - CPE AND INSIDE WIRE MAINTENANCE PLANS

Inside wire maintenance plans insure that the Company -- not the customers -- will be responsible for checking and fixing any inside wire or CPE problems in a timely manner. Yet, CWA has received almost 200 reports indicating that customers with inside wire maintenance plans are not receiving the services for which they are paying. Many reports describe how the Company directs customers with plans to check their own CPE rather than dispatching a technician to fix the problem -- even after repeated calls by the customer. Other reports indicate that the Company directs customers with plans to check their CPE even when line tests reveal that there is still a trouble on the line and that there is a high probability the trouble is located on the Company's system. These practices may be potentially fraudulent since the Company is denying subscribers the services for which they have paid.

Example 1. On 4/21/98, a customer called in a trouble for no dial tone. The line test revealed a short circuit. The trouble was coded "sub to check CPE." After checking CPE the customer called back the next day reporting the trouble still existed. The trouble was closed out again as "sub to check CPE." The customer made a third call reporting the trouble still existed. Yet again, the trouble was closed out as "sub to check CPE." The customer called a fourth time on 4/25/98 still reporting an out of service condition. The job was finally dispatched on 4/27/98 -- six days after the initial call. The technician cleared a short circuit in the network terminating wire. This trouble was in the Company's network terminating wire -- not the customer's inside wire.

In this example, the Company was able to exclude all the customer's troubles that were coded as "sub to check CPE." Only the call on 4/25 actually counted as a reportable trouble for PSC purposes. Adding insult to injury, this customer pays for a full maintenance plan.

Example 2. Customer reported trouble on 3/10/98 as no dial tone. Customer has a full wiring plan and the job was testing "open" which is a dispatchable trouble. The trouble report was closed out on the same day without a dispatch to a cleared code of 100-1247-698-000 with a narrative of "sub to check CPE" even though the customer was paying for a full wire plan.

The customer called back on 3/10/98 and insisted that a technician be sent because she was paying for ECM/IWM and was entitled to it. The job was then dispatched on 3/11/98.

The technician that was dispatched found that the dial tone was not leaving the frame. The job was then rewired in the central office to provide service.

Example 3. A customer called the Company numerous times on 1/18/99. This trouble was closed out to CPE without dispatch. The customer called again on 2/5/99 and the trouble was again coded to CPE - even though the customer was paying for an inside wire maintenance plan (PMP/IWM). When the technician was finally dispatched on 2/7/99, he cleared the problem in the riser cable that feeds the apartments in the building. The customer told the technician that she had been out of service for two weeks and no one from The Company told her to check the CPE. If the Company had directed her to check the CPE, she would have insisted that the job be dispatched.

Example 4. Customer called in a static trouble on 4/02/98. The trouble was then closed out to a cleared code of 300-1247-698-000 with a narrative of sub to check CPE without a dispatch. The customer then called back on 4/03/98 to report the trouble again.

The trouble was then dispatched out on 4/04/98 and a technician had to clear the static in the outside wire (drop) caused by two tree limbs that had fell on the drop.

Customer is paying for Inside Wire Maintenance Plan and the Company still didn't dispatch on the job the first time.

Example 5. On February 4, 1998 a customer called in a trouble for a broken jack. The customer had a wire maintenance plan covering 3 jacks. The Company closed out the job the same day without a dispatch to a cleared code of 100-0712-600-000 with a narrative of "reached answering machine left message - TEST OK." The Company did not call the customer again nor did it dispatch a technician to check the trouble.

The customer then called back on 2/16/98 for the same trouble but a technician was not dispatched until 2/20/98. The technician had to replace the defective jack to provide the customer with service.

The customer had a maintenance plan but had to wait 16 days for the Company to dispatch a technician.

Example 6. On 3/31/98, a customer called in a trouble for no dial tone. The line test revealed a short circuit. The trouble was coded "sub to check CPE." After checking CPE the customer called back reporting the trouble still existed. The trouble was closed out again as "sub to check CPE." On the customer's third call back on 3/31/98 she demanded that a tech be dispatched because she paid for the PMP/IWM (the full service maintenance plan). The tech was dispatched and cleared a short circuit in the customer's inside wire. No maintenance service charge was assessed.

Example 7. A customer reported "No Dialtone" on 9/8/99. The job was closed out to an inside wire code 1247-698 with a narrative of "Sub to Check CPE." No technician was dispatched. The customer called again on 9/10 and the same thing happened. The customer called a third time demanding that a technician be dispatched. When a technician was finally dispatched on 9/12 he had to replace a cross-connect at the Company's underground feeder terminal.

#### MANAGEMENT POLICIES WHICH HINDER THE ABILITY OF WORKERS TO DELIVER QUALITY SERVICES

In an effort to "assess the delivery of service by the Company" we conducted a series of interviews and workshops attended by 1,050 telephone workers from various crafts. We found that many of the Company's efforts to cut costs and boost productivity interfered with the ability of workers to provide quality services. The following list contains a few examples of the roadblocks the Company has placed in workers' efforts to provide quality services.

##### Deteriorating Plant Equipment Harms Customer Service

Due to the lack of investment in plant and equipment, there are not enough pairs available for new customer lines. Instead, the Company now uses AMLs that put two or more lines on one pair. This quick fix solution has consequences for the customer. For example, if a drive pair goes bad, two or more customers can go out of service instead of one. AMLs also cause poor quality dial tone. They also do not work on all C.P.E. equipment and some answering machines. In addition, AMLs reduce the speed for faxes and Internet usage. Because AMLs use 135 volts instead of 48 volts, over time, they may overheat the line causing future failures, as well as causing unsafe working conditions. MLT equipment is not capable of testing AML circuits. Notwithstanding all these problems, the use of AMLs is still widespread. For example, the West Bronx District installs approximately 500 AMLs every 3 months while Brooklyn has 11,000 AMLS.

## Productivity Programs Hurt Customer Service

The continuous push for more productivity produces Company rules and regulations that not only put undue pressure on the worker but, in most cases, prevents the worker from spending the time needed to give customers the quality service they deserve and for which they have paid. We have found through our workshops that discipline related to performance, adherence, monitoring, poor training and technological changes in both customer services and operator services adds more stress and does little to serve the customer.

### Discipline Related to Performance

For Reps the Company prescribed handle time for each call is 370 seconds. This includes a mandatory opening script of 20 seconds and a closing "Is there anything else I can help you with today?" If the customer responds with another request that conversation is included in the 370 seconds handle time.

Operators have to deal with a 21-second handle time besides the indignity of having a machine answer the call for them. It is very difficult to service most customer inquiries within the handle time without "hurrying" the customer.

The customer representatives and the operators are put in the position of rushing the customer off the line to meet the Company rules.

### Adherence

The time a Rep must be ready to receive a call is strictly set. Only 30 minutes is allowed per tour to be out of adherence. Reps are considered out of adherence even if they are late for a break or lunch because they are on with a customer. Discipline can be taken when a Rep is 10% over adherence time. Many times there is paper work involved after a call so a Rep must go off line putting them out of adherence again. In reality, because of the way the clock is used to determine adherence, a Rep can have as little as 20 minutes a day to be out of adherence.

### Monitoring

Monitoring of customer calls is used by the Company "to protect service quality." Customers, Reps and Operators do not know when a call is being monitored. For example, if Reps do make a mistake they are not usually told, and continue to make the same mistake. Secret monitoring also adds stress, which is passed onto the service given to the customer.

### Poor Training

Many new product lines and price changes require formal training. Most training is given on a read and pass along technique. Also, outside contractors are used to push new

products that the Rep has not been trained on and is therefore unable to explain the product to the customer. Operators get new Company information printed on their screen or written on an easel in the office. In most cases, there is no follow-up information and no guarantee the Operator saw the new information.

### Technological Changes

Both Reps and Operators are pushed by new computers that only add more stress and do not serve the customer. The new DAB computers (411) actually take longer to get the information the customer is seeking.

### Pressures Put On MAs And CSAs Adversely Affect Service Quality And The Data Reported To the PSC

There are many different job functions that fall under the title of MA or CSA. Many pressures are placed on these craft people every day because of their multi-faceted jobs. These pressures affect the way MAs and CSAs deal with both employees and customers. In some cases this affects the accuracy of Company PSC reports for "out of service" commitment times. The following list provides a few examples of the types of pressures that are being placed on these crafts every day:

#### Back-Timing

MAs and CSAs are being told by supervisors to back-time returns called into the RSB by Field Technicians to make the out of service commitment times. This practice places not only the MAs or CSA in jeopardy of disciplinary action for falsifying Company records but also places the Field Technician unknowingly in jeopardy for the same reason.

#### Lack Of Training

Many MAs and CSAs are not trained in every entity of their job responsibilities. In one interview done by CWA, a long term employee who has worked in a RSB for years, was moved to dispatch a year and a half ago. As of the time this interview took place the technician still was not trained in all the aspects of the dispatch entity.

#### Customer Call-Outs

MAs are pressured to call out customers on a daily basis. One reason for these calls is to get customers to cancel or re-appoint their service order before it is dispatched. In one RSB these technicians are referred to as the "Call-Out Crew," and must meet customer call out quotas on a daily basis. This practice allows managers to move the workload so they can meet their commitment times. This gives the Company the opportunity to close jobs that are still in trouble.

#### Deregulation and the Loss of Experienced Managers Negatively Impact Service Quality

Deregulation insured that the Company could boost profits from downsizing, reengineering and reorganizing. With this incentive it eliminated thousands of experienced managers and lowered the benefits for those remaining. It also increased the productivity pressures on those that remained. Here are some of the consequences:

Because of the lower benefits and increased productivity pressures, the position has become much less desirable to senior skilled workers. As a result, the positions are increasingly filled with people hired off the street with little or no technical experience or skill.

Because these new managers have few if any technical skills, they are unable to properly train the new temporary workers or respond adequately to workers' technical problems and concerns.

For example, a CWA review of the 9 managers at a work location found that five had less than two years experience. Of those 5, three had less than one year. These managers were responsible for 240 workers.

## RECOMMENDATIONS

The presence of inconsistent and inaccurate service quality data allowed New York Tel to artificially improve the Company's service quality performance and, thus, minimize its exposure to the multi-million dollar penalties built into the PRP. CWA makes the following recommendations to fix these problems.

1) Extend the CWA service quality program for the remainder of the PRP.

It is not enough to merely monitor PSC service quality data because it has already been doctored. The CWA service quality program is needed so that data reporting is monitored at the source. There is no other avenue through which workers can participate without fear of retribution. The program also benefits consumers and the PSC because it educates and trains members in terms of the importance of service quality for the Company, consumers and the workers themselves.

2) Develop a remedial program - with the participation of CWA - to insure that over the long term, proper procedures are followed to guarantee the future validity of service quality data and the delivery of high quality service.

The surveys and hotline reports prove that the service quality reporting problems are widespread and represent a pattern of abuse across the state of New York. They are not isolated to one manager, bureau or geographic area. Such problems require long term solutions. CWA recommends that a remedial program be developed -- with our full participation -- to address these problems in a systematic and comprehensive manner.

3) Conduct a comprehensive reevaluation of New York Tel's performance in relation to service quality targets and recalculate the penalties levied against the Company - part of the PRP.

The existence of documented inaccurate service quality data calls into question all the service quality reports previously submitted by the Company to the PSC.

Florida Public Service Commission  
Performance Assessment Plan  
Docket 000121-TP

**DRAFT**

**1.0 Scope**

1.1 This document defines the Florida Public Service Commission Staff Proposal for (a) BellSouth Service Quality Measures (SQMs), (b) the Enforcement Measures, (c) Benchmarks and Analogs, (d) Statistical Methodology, and (e) the Enforcement Plan for purposes of Docket No. 000121-TP.

1.2 KPMG Consulting LLC is currently conducting an adequacy review of the BellSouth SQMs in conjunction with the Florida Operations Support System (OSS) test in Docket Nos. 981834-TP and 960786-TL. The SQMs, Enforcement Measures, and the Benchmarks and Analogs recommended here will be readdressed at the conclusion of the Florida OSS test to incorporate any changes or modifications recommended by KPMG.

**2.0 Measurement Reporting**

2.1 BellSouth will report its performance to individual CLECs and to the Florida Public Service Commission in accordance with the list of SQMs, which are contained in **Exhibit A**.

2.2 BellSouth will report its performance to individual CLECs and the Florida Public Service Commission in accordance with the Enforcement Measures, which are contained in **Exhibit B**.

2.3 BellSouth will make performance data and reports available to individual CLECs on a monthly basis. The reports will contain information collected in each performance category and will be available to CLECs via the BellSouth Interconnection Web site. BellSouth will also provide electronic access to the Performance Monitoring and Analysis Platform raw data underlying the performance measures. BellSouth shall provide detailed instructions regarding access to the reports and to the raw data, as well as the nature of the format of the data provided on the Web site. Monthly reports and data will be posted to the Web site by the 20th calendar day of the following month.

2.4 Section 364.285(1), Florida Statutes, provides that the Florida Public Service Commission shall have the power to impose upon any entity subject to its jurisdiction under Chapter 364, Florida Statutes, which is found to have refused to comply with or to have willfully violated any lawful rule or order of the Commission or any provision of Chapter 364, Florida Statutes, a penalty for each offense of not more than \$25,000. Each

day that such refusal or violation continues constitutes a separate offense. Collected penalties shall be paid to the Florida Public Service Commission for deposit in the State General Revenue Fund.

- 2.5 If performance data and associated reports are not published on the BellSouth Web site by the twentieth (20<sup>th</sup>) calendar day of each month, each day past the due date shall constitute an admission of a violation of the Commission Order implementing this enforcement plan pursuant to Section 364.285, Florida Statutes, and a penalty of \$2,000 will be deemed assessed. BellSouth will be required to pay the penalty to the Florida Public Service Commission for deposit in the State General Revenue Fund within fifteen (15) calendar days of the actual publication date.
- 2.6 If performance data and reports published on the BellSouth Web site by the twentieth (20<sup>th</sup>) calendar day of each month are incomplete, or if previously reported data are revised, each day past the due date shall constitute an admission of a violation of the Commission Order implementing this enforcement plan pursuant to Section 364.285, Florida Statutes, and a penalty of \$400 will be assessed. BellSouth will be required to pay the penalty within fifteen (15) days of the final publication date or the report revision date, to the Florida Public Service Commission, for deposit in the State General Revenue Fund.

### 3.0 Modifications to Measures

- 3.1 During the first two years of implementation, BellSouth will participate in six-month review cycles starting six months after the date of the Florida Public Service Commission order. A collaborative work group, which will include BellSouth, interested CLECs and the Florida Public Service Commission will review the Performance Assessment Plan for additions, deletions or other modifications. After two years from the date of the order, the review cycle may, at the discretion of the Florida Public Service Commission, be reduced to an annual review.
- 3.2 BellSouth and the CLECs shall file any proposed revisions to the Performance Assessment Plan one month prior to the beginning of each review period.
- 3.3 From time-to-time, BellSouth may be ordered by the Florida Public Service Commission to modify or amend the Service Quality Measures or Enforcement Measures. Nothing will preclude any party from participating in any proceeding involving BellSouth's Service Quality Measures or Enforcement Measures or from advocating that those measures be modified.
- 3.4 In the event a dispute arises regarding the ordered modification or amendment to the Service Quality Measures or Enforcement Measures, the parties will refer the dispute to the Florida Public Service Commission.

#### 4.0 Enforcement Mechanisms

##### 4.1 Purpose

This section establishes Enforcement Mechanisms used to verify and maintain parity performance between BellSouth and an individual CLEC's operations as well as to maintain access to Operational Support System functions.

##### 4.2 Effective Date

The Enforcement Mechanisms shall become effective 90 days after the Florida Public Service Commission issues a final order in this case. This time will allow BellSouth to put statistical methods and plans into production.

##### 4.3 Definitions

4.3.1 Enforcement Measurement means the performance measures listed in **Exhibit B**. Enforcement Measures are a subset of the Service Quality Measures used to evaluate BellSouth's performance.

4.3.2 Enforcement Measurement Benchmarks means a competitive level of service used to compare the performance of BellSouth and an individual CLEC where no analogous process, product or service is feasible. Benchmarks are listed in **Exhibit C**.

4.3.3 Enforcement Measurement Analog means comparing performance levels provided to BellSouth retail customers with performance levels provided by BellSouth to the CLEC customer, as set forth in **Exhibit C**.

4.3.4 Test Statistic and Balancing Critical Value is the means by which enforcement will be determined using statistically valid equations. See **Exhibit D**. CLEC performance will be compared to BellSouth performance using a truncated Z statistic. Balancing the critical value balances the probability of Type I and Type II errors. See **Exhibit E** for statistical methodology and technical description.

4.3.5 Cell is the point at which like-to-like comparisons are made. For example, all BellSouth retail POTS services, for residential customers, requiring a dispatch in a particular wire center, at a particular point in time, will be compared directly to a CLEC's resold services for residential customers, requiring a dispatch, in the same wire center, at a particular point in time. When determining compliance, these cells can have a positive or negative value and are compared to the critical value. See **Exhibit D**.

- 4.3.6 Parity Gap refers to the incremental departure from a compliant level of service. See Exhibit D. The parity gap is the difference in the aggregated truncated Z value and the balancing critical value.
- 4.3.7 Affected Volume means that proportion of the total impacted individual CLEC volume or CLEC aggregate volume for which remedies will be paid.
- 4.3.8 Delta Value is used to develop the balancing critical value. The difference between the balancing critical value and the truncated Z statistic determines whether or not the measure passed or failed. The delta value also impacts the amount of the remedies that would be paid assuming failures. An initial delta value of .5 for individual CLEC calculations and .35 for aggregated calculations will be used. The delta value for each measure will be reevaluated for materiality concerns during the six-month review cycles described in Section 3.1.
- 4.3.9 Tier 1 Enforcement Mechanism means self-executing penalties paid directly by BellSouth to an individual CLEC when BellSouth delivers noncompliant performance of any one of the Enforcement Measures for any month.
- 4.3.10 Tier 2 Enforcement Mechanism means assessments paid directly by BellSouth to the Florida Public Service Commission for deposit in the State General Revenue Fund pursuant to terms set forth in Section 4.4. Tier 2 Enforcement Mechanisms are triggered by a monthly failure in which BellSouth performance is out of compliance or does not meet the benchmarks for the aggregate of all CLEC data for a particular Enforcement Measurement.

#### **4.4 Application**

- 4.4.1 If BellSouth fails to achieve the Enforcement Analogs or Benchmarks specified in this Performance Assessment Plan, each failure shall constitute an admission of a separate violation of the Commission Order implementing this enforcement plan.
- 4.4.2 Section 364.285(1), Florida Statutes, provides that the Florida Public Service Commission shall have the power to impose upon any entity subject to its jurisdiction under Chapter 364, Florida Statutes, which is found to have refused to comply with or to have willfully violated any lawful rule or order of the Commission or any provision of Chapter 364, Florida Statutes, a penalty for each offense of not more than \$25,000. Each day that such refusal or violation continues constitutes a separate offense. Collected penalties shall be paid to the

Florida Public Service Commission and deposited in the State General Revenue Fund.

4.4.3 Pursuant to Section 364.285, Florida Statutes, Tier 2 violations will require payment of the associated penalties set forth in Sections 4.5.6 and 4.5.7 to the Florida Public Service Commission for deposit in the State General Revenue Fund.

4.4.4 If a Tier 2 measure fails twice in three consecutive months, BellSouth must perform a root cause analysis and file with the Florida Public Service Commission a corrective action plan within 30 days after the end of the second failed month.

4.4.5 The application of the Tier 1 or Tier 2 Enforcement Mechanisms does not foreclose other legal and regulatory claims and remedies available to CLECs.

**4.5 Methodology**

**Tier 1 Methodology**

4.5.1 Tier 1 Enforcement Mechanisms will be triggered by BellSouth's failure to achieve Enforcement Measurement Analogs or Benchmarks for an individual CLEC for a given Enforcement Measurement in a given month based upon a test statistic and balancing critical value calculated by BellSouth utilizing BellSouth generated data. The method of calculation for both analogs and benchmarks is included in Exhibit D.

4.5.2 Tier 1 Enforcement Mechanisms apply on a per transaction basis for the affected volume for each submeasure and will escalate based upon the number of consecutive months that BellSouth has reported noncompliance.

4.5.3 Fee Schedule for Tier 1 Enforcement Mechanisms is shown below. Failures beyond Month 6 will be subject to the fees listed in Month 6.

**PAYMENTS FOR TIER 1 MEASURES**

PER AFFECTED ITEM						
	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6
Ordering	\$40	\$50	\$60	\$70	\$80	\$90
Provisioning	\$100	\$125	\$175	\$250	\$325	\$500
Provisioning UNE (Coordinated Customer Conversions)	\$400	\$450	\$500	\$550	\$650	\$800
Maintenance and Repair	\$100	\$125	\$175	\$250	\$325	\$500

PER AFFECTED ITEM						
	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6
Maintenance and Repair UNE	\$400	\$450	\$500	\$550	\$650	\$800
LNP	\$150	\$250	\$500	\$600	\$700	\$800
IC Trunks	\$100	\$125	\$175	\$250	\$325	\$500
Collocation	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000

**Tier 2 Methodology**

- 4.5.4 Tier 2 Enforcement Mechanisms will be triggered by BellSouth's failure to achieve Enforcement Measurement Analogs and Benchmarks for given Enforcement Measures on a month by month basis using BellSouth state aggregate data. The method of calculation for Tier 2 is the same as that described for Tier 1 and is included in Exhibit D.
- 4.5.5 Tier 2 Enforcement Mechanisms apply for an aggregate of all Florida CLEC data, on a per transaction basis, for each submeasure, for a particular Enforcement Measure. The payment will escalate ten (10) percent per month based on the number of consecutive months that BellSouth has reported noncompliance.
- 4.5.6 Fee Schedule for Tier 2 Enforcement Mechanisms is shown below:

**PAYMENTS FOR TIER 2 MEASURES**

	Per Affected Item
OSS	
Pre-Ordering	\$20
Ordering	\$60
Provisioning	\$300
UNE Provisioning (Coordinated Customer Conversions)	\$875
Maintenance and Repair	\$300
UNE Maintenance and Repair	\$875
Billing	\$1
LNP	\$500
IC Trunks	\$500
Collocation	\$15,000

**4.6 Payment of Tier 1 and Tier 2 Amounts**

- 4.6.1 If BellSouth performance triggers an obligation to pay Tier 1 Enforcement Mechanism penalties to a CLEC or an obligation to remit Tier 2 Enforcement Mechanism penalties to the Florida Public Service Commission for deposit in the State General Revenue Fund, BellSouth shall make payment in the required amount on or before the thirtieth (30<sup>th</sup>) day following the due date of the performance measurement report for the month in which the obligation arose.
- 4.6.2 For each day after the due date that BellSouth fails to pay a CLEC the required amount for Tier 1, BellSouth will pay the CLEC six (6) percent simple interest per annum.
- 4.6.3 Each day after the due date that BellSouth fails to pay penalties under the Tier 2 Enforcement Mechanism shall constitute a separate violation of the Commission Order implementing this enforcement plan, pursuant to Section 364.285, Florida Statutes. BellSouth will pay the Florida Public Service Commission an additional \$1,000 per day for deposit into the State General Revenue Fund.
- 4.6.4 If a CLEC disputes the amount paid to the CLEC under Tier 1 Enforcement Mechanisms, the CLEC shall submit a written claim to BellSouth within sixty (60) days after the date of the performance measurement report for which the obligation arose. BellSouth shall investigate all claims and provide the CLEC written findings within thirty (30) days after receipt of the claim. If BellSouth determines the CLEC is owed additional amounts, BellSouth shall pay the CLEC such additional amounts within thirty (30) days after its findings along with six (6) percent simple interest per annum. However, the CLEC shall be responsible for all administrative costs associated with resolution of disputes that result in no actual payment.
- 4.6.5 At the end of each calendar year, BellSouth will have its independent auditing and accounting firm certify that all penalties under Tier 1 and Tier 2 Enforcement Mechanisms were paid and accounted for in accordance with Generally Accepted Accounting Principles.

#### **4.7 Limitations of Liability**

- 4.7.1 BellSouth will not be responsible for a CLEC's acts or omissions that cause performance measures to be missed or failed, including but not limited to, accumulation and submission of orders at unreasonable quantities or times or failure to submit accurate orders or inquiries. BellSouth shall provide the CLEC with reasonable notice of such acts or omissions and provide the CLEC with any such supporting documentation.

4.7.2 BellSouth shall not be obligated for penalties under Tier 1 or Tier 2 Enforcement Mechanisms for noncompliance with a performance measure if such noncompliance was the result of an act or omission by the CLEC that was in bad faith.

4.7.3 BellSouth shall not be obligated for penalties under Tier 1 or Tier 2 Enforcement Mechanisms for noncompliance with a performance measurement if such noncompliance 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 BellSouth; an act or omission by a CLEC that is contrary to any of its obligations under the Act, Commission rule, or state law; or an act or omission associated with third-party systems or equipment.

#### **4.8 Enforcement Mechanism Caps**

4.8.1 BellSouth's total liability for payments under Tier 1 and Tier 2 Enforcement Mechanisms shall be procedurally capped at 39 percent of net revenues for the state or approximately \$337 million.

4.8.2 Within 30 days of exceeding the cap, BellSouth must file a petition with the Florida Public Service Commission for an expedited hearing showing why it should not be required to pay remedies in excess of the procedural cap.

4.8.3 The cap shall apply on a rolling twelve-month period.

#### **4.9 Dispute Resolution**

4.9.1 Notwithstanding any other provision of this Agreement, any dispute regarding BellSouth's performance or obligations shall be resolved by the Florida Public Service Commission. Mediation may be available on a case-by-case basis and will not affect a substantially interested person's right to a hearing. If mediation results in the settlement of the dispute, the settlement will be presented to the Commission for consideration.

#### **5.0 Market Penetration Adjustment**

BellSouth shall implement a market penetration adjustment for new and advanced services based upon statewide aggregate performance as follows:

5.1 In order to ensure parity and benchmark performance where CLECs order low volumes of advanced and nascent services, BellSouth will make additional voluntary payments to the Florida Public Service Commission for deposit in the

State General Revenue Fund. These additional payments will only apply when there are less than 100 observations for those measures listed in Section 5.2 on a statewide basis, subject to the conditions specified in Sections 5.3, 5.4 and 5.5 below.

5.2 The measures applicable to the market penetration adjustment are:

- Percent Missed Installation Appointments
- Average Completion Interval
- Missed Repair Appointments
- Maintenance Average Duration
- Average Response Time for Loop Make-Up Information

Each of these measures will be disaggregated into submeasures as follows:

- UNE Loop and Port Combo
- UNE xDSL
- UNE Line Sharing

5.3 The additional payments referenced above will be made if BellSouth fails to provide the requisite parity or benchmark service for the above measures as determined by the use of the truncated Z statistic and the balancing critical value on a monthly basis. Each failure shall constitute an admission of a violation of the Commission Order implementing this enforcement plan pursuant to Section 364.285, Florida Statutes, and will require payment of the associated penalties set forth in Section 5.4 to the Florida Public Service Commission for deposit in the State General Revenue Fund.

5.4 If during the month there were 100 observations or more for the submeasure, then no additional voluntary payments will be made to the Florida Public Service Commission for deposit in the State General Revenue Fund. However, if during the same month there are less than 100 observations for a submeasure on a statewide basis, then BellSouth shall calculate the additional payments to the Florida Public Service Commission for deposit in the State General Revenue Fund by first applying the normal Tier 2 assessment calculation methodology to that qualifying measurement and then trebling that amount.

5.5 Any payments made are subject to the cap ordered by the Florida Public Service Commission.

## 6.0 Competitive Entry Volume Adjustment

6.1 In order to ensure that nascent CLECs have an adequate opportunity to establish a market presence, BellSouth will make a higher payment per transaction for the affected submeasure for ordering and provisioning under Tier 1 where the

CLEC's volume of total transactions for the submeasure is low, in accordance with Sections 6.2 and 6.3.

- 6.2 If the CLEC's volume of total transactions for a submeasure is equal to or less than 25, the payment per affected item specified in Section 4.5.3 will be trebled.
- 6.3 If the CLEC's volume of total transactions for a submeasure is less than 50 but more than 25, the payment per affected item specified in Section 4.5.3 will be doubled.

#### **7.0 Auditing Measurement Data**

- 7.1 BellSouth will agree to undergo a comprehensive audit of the aggregate level reports for both BellSouth and the CLEC(s) current year data for each of the next five (5) years (2001 - 2006), to be conducted by an independent third party. The results of that audit will be made available to all the parties subject to proper safeguards to protect proprietary information.
- 7.2 The cost of the comprehensive audit shall be borne by BellSouth.
- 7.3 The independent third-party auditor shall be selected with input from BellSouth and the Florida Public Service Commission.
- 7.4 BellSouth and the Florida Public Service Commission shall jointly determine the scope of the audit considering input from the CLECs.
- 7.5 When a CLEC has reason to believe the data collected for a measure is flawed or the reporting criteria for the measure is not being adhered to, a CLEC should have the right to a review performed by BellSouth on specific measures and/or submeasures upon written request. If within thirty (30) days of the written request, the issue has not been resolved, the CLEC may, at its own expense, commence a focused audit by an independent third party upon providing BellSouth with five (5) business days advance notice.
- 7.6 BellSouth shall retain data that supports performance measure results for a rolling month period.

**EXHIBIT A**  
**SERVICE QUALITY MEASURES**

**EXHIBIT A**  
**BellSouth Telecommunications**  
**Florida Service Quality Measures**

**CATEGORY**

**MEASUREMENT DESCRIPTION**

<b>(OSS) Operations Support Systems</b>	<p>OSS-1. Average Response Time and Response Interval (Pre-Ordering/Ordering)</p> <p>OSS-2. Interface Availability (Pre-Ordering)</p> <p>OSS-3. Interface Availability (Maintenance &amp; Repair)</p> <p>OSS-4. Response Interval (Maintenance &amp; Repair)</p> <p>OSS-5. Percent Response Received Within "x" Seconds</p>
<b>(O) Ordering</b>	<p>O-1. Percent Flow-through Service Requests (Summary)</p> <p>O-2. Percent Flow-through Service Requests (Detail)</p> <p>O-3. Flow-through Error Analysis</p> <p>O-4. CLEC LSR Information LSR Flow-Through Matrix</p> <p>O-5. Percent Rejected Service Requests</p> <p>O-6. Reject Interval</p> <p>O-7. Firm Order Confirmation Timeliness</p> <p>O-8. Speed of Answer in Ordering Center</p> <p>O-9. LNP-Percent Rejected Service Request</p> <p>O-10. LNP-Reject Interval Distribution &amp; Average Reject Interval</p> <p>O-11. LNP-Firm Order Confirmation Timeliness Interval Distribution &amp; Firm Order Confirmation Average Interval</p> <p>O-12. Acknowledgement Timeliness</p> <p>O-13. Acknowledgement Completeness</p> <p>O-14. Loop Make Up Information Average Response Time</p>
<b>(P) Provisioning</b>	<p>P-1. Mean Held Order Interval &amp; Distribution Intervals</p> <p>P-2. Average Jeopardy Notice Interval &amp; Percentage of Orders Given Jeopardy Notices</p> <p>P-3. Percent Missed Installation Appointments</p> <p>P-4. Average Completion Interval (OCI) &amp; Order Completion Interval Distribution</p> <p>P-5. Average Completion Notice Interval</p> <p>P-6. Coordinated Customer Conversions Interval</p> <p>P-6A. Coordinated Customer Conversions Hot Cut Timeliness % within Interval and Average Interval</p> <p>P-7. % Provisioning Troubles w/i 30 days of Service Order Completion</p> <p>P-8. Total Service Order Cycle Time (TSOCT)</p> <p>P-9. LNP -Percent Missed Installation Appointments</p> <p>P-10. LNP-Average Disconnect Timeliness Interval &amp; Disconnect Timeliness Interval Distribution</p> <p>P-11. LNP-Total Service Order Cycle Time</p>
<b>(M&amp;R) Maintenance &amp; Repair</b>	<p>M&amp;R-1. Missed Repair Appointments</p> <p>M&amp;R-2. Customer Trouble Report Rate</p> <p>M&amp;R-3. Maintenance Average Duration</p> <p>M&amp;R-4. Percent Repeat Troubles w/i 30 days</p> <p>M&amp;R-5. Out of Service &gt; 24 Hours</p> <p>M&amp;R-6. Average Answer Time - Repair Centers</p>
<b>(B) Billing</b>	<p>B-1. Invoice Accuracy</p> <p>B-2. Mean Time to Deliver Invoices</p> <p>B-3. Usage Data Delivery Accuracy</p> <p>B-4. Usage Data Delivery Completeness</p> <p>B-5. Usage Data Delivery Timeliness</p> <p>B-6. Mean Time to Deliver Usage</p>

**EXHIBIT A**  
**BellSouth Telecommunications**  
**Florida Service Quality Measures**

<u>CATEGORY</u>	<u>MEASUREMENT DESCRIPTION</u>
<b>(OS) (DA) Operator Services Toll &amp; Directory Assistance</b>	OS-1. Speed to Answer Performance/Average Speed to Answer (Toll) OS-2. Speed to Answer Performance/Percent Answered within "X" Seconds (Toll) DA-1. Speed to Answer Performance/Average Speed to Answer (DA) DA-2. Speed to Answer Performance/Percent Answered within "X" Seconds (DA)
<b>(E) E911</b>	E-1. Timeliness E-2. Accuracy E-3. Mean Interval
<b>(TGP) Trunk Group Performance</b>	TGP-1. Trunk Group Performance-Aggregate TGP-2. Trunk Group Performance-CLEC Specific TGP-3. Trunk Group Service Report TGP-4. Trunk Group Service Detail
<b>(C) Collocation</b>	C-1. Average Response Time C-2. Average Arrangement Time C-3. Percent of Due Dates Missed
<b>(CM) Change Management</b>	CM-1 Timeliness of Change Management Notices CM-2 Average Delay Days for Change Management Notices CM-3 Timeliness of Documents Associated with Change CM-4 Average Delay Days for Documentation

**Note:** The detailed business rules for these SQM's will be consistent with those adopted by the Florida Public Service Commission as Interim metrics for the purpose of OSS testing unless otherwise specified.

### Additional Measures Under Consideration

KPMG is currently conducting an adequacy review of the BellSouth SQM's as part of the Florida OSS test. As a part of that evaluation KPMG Consulting LLC is determining the need for any of the additional measures listed below.

1. Percent Service Loss from Early and Late Cuts
2. Percent of Hot Cuts Not Working When Initially Provisioned
3. Percent Completions or Attempts without Notice or with less than 24 hours Notice
4. Percent Order Accuracy
5. Percent of Orders Canceled or Supplemented at the Request of BellSouth
6. Percent and Timeliness of EDI and TAG LSR acknowledgements
7. Provisioning Troubles prior to Loop Acceptance
8. Percent Orders Canceled after Missed Due Date
9. Percent Found OK/test OK/CPE
10. CLEC Center Call Abandonment Rate
11. Average Notification of Interface / OSS Outage
12. Percent of Change Management Notices and Documentation Sent on Time
13. Percent of Software Certification Failures and Software Problem Resolution
14. Percent Billing Errors Corrected in X Days
15. Loop Make Up Information Timeliness
16. Provisioning Trouble Reports Prior to Service Order Completion
17. Coordinated Customer Conversions as Percentage on Time
18. Service Inquiry with Firm Order (Manual)
19. Percent Troubles within 7 days of a Hot Cut

Note that KPMG is also evaluating the appropriateness of levels of disaggregation. Additionally they will conduct a special study of end-to-end timing of several transactions, including Average OSS Response Time, Reject Interval, and Firm Order Commitment Timeliness

**EXHIBIT B**

**ENFORCEMENT MEASURES**

**EXHIBIT B**  
**BellSouth Telecommunications**  
**Florida Enforcement Measures**  
**TIER 1 and 2**

<u>CATEGORY</u>	<u>MEASUREMENT DESCRIPTION</u>
(OSS) Operations Support Systems	OSS-1. Average Response Time and Response Interval (Pre-Ordering/Ordering) (Tier 2 Only) OSS-2. Interface Availability (Pre-Ordering) (Tier 2 Only)
(O) Ordering	O-1. Percent Flow-through Service Requests (Summary) (Tier 2 Only) <i>(Residential, Business, UNE, LNP)</i> O-2. Percent Flow-through Service Requests (Detail) (Tier 1 Only) <i>(Residential, Business, UNE, LNP)</i> O-6. Reject Interval <i>(Mechanized, Partially Mechanized, Non-mechanized)</i> O-7. Firm Order Confirmation Timeliness <i>(Mechanized, Partially Mechanized, Non-mechanized)</i> O-14 Loop Make Up Information Average Response Time <i>(Manual, Electronic)</i>
(P) Provisioning	P-3. Percent Missed Installation Appointments* P-4. Average Completion Interval (OCI) & Order Completion Interval Distribution * P-6. Coordinated Customer Conversions Interval P-6A. Coordinated Customer Conversions Hot Cut Timeliness % within Interval and Average Interval P-7. Percent Provisioning Troubles w/i 30 days of Service Order Completion* P-9. LNP -Percent Missed Installation Appointments P-10. LNP-Average Disconnect Timeliness Interval & Disconnect Timeliness Interval Distribution
(M&R) Maintenance & Repair	M&R-1. Missed Repair Appointments * M&R-2. Customer Trouble Report Rate * M&R-3. Maintenance Average Duration * M&R-4. Percent Repeat Troubles w/I 30 days) *
(B) Billing	B-1. Invoice Accuracy B-2. Mean Time to Deliver Invoices B-3. Usage Data Delivery Accuracy B-5. Usage Data Delivery Timeliness
(TGP) Trunk Group Performance	TGP-1. Trunk Group Performance-Aggregate (Exclude from Tier 1 Measures) TGP-2. Trunk Group Performance-CLEC Specific (Exclude from Tier 2 Measures)
(C) Collocation	C-3. Percent of Due Dates Missed
(CM) Change Management	CM-1 Timeliness of Change Management Notices (Tier 2 Only)

**Note.** The detailed business rules for these SQMS's will be consistent with those adopted by the Florida Public Service Commission as Interim metrics for the purpose of OSS testing unless otherwise specified.

\* The level of disaggregation for these measures shall be:

- a) Resale POTS Residence
- b) Resale POT Business
- c) Resale Design
- d) UNE Design
- e) UNE NonDesign
- f) UNE Loop and Port Combo
- g) UNE Loops
- h) UNE xDSL
- i) UNE Line Sharing
- j) Interconnection Trunks

Unless otherwise noted in this Exhibit the level of disaggregation for Tier 1 and Tier 2 measures are describe in Exhibit A.

**EXHIBIT C**  
**ANALOGS AND BENCHMARKS**

**Exhibit C  
Florida Enforcement Analogs and Benchmarks**

	MEASURES AND SUBMEASURES	RETAIL ANALOG RESALE AND UNES	BENCHMARK
<b>Pre-Ordering</b>	OSS-1 Average Response Time	Parity with Retail	> 99.5%
	OSS-2 OSS Interface Availability		
<b>Ordering</b>	O-1 Percent Flow-Through Service Request (Summary)		> 90% > 80% > 80% > 80%
	Residential		
	Business		
	UNE		
	LNP		
	O-2 Percent Flow-Through Service Request (Detail)		> 90% > 80% > 80% > 80%
	Residential		
	Business		
	UNE		
	LNP		
	O-6 Reject Interval		97% ≤ 1 hr 85% ≤ 10 hrs 85% ≤ 24 hrs
	Mechanized		
	Partially Mechanized		
	Non-Mechanized		
	O-7 Firm Order Confirmation Timeliness		95% ≤ 3 hrs 85% ≤ 10 hrs 85% ≤ 36 hrs
	Mechanized		
	Partially Mechanized		
	Non-Mechanized		
	O-14 Loop Make Up Information Average Response Time		95% ≤ 3 bus.dys 95% ≤ 1 min
	Manual		
	Electronic		
<b>Provisioning</b>	P-3 Percent Missed Installation Appointments – Resale POTS	Parity with Retail POTS	
	P-3 Percent Missed Installation Appointments – Resale Design	Parity with Retail Design	
	P-3 Percent Missed Installation Appointments – UNE Loop and Port	Retail Residence and Business <sup>1</sup>	
	Combos		
	P-3 Percent Missed Installation Appointments – UNE Loops	Design: Retail Design <sup>1</sup> Non-Design: Retail Res. Bus <sup>1</sup>	
	P-3 Percent Missed Installation Appointments – UNE xDSL	Parity with Retail Design	
	P-3 Percent Missed Installation Appointments – UNE Line Sharing	ADSL Provide to Retail	
	P-3 Percent Missed Installation Appointments – IC Trunks	Parity with Retail	
	P-4 Order Completion Interval – Resale POTS	Parity with Retail POTS	

	MEASURES AND SUBMEASURES	RETAIL ANALOG	BENCHMARK
	P-4 Order Completion Interval – Resale Design	Parity with Retail Design	
	P-4 Order Completion Interval – UNE Loop & Port Combos	Retail Residence and Business <sup>1</sup>	
	P-4 Order Completion Interval – UNE Loops	Design: Retail Design Dispatch 'w' Orders <sup>1</sup> Non-Design: Retail Residence and Business POTS	
	P-4 Order Completion Interval – UNE xDSL		7 days w/o conditioning 14 days w/conditioning
	P-4 Order Completion Interval – UNE Line Sharing	ADSL Provide to Retail	
	P-4 Order Completion Interval – IC Trunks	Parity with Retail	
	P-6 Coordinated Customer Conversion Interval		95% < 15 min
	P-6A Coordinated Customer Conversion Hot Cut Timeliness Percent within Interval and Average Interval		95% w/l + or – 15 min of sched start time
	P-7 Percent Provisioning Troubles within 30 Days – Resale POTS	Parity with Retail POTS	
	P-7 Percent Provisioning Troubles within 30 Days – Resale Design	Parity with Retail Design	
	P-7 Percent Provisioning Troubles within 30 Days - UNE Loop and Port Combos	Retail Residence and Business <sup>1</sup>	
	P-7 Percent Provisioning Troubles within 30 Days - UNE Loops	Design: Retail Design <sup>1</sup> Non-Design: Retail Res, Bus <sup>1</sup>	
	P-7 Percent Provisioning Troubles within 30 Days – UNE xDSL	Parity with Retail Design	
	P-7 Percent Provisioning Troubles within 30 Days – UNE Line Sharing	ADSL Provide to Retail	
	P-7 Percent Provisioning Troubles within 30 Days – IC Trunks	Parity with Retail	
	P-9 LNP – Percent Missed Installation Appointments	Retail Residence and Business	
	P-10 LNP-Average Disconnect Timeliness Interval & Disconnect Timeliness Interval Distribution		
Maintenance	M&R-1 Percent Missed Repair Appointments – Resale POTS	Parity with Retail POTS	95% < 15 min
	M&R-1 Percent Missed Repair Appointments – Resale Design	Parity with Retail Design	
	M&R-1 Percent Missed Repair Appointments – UNE Loop and Port Combos	Retail Residence and Business <sup>1</sup>	
	M&R-1 Percent Missed Repair Appointments – UNE Loops	Design: Retail Design <sup>1</sup> Non-Design: Retail Res, Bus <sup>1</sup>	
Maintenance Continued	M&R-1 Percent Missed Repair Appointments – UNE xDSL	Parity with Retail Design	
	M&R-1 Percent Missed Repair Appointments – UNE Line Sharing	ADSL Provide to Retail	

	MEASURES AND SUBMEASURES	RETAIL ANALOG RESALE AND UNES	BENCHMARK
	M&R-1 Percent Missed Repair Appointments – IC Trunks	Parity with Retail	
	M&R-2 Customer Trouble Report Rate – Resale POTS	Parity with Retail POTS	
	M&R-2 Customer Trouble Report Rate – Resale Design	Parity with Retail Design	
	M&R-2 Customer Trouble Report Rate – UNE Loop and Port Combos	Retail Residence and Business <sup>1</sup>	
	M&R-2 Customer Trouble Report Rate - UNE Loops	Design: Retail Design <sup>1</sup> Non-Design: Retail Res, Bus <sup>1</sup>	
	M&R-2 Customer Trouble Report Rate – UNE xDSL	Parity with Retail Design	
	M&R-2 Customer Trouble Report Rate – UNE Line Sharing	ADSL Provide to Retail	
	M&R-2 Customer Trouble Report Rate – IC Trunks	Parity with Retail	
	M&R-3 Maintenance Average Duration – Resale POTS	Parity with Retail POTS	
	M&R-3 Maintenance Average Duration – Resale Design	Parity with Retail Design	
	M&R-3 Maintenance Average Duration - UNE Loop and Port Combos	Retail Residence and Business <sup>1</sup>	
	M&R-3 Maintenance Average Duration - UNE Loops	Design: Retail Design <sup>1</sup> Non-Design: Retail Res, Bus <sup>1</sup>	
	M&R-3 Maintenance Average Duration – UNE xDSL	Parity with Retail Design	
	M&R-3 Maintenance Average Duration – UNE Line Sharing	ADSL Provide to Retail	
	M&R-3 Maintenance Average Duration – UNE IC Trunks	Parity with Retail	
	M&R-4 Percent Repeat Troubles within 30 Days – Resale POTS	Parity with Retail POTS	
	M&R-4 Percent Repeat Troubles within 30 Days – Resale Design	Parity with Retail Design	
	M&R-4 Percent Repeat Troubles within 30 Days - UNE Loop and Port Combos	Retail Residence and Business <sup>1</sup>	
	M&R-4 Percent Repeat Troubles within 30 Days - UNE Loops	Design: Retail Design <sup>1</sup> Non-Design: Retail Res, Bus <sup>1</sup>	
	M&R-4 Percent Repeat Troubles within 30 Days – UNE xDSL	Parity with Retail Design	
	M&R-4 Percent Repeat Troubles within 30 Days – UNE Line Sharing	ADSL Provide to Retail	
	M&R-4 Percent Repeat Troubles within 30 Days - IC Trunks	Parity with Retail	
Billing	B-1 Invoice Accuracy	Parity with Retail	
	B-2 Mean Time To Deliver Invoices	Parity with Retail	
	B-3 Usage Data Delivery Accuracy	Parity with Retail	
Trunk Performance	TGP-1 Trunk Group Performance – Aggregate	Retail Trunk Group Category #9	
	TGP-2 Trunk Group Performance – CLEC Specific	Retail Trunk Group Category #9	
Collocation	C-3 Percent of Due Dates Missed		< 5%
Change Management	CM-1 Timeliness of Change Management Notices		98% on time

**NOTES**

' The retail analog for UNE Non-Design is the average of all dispatch retail residence and dispatch retail business transactions for the particular month. The retail analog for UNE Design is calculated similarly using dispatch retail design results.

**EXHIBIT D**  
**CALCULATION PROCEDURES**

## EXHIBIT D CALCULATION PROCEDURE

### TIER 1 CALCULATION FOR RETAIL ANALOGUES

1. Calculate the overall test statistic for each CLEC;  $z_{CLEC1}^T$  (See Exhibit E)
2. Calculate the balancing critical value ( $C_{B_{CLEC1}}$ ) that is associated with the alternative hypothesis (for fixed parameters  $\delta$ ,  $\psi$  or  $\epsilon$ ). (See Exhibit E)
3. If the overall test statistic is equal to or above the balancing critical value, stop here. That is, if  $C_{B_{CLEC1}} < z_{CLEC1}^T$ , stop here. Otherwise, go to step 4.
4. Calculate the Parity Gap by subtracting the value of step 2. from that of step 1.;  
 $z_{CLEC1}^T - C_{B_{CLEC1}}$
5. Calculate the Volume Proportion using a linear distribution with slope of  $\frac{1}{4}$ . This can be accomplished by taking the absolute value of the Parity Gap from step 4. Divided by 4;  $ABS((z_{CLEC1}^T - C_{B_{CLEC1}}) / 4)$ . All parity gaps equal or greater to 4 will result in a volume proportion of 100%.
6. Calculate the Affected Volume by multiplying the Volume Proportion from step 5. by the Total Impacted CLEC, Volume ( $I_c$ ) in the negatively affected cell; where the cell value is negative. (See Exhibit E)
7. Calculate the payment to the CLEC by multiplying the result of step 6. by the appropriate dollar amount from the fee schedule.

So, CLEC payment = Affected Volume<sub>CLEC1</sub> \* \$\$ from Fee Schedule

**Example: CLEC-1 Missed Installation Appointments (MIA) for Resale POTS**

	$n_i$	$n_c$	$I_c$	$MIA_i$	$MIA_c$	$Z_{CLEC1}^T$	$C_B$	Parity Gap	Volume Proportion	Affected Volume
State	50000	600	96	9%	16%	-1.92	-0.21	1.71	0.4275	
Cell						$Z_{CLEC1}$				
1		150	17	0.091	0.113	-1.994				8
2		75	8	0.176	0.107	0.734				
3		10	4	0.128	0.400	-2.619				2
4		50	17	0.158	0.340	-2.878				8
5		15	2	0.245	0.133	1.345				
6		200	26	0.156	0.130	0.021				
7		30	7	0.166	0.233	-0.600				3
8		20	3	0.106	0.150	-0.065				2
9		40	9	0.193	0.225	-0.918				4
10		10	3	0.160	0.300	-0.660				2
										29

where  $n_i$  = ILEC observations and  $n_c$  = CLEC-1 observations

Payout for CLEC-1 is (29 units) \* (\$100/unit) = \$2,900

Example: CLEC-1 Order Completion Interval (OCI) for Resale POTS

	$n_i$	$n_c$	$l_c$	$-OCI_i$	$OCI_c$	$Z_{CLEC1}^T$	$C_B$	Parity Gap	Volume Proportion	Affected Volume
State	50000	600	600	5days	7days	-1.92	-0.21	1.71	0.4275	
Cell						$Z_{CLEC1}$				
1		150	150	5	7	-1.994				64
2		75	75	5	4	0.734				
3		10	10	2	3.8	-2.619				4
4		50	50	5	7	-2.878				21
5		15	15	4	2.6	1.345				
6		200	200	3.8	2.7	0.021				
7		30	30	6	7.2	-0.600				13
8		20	20	5.5	6	-0.065				9
9		40	40	8	10	-0.918				17
10		10	10	6	7.3	-0.660				4
										133

where  $n_i$  = ILEC observations and  $n_c$  = CLEC-1 observations

Payout for CLEC-1 is (133 units) \* (\$100/unit) = \$13,300

**TIER 2 CALCULATION for RETAIL ANALOGUES:**

1. Tier 2 is triggered by failures in a given month of any Enforcement Measurement submeasure.
2. Therefore, calculate monthly statistical results and affected volumes as outlined in steps 2. through 6. for the CLEC Aggregate performance.
3. Calculate the payment to Florida Public Service Commission for deposit in the State General Revenue Fund by totaling monthly affected volume and multiplying the result by the appropriate dollar amount from the Tier 2 fee schedule.

So, the Florida Public Service Commission payment  
 =  $\Sigma$  ( Affected Volume<sub>CLECA</sub> for the month) \* \$\$ from Fee Schedule

**Example: CLEC-A Missed Installation Appointments (MIA) for Resale POTS**

State	$n_i$	$n_c$	$I_c$	$MIA_i$	$MIA_c$	$Z^T_{CLECA}$	$C_B$	Parity Gap	Volume Proportion	Affected Volume
Month1	180000	2100	336	9%	16%	-1.92	-0.21	1.71	0.4275	
Cell						$Z_{CLECA}$				
1		500	56	0.091	0.112	-1.994				24
2		300	30	0.176	0.100	0.734				
3		80	27	0.128	0.338	-2.619				12
4		205	60	0.158	0.293	-2.878				26
5		45	4	0.245	0.089	1.345				
6		605	79	0.156	0.131	0.021				
7		80	19	0.166	0.238	-0.600				9
8		40	6	0.106	0.150	-0.065				3
9		165	36	0.193	0.218	-0.918				16
10		80	19	0.160	0.238	-0.660				9
										99

where  $n_i$  = ILEC observations and  $n_c$  = CLEC-A observations

Payout for CLEC-A is (99 units) \* (\$300/unit) = \$29,700



### TIER 1 CALCULATION FOR BENCHMARKS WITH TARGETS

1. For each, CLEC, with five or more observations, calculate monthly performance results for the State.
2. CLECs having observations (sample sizes) between 5 and 30 will use Table I above.
3. Calculate the interval distribution based on the same data set used in step 1.
4. If the 'percent within' (or equivalent percentage for small samples) meets the benchmark standard, stop here. Otherwise, go to step 5.
5. Determine the Volume Proportion by taking the difference between benchmark and the actual performance result.
6. Calculate the Affected Volume by multiplying the Volume Proportion from step 5. by the Total CLEC, Volume.
7. Calculate the payment to the CLEC by multiplying the result of step 6. by the appropriate dollar amount from the fee schedule.

So, CLEC payment = Affected Volume<sub>CLEC1</sub> \* \$\$ from Fee Schedule

#### **Example: CLEC-1 Reject Timeliness**

	$n_c$	Benchmark	Reject Timeliness <sub>c</sub>	Volume Proportion	Affected Volume
State	600	95% within 1 hour	93% within 1 hour	.02	12

Payout for CLEC-1 is (12 units) \* (\$100/unit) = \$1,200

### TIER 2 CALCULATIONS for BENCHMARKS:

Tier 2 calculations for benchmark measures are the same as the Tier 1 benchmark calculations except the CLEC Aggregate data having failed for the given month being assessed.

**EXHIBIT E**

**STATISTICAL METHODOLOGY  
AND  
TECHNICAL APPENDIX**

## EXHIBIT E

### Statistical Methods for Performance Measure Analysis

#### I. Necessary Properties for a Test Methodology

The statistical process for testing if competing local exchange carriers (CLECs) customers are being treated equally with BellSouth (BST) customers involves more than just a mathematical formula. Three key elements need to be considered before an appropriate decision process can be developed. These are

- the type of data,
- the type of comparison, and
- the type of performance measure.

Once these elements are determined a test methodology should be developed that complies with the following properties.

- Like-to-Like Comparisons. When possible, data should be compared at appropriate levels, e.g. wire center, time of month, dispatched, residential, new orders. The testing process should:
  - Identify variables that may affect the performance measure.
  - Record these important confounding covariates.
  - Adjust for the observed covariates in order to remove potential biases and to make the CLEC and the ILEC units as comparable as possible.
- Aggregate Level Test Statistic. Each performance measure of interest should be summarized by one overall test statistic giving the decision maker a rule that determines whether a statistically significant difference exists. The test statistic should have the following properties.
  - The method should provide a single overall index, on a standard scale.
  - If entries in comparison cells are exactly proportional over a covariate, the aggregated index should be very nearly the same as if comparisons on the covariate had not been done.
  - The contribution of each comparison cell should depend on the number of observations in the cell.
  - Cancellation between comparison cells should be limited.
  - The index should be a continuous function of the observations.
- Production Mode Process. The decision system must be developed so that it does not require intermediate manual intervention, i.e. the process must be a "black box."
  - Calculations are well defined for possible eventualities.
  - The decision process is an algorithm that needs no manual intervention.
  - Results should be arrived at in a timely manner.
  - The system must recognize that resources are needed for other performance measure-related processes that also must be run in a timely manner.
  - The system should be auditable, and adjustable over time.
- Balancing. The testing methodology should balance Type I and Type II Error probabilities.
  - $P(\text{Type I Error}) = P(\text{Type II Error})$  for well defined null and alternative hypotheses.
  - The formula for a test's balancing critical value should be simple enough to calculate using standard mathematical functions, i.e. one should avoid methods that require computationally intensive techniques.

- Little to no information beyond the null hypothesis, the alternative hypothesis, and the number of observations should be required for calculating the balancing critical value.
- Trimming. Trimming of extreme observations from BellSouth and CLEC distributions is needed in order to ensure that a fair comparison is made between performance measures. Three conditions are needed to accomplish this goal. These are:
  - Trimming should be based on a general rule that can be used in a production setting.
  - Trimmed observations should not simply be discarded; they need to be examined and possibly used in the final decision making process.
  - Trimming should only be used on performance measures that are sensitive to "outliers."

### Measurement Types

The performance measures that will undergo testing are of four types:

- 1) means
- 2) proportions,
- 3) rates, and
- 4) ratio

While all four have similar characteristics, proportions and rates are derived from count data while means and ratios are derived from interval measurements. Table 2 classifies the performance measures by the type of measurement.

## **II. Testing Methodology – The Truncated Z**

Many covariates are chosen in order to provide deep comparison levels. In each comparison cell, a Z statistic is calculated. The form of the Z statistic may vary depending on the performance measure, but it should be distributed approximately as a standard normal, with mean zero and variance equal to one. Assuming that the test statistic is derived so that it is negative when the performance for the CLEC is worse than for the ILEC, a positive truncation is done – i.e. if the result is negative it is left alone, if the result is positive it is changed to zero. A weighted average of the truncated statistics is calculated where a cell weight depends on the volume of BST and CLEC orders in the cell. The weighted average is re-centered by the theoretical mean of a truncated distribution, and this is divided by the standard error of the weighted average. The standard error is computed assuming a fixed effects model.

### *Proportion Measures*

For performance measures that are calculated as a proportion, in each adjustment cell, the truncated Z and the moments for the truncated Z can be calculated in a direct manner. In adjustment cells where proportions are not close to zero or one, and where the sample sizes are reasonably large, a normal approximation can be used. In this case, the moments for the truncated Z come directly from properties of the standard normal distribution. If the normal approximation is not appropriate, then the Z statistic is calculated from the hypergeometric distribution. In this case, the moments of the truncated Z are calculated exactly using the hypergeometric probabilities.

### *Rate Measures*

The truncated Z methodology for rate measures has the same general structure for calculating the Z in each cell as proportion measures. For a rate measure, there are a fixed number of circuits or units for the CLEC,  $n_2$ , and a fixed number of units for BST,  $n_1$ . Suppose that the performance measure is a "trouble rate." The modeling assumption is that the occurrence of a trouble is independent between units and the number of troubles in  $n$  circuits follows a Poisson distribution with mean  $\lambda n$  where  $\lambda$  is the probability of a trouble in 1 circuit and  $n$  is the number of circuits.

In an adjustment cell, if the number of CLEC troubles is greater than 15 and the number of BST troubles is greater than 15, then the Z test is calculated using the normal approximation to the Poisson. In this case, the

moments of the truncated Z come directly from properties of the standard normal distribution. Otherwise, if there are very few troubles, the number of CLEC troubles can be modeled using a binomial distribution with n equal to the total number of troubles (CLEC plus BST troubles.) In this case, the moments for the truncated Z are calculated explicitly using the binomial distribution.

#### *Mean Measures*

For mean measures, an adjusted t statistic is calculated for each like-to-like cell which has at least 7 BST and 7 CLEC transactions. A permutation test is used when one or both of the BST and CLEC sample sizes is less than 6. Both the adjusted t statistic and the permutation calculation are described in the technical appendix.

#### *Ratio Measures*

Rules will be given for computing a cell test statistic for a ratio measure, however, the current plan for measures in this category, namely billing accuracy, does not call for the use of a Z parity statistic.

# EXHIBIT E

## TECHNICAL APPENDIX

EXHIBIT E  
TECHNICAL APPENDIX

We start by assuming that any necessary trimming<sup>1</sup> of the data is complete, and that the data are disaggregated so that comparisons are made within appropriate classes or adjustment cells that define "like" observations.

Notation and Exact Testing Distributions

Below, we have detailed the basic notation for the construction of the truncated z statistic. In what follows the word "cell" should be taken to mean a like-to-like comparison cell that has both one (or more) ILEC observation and one (or more) CLEC observation.

- L = the total number of occupied cells
- j = 1, ..., L; an index for the cells
- n<sub>1j</sub> = the number of ILEC transactions in cell j
- n<sub>2j</sub> = the number of CLEC transactions in cell j
- n<sub>j</sub> = the total number transactions in cell j; n<sub>1j</sub> + n<sub>2j</sub>
- X<sub>1k</sub> = individual ILEC transactions in cell j; k = 1, ..., n<sub>1j</sub>
- X<sub>2k</sub> = individual CLEC transactions in cell j; k = 1, ..., n<sub>2j</sub>
- Y<sub>k</sub> = individual transaction (both ILEC and CLEC) in cell j
 
$$= \begin{cases} X_{1k} & k = 1, \dots, n_{1j} \\ X_{2k} & k = n_{1j} + 1, \dots, \end{cases}$$
- Φ<sup>-1</sup>( ) = the inverse of the cumulative standard normal distribution function

For Mean Performance Measures the following additional notation is needed.

- $\bar{X}_{1j}$  = the ILEC sample mean of cell j
- $\bar{X}_{2j}$  = the CLEC sample mean of cell j
- s<sub>1j</sub><sup>2</sup> = the ILEC sample variance in cell j
- s<sub>2j</sub><sup>2</sup> = the CLEC sample variance in cell j
- {y<sub>k</sub>} = a random sample of size n<sub>2j</sub> from the set of Y<sub>j1</sub>, ..., Y<sub>jn<sub>2j</sub></sub>; k = 1, ..., n<sub>2j</sub>
- M<sub>j</sub> = the total number of distinct pairs of samples of size n<sub>1j</sub> and n<sub>2j</sub>;

---

<sup>1</sup> When it is determined that a measure should be trimmed, a trimming rule that is easy to implement in a production setting is:

**Trim the ILEC observations to the largest CLEC value from all CLEC observations in the month under consideration.**

That is, no CLEC values are removed; all ILEC observations greater than the largest CLEC observation are trimmed.



- $b_{2j}$  = the number of CLEC base elements in cell  $j$
- $b_j$  = the total number of base elements in cell  $j$ ;  $b_{1j} + b_{2j}$
- $\hat{r}_{1j}$  = the ILEC sample rate of cell  $j$ ;  $n_{1j}/b_{1j}$
- $\hat{r}_{2j}$  = the CLEC sample rate of cell  $j$ ;  $n_{2j}/b_{2j}$
- $q_j$  = the relative proportion of ILEC elements for cell  $j$ ;  $b_{1j}/b_j$

The exact distribution for a parity test is the binomial distribution. The binomial probability mass function distribution for cell  $j$  is

$$BN(k) = P(B = k) = \begin{cases} \binom{n_j}{k} q_j^k (1 - q_j)^{n_j - k}, & 0 \leq k \\ 0 & \text{otherwise} \end{cases}$$

and the cumulative binomial distribution is

$$CBN(x) = P(B \leq x) = \begin{cases} 0 & x < 0 \\ \sum_{k=0}^x BN(k), & 0 \leq x \\ 1 & x > n_j \end{cases}$$

For Ratio Performance Measures the following additional notation is needed.

- $U_{1k}$  = additional quantity of interest of an individual ILEC transaction in cell  $j$ ;  $k = 1, \dots, n_{1j}$
- $U_{2k}$  = additional quantity of interest of an individual CLEC transaction in cell  $j$ ;  $k = 1, \dots, n_{2j}$
- $r_j$  = the ILEC ( $i = 1$ ) or CLEC ( $i = 2$ ) ratio of the total additional quantity of interest to the base transaction total in cell  $j$ , i.e.,  $\sum_k U_{ijk} / \sum_k U_{kj}$

### Calculating the Truncated Z

The general methodology for calculating an aggregate level test statistic is outlined below.

1. Calculate cell weights,  $W_j$ . A weight based on the number of transactions is used so that a cell which has a larger number of transactions has a larger weight. The actual weight formulae will depend on the type of measure.

#### Mean or Ratio Measure

$$W_j = \sqrt{\frac{n_{1j} - 2}{j}}$$

*Proportion Measure*

$$W_j = \sqrt{\frac{n_{2j}n_{1j}}{n_j} \cdot \frac{a_j}{n_j} \left(1 - \frac{a_j}{n_j}\right)}$$

*Rate Measure*

$$W_j = \sqrt{\frac{b_{1j}b_{2j}}{b_j}}$$

2. In each cell, calculate a Z value,  $Z_j$ . A Z statistic with mean 0 and variance 1 is needed for each cell.

- If  $W_j = 0$ , set  $Z_j = 0$ .
- Otherwise, the actual Z statistic calculation depends on the type of performance measure.

*Mean Measure*

$$Z_j = \Phi^{-1}(\alpha)$$

where  $\alpha$  is determined by the following algorithm.

If  $\min(n_{1j}, n_{2j}) > 6$ , then determine  $\alpha$  as

$$\alpha = P(t_{n_j-1} \leq T_j)$$

that is,  $\alpha$  is the probability that a t random variable with  $n_j - 1$  degrees of freedom, is less than

$$T_j = \begin{cases} t_j + \frac{g}{6} \left( \frac{n_{1j} + 2n_{2j}}{\sqrt{n_{1j} n_{2j} (n_{1j} + n_{2j})}} \right) \left( t_j^2 + \frac{n_{2j} - n_{1j}}{n_{1j} + 2n_{2j}} \right) & t_j \geq t_{\min} \\ t_j + \frac{g}{6} \left( \frac{n_{1j} + 2n_{2j}}{\sqrt{n_{1j} n_{2j} (n_{1j} + n_{2j})}} \right) \left( t_{\min}^2 + \frac{n_{2j} - n_{1j}}{n_{1j} + 2n_{2j}} \right) & \text{otherwise} \end{cases}$$

where

$$t_j = \frac{\bar{X}_{1j} - \bar{X}_{2j}}{s_{1j} \sqrt{\frac{1}{n_{1j}} + \frac{1}{n_{2j}}}}$$

$$t_{\min} = \frac{-3\sqrt{n_{1j}n_{2j}}}{g(n_{1j} + 2n_{2j})}$$

and  $g$  is the median value of all values of

$$Y_{1j} = \frac{n_{1j}}{(n_{1j} - 1)(n_{1j} - 2)} \sum_k \left( \frac{X_{1jk} - \bar{X}_{1j}}{s_{1j}} \right)$$

with  $n_{1j} > 3$  for all values of  $j$ .  $\bar{n}_{3q}$  is the 3 quartile of all values of  $n_{1j}$ .

Note, that  $t_j$  is the "modified Z" statistic. The statistic  $T_j$  is a "modified Z" corrected for the skewness of the ILEC data.

If  $\min(n_{1j}, n_{2j}) \leq 6$ , and

a)  $M_j \leq 1,000$  (the total number of distinct pairs of samples of size  $n_{1j}$  and  $n_{2j}$  is 1,000 or less).

- Calculate the sample sum for all possible samples of size  $n_{2j}$ .
- Rank the sample sums from smallest to largest. Ties are dealt by using average ranks.
- Let  $R_0$  be the rank of the observed sample sum with respect all the sample sums.

$$\alpha = 1 - \frac{R_0 - 0.5}{M_j}$$

b)  $M_j > 1,000$

- Draw a random sample of 1,000 sample sums from the permutation distribution.
- Add the observed sample sum to the list. There is a total of 1001 sample sums. Rank the sample sums from smallest to largest. Ties are dealt by using average ranks.
- Let  $R_0$  be the rank of the observed sample sum with respect all the sample sums.

$$\alpha = 1 - \frac{R_0 - 0.5}{1001}$$

*Proportion Measure*

$$Z_j = \frac{n_{1j} a_{1j} - n_{1j} a_{2j}}{\sqrt{\frac{n_{1j} n_{2j} a_{1j} (n_{1j} - a_{1j})}{n_{1j} - 1}}}$$

*Rate Measure*

$$Z_j = \frac{n_{1j} - n_{2j}}{\sqrt{n_{1j} q_j (1 - q_j)}}$$

$$Z_j = \frac{\hat{R}_{1j} - \hat{R}_{2j}}{\sqrt{V(\hat{R}_{1j}) \left( \frac{1}{n_{1j}} + \frac{1}{n_{2j}} \right)}}$$

$$V(\hat{R}_{1j}) = \frac{\sum_k (U_{1jk} - \hat{R}_{1j} X_{1jk})^2}{\bar{X}_{1j}^2 (n_{1j} - 1)} = \frac{\sum_k U_{1jk}^2 - 2\hat{R}_{1j} \sum_k (U_{1jk} X_{1jk}) + \hat{R}_{1j}^2 \sum_k 1}{\bar{X}_{1j}^2 (n_{1j} - 1)}$$

3. Obtain a truncated Z value for each cell. To limit the amount of cancellation that takes place between cell results during aggregation, cells whose results suggest possible favoritism are left alone. Otherwise the cell statistic is set to zero. This means that positive equivalent Z values are set to 0, and negative values are left alone. Mathematically, this is written as

$$Z_j^* = \min(0, Z_j)$$

4. Calculate the theoretical mean and variance of the truncated statistic under the null hypothesis of parity,  $E(Z_j^* | H_0)$  and  $\text{Var}(Z_j^* | H_0)$ . In order to compensate for the truncation in step 3, an aggregated, weighted sum of the  $Z_j^*$  will need to be centered and scaled properly so that the final aggregate statistic follows a standard normal distribution.

- If  $W_j = 0$ , then no evidence of favoritism is contained in the cell. The formulae for calculating  $E(Z_j^* | H_0)$  and  $\text{Var}(Z_j^* | H_0)$  cannot be used. Set both equal to 0.
- If  $\min(n_{1j}, n_{2j}) > 6$  for a mean measure,  $\min\left\{a_{1j} \left(1 - \frac{a_{1j}}{n_{1j}}\right), a_{2j} \left(1 - \frac{a_{2j}}{n_{2j}}\right)\right\}$  for a proportion measure,  $\min(n_{1j}, n_{2j}) > 15$  and  $n_j q_j (1 - q_j)$  for a rate measure, or  $n_{1j}$  and  $n_{2j}$  are large for a ratio measure then

$$E(Z_j^* | H_0) = -\frac{1}{\sqrt{2}}$$

$$\text{Var}(Z_j^* | H_0) = \frac{1}{2}$$

- Otherwise, determine the total number of values for  $X_{1jk}$ . Let  $z_{\mu}$  and  $\theta_{\mu}$  denote the values of  $X_{1jk}$  and the probabilities of observing each value, respectively.

$$E(Z_j^* | H_0) = \sum_{\mu} \theta_{\mu} z_{\mu}, \text{ and}$$

$$\text{Var}(Z_j^* | H_0) = \sum_{\mu} \theta_{\mu} z_{\mu}^2 - [E(Z_j^* | H_0)]^2$$

The actual values of the z's and  $\theta$ 's depends on the type of measure.

### Mean Measure

$$N_j = \min(M_j, 1,000), \quad i = 1, \dots, N_j$$
$$z_{\mu} = \min \left\{ 0, \Phi^{-1} \left( 1 - \frac{R_i - 0.5}{N_j} \right) \right\} \quad \text{where } R_i \text{ is the rank of sample sum}$$
$$\theta_j = \frac{1}{N_j}$$

### Proportion Measure

$$z_{\mu} = \min \left\{ 0, \frac{n_j i - n_{1j} a_j}{\sqrt{\frac{n_{1j} n_{2j} a_j (n_j - a_j)}{n_j - 1}}} \right\}, \quad i = \max(0, a_j - n_{2j}), \dots, \min(a_j, n_{1j})$$
$$\theta_{\mu} = \text{HG}(i)$$

### Rate Measure

$$z_{\mu} = \min \left\{ 0, \frac{i - n_j q_j}{\sqrt{n_j q_j (1 - q_j)}} \right\}, \quad i = 0, \dots,$$
$$\theta_{\mu} = \text{BN}(i)$$

### Ratio Measure

The performance measure that is in this class is billing accuracy. If a parity test were used, the sample sizes for this measure are quite large, so there is no need for a small sample technique. If one does need a small sample technique, then a resampling method can be used.

1. Calculate the aggregate test statistic,  $Z^T$ .

$$Z^T = \frac{\sum_j W_j Z_j^* - \sum_j W_j E(Z_j^* | H_0)}{\sqrt{\sum_j W_j^2 \text{Var}(Z_j^* | H_0)}}$$

### The Balancing Critical Value

There are four key elements of the statistical testing process:

1. the null hypothesis,  $H_0$ , that parity exists between ILEC and CLEC services
2. the alternative hypothesis,  $H_a$ , that the ILEC is giving better service to its own customers
3. the Truncated Z test statistic,  $Z^T$ , and
4. a critical value,  $c$

The decision rule<sup>2</sup> is

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<sup>2</sup> This decision rule assumes that a negative test statistic indicates poor service for the CLEC customer. If the opposite is true, then reverse the decision rule.

- If  $Z^T < c$  then accept  $H_1$ .
- If  $Z^T \geq c$  then accept  $H_0$ .

There are two types of error possible when using such a decision rule:

- Type I Error:** Deciding favoritism exists when there is, in fact, no favoritism.
- Type II Error:** Deciding parity exists when there is, in fact, favoritism.

The probabilities of each type of each are:

- Type I Error:**  $\alpha = P(Z^T < c | H_1)$
- Type II Error:**  $\beta = P(Z^T \geq c | H_0)$

We want a balancing critical value,  $c_B$ , so that  $\alpha = \beta$ .

It can be shown that:

$$c_B = \frac{\sum_j W_j M(m_j, se_j) - \sum_j W_j \frac{-1}{\sqrt{2\pi}}}{\sqrt{\sum_j W_j^2 V(m_j, se_j)} + \sqrt{\sum_j W_j^2 \left(\frac{1}{2} - \frac{1}{2}\right)}}$$

where

$$M(\mu, \sigma) = \mu \Phi\left(\frac{\mu}{\sigma}\right) - \sigma \phi\left(\frac{\mu}{\sigma}\right)$$

$$V(\mu, \sigma) = (\mu^2 + \sigma^2) \Phi\left(\frac{\mu}{\sigma}\right) - \mu \sigma \phi\left(\frac{\mu}{\sigma}\right) - M(\mu, \sigma)$$

$\Phi(\cdot)$  is the cumulative standard normal distribution function, and  $\phi(\cdot)$  is the standard normal density function.

This formula assumes that  $Z_j$  is approximately normally distributed within cell  $j$ . When the cell sample sizes,  $n_{1j}$  and  $n_{0j}$ , are small this may not be true. It is possible to determine the cell mean and variance under the null hypothesis when the cell sample sizes are small. It is much more difficult to determine these values under the alternative hypothesis. Since the cell weight,  $W_j$ , will also be small (see calculate weights section above) for a cell with small volume, the cell mean and variance will not contribute much to the weighted sum. Therefore, the above formula provides a reasonable approximation to the balancing critical value.

The values of  $m_j$  and  $se_j$  will depend on the type of performance measure.

#### Mean Measure

For mean measures, one is concerned with two parameters in each cell, namely, the mean and variance. A possible lack of parity may be due to a difference in cell means, and/or a difference in cell variances. One possible set of hypotheses that capture this notion, and take into account the assumption that transaction are identically distributed within cells is:

$$H_0: \mu_{1j} = \mu_{2j}, \sigma_{1j}^2 = \sigma_{2j}^2$$

$$H_1: \mu_{2j} = \mu_{1j} + \delta_j \sigma_{1j}, \sigma_{2j}^2 = \lambda_j \sigma_{1j}^2 \quad \delta_j > 0, \lambda_j \geq 1 \text{ and } j = 1, \dots, L.$$

Under this form of alternative hypothesis, the cell test statistic  $Z_j$  has mean and standard error given by

$$m_j = \frac{-\delta_j}{\sqrt{n_{1j} + n_{2j}}}, \text{ and}$$

$$se_j = \sqrt{\frac{\lambda_j n_{1j} + n_{2j}}{n_{1j} + n_{2j}}}$$

### Proportion Measure

For a proportion measure there is only one parameter of interest in each cell, the proportion of transaction possessing an attribute of interest. A possible lack of parity may be due to a difference in cell proportions. A set of hypotheses that take into account the assumption that transactions are identically distributed within cells while allowing for an analytically tractable solution is:

$$H_0: \frac{p_{2j}(1-p_{1j})}{(1-p_{2j})p_{1j}}$$

$$H_1: \frac{p_{2j}(1-p_{1j})}{(1-p_{2j})p_{1j}} = \psi_j > 1 \text{ and } j = 1, \dots, L.$$

These hypotheses are based on the "odds ratio." If the transaction attribute of interest is a missed trouble repair, then an interpretation of the alternative hypothesis is that a CLEC trouble repair appointment is  $\psi_j$  times more likely to be missed than an ILEC trouble.

Under this form of alternative hypothesis, the within cell asymptotic mean and variance of  $a_{1j}$  are given by<sup>3</sup>

$$E(a_{1j}) = n_j \pi_j^{(1)}$$

$$\text{var}(a_{1j}) = \frac{n_j}{\frac{1}{\pi_j^{(0)}} + \frac{1}{\pi_j^{(1)}} + \frac{1}{\pi_j^{(2)}} + \frac{1}{\pi_j^{(3)}}}$$

where

<sup>3</sup> Stevens, W. L. (1951) Mean and Variance of an entry in a Contingency Table. *Biometrika*, 38, 468-470.

$$\begin{aligned}\pi_j^{(1)} &= f_j^{(1)} (n_j^2 + f_j^{(2)} + f_j^{(3)} - f_j^{(4)}) \\ \pi_j^{(2)} &= f_j^{(1)} (-n_j^2 - f_j^{(2)} + f_j^{(3)} + f_j^{(4)}) \\ \pi_j^{(3)} &= f_j^{(1)} (-n_j^2 + f_j^{(2)} - f_j^{(3)} + f_j^{(4)}) \\ \pi_j^{(4)} &= f_j^{(1)} \left( n_j^2 \left( \frac{2}{\psi_j} - 1 \right) - f_j^{(2)} - f_j^{(3)} - f_j^{(4)} \right)\end{aligned}$$

$$f_j^{(1)} = \frac{1}{2n_j^2 \left( \frac{1}{\psi_j} - 1 \right)}$$

$$f_j^{(2)} = n_j n_{1j} \left( \frac{1}{\psi_j} - 1 \right)$$

$$f_j^{(3)} = n_j a_j \left( \frac{1}{\psi_j} - 1 \right)$$

$$f_j^{(4)} = \sqrt{n_j^2 \left[ 4n_{1j} (n_j - a_j) \left( \frac{1}{\psi_j} - 1 \right) + \left( n_j + (a_j - n_{1j}) \left( \frac{1}{\psi_j} - 1 \right) \right)^2 \right]}$$

Recall that the cell test statistic is given by

$$Z_j = \frac{n_j a_j - n_{1j} a_j}{\sqrt{\frac{n_{1j} n_{2j} a_j (n_j - a_j)}{n_j - 1}}}$$

Using the equations above, we see that  $Z_j$  has mean and standard error given by

$$m_j = \frac{n_j^2 \pi_j^{(1)} - n_{1j} a_j}{\sqrt{\frac{n_{1j} n_{2j} a_j (n_j - a_j)}{n_j - 1}}}, \text{ and}$$

$$se_j = \sqrt{\frac{n_j^3 (n_j - 1)}{n_{1j} n_{2j} a_j (n_j - a_j) \left( \frac{1}{\pi_j^{(1)}} + \frac{1}{\pi_j^{(2)}} + \frac{1}{\pi_j^{(3)}} + \frac{1}{\pi_j^{(4)}} \right)}}$$

#### Rate Measure

A rate measure also has only one parameter of interest in each cell, the rate at which a phenomenon is observed relative to a base unit, e.g. the number of troubles per available line. A possible lack of parity may be due to a difference in cell rates. A set of hypotheses that take into account the assumption that transactions are identically distributed within cells is:

$$H_0: r_{1j} = r_{2j}$$

$$H_1: r_{2j} = \xi_j r_{1j} \quad \xi_j > 1 \text{ and } j = 1, \dots, L.$$

Given the total number of ILEC and CLEC transactions in a cell,  $n_j$ , and the number of base elements,  $b_{1j}$  and  $b_{2j}$ , the number of ILEC transaction,  $n_{1j}$ , has a binomial distribution from  $n_j$  trials and a probability of

$$q_j^* = \frac{r_{1j} b_{1j}}{r_{1j} b_{1j} + r_{2j} b_{2j}}$$

Therefore, the mean and variance of  $n_{1j}$  are given by

$$E(n_{1j}) = n_j q_j^*$$

$$\text{var}(n_{1j}) = n_j q_j^* (1 - q_j^*)$$

Under the null hypothesis

$$q_j^* = q_j = \frac{1}{2}$$

but under the alternative hypothesis

$$q_j^* = q_j^* = \frac{b_{1j}}{b_{1j} + \varepsilon_j}$$

Recall that the cell test statistic is given by

$$Z_j = \frac{n_{1j} - n_j q_j}{\sqrt{n_j q_j (1 - q_j)}}$$

Using the relationships above, we see that  $Z_j$  has mean and standard error given by

$$m_j = \frac{n_j (q_j^* - q_j)}{\sqrt{n_j q_j (1 - q_j)}} = (1 - \varepsilon_j) \frac{\sqrt{n_j b_{1j}^2}}{b_{1j} + \varepsilon_j}, \text{ and}$$

$$se_j = \sqrt{\frac{q_j^* (1 - q_j^*)}{q_j (1 - q_j)}} = \sqrt{\varepsilon_j} \frac{b_j}{b_{1j} + \varepsilon_j}$$

#### *Ratio Measure*

As with mean measures, one is concerned with two parameters in each cell, the mean and variance, when testing for parity of ratio measures. As long as sample sizes are large, as in the case of billing accuracy, the same method for finding  $m_j$  and  $se_j$  that is used for mean measures can be used for ratio measures.

#### **Determining the Parameters of the Alternative Hypothesis**

In this appendix we have indexed the alternative hypothesis of mean measures by two sets of parameters,  $\lambda_j$  and  $\delta_j$ . Proportion and rate measures have been indexed by one set of parameters each,  $\psi_j$  and  $\varepsilon_j$  respectively. A major difficulty with this approach is that more than one alternative will be of interest; for example we may consider one alternative in which all the  $\delta_j$  are set to a common non-zero value, and another set of alternatives in each of which just one  $\delta_j$  is non-zero, while all the rest are zero. There are very many other possibilities. Each possibility leads to a single value for the balancing critical value; and each possible critical value corresponds to many sets of alternative hypotheses, for each of which it constitutes the correct balancing value.

The formulas we have presented can be used to evaluate the impact of different choices of the overall critical value. For each putative choice, we can evaluate the set of alternatives for which this is the correct balancing value. While statistical science can be used to evaluate the impact of different choices of these parameters, there is not much that

an appeal to statistical principles can offer in directing specific choices. Specific choices are best left to telephony experts. Still, it is possible to comment on some aspects of these choices:

- Parameter Choices for  $\lambda_j$ . The set of parameters  $\lambda_j$  index alternatives to the null hypothesis that arise because there might be greater unpredictability or variability in the delivery of service to a CLEC customer over that which would be achieved for an otherwise comparable ILEC customer. While concerns about differences in the variability of service are important, it turns out that the truncated Z testing which is being recommended here is relatively insensitive to all but very large values of the  $\lambda_j$ . Put another way, reasonable differences in the values chosen here could make very little difference in the balancing points chosen.
- Parameter Choices for  $\delta_j$ . The set of parameters  $\delta_j$  are much more important in the choice of the balancing point than was true for the  $\lambda_j$ . The reason for this is that they directly index differences in average service. The truncated Z test is very sensitive to any such differences; hence, even small disagreements among experts in the choice of the  $\delta_j$  could be very important. Sample size matters here too. For example, setting all the  $\delta_j$  to a single value -  $\delta_j = \delta$  - might be fine for tests across individual CLECs where currently in Louisiana the CLEC customer bases are not too different. Using the same value of  $\delta$  for the overall state testing does not seem sensible. At the state level we are aggregating over CLECs, so using the same  $\delta$  as for an individual CLEC would be saying that a "meaningful" degree of disparity is one where the violation is the same ( $\delta$ ) for each CLEC. But the detection of disparity for any component CLEC is important, so the relevant "overall"  $\delta$  should be smaller.
- Parameter Choices for  $\psi_j$  or  $\epsilon_j$ . The set of parameters  $\psi_j$  or  $\epsilon_j$  are also important in the choice of the balancing point for tests of their respective measures. The reason for this is that they directly index increases in the proportion or rate of service performance. The truncated Z test is sensitive to such increases; but not as sensitive as the case of  $\delta$  for mean measures. Sample size matters here too. As with mean measures, using the same value of  $\psi$  or  $\epsilon$  for the overall state testing does not seem sensible.

The three parameters are related however. If a decision is made on the value of  $\delta$ , it is possible to determine equivalent values of  $\psi$  and  $\epsilon$ . The following equations, in conjunction with the definitions of  $\psi$  and  $\epsilon$ , show the relationship with delta.

$$\delta = 2 \cdot \arcsin(\sqrt{\hat{p}_2}) - 2 \cdot \arcsin(\sqrt{p})$$

$$\delta = 2\sqrt{\hat{r}_2} - 2\sqrt{\hat{r}_1}$$

The bottom line here is that beyond a few general considerations, like those given above, a principled approach to the choice of the alternative hypotheses to guard against must come from elsewhere.

### Decision Process

Once  $Z^I$  has been calculated, it is compared to the balancing critical value to determine if the ILEC is favoring its own customers over a CLEC's customers.

This critical value changes as the ILEC and CLEC transaction volume change. One way to make this transparent to the decision maker, is to report the difference between the test statistic and the critical value,  $diff = Z^I - c_B$ . If favoritism is concluded when  $Z^I < c_B$ , then the  $diff < 0$  indicates favoritism.

This make it very easy to determine favoritism: a positive  $diff$  suggests no favoritism, and a negative  $diff$  suggests favoritism.

## I. INTRODUCTION

The Telecommunications Act of 1996 ("TA'96") requires incumbent local exchange carriers ("ILECs") to allow other companies wishing to provide local exchange telephone service to interconnect with the ILEC's network.<sup>1</sup> TA'96 provides such other companies, known as competitive local exchange carriers ("CLECs"), various options to allow for the development of local exchange competition, including purchasing bundled local service at wholesale rates from an ILEC, or purchasing individual elements of an ILEC's network and collocating equipment on ILEC premises.<sup>2</sup>

The Indiana Utility Regulatory Commission ("Commission" or "IURC") issued an order on November 4, 1998 initiating this Cause. Further, as stated in the Commission's docket entry dated December 2, 1998, one of the purposes of this cause was to determine if the ILECs were complying with the requirements of the FCC's August 8, 1996 Order No. 96-325, paragraph 525, governing Operating Support Systems, ("OSS"). In the first phase of this proceeding the Commission and the parties were given on-site demonstrations at each of the ILEC's OSS centers pursuant to Commission Order.

On April 14, 1999 the Commission issued a docket entry initiating the second phase of this proceeding to "develop appropriate performance standards for OSS". The docket entry further sought comments on the development of appropriate performance standards for OSS and established a workshop for July 16, 1999 to attempt to reach an agreement regarding the development of performance standards. Subsequently, numerous technical workshops and conference calls have been held in an attempt to reach consensus regarding a uniform set of performance standards to be utilized in Indiana for the provision of OSS.

This Interim Stipulation and Joint Partial Settlement Agreement (hereinafter the "Agreement") is the work product of the participating CLECs as indicated on the signature page of this Agreement, Ameritech, GTE, and Sprint/United (Ameritech, GTE and Sprint United may be referred to collectively as "the ILECs"). Those parties executing this Agreement are collectively referred to as the "Settling Parties." The parties at the July 29, 1999 workshop entered into settlement talks in an attempt to reach that goal. It was agreed that Indiana should take advantage of OSS performance standards work done elsewhere with particular interest in the California and Texas efforts.

In California, OSS performance standards were addressed through a collaborative process in a series of workshops over an approximate one-year period. A Joint Partial Settlement Agreement ("JPSA") was filed January 7, 1999 with the California Public Utilities Commission ("CPUC") and resubmitted by the parties May 3, 1999 to reflect subsequent agreements. Remaining issues were ordered in CPUC Decision No. 99-08-020, issued August 5, 1999, and a conforming Agreement filed by the parties on September 7, 1999. In Texas, the staff of the Public Utility Commission of Texas

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<sup>1</sup> 47 U.S.C. §251(c)(2)(1996)

<sup>2</sup> See, e.g., 47 U.S.C. § 251 (c)(3), (c)(4) and (c)(5)

submitted on June 2, 1999 a Staff Recommendation on the Performance Measurements regarding the entry of Southwestern Bell Telephone Company ("SWBT") into in-region interLATA service under Section 271 of TA 96. That document, likewise, was the product of numerous Texas Commission decisions and collaborative work sessions between the Texas staff, SWBT and CLECs. The Texas Commission subsequently approved a revised statement of these measures, SWBT's Performance Measures Business Rules, Version 1.6 dated July 20, 1999.

During the Indiana collaborative workshop it was decided to use the California JPSA and the Texas Business Rules Version 1.6 as baseline documents for the Agreement with parties proposing modifications, additions, or deletions to the performance measurements and associated ancillary issues, along with other unresolved issues, in the referenced proceedings. These measurements are depicted in the comparative matrix included as Attachment A. The Commission Staff strongly encouraged all interested CLECs and ILECs to stipulate to a resolution in this proceeding through technical workshops chaired by the IURC and its consultant. The Settling Parties recognize that, during the time allotted to these workshops, the resolution of all the issues to allow for a complete and final agreement was not possible. Accordingly, this partial settlement agreement represents an interim stipulation between the participating CLECs, Ameritech, GTE and Sprint/United. A long-term resolution of OSS performance measurements and resolution of the unresolved issues, which are summarized herein, and any new issues will occur subsequently in this proceeding.

## II. EXECUTIVE SUMMARY

### Performance Measures Development Process

TA 96 and the FCC's implementing rules require all incumbent local exchange carriers to provide CLECs with nondiscriminatory access to OSS. In the August 1996 Local Competition First Report and Order, the FCC commented, generally, that ILECs must provide CLECs with access to the pre-ordering, ordering, provisioning, billing, repair, and maintenance OSS sub-functions pursuant to the Act such that CLECs are able to perform such OSS sub-functions in "substantially the same time and manner" as the ILECs can for themselves.<sup>3</sup> In August of 1997, the FCC's *Ameritech Opinion* analyzed the nondiscriminatory access requirements of §251(c) to a Bell Operating Company's (BOC's) §271 application, and clarified that for those OSS subfunctions with retail analogs, a BOC "must provide access to competing carriers that is equal to the level of access that the BOC provides to itself, its customers or its affiliates, in terms of quality, accuracy and timeliness."<sup>4</sup> The FCC further clarified in the *Ameritech Opinion* that for those OSS functions with no retail analog, a BOC must offer access sufficient to allow an efficient competitor "a meaningful opportunity to compete."<sup>5</sup>

Initially, some of the interconnection agreements contained performance measures. In late 1998, the IURC initiated Cause No. 41324 to address monitoring the performance of OSS. The Commission's proceeding was organized into three phases. This second phase addresses the development of appropriate performance standards for OSS for Ameritech, GTE and Sprint-United. Two basic issues will be addressed in this Agreement:

- Performance Measurements

<sup>3</sup> See, Implementation of the Local Competition Provisions in the Telecommunications Act of 1996, CC Docket No. 96-98, First Report and Order, 11 FCC Rcd 15499, 15763-64 [¶518] (1996) ("Local Competition First Report and Order"), aff'd in part and rev'd in part sub nom. AT&T v. Iowa Utilities Board, 525 U.S. 366 (1999).

<sup>4</sup> See, *In the Matter of Application of Ameritech Michigan Pursuant to Section 271 of the Communications Act of 1934, as amended, To Provide In-Region, InterLATA Services In Michigan*, Memorandum Opinion and Order, 12 FCC Rcd 20543, 20618-19 [¶139] (1997) (*Ameritech Michigan Order*), writ of mandamus issued sub nom. *Iowa Utils. Bd. v. FCC*, No. 96-3321 (8th Cir. Jan. 22, 1998). ("Ameritech Opinion"); see also, *In the Matter of Application of Bellsouth Corporation, et al., for Provision of In-Region, InterLATA services in Louisiana* ("BellSouth (Louisiana II) Opinion") CC Docket No. 98-121, FCC 98-271 (10-13-98), paragraph 87 (citing, *Ameritech Opinion* at 12 FCC Rcd 20618-19). See also, *Ameritech Opinion* at ¶131, wherein the FCC makes the following statement regarding application of the §251(c) requirements to a BOC's §271 application:

"Because the duty to provide access to network elements under section 251(c)(3) and the duty to provide resale services under section 251(c)(4) include the duty to provide nondiscriminatory access to OSS functions, an examination of a BOC's OSS performance is necessary to evaluate compliance with section 271(c)(2)(B)(ii) and (xiv)."

<sup>5</sup> See, *Ameritech Opinion* at 12 FCC Rcd at 20619 [¶141]; See also, *BellSouth (Louisiana II) Opinion* at ¶87 (citing *Ameritech Opinion* at 12 FCC Rcd at 20619).

- Standards

In addition to performance measurements and standards, the scope of the proceeding was also identified by the Settling Parties to include related issues such as, but not limited to uniformity among carriers, geographic and product disaggregation, treatment of ILEC affiliates, implementation process, statistical analysis, access to raw data, audits of performance measures results, timing of performance measures reports and periodic review process.

## Major Categories

Measurements developed to help assess the provision of non-discriminatory access to OSS and other services, elements or functions were combined into the following broad categories:

- Pre-Ordering

Pre-ordering activities relate to the exchange of information between the ILEC and the CLEC regarding current or proposed customer products and services, or any other information required to initiate ordering of service. Pre-ordering encompasses the critical information needed to submit a provisioning order from the CLEC to the ILEC. The pre-order measurement reports the timeliness with which pre-order inquiries are returned to CLECs by the ILEC. Pre-ordering query types may include:

- Address Verification/Dispatch Required
- Request for Telephone Number
- Request for Customer Service Record
- Service Availability
- Service Appointment Scheduling (due date)
- Rejected Failed Inquiries
- Facility Availability
- Primary Interexchange Carrier

- Ordering

Ordering activities include the exchange of information between the ILEC and the CLEC regarding requests for service. Ordering includes: (1) the submittal of the service request from the CLEC, (2) rejection of any service request with errors and (3) confirmation that a valid service request has been received and a due date for the request assigned. Ordering performance measurements report on the timeliness with which these various activities are completed by the ILEC. Also captured within this category is reporting on the number of CLEC service requests that automatically generate a service order in the ILECs' service order creation system.

- **Provisioning**

Provisioning is the set of activities required to install, change or disconnect a customer's service. It includes the functions to establish or condition physical facilities as well as the completion of any required software translations to define the feature functionality of the service. Provisioning also involves communication between the CLEC and the ILEC on the status of a service order, including any delay in meeting the commitment date and the time at which actual completion of service installation has occurred. Measurements in this category evaluate the quality of service installations, the efficiency of the installation process and the timeliness of notifications to the CLEC that installation is completed or has been delayed.

- **Maintenance**

Maintenance involves the repair and restoral of customer service. Maintenance functions include the exchange of information between the ILEC and CLEC related to service repair requests, the processing of trouble ticket requests by the ILEC, actual service restoral and tracking of maintenance history. Maintenance measures track the timeliness with which trouble requests are handled by the ILEC and the effectiveness and quality of the service restoral process.

- **Network Performance**

Network performance involves the level at which the ILEC provides services and facilitates call processing within its network. The ILEC also has the responsibility to complete network upgrades efficiently. If network outages do occur, the ILEC needs to provide notification so appropriate network management and customer notification can occur by CLECs. Network performance is evaluated on the quality of interconnection, the timeliness of notification of network outages and the timeliness of network upgrades (code openings) the ILEC completes on behalf of the CLEC.

- **Billing**

Billing involves the exchange of information necessary for CLECs to bill their customers, to verify the ILEC's bill for services provided to the CLEC and to allow CLECs to bill for access. Billing measures have been designed to gauge the quality, timeliness and overall effectiveness of the ILEC billing processes associated with CLEC customers.

- **Collocation**

ILECs are required to provide to CLECs available space as required by law to allow the installation of CLEC equipment. Performance measures in this category assess the timeliness with which the ILEC handles the CLEC's request for collocation as well as how timely the collocation arrangement is provided.

- **Data Base Updates**

Database updates for directory assistance/listings and E911 include the processes by which these systems are updated with customer information which has changed due to the service provisioning activity. Measurements in this category are designed to evaluate the timeliness and accuracy with which changes to customer information, as submitted to these databases, are completed by the ILEC.

- **Interfaces**

ILECs provide the CLECs with choices for access to OSS pre-ordering, ordering, maintenance and repair systems. Availability of the interfaces is fundamental to the CLEC being able to effectively do business with the ILEC. Additionally, in many instances, CLEC personnel must work with the service personnel of the ILEC. Measurements in this category assess the availability to the CLECs of systems and personnel at the ILEC work centers.

## **Auditing and Review Procedures**

The Settling Parties have agreed to most procedures for auditing and review. Descriptions of these procedures can be found in Sections V and VI.

*Note: This Executive Summary is intended to provide a general background regarding Settling Parties' negotiations of the OSS performance measures. The statements contained in the Executive Summary are not intended to be binding on the Settling Parties and shall not be used for such purposes.*

### III. Reservation of Rights

These reservations of rights do not negate the Settling Parties' agreement regarding performance measures and standards as reflected in this Agreement.

This Agreement shall not, in whole or in any part, constitute or be cited as precedent or deemed an admission by any party to this Agreement in any subsequent phases of the proceedings in this Cause or any other proceeding or proceedings before this Commission or in any other jurisdiction except as necessary to enforce its terms before the Commission or any court of competent jurisdiction. This Agreement is solely the result of compromise in the settlement process. This Agreement is without prejudice to and shall not constitute a waiver of any position that any of the Settling Parties to this Agreement may take with respect to any or all of the issues resolved herein in any subsequent phases of the proceedings in this Cause, any future regulatory or other proceedings and, failing approval by this Commission, shall not be admissible or discussed in any subsequent phases of the proceedings in this Cause or any future proceedings.

#### IV. REPORTING PROCESS

Except as otherwise provided, performance reports will be made available to the CLECs (unless otherwise noted, the term "CLECs" as used in Sections IV and V includes all CLECs certified and operational in Indiana) and the Commission by the twentieth calendar day of the month succeeding the reporting period.<sup>6</sup> The reporting period is the calendar month, unless otherwise noted.

If there are any changes to the implementation schedules, the ILECs will notify the parties of the changes.

Sprint/United will implement measures (Attachment C) per the following schedule:

Sprint/United is currently providing interim performance measures in Indiana, in accordance with Commission Cause No. 41324, based on LCUG 7.0 requirements. Sprint/United currently has two active CLECs in Indiana, which have resold less than 650 lines as of September 30. Due to Sprint/United's rural nature in Indiana, the current CLEC environment is limited to two prepaid resellers which have opted to use manual processes rather than electronic interfaces to submit less than 100 orders per month. As a result, 25 of the 44 LCUG measures are not applicable at this time.

Sprint/United will follow a two-tier implementation plan. First, Sprint/United will continue to provide to the Commission the current LCUG 7.0 report until such time the level of CLEC activity warrants full migration to the Sprint/United specific plan. Due to the relatively low CLEC activity in Sprint/United's territory and the high cost to fully implement the Sprint/United plan, full migration is not warranted at this time. Full migration from the interim LCUG measures to the Sprint/United plan will occur when a CLEC processes more than 1000 orders per month (either manual or electronic) but no later than first quarter, 2001.

Second, Sprint/United will accommodate CLEC specific concerns by providing requesting CLECs with any additional performance measures contained in the Sprint/United plan within three months of a bona fide request or as otherwise agreed upon within the interconnection agreement. Sprint/United will also provide a copy of these reports to the Commission as part of the monthly reporting process.

GTE's implementation schedule for measures (Attachment C) made available after the November 1999 report month posted December 1999 is included below:

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<sup>6</sup> The Settling Parties agree that all reports called for under this section of the Agreement may also be provided to the OUCC if necessary parties have authorized such disclosure in advance, pursuant to the terms of a mutually acceptable non-disclosure agreement. To avoid a delay in filing their Agreement, the Settling Parties agreed to continue negotiating the specific terms of the OUCC's non-disclosure agreement until some time after this Agreement is filed with the Commission.

**December 1999 Report Month for Posting January 2000:**  
Measurement 4 – Percentage of Flow Thru Orders

Measurement 18 - Average Completion Notice Interval (Fully Electronic Only)

**February 2000 Report Month for Posting March 2000:**  
Measurement 2 - Average FOC & LSC Notice Interval (Fully Electronic Only)

Measurement 3 - Average Reject Notice Interval (Fully Electronic Only)

**March 2000 Report Month for Posting April 2000:**  
Measurement 15 - Provisioning Trouble Reports

**June 2000 Report Month for Posting July 2000:**  
Measurement 6 - Average Jeopardy Notice Interval

Ameritech will implement measures (Attachment B) per the following schedule:

**Posting in January 2000:**

Measurement Numbers 1,4,7,1,18,29,37,38,39,41,45,46,52,53,54,58,59, 65,66,67,69,70,107

**Posting in February 2000:**

Measurement Numbers 2,6,8,9,11,11.1,11,2,19,21,22,23,24,25,26, 40, 55,68,73,80,82,91,93,95,99,105

**Posting in March 2000:**

Measurement Numbers 5,7,10,10.1,10.2,10.3,13,15,16,17,27,28,30,31,32,33, 35,36,42,43,44,47,48,49,50,55,1,56,57,60,61,62,63,71,72,74,75,76,77,79,81,83, 84,85,86,94,96,104,106,108,109,112,114,115,117,118,119,120,121

**Posting in June 2000:**

Measurement Numbers 1a, 2a, 3a, 4a, 12,14,34,51,64,92,97,98,100,101, 102,103,110,111,113

**Measures from Texas agreed as infeasible at this time:**

Measurement Numbers #3,87,88,89,90,116

For those measures where results appear to be statistically less than parity or not meeting the benchmark level, the ILEC will perform analysis of the data if requested by the CLEC. This analysis will detail the underlying causes contributing to the reported performance results. The ILEC will supply this analysis to the requesting CLECs within thirty days of notification of the request.

Authorized users will have access to monthly reports through a website. Each CLEC will have access to its own data, aggregate CLEC data, ILEC data and ILEC Affiliate data.

The ILECs will report performance results for transactions with their affiliates and make those outcomes (exclusive of the numerator and denominator) available to all CLECs who have filed non-disclosure documents. The IURC will have access to reports for all entities, including ILEC Affiliate data. ILEC Affiliate data will not be included in CLEC aggregate data.<sup>7</sup>

In addition to the performance measure reports themselves, the raw data supporting the results will be available to the CLECs and the IURC in a mutually acceptable format, within 30 days of the request. Raw data will be archived for a period of 24 months to provide an adequate audit trail and will be retained with sufficient detail so that CLECs can reasonably reconcile the data captured by the ILEC (for the CLEC) with its own internal data. Raw data will include that which is counted in the numerator and denominator of any specific measurement. Data relating to any exclusions from the measured data will be made available as a separate request. Furthermore, data that relates to the ILEC's own performance will be retained, at a consistent level of disaggregation comparable to that reported for the CLECs.

CLECs may request raw data (including Purchase Order Number ("PON")) for Ordering and Provisioning measures. The ILECs will respond by producing the requested data within 30 days of the request.

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<sup>7</sup> The Settling Parties agree that all reports called for under this section of the Agreement may also be provided to the OUCC if necessary parties have authorized such disclosure in advance, pursuant to the terms of a mutually acceptable non-disclosure agreement. To avoid a delay in filing their Agreement, the Settling Parties agreed to continue negotiating the specific terms of the OUCC's non-disclosure agreement until some time after this Agreement is filed with the Commission.

## V. AUDITING

### **Initial Audit:**

The Settling Parties agree that an Initial Audit will be performed to ensure that the individual ILEC reporting procedures are sound and that data collection and reporting are timely, accurate and complete. The Settling Parties agree that the Initial Audit will include all systems, processes and procedures associated with the production and reporting of performance measurement results, from initial data collection to reporting on the web site, including data collection and mechanics of providing data analysis. This Audit, which will commence in accordance with the audit schedule and parameters established in California for GTE and in the third quarter 2000 for Ameritech, will be completed by a third party auditor that meets the approval of all Settling Parties. Costs for the Initial Audit will be borne by the ILEC.

The ILECs shall submit the results of their Initial Audits, to the Commission and the OUCC and will distribute copies (which include only non-proprietary information) to all requesting CLECs.<sup>4</sup>

### **Mini - Audits:**

The ILECs and CLECs agree that the CLECs will have the right to mini-audits of individual performance measures and or sub-measures during the year. As GTE utilizes a national reporting process, GTE audits will be national in scope. When a CLEC has reason to believe the data collected for a measure is flawed or the reporting criteria for the measure is not being adhered to, it has the right to have a mini-audit performed on the specific measure and or sub-measure upon written request (including e-mail), which will include the designation of a CLEC representative to engage in discussions with the ILEC about the requested mini-audit. If, 30 days after the CLEC's written request, the CLEC believes that the issue has not been resolved to its satisfaction, the CLEC will commence the mini-audit upon providing the ILEC with 5 business days advance written notice. Each CLEC will be limited to three mini-audits per audit year. For purposes of this Agreement, the audit year is defined as a calendar year and a mini-audit may encompass one entire measure or specific sub-measure. Mini-Audits may be requested for months including and subsequent to the month in which the Initial Audit or a subsequent audit is initiated. Mini-audits cannot be requested by a CLEC while the Initial Audit or a subsequent audit is being conducted (i.e., before completion).

Mini-Audits will include all systems, processes and procedures associated with the production and reporting of performance measurement results for the audited measure. Mini-Audits will include two (2) months of data, and all Settling Parties agree that raw

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<sup>4</sup> The Settling Parties agree that all audit results called for under this section of the Agreement may also be provided to the OUCC if necessary parties have authorized such disclosure in advance, pursuant to the terms of a mutually acceptable non-disclosure agreement. To avoid a delay in filing their Agreement, the Settling Parties agreed to continue negotiating the specific terms of the OUCC's non-disclosure agreement until some time after this Agreement is filed with the Commission.

data supporting the performance measurement results will be available to CLECs as described in the Reporting Process section (Section IV) of this Agreement.

No more than three (3) Mini-Audits will be conducted simultaneously unless more than one CLEC wants the same measure and or sub-measure audited at the same time, in which case, Mini-Audits of the same measure and or sub-measure shall count as one Mini-Audit for the purposes of this paragraph only.

Mini-Audits will be conducted by a third party auditor, selected by the same method as the selection of the auditor for the Initial Audit. The CLEC will pay for the costs of the third party auditor conducting the Mini-Audit unless the ILEC is found to be "materially" mis-reporting or misrepresenting data or to have non-compliant procedures, in which case, the ILEC will pay for the costs of the third party auditor. Settling Parties agree that the issue of whether the ILEC is "materially" at fault will be based on the parameters of failure to perform: "materially" at fault means that a reported successful measure changes as a consequence of the audit to a missed measure, or there is a change from an ordinary missed measure to another category, if such exists. Each party to the Mini-Audit shall bear its own internal costs, regardless of which party ultimately bears the costs of the third party auditor.

If, during a Mini-Audit, it is found that for more than 50% of the audited measures in a major service category the ILEC is "materially" at fault (i.e., a reported successful measure changes as a consequence of the audit to a missed measure, or there is a change from an ordinary missed measure to another category, if such exists), the entire service category will be re-audited at the expense of the ILEC. The major service categories for this purpose are:

- Pre-Ordering
- Ordering
- Provisioning
- Maintenance
- Network Performance
- Billing
- Database Updates
- Collocation
- Interfaces

The results of each Mini-Audit shall be submitted to the CLEC involved, the Commission and the OUCC as a proprietary document subject to the applicable protection afforded by Ind. Code 5-14-3-4(a), 24-2-3-2 and 8-1-2-29.

The ILEC will provide notification to the CLECs of any Mini-Audit requested when the request for the audit is made.

## VI. REVIEW PROCEDURES

As all issues addressed were not resolved in the initial workshops, the Settling Parties agree that additional workshops to continue discussions, anticipating resolution of unresolved issues, would be beneficial. Accordingly, the Settling Parties agree to reconvene prior to the end of the first quarter 2000 to continue this evaluation. Additionally, as experience is acquired under this Agreement with the implementation of the new performance measurements and underlying business processes, the Settling Parties expect to learn which measurements set forth in Attachments B and C may not have been properly defined or are more or less useful than others. The Settling Parties also expect that experience will show whether new measurements are needed or whether certain existing measurements are not needed or require modification. Additionally some changes or modifications may be identified in areas such as business rules, reporting processes, auditing, review procedures or other ancillary issues involved with performance measures. To that end, the Settling Parties agree to reconvene by end of the third quarter 2000 to begin this activity. In the event the Settling Parties cannot agree on any addition, deletion or modification, they will jointly submit such dispute for resolution by the IURC.

If, prior to the agreed-upon review dates, there is consensus that one or more measures are not effective, the Settling Parties will schedule meetings to discuss modifying the measure(s) or process(es). If there is no consensus, any individual party seeking formal review by the IURC shall give notice to the other parties of its intent to do so. The party will also describe the action it intends to take and the reason(s) for its proposed actions.

## VII. UNRESOLVED ISSUES

The Settling Parties are entering this Agreement with the understanding that unresolved issues remain to be addressed by the Commission in this proceeding. The Settling Parties agree to address several aspects of performance measurements through additional workshops to commence prior to the end of the first quarter 2000. Some of these issues are unresolved due to different opinions among the Settling Parties. Certain other issues have not been discussed adequately to determine whether agreement can be reached. Settling Parties will be allowed to propose additional items for consideration during these workshops, if unanticipated issues arise. The unresolved issues identified to date include the following:

1. Penalties—whether the Commission has authority to impose penalties. If so, whether penalties should be an issue in this proceeding and if they are an issue in this proceeding, what should be the correct penalty amounts and the structure.
2. Third-party OSS testing—whether this should be an issue in this proceeding. If so, whether the Commission should require third-party OSS testing and what kind of third party OSS testing should be used.
3. Interconnection agreements—the effect on existing contracts of a Commission order implementing the stipulated performance measurements.
4. Structure of certain performance standards—whether the proper standard for some measurements should be a benchmark or parity with another service the ILEC provides. For some measurements with a parity standard, the proper ILEC service to be used in assessing parity.
5. Statistical testing—whether statistical testing should apply for benchmark standards. The proper method of statistical testing for measurements with a small sample size.
6. Disaggregation—whether there should be geographic disaggregation for some measures. Product disaggregation for certain measures.
7. Business rules and formulas for certain performance measurements.
8. New performance measurements including those adopted in other states.
9. Forecasting requirements
10. Inclusion/exclusion of ILEC affiliated wireless companies in performance measurements.
11. Alternative Dispute Resolution - the procedures for resolving disputes arising under the Agreement, including informal dispute resolution.

12. Operational Issues - the processes and procedures for ILECs to provide reports and information to CLECs and for CLECs to request audits, analysis of data, and raw data from ILECs.
13. The requirements the OUCC must meet and the procedures the OUCC must follow to request and obtain copies of reports that Settling ILECs are required to prepare under Sections IV and V of this Agreement.

In addition, the Settling Parties agree that a general review of the stipulated interim performance measurements will be needed after experience is gained with the measurements. The Settling Parties agree to commence a general review of the performance measurements by the end of third quarter 2000. In addition to a general review, the following issues would be addressed at that time:

1. Whether the stipulated performance measurements are effective in measuring ILEC performance.
2. Whether the stipulated benchmark levels are appropriate for Indiana.

## VIII. TERMINATION OF AGREEMENT

This Agreement will terminate upon the effective date of the Commission's Order establishing OSS performance measurements. For the purposes of this Agreement, the "termination date" will be the date upon which a final, non-appealable Order is entered and approved by the Commission. If the Commission Order approving this Agreement is appealed to the judiciary, the Settling Parties will continue to adhere to the terms and conditions of the Agreement pending ultimate resolution of the court appeal or until the Commission has adopted final OSS requirements and standards (whether through a generic order or an administrative rulemaking proceedings), whichever occurs first.

## IX. TERMS OF THE AGREEMENT

In the event the Commission does not approve the Agreement in its entirety and incorporate it in the Order in this Cause, the proposed Agreement shall be null and void and deemed withdrawn, unless the Commission approves the Agreement with changes and any such changes are agreed to by the Settling Parties in a written amendment.

In the event this Cause is required to be litigated, the Settling Parties to this Agreement expressly reserve all of their rights to make objections and motions to strike with respect to all testimony and exhibits submitted in support of the Agreement and their right to cross-examine the witnesses presenting such testimony and exhibits.

The undersigned have represented and agreed that they are fully authorized to execute the Agreement on behalf of their designated clients who will be bound thereby.

The Settling Parties agree to use their best efforts, and negotiate in good faith, to seek mutually agreeable solutions to any disputes that arise regarding the unresolved issues identified in Section VII of this Agreement, or any other issue that may arise during the continued development of OSS performance measurements.

The Settling Parties to this Agreement shall not appeal the Order or any other Commission order to the extent such orders specifically implement the provisions of this Agreement and shall make a good faith effort to support this Agreement in the event of any appeal by a person not a party to this Agreement. The OUCC's participation in such an appeal is subject to the OUCC's available resources at that time.

The communications and discussions during the negotiations and conferences that produced the Agreement have been conducted on the explicit understanding that they are or relate to offers of settlement and therefore are privileged and not admissible in any proceeding before this Commission or in any other jurisdiction.

This Agreement constitutes the entire Agreement among the Settling Parties to this Agreement pertaining to the subject matter of this Agreement and supersedes all prior negotiations, proposals, and representations, whether written or oral, and all contemporaneous oral agreements, negotiations, proposals, and representations concerning such subject matter. No representations, understandings, or agreements, expressed or implied, have been made or relied upon in the making of this Agreement other than those specifically set forth herein.

Except as may be specifically set forth in this Agreement, this Agreement does not provide and shall not be construed to provide third parties with any remedy, claim, liability, reimbursement, cause of action, or other right or privilege.

This Agreement may be executed in multiple counterparts, each of which shall be deemed an original, but all of which shall together constitute but one and the same document.

The headings in this Agreement are inserted for convenience and identification only and shall not be considered in the interpretation of this Agreement.

Various provisions of this Agreement were drafted by the Settling Parties. Therefore, this Agreement shall not be strictly construed against any of the Settling Parties as drafters of this Agreement.

This Agreement shall be binding on all Settling Parties and their successors and interests.

ACCEPTED and AGREED this 22<sup>nd</sup> day of December, 1999.

**Indiana Bell Telephone Company, Incorporated  
d/b/a Ameritech Indiana**

By: \_\_\_\_\_  
Sue E. Stemen  
Counsel for Ameritech Indiana

## ATTACHMENT A

### Comparative Matrix of ILEC Measurements<sup>9</sup>

Performance Measure	Ameritech (Texas)	GTE/Sprint (California/Nevada)
<b>Pre-Ordering &amp; Ordering OSS</b>		
Average OSS Response Interval	1	1
Percent Responses Received Within "X" Seconds	2	No
Average Response Time for Loop Make- Up Information	57	1
OSS Interface Availability	4	42
Percent Flow-through Service Requests	13	4
Mechanized Provisioning Accuracy	12	15,16,17
Percent Rejected Service Requests	9	No
Reject Interval	10,11, 10.1, 11.1	3
Firm Order Confirmation Timeliness	5,6,94	2
Completion Notice Interval	7,7.1,8	18
Percent Orders Jeopardized	Added New	5
Average Jeopardy Notice	Added New	6
Average Notification of Interface Outage	Added New	43
Average Installation Interval	27, 43, 55,55.1, 55.2, 78, 88,	7
Percent Orders Completed On-Time	28,44,56, 87, 91	8
Coordinated Customer Conversion	96,114,115,116	9
LNP Provisioning	92,93,95,97, 100,101	10
Incumbent Caused Missed Order Due Dates	29,36,45,58, 73,90	11
Missed Order Due Dates - Lack of Facilities	30,47, 60	12
Delayed Orders - Lack of Facilities	31, 48, 61	13
Orders Canceled	34,51, 64	No
Held Orders	31,32,33,48, 49,50,61,62, 63,74,75,99	14

<sup>9</sup> The Settling Parties agree that this comparative matrix of ILEC measurements does not necessarily represent an exact representation of the measurements and is provided as an illustration.

Orders with Provisioning Trouble	96,114,115,116	15
<b>Maintenance &amp; Repair</b>		
Mean Time to Restore	39,52,67,76, 77	21
Repeat Trouble Rate	41,53,69	23
Trouble Report Rate	37,54,65	19
% Troubles Within "X" days of Install	35,46,59,89, 98	17
Out of Service (OOS) <24 Hours	40,68	22
% No Access	42	No Access disaggregation included in several measures
% Troubles Resolved On-Time	38,66	20
<b>Call Center Measures</b>		
Directory Assistance	79, 80	No
Operator Services	81, 82,83, 84, 85, 86	No
<b>Performance Measure</b>		
Call Center Responsiveness	21, 22,23, 24, 25, 26	4
Directory Data Base Update Interval	110,111	37 (pending audit)
Directory Data Base Accuracy	112	38 (pending audit)
Directory Data Base Flow Through	113	4
911 Data Base Update Interval	104	39 (pending audit)
911 Data Base Accuracy	102,103	38 (pending audit)
<b>Billing Measures</b>		
Usage Timeliness	19	28
Wholesale Bill Timeliness	18	30
Usage Accuracy	16,20	29
Usage Completeness	No	31
Billing Completeness	17	32,33
Mechanized Billing Feed Accuracy	15	36
% Invoice Accuracy	14	34
<b>Other Measures</b>		
Network Outage Notification	Added New (pending audit)	27
Trunk Blocking	70,71,72	24,25
Poles, ROW	105, 106	No
Collocation	107, 108,109	40, 41
NXX Loaded/Tested	117,118,119	21,26
BFR Processing	120, 121	No
Timeliness of Change Control Notices/Documentation	Added New	No



# RANDOM VARIATION, "FORGIVENESSES", AND "K-TABLES":

## A CLEC PERSPECTIVE

By

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### I. Introduction

The Telecommunication Act of 1996 provided for ILEC entry into the long distance telephone service market after CLECs were allowed to enter the various local telephone service markets. This CLEC entry, in turn, is predicated upon their ability to purchase from the ILEC various services crucial to their ability to compete in the local market. Consequently, the Act further requires that the ILEC provide these services to the CLECs at a quality level at least equal to that they provide to their own customers. Thus, the evaluation of parity in local service provision has become a central issue in all proceedings concerning ILECs' (1) obligation to open their local markets under the Act's section 251 and (2) opportunity to enter the in-region long distance market after satisfying the conditions set for in the Act's section 271. As a result, statistical means difference tests, typically based on (some version of) the Local Competition Users Group (LCUG) Modified Z statistic, have become the cornerstone in the evaluation of service quality provision. Indeed, test results are not only used to determine whether the ILEC

has discriminated against the CLEC in service quality provision, they also enter into the determination of the magnitude of the penalty involved according to several performance assurance plans (such as those proposed by SBT, BST, and AT&T).

When one makes a decision concerning the presence or absence of parity in service provision based on a statistical test, he or she can err in one of two possible ways. One could conclude that discrimination in service provision exists when in fact it does not, or one could conclude that discrimination does not exist when in fact it does. Because the null hypothesis of the test assumes "no discrimination," the former error involves the rejection of a true null; it is called a type I error. The latter error involves the acceptance of a false null; it is called a type II error. Proposals made by some ILECs that use the notion of "random variation" as a basis for suggesting that some of their discriminatory acts (as determined by failed parity tests) should be "forgiven" (i.e., not penalized), where the number of violations to be forgiven is sometimes determined by a "K-Table" (see, e.g., the SBT plan), are founded exclusively on the existence of type I error. The purpose of this paper is to examine the underpinnings of such proposals and to evaluate their appropriateness from a CLEC perspective.

## II. FORGIVING FAILED TESTS: THE BASIC RATIONALE AND A CLEC REACTION

The fundamental statistical test of parity service provision employed in almost all of the proposed performance assurance plans (PAPs) is a simple one-tailed means difference test conducted at the  $\alpha=0.05$  level of significance. Since the probability of committing a type I error is equal to the level of significance of the test, each parity test

incurs a five percent chance of concluding discrimination in service provision when parity in fact exists. ILECs describe such a decision as the result of "random variation" in the test statistic and not the result of actual discrimination on their part. They use this idea as the basis for the following argument:

Suppose we supply the CLECs with 100 submeasures per month that are subject to parity testing. Each submeasure stands a 5% chance of failing its test each month due solely to random variation. Thus, *even if we supply every service in parity every month*, over the course of a year, each submeasure can be expected to fail 0.6 (12 mo. x .05) tests. (Since it is hard to think about failing a fraction of a test, aggregating further over time is helpful: Failing 0.6 tests in one year is equivalent to failing 3 tests in 5 years.) This means that, *even though we always are in parity*, testing 100 submeasures per month implies that 60 (0.6 x 100) tests will be failed over the course of a year (300 tests in 5 years) due strictly to random variation. (None could be failed due to discrimination, since it is explicitly assumed away). This result, in turn, implies that we should be "forgiven" (i.e., not penalized for) five test failures per month (60 per yr. / 12 mo.), since this is the number of tests (out of 100) that would be expected to fail due solely to random variation (*even if we are always in parity*)."

Honesty compels me to admit that the above is not really what the ILECs typically argue -- although it is certainly what they should argue. Usually, ILECs unabashedly ignore the statistical underpinnings that determine the "appropriate" number of forgivenesses, and they inflate the number of forgivenesses they demand with no obvious basis whatsoever. A personal anecdote will illustrate: In February 1999, I was involved (as a statistical consultant for MCI Telecommunications) in a joint workshop (CLECs, Pacific Bell, and the Public Utilities Commission's staff and Administrative Law Judge), which constituted the first attempt to produce a unified remedy plan for ILECs in California. At that time, the CLECs were proposing an "equal risk" approach to

parity testing. Without going into detail, equal risk is an alternative to forgiveness for dealing with random variation. It involves the selection of a critical value of the test statistic that equates the probability of type I and type II errors so that the expected value of inappropriate penalty payments is zero. In any event, some exploratory work using CA data by Dr. Clark Mount-Campbell had suggested that a Z value of 1.04 would equalize the probabilities of type I and type II error at 0.15 (i.e.,  $\alpha = \beta = 0.15$ ). Thus the CLECs were proposing that all parity tests be conducted at an  $\alpha = 0.15$  level of significance.

PacBell, ignoring the equal risk aspects of the testing procedure, insisted that each submeasure would fail about two tests each year due to random variation. (Presumably, PacBell arrived at this figure by noting that 12 months x 0.15 probability of a type I error = 1.8, or approximately 2, tests expected to fail each year due to random variation.) Thus PacBell demanded one forgiveness per sub measure every six months to compensate them for random variation. At the same time, PacBell argued that the appropriate significance level should be  $\alpha = 0.05$  (or  $Z_{crit} = 1.645$  rather than 1.04), implying as shown above, about one forgiveness per submeasure every 18 months. (As an interesting aside, the CLECs, mistakenly viewing forgivenesses as a bargaining chip and also ignoring the equal risk aspects of the testing procedure, had pretty much agreed to grant PacBell one forgiveness per submeasure every six months if PacBell would agree to test at the  $\alpha = 0.15$  level.) To make a long story short, no unified plan (at least in terms of critical values and remedy levels) came out of that workshop. And remedy plan issues remain in litigation before the PUC. Subsequent to the initial CA workshop discussions, Bell Atlantic-New York was granted 271 approval by the FCC. In approving the BANY PAP, the FCC noted the appropriateness of a one-tailed parity test undertaken at the  $\alpha = 0.05$

level of significance ( $Z_{crit}=1.645$ ). As result, most subsequent PAPs (Pennsylvania and Texas) have adopted a 1.645 critical value for judging parity. Massachusetts copied New York and is using in addition to a 1.645 critical value a repeated 0.8225 critical value as a component in scoring whether parity performance has been achieved.

While the above anecdote is only one instance of an ILEC's tendency to inflate the number of forgivenesses, it is symptomatic of a general propensity. A number of states served by Southwestern Bell Telephone Company (SWBT) are currently considering a PAP modeled after their Texas plan. The Texas plan determines the number of forgivenesses from a "K-Table," which consists of a set of test numbers and corresponding forgiveness (and critical Z) values. The table basically says to the reader, "You tell me how many tests you are going to conduct, and I will tell you how many parity violations must be forgiven to correct for random variation (and the appropriate  $Z_{crit}$  value to use in the tests)." The number of forgivenesses is called "K" in the table, hence the name. As will be shown later, this table overstates the statistically appropriate number of forgivenesses justified to correct for random variation by a factor of twenty to one hundred percent, depending on the number of tests undertaken. Thus, when forgivenesses are used to correct for potential problems arising from random variation, there is a clear tendency for ILECs to overstate the justified number.

In concluding this overview, it is important to note that many view forgivenesses, whether justified by random variation or not, as THEFT! While this is a harsh view, it is, to many CLECs, appropriate. In their view, forgivenesses allow ILECs to violate the law, by providing CLECs with discriminatory service levels, without being penalized. Three tenets form the basis for this view.

(i). Computing the extent of random variation and the appropriate number of forgivenesses according to the ILEC approach outlined above requires the assumption that the ILEC always provides parity service. Many CLECs find this assumption ludicrous. They point out that if it were true, there would be no need for parity testing, and with no statistical testing, there would be no random variation in the test statistic, and hence no need for forgivenesses. The most fundamental rationale for performance appraisal and parity testing is that the ILEC has an incentive to maintain its monopolistic position in the local market and will do so by providing inferior service levels to competing CLECs unless its service provision performance is carefully monitored. Thus the mere fact that we are trying to put together a PAP gives lie to the assumption that the ILEC always provides parity service

It can also be argued that the number of forgivenesses justified if this assumption were true would be an overstatement of the appropriate number of forgivenesses, given that is not true. Thus a corrected number of forgivenesses could be obtained by weighting the original number of forgivenesses by the probability that the ILEC provided parity in its supply of every submeasure. But even in this case, many CLECs would argue that a false sense of propriety has been given to an essentially worthless idea -- nothing is to be gained by placing any credence in a procedure based on such an unrealistic hypothetical.

(ii) Random variation and its associated forgivenesses ignore the possibility of type II error. Recall that when someone bases their conclusions on a statistical test, they can make two types of errors. They could conclude parity is not present when in truth it is, a type I error; or they could conclude parity is present when in fact it is not, a type II

error. As explained above, ILEC random variation arguments exploit the former type of error but ignore the latter. Clearly, when a type II error occurs -- the ILEC is judged in parity when in fact it is discriminating against the CLEC -- the ILEC avoids paying a penalty it should pay. *In fairness, if the CLEC owes the ILEC a forgiveness when the ILEC is asked to pay a penalty it should not have to pay due to type I error, then the ILEC owes the CLEC a "forgiveness" if it avoids paying a penalty it should pay due to a type II error.* The problem is that determining how many forgivenesses of the second type the ILEC owes the CLEC requires the computation of the probability of a type II error. This computation requires, in turn, knowledge of the extent to which parity was violated (so as to locate the distribution of sample means differences under the alternative hypothesis). Since this information is not generally available to the analyst, this latter computation, and the implied forgivenesses associated with it, is typically ignored.

There are, however, several ways to take type II errors, as well as random variation, into account in performance appraisal questions. One method is an "equal risk" approach, as developed in current PAPs of AT&T and BST. As this approach has already been outlined, an example will serve to illustrate the point. It turns out that a delta value of 0.1 and a CLEC sample size of about 400 will produce a balancing critical value of  $Z_{crit}=1.04$  which equates the probability of making a type I error ( $\alpha$ ) with the probability of making a type II error ( $\beta$ ) at a value of 0.15. Now suppose we conduct 100 tests this month. Under these conditions, the ILEC would be judged to owe penalties on 15 submeasures that it should not have to pay (due to type I error), but it would also avoid paying penalties on 15 submeasures that it should have to pay (due to type II error). In the end, fifteen penalties, plus those for any other submeasures found out of parity, are

owed, and fifteen penalties, plus those for any other submeasures found out of parity, are paid. The errors cancel each other out and there is no mistake in penalty assessment.

There is no doubt that such an equal risk approach has a certain appeal for parity testing and performance appraisal. An obvious advantage is that it obviates the need to treat forgivenesses and K-Tables. Unfortunately, operationalizing the approach encounters some serious, perhaps fatal, problems relating to the appropriate value to assign to a crucial parameter called "delta". If these problems can be solved, then equal risk becomes a very attractive approach.

On the other hand, if the problems cannot be solved, we are stuck with having to deal with forgivenesses and K-tables. In this vein, Dr. George Ford, of Z-Tel, has suggested a method for determining the number of forgivenesses the ILEC would owe to the CLEC due to type II error. Dr. Ford has attempted to modify the Texas Plan so as to eliminate some of its more glaring errors. When considering problems arising from forgivenesses, he noted that the K-Table used in the Texas plan to determine the appropriate number of forgivenesses was constructed assuming that the ILEC was always in parity and thus considered only type I errors. Making a reasonable assumption concerning the extent to which the ILEC might diverge from parity, Dr. Ford constructed an "Inverse K-Table", that is, one based on type II error where the value of K tells us the number of "forgivenesses" an ILEC would owe a CLEC for not paying penalties it should have paid, but avoided, due to type II error. Based on his assumptions, Dr. Ford found that for any reasonable number of tests, the number of "forgivenesses" arising from type II errors dwarf the numbers in the traditional K-Table, i.e., those arising from type I errors. Now, clearly, we could change Dr. Ford's assumptions about the extent of the

ILEC's divergence from parity and find different numbers for type II forgivenesses. But the lesson he provides us is clear: for reasonable departures from parity, it is likely that the probability of type II errors exceed the probability of type I errors, so from a forgiveness perspective, the ILEC probably owes the CLEC, rather than conversely. Now, nobody truly expects the ILEC to pay more due to type II random variation. Ford's point is that no undue harm is likely to accrue to the ILEC if we drop the notion of random variation and forgiveness altogether. Most CLECs agree with this position.

(iii). Finally, if one wishes to fully understand why some CLECs view forgivenesses as theft, it is important to understand that there are two alternative, and arguably, equally legitimate views of what constitutes "parity in service provision". One view, which we shall call "Parity of Process," holds that parity is achieved if the mean (and variance) of the production process that the ILEC uses to supply its own customers is the same as the mean (and variance) of the production process which it uses to supply the CLEC's customers. As will be explained momentarily, in this approach, the test statistic can be thought of as exhibiting sampling variability. Thus, if one ignores the two criticisms above, a case can be made in support of the legitimacy of forgivenesses.

The second view, which we shall call "Parity of Outcome," holds that the service provision data collected on the CLECs and ILEC each month constitute a population, not a sample. In this approach, the test statistic is not a "statistic" at all; rather it is simply a measure of the extent of discrimination that took place that month. According to this view, since the "test statistic" is not subject to random variation, there is no legitimate statistical justification for forgivenesses. Most CLECs subscribe to this latter view to a greater or lesser degree. Clearly, if that view is correct, then granting a forgiveness to the

ILEC -- allowing them to discriminate against the CLEC without penalty -- is tantamount -- to allowing them to steal a part of the CLEC's local market, both actual and potential. Since the distinction between the two views of parity is fundamental to understanding the CLECs' perspective on forgivenesses, we now turn to a more detailed examination of each.

### III. Parity of Process Versus Parity of Outcome

Most PAPs use (some variant of) the LCUG Modified Z statistic as the *deus ex machina* for evaluating the extent of discrimination in service quality provision. The formula for the basic statistic is

$$Z = \frac{\bar{X}_{CLEC} - \bar{X}_{ILEC}}{\sigma \sqrt{\frac{1}{n_{CLEC}} + \frac{1}{n_{ILEC}}}} \quad (1)$$

where the  $\bar{X}_i$ 's are the means and the  $n_i$ 's are the number of data elements collected on the service for the CLEC and the ILEC, respectively.  $\sigma$  is standard deviation, of the ILEC data if the LCUG approach is used or of the pooled data otherwise. Once this statistic is computed, its value is compared to a critical value to determine whether the deviation from parity is large enough to indicate the presence of discriminatory service provision. Both views of parity conform to this general framework; they differ in their view of the nature of the data used to compute the statistic and the consequent implications on the stochastic nature of the statistic.

The Parity of Process view takes the data to be realizations of a sample from an infinite population. That is, the production process that the ILEC used to supply its own customers last month could have generated an infinity of possible outcomes, as could the

production process that the ILEC used to supply the CLECs' customers. The data on these processes can then be thought as simply the outcomes of the processes observed last month. They are therefore samples of all of the observations that could possibly have arisen from each of the respective processes. Their means and variances ( $\bar{X}$  and  $S^2$ , respectively) of the true measures of location and dispersion ( $\mu$  and  $\sigma^2$ , respectively) of their corresponding production processes. Note that these production processes could have produced infinitely many other samples, each having a different mean (and variance). Thus both sample means, while certainly estimates of their corresponding population parameters, are themselves random variables that follow statistical distributions. According to the Central Limit theorem, for large samples, the sample mean follows a normal distribution with mean given by the population mean and variance given the population variance divided by the sample size. It is further known that if we create another random variable by taking the difference in the means of the two samples, it will also follow a normal distribution, with mean equal to the difference in the population means and variance given by the sum of the population variances divided by their respective sample sizes. This random variable can be converted to a *standard* normal random variable, i.e., one having zero mean and unit variance, by subtracting out its mean and dividing through by its standard deviation (the square root of its variance).

More formally

$$\begin{aligned} \bar{X}_{CLEC} &\rightarrow N\left(\mu_{CLEC}, \frac{\sigma_{CLEC}^2}{n_{CLEC}}\right) \quad \text{and} \quad \bar{X}_{ILEC} \rightarrow N\left(\mu_{ILEC}, \frac{\sigma_{ILEC}^2}{n_{ILEC}}\right), \text{ so} \\ \bar{X}_{CLEC} - \bar{X}_{ILEC} &\rightarrow N\left(\mu_{CLEC} - \mu_{ILEC}, \frac{\sigma_{CLEC}^2}{n_{CLEC}} + \frac{\sigma_{ILEC}^2}{n_{ILEC}}\right), \text{ and hence} \quad (2) \\ Z &= \frac{(\bar{X}_{CLEC} - \bar{X}_{ILEC}) - (\mu_{CLEC} - \mu_{ILEC})}{\sqrt{\frac{\sigma_{CLEC}^2}{n_{CLEC}} + \frac{\sigma_{ILEC}^2}{n_{ILEC}}}} \rightarrow N(0,1) \end{aligned}$$

To conduct any statistical test, the test statistic is always computed assuming the null hypothesis is true. For parity testing, the null hypothesis is equality of distribution, that is equality of means and variances, so that  $H_0: \mu_{CLEC} - \mu_{ILEC} = 0$  and  $\sigma_{CLEC}^2 = \sigma_{ILEC}^2$ . Substituting these restrictions into the Z statistic of equations (2) will reproduce the appropriate test statistic of equation (1). It follows that the statistical properties of a parity test are inherited from the statistical properties of its components (means and variances), that are in turn inherited from what we assume about the properties of the data that make them up. Different assumptions about the data will lead to different implications as to the nature of the test statistic, as will soon be shown.

Parity of Process therefore is based on a test statistic derived from a standard normally distributed random variable. This result allows us to easily compute the extent of random variation and, ignoring type II error, provides us with a statistical justification for forgivenesses. For instance, the fact that Z follows a standard normal distribution indicates that there is only a 5% probability of computing a value of it in excess of 1.645 by chance. Now suppose we are analyzing data on order completion interval, or any other service for which larger values indicate worse service, and undertake the parity test at the .05 level of significance. Suppose further that we obtain a value of the test statistic in excess of 1.645, so that we conclude discrimination against the CLEC. There is only a

95% chance, in general, that this is a correct decision. There is a 5% chance that we got a statistic value this large because one of the means came from a sample taken from an extreme or uncharacteristic part of its production process. That is, there is a 5% chance that the processes are actually in parity even though our statistical results suggest otherwise. In this case, according to the parity of process view, the ILEC would be forced to pay a fine when it was in fact providing parity service. The ILEC thus argues that such a "violation" should be forgiven since it is not actually a violation at all. To reiterate, if all tests are undertaken at the 5% level of significance, there is a 5% chance of this error occurring for each test. Thus, if we conducted one hundred tests per month, on average, we would expect five of the resulting outcomes to exhibit this type I error, and hence, so the story goes, we should forgive five violations on the part of the ILEC.

Now let us contrast this view with a Parity of Outcome approach. This approach does not view the data to be analyzed as realizations of outcomes of the output of some unspecified production process. The Outcomes approach does not view the data as a sample at all, but rather as a population. Whether more or different data might have been generated from the process is both esoteric and immaterial; *what we have is all of the data on the various service quality measures that were generated that month.* Thus when we compute the means and variances of these data series, we are not estimating the mean and variance of some underlying production process, we are literally computing the parameters of the respective populations. It follows that if the CLEC mean is computed to be larger than the ILEC mean, we already know what we were testing to find out in the Process approach, that  $\mu_{CLEC} > \mu_{ILEC}$ . This does not mean that the computation of equation (1) is not important from the Outcomes view. But in this view, it is a measure of

materiality, not a test statistic. It allows us to address the question of whether the existing means difference is big enough to have an important effect on competition. If we compare it to some critical value to make that decision, and if that critical value happens to be 1.645, so be it. It probably makes more sense to use a statistically determined value to demarcate materiality than a mere guess at the actual means difference that would be marginally competitively significant.

Thus, even though the two approaches are superficially similar, they are fundamentally different. This difference is no more pronounced than in the determination of forgivenesses. For statistical legitimacy, forgivenesses require random variation, specifically, type I error. But in the Parity of Outcomes approach the data constitute populations, not samples, so that "statistics" computed from random variables based on them do not exhibit sampling variability. Thus *there can be no type I error, no random variation, and consequently, no justification for forgivenesses.*

The Parity of Outcomes approach is rather extreme and not very many CLECs subscribe to it. However, several CLECs do subscribe to a hybrid of the two approaches which relies on the outcomes view heavily enough to refute the rationale for forgivenesses. This view follows the Parity of Process approach up to the computed value of the test statistic exceeds the critical value, then it adopts (a variant of) the parity of process approach. The argument goes like this: When the ILEC fails a parity test, it has provided the CLEC with inferior service -- type I error or no type I error. They can only fail the test if the computed Z is larger than the critical Z. But this can occur only if the CLEC's mean exceeds the ILEC mean, i.e., only if the CLEC has been given inferior service. Of course, there may be a 5% probability that this outcome was due to chance.

But all this suggests is that the ILEC did not discriminate against the CLEC on purpose; that is, they did not employ a discriminatory process, they simply achieved an extreme or uncharacteristic result from an equivalent process. Nevertheless the fact remains that the CLEC received inferior service. CLECs that support this view find no provision in the Telecommunication Act of 1996 that the ILEC be excused from providing parity service simply because it did not intend to discriminate. What they do find is that the law requires service to be of at least equal quality to that which it provides its own customers. When an ILEC fails a parity test, it has not met this requirement.

This section has tried to provide a CLEC perspective on legitimate reasons why parity testing does necessarily require the granting of forgiveness. In fact it should now be clear that the only statistical foundation justifying forgivenesses is a pure Parity of Process view, and even this view ignores mitigation due to type II error. However, given that almost every PAP that does not advocate equal risk requires forgivenesses in one form or another, many CLECs are developing the following philosophy: If forgivenesses must be granted, at least make an effort to grant no more than are justified. The implicit question here leads us directly to the next section.

#### IV. What is the Appropriate Number of Forgivenesses?

Most of this paper up to now has suggested that the obvious answer to this question is zero, at least from a CLEC perspective. On the other hand, as we noted earlier, ILECs tend to overstate, or simply provide no justification for, their forgiveness demands. It is therefore important to have some accurate analysis based on statistical principles as to the appropriate answer to this question. Since a pure Parity of Process

view is necessary for the legitimacy of the granting of any forgivenesses, we assume that it is correct in what follows. We do not, however, advocate it as the correct approach.

Let us consider the following experiment. Suppose we conduct many, say  $N$ , parity tests, each at the  $\alpha$  level of significance. The outcome of each test can be classified into one of two possible categories: Pass (a failure) or Fail (a success). The probability of failing a test by chance is thus  $\alpha$ , so that  $P(\text{success}) = \alpha$ . Finally, the outcome of each test is independent of that of every other test. Under these assumptions, the number of failed tests is a random variable (call it  $K$ ), known as a Bernouli variable. As such, it is known to follow a binomial distribution with parameters  $N$  and  $p$ .  $N$  is known as the number of Bernouli trials, the number of tests in this case, and  $p$  is the probability of success for any trial, which equals  $\alpha$  in this case. Notationally, it is said that

$$K \sim b(N,p) \quad (3)$$

and the probability distribution function of  $K$  is thus

$$P(K \leq k) = \sum_{k=1}^k \frac{N!}{k!(N-k)!} p^k (1-p)^{N-k} \quad (4)$$

While technical, this information is important because it allows us to compute the probability that we will fail a certain number of tests by chance. For example, suppose we conduct 100 parity tests at the  $\alpha = .05$  level of significance, i.e.,  $N = 100$  and  $p = .05$ . Now if we wish to know the probability of failing exactly five tests by chance, we have

$$P(K = 5) = \frac{100!}{5!95!} p^5 (1-p)^{95} = 0.18 \quad (5)$$

or if we wish to know the probability of failing fewer than, say, four tests a by chance

$$P(K < 4) = \sum_{k=1}^4 \frac{100!}{k!(100-k)!} p^k (1-p)^{(100-k)} = 0.118 \quad (6)$$

Figure 1 and Table 1, below it, (next page) show and tabulate, respectively, the probability distribution of  $K$  under these assumptions. It is worth noting that the probability of failing more than ten out of the 100 tests is only about 1.1%.

The mean of any random variable is its expected value; that is, the sum of the values that the random variable can take and times the probability of those outcomes. A Bernouli random variable is typically viewed as taking on a value of zero for a failure and one for a success. Thus the expected value of a Bernouli random variable consists of the sum of  $N$  identical elements of the form  $0 \cdot (1 - p) + 1 \cdot (p)$ . It follows that

$$E[K] = Np \quad (7)$$

Likewise, it can be shown that the variance of  $K$  is

$$V [K] = Np (1 - p) \quad (8)$$

In the above example with 100 tests, each taken at the 5% level of significance,  $N = 100$ ,  $p = .05$ , therefore the expected (mean or average) number of misses is 5 ( $= 100 \times .05$ ), and the variance is 0.475 [ $5 \times (.95)$ ].

Finally note that as the number of trials ( $N$ ) gets large, the binomial distribution approaches the normal. Thus for large  $N$ ,

$$K \sim N[Np, Np(1-p)] \quad (9)$$

How large does  $N$  need to be before the normal approximation can be used? An often suggested rule of thumb is that the normal approximation is a good one so long of the smaller of the two numbers given by  $Np$  and  $N(1-p)$  is greater than or equal to 5. Figure 1 illustrates. Since  $N = 100$  and  $p = .05$ ,  $Np = 5$ , so the normal approximation should be acceptable. From Figure 1 we can see that the mean of  $K$ , 5, is also equal to

Figure 1

The Binomial Probability Distribution for  $N=100$  and  $p=.05$   
 (The vertical axis graphs the probability that  $K=k$  and the horizontal axis graphs the categories of  $K$ . Category 1 corresponds to  $K=0$ , category 2 corresponds to  $K=1$ , ..., category 11 corresponds to  $K=10$ )

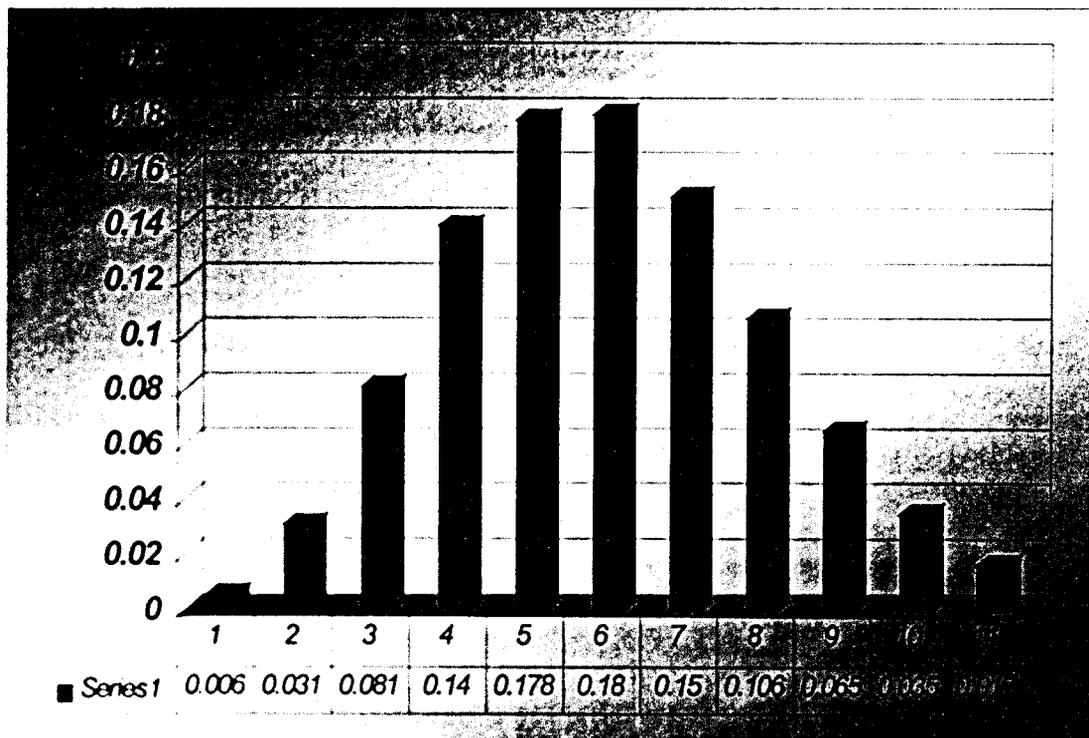


Table 1  
 The Data corresponding to Figure 1

K	P(K)
0	.006
1	.031
2	.081
3	.140
4	.178
5	.180
6	.150
7	.106
8	.065
9	.035
10	.017

the mode (the most likely value in this case 0.18%) of  $K$ , and hence also equal to the median (middle value) of  $K$ . Since the mean, median, and mode of  $K$  are all equal, the distribution of  $K$  is essentially symmetric. Figure 1 also bears out the familiar bell curve shape of the normal.

It is worth noting that for smaller  $N$ , the binomial is skewed to the right so that the mode  $<$  median  $<$  mean. In this case we are more likely to observe  $K$  values smaller than the mean than ones larger than the mean.

All of these technical details are important foundations that must be laid in order to justify the following key proposition: *If forgivenesses must be granted, the (maximum) number appropriate to grant is equal to the expected (mean or average) number of chance test failures in  $N$  trials (or tests) undertaken.* This is the natural measure that we have employed in earlier sections of this paper, and now we see that it has a sound statistical foundation. To be clear, the appropriate number of forgivenesses to grant is  $E[K]$  which is computed as  $Np$ , the number of tests, times  $p$ , the level of significance of each test (which we have also called  $\alpha$  above). Because it is the mean of the distribution of  $K$ , it is a statistically unbiased measure of the number of failures. This means that, in the absence of any further information, it is our best guess at the actual number of test failures, assuming the ILEC always provides parity service. Of course, since  $K$  is a random variable, we might on occasion observe more than  $Np$  failures, and on other occasions, we might observe fewer. But over time, with many parity tests undertaken each month, the number of failures will average out to  $Np$ . This generalization is especially true for large  $N$ , where the distribution of  $K$  is symmetric, because in this case it is clear that the probability of observing a number of failures

greater than  $Np$  is exactly equal to observing a number of failures less than  $Np$ .

When  $N$  is smaller, we are more likely to observe a number of failed tests smaller than the mean (since the mode of the distribution is less than  $Np$ ). This is one reason why we suggest that the maximum number of forgivenesses: Over time we would be likely to observe fewer failures than the mean value -- at least in the small  $N$  case. We do not belabor this point, however, since most PAP's envision monthly parity testing for a large number of submeasures. We conclude that since a large number of parity tests is the norm, symmetry of the distribution of  $K$  should be expected. Thus, over time, parity testing should cause the number of tests failed due to random variation to converge to  $Np$  tests.

There is, however, one point to be made that suggests that granting  $Np$  forgivenesses to the ILEC every month may be -- even on average -- granting too many. When we suggested that we could expect  $Np$  failures each month due to random variation, we based their result on the assumption that the ILEC always provided parity service. In other words, the conditional expectation of  $K$ , the expected number of failures given the ILEC is always in parity, is  $Np$ . It follows that the relevant, or unconditional expectation, of  $K$  is  $Np$  times the probability that the ILEC is always in parity. A crude measure of this probability is given by

$$P(\text{ILEC always provides parity service}) = 1 - \frac{\text{number of failed tests}}{\text{total number of tests}} \quad (10)$$

Thus, we suggest the following modification to the earlier rule. *The appropriate number of forgivenesses to grant the ILEC in any given month is  $F$ , where*

$$F = \left[ \frac{\text{number of passed tests}}{\text{total number of tests}} \right] \times Np \quad (11)$$

To illustrate, we continue with the  $N = 100$  and  $p = .05$  example. That is, we conduct 100 independent parity tests at the  $\alpha = .05$  level of significance. Suppose 20 of those tests fail. Originally, we would have suggested that  $Np = 5$  test failures should be forgiven, so that only 15 failures should be penalized that month. However, we now note that there is not a 100% probability that the ILEC provides parity service for each and every submeasure. A heuristic estimate of the probability that the ILEC provides parity service for any one submeasure is 0.8 (80, the number of tests passed, divided by 100, the total number of tests undertaken). Thus we suggest the ILEC be granted only 4 forgivenesses ( $0.8 \times 5$ ) and that it be penalized for 16 violations if the desire is to grant the statistically appropriate number of forgivenesses.

#### V. K-Tables and Forgivenesses

A number of ILEC PAP's, mostly in states serviced by SBT, use a K - Table to determine the number of forgivenesses. From our earlier discussion, it may be recalled that a K-Table consists of a set of test numbers and corresponding forgiveness (and critical Z) values. The table basically says to the reader, "You tell me how many tests you are going to conduct, and I will tell you how many parity violations must be forgiven to correct for random variation (and the appropriate  $Z_{Crt}$  value to use in the tests)." The number of forgivenesses is called "K" in the table, hence the name. In what follows, we will review the history of the K-Table and discuss how one is calculated. We will then argue that using the K-Table to determine the number of forgivenesses to be granted to the ILEC in a given month is a dramatic overstatement of the amount that they

legitimately merit.

Early on (pre-1998) in CLEC/ILEC/state regulatory commission discussions of 251/271 compliance verification, AT&T, with most CLECs' approval, had proposed a three tiered penalty structure: Tier I related to the ILEC providing parity service to the individual CLECS (one by one). Tier II related to the ILEC providing parity service at the industry level, i.e., to all CLECs taken together. Tier III related to service or persistent ILEC violations at the industry level, penalties for which would be paid to the state (a persistent violation is one which occurs for three consecutive months). Tier I thus considered individual tests on individual submeasures for individual CLECs, but Tiers II and III required the consideration of the industry as a whole. Therefore these upper tiers required the aggregation of the results of many tests. In particular, the question arose "How many tests would the ILEC have to fail before we are (95%) sure that their failure to provide parity service is not attributable to chance?" The first K - Tables were early attempts to answer this question. Similarly, the paper submitted by then separate MCI and WorldCom entities in TX contained Dr. Mallow's K table for use in determining 251 271 compliance, not for determining if any remedies should be paid to CLECs when inferior service is received.

While the LCUG literature produced prior to 1998 may contain K-Tables, the first K-Table to be produced in written testimony was provided by Dr. Colin Mallows of AT&T in a document presented to the FCC dated May 29,1998. We refer the reader particularly to pages 18-21 of this document and the attached Exhibit 1. Dr Mallows begins by noting that, in reviewing aggregate results of ILEC's performance, if all tests have "...a Type I error rate of 5%, then we would expect, on average, 5% of these tests to

indicate non-compliance even when the ILEC is in full compliance." He further notes that this number is a random variable so, "We need to derive some threshold number of parity tests such that if more than this number are observed to fail, then non-compliance can be deduced." Thus we have his announced purpose for creating the K-Table.

The object of the K-Table is to determine the number of individual violations (K) and the type I error of the individual tests ( $\alpha$ ) so that the probability of falsely claiming a violation of 251/271 requirements is set at 5%. Assuming that the ILEC is fully in compliance and that we know N, the number of tests to be aggregated, Dr. Mallows suggested the following procedure for setting up a K-Table: (i) Choose a tentative value for  $\alpha$ , say  $\alpha=0.05$ . (ii) Determine K to be the largest number such that the probability that the overall set of tests violate parity is no greater than .05. (iii) Decrease the value of  $\alpha$  until the overall probability of a violation using the K determined in (ii) is exactly .05. The resulting values of  $\alpha$  and the implied  $Z_{crit}$ , which will be read from the table, determine the values to be used in the individual tests. The corresponding number K, also read from the table tells us the maximum number of tests that can be failed under these conditions such that any additional failures will render us (95%) certain that parity is not being provided at the industry level.

Before providing an example, it is worth noting that that Dr. Mallows proposed the following formula for finding K in step (ii):

$$P(K < k) = 1 - [(1 - \alpha^3)^N * b(k, N, \alpha)]$$

where the first term in brackets is the probability of three consecutive misses, the persistent failures component. The cognoscenti typically ignore this term either because their plan contains no persistent failures component or because the resulting number is so

close to unity (for the  $N=100$ ,  $\alpha=.05$  case, the term is equal to 0.988). The second term in brackets is the probability from the binomial distribution of finding  $k$  or fewer successes in  $N$  trials when the probability of success is  $\alpha$ , which we discussed earlier. (Again Dr. Mallows suggested an adjustment to  $\alpha$  relating to the persistence component, which is almost universally ignored in subsequent work because it is so small.) Thus, if we are simply concerned with finding the maximum number of failed tests before lack of parity is assured with 95% confidence -- without regard to persistence -- we simply make use of the binomial distribution. For a given  $N$  and trial  $p$  we find the largest  $k$  such that the probability that the number of failures is less than or equal to  $k$  is at most 0.95. Holding this  $k$  constant, we reduce  $p$  until that overall probability is exactly 0.95. This consequent value of  $p$  defines the level of significance, and hence the critical  $Z$  value, at which all  $N$  individual tests should be undertaken.

A simple illustration using EXCEL may help clarify the procedure. Suppose we wish to conduct 100 tests, and we begin by assuming a  $p$  ( $=\alpha$ ) of 0.05. Using the statistical function CRITBINOM, we set TRIALS=100, PROBABILITY=.05, and ALPHA=.95. The function returns the smallest value of  $k$  for which the cumulative binomial probability is greater than ALPHA -- 9 in this case. However, we wish the largest value of  $k$  for which the cumulative binomial probability is just less than ALPHA. Thus our desired value of  $k$  is the number the function returns minus one -- 8 in this case. Next we use the BINOMDIST statistical function with NUMBER=8, TRIALS=100, PROBABILITY=.05, and CUMULATIVE=true. We then nudge the PROBABILITY entry downward slightly and continue to do so until the function returns exactly .95 -- roughly .048 in this case. Finally, this probability if entered into the NORMINV function

with MEAN = 0 and STANDARD DEVIATION = 1 to find the critical Z value at which the 100 tests should be conducted-- 1.67 in this case. A K-Table simply repeats this exercise for various numbers of trials (or tests, N) and tabulates the results.

A further illustration is provided by Dr. George Ford in his paper on "The Modified Texas Plan", page 13. There he reproduces and expands the Texas K-Table. It turns out that it is an exact replica of the one in Dr. Colin Mallows testimony referenced earlier. As such it, presumably unknowingly, corrects for persistence when no correction is justified. Dr Ford recomputes the table without the persistence factor and presents the corrected table on page 13 as well. For our purposes, either table will do (although Ford's corrected table was computed exactly as outlined above). *According to the Texas Plan, one determines the number of tests to be conducted, goes to the K-Table, and finds the corresponding entries for K and Z. The K entry indicates the number of tests the ILEC is allowed to fail before it owes a penalty; the Z entry gives the critical value at which each test must be conducted. It is our contention that this procedure forgives the ILEC far too many failed tests and is therefore unfair to the CLECs.*

As shown above, the value for K from the table tells us the maximum number of tests the ILEC can fail before we are 95% sure that the ILEC is out of parity for the industry for that month. This is exactly what Dr. Mallows designed the Table for and it is exactly what the Table is supposed to tell us. It is also correct that this means that there is a 5% probability of type I error for the testing process that month. That is, for say, the N=100 and p=.05 case, if every test were undertaken at the .048 level, there is a 5% chance that if we observed more than 8 violations that month, that the ILEC would still be in parity. Up to this point everything is fine.

The problem arises because somebody on the Texas Staff or at SBT decided that (for  $N=100$ ,  $p = .05$ , say) because 8 tests must be failed before the ILEC is judged out of parity, the ILEC should be forgiven those 8 failures. This is a *non sequitur*; there is no logical connection between the information in the K-Table and the appropriate number of forgivenesses. What is so amazing is that people were so unfamiliar with the notion of a K-Table and what it was designed to do that they are only just now realizing the fallacy. One way to see the problem is to note that if we, as is typical, equate random variation with type I error, then we should only forgive those errors in excess of 8 because they are the ones that would arise due to type I error. This is clearly incorrect, but it follows the logic of using the K table for forgivenesses.

The problem with the K-Table reasoning is that it ignores the fact that, under the assumptions used to generate it, *all misses are due to random variation*. Figure 1 of section IV may prove helpful here. It shows that there is about a 6% chance of failing more than 8 tests due to random variation. But it also shows that there is a 38% chance of failing more than 5 tests due to random variation, a 44% chance of failing fewer than 5 tests due to random variation, an 18% chance of failing exactly 5 tests due to random variation, etc. *The point is that when we assume the ILEC always provides parity service, any observed test failure must be due to random variation. Thus if we wish to estimate the actual number of failures arising due solely to random variation, we should not be asking, "What is the maximum number of test failures that could occur before we would be 95% sure that the next failure was not due to random variation (the K-Table question)?" Rather, what we should be asking is, "How many test failures due to random variation would we expect if we conducted 100 tests, each at the 5% level, month after*

*month, after month (the expected value question)?" As we showed in section IV, the answer to this question is the expected value of the binomial random variable  $K$ . Under the above assumptions, we would expect, over time, on average, 5 tests to fail each month, not 8. Thus forgiving 8 violations instead of five, forgives the ILEC three failures with no statistical justification. Certainly, granting these three additional forgivenesses cannot be justified on the basis of the expected failures due to random variation -- as we have shown above.*

For these reasons, it seems clear to the CLECs that the number of failed tests forgiven the ILEC should be based on the expected value of  $K = Np$ , not on the  $K$ -Table. Without doubt, more than  $Np$  tests will fail due to random variation in some months. But equally, fewer than  $Np$  tests will fail due to random variation in others. Statistical theory guarantees us that over time the number of test failures due to random variation will converge to  $Np$  and not some number from a  $K$ -Table. However CLECs believe that even  $Np$  is too many forgivenesses. Recall that  $Np$  is the conditional expectation of  $K$  (conditioned on the assumption that the ILEC is always in parity). CLECs believe that the more appropriate is the unconditional expectation of  $K$ , i.e.,  $Np$  weighted by the probability that the ILEC passes all of the tests. Since this probability is less than one, this view must imply fewer legitimate forgivenesses. CLECs hasten to add that even this adjusted measure of forgivenesses ignores type II error. Since this probability is non zero, it suggests even further reduction in the number of test failures that can legitimately be granted an ILEC.

## VI. Conclusions

This paper presents a CLEC perspective on random variation, forgivenesses, and their manifestation in many PAPs, K-tables. The analysis begins by explaining the ILECs rationale for requesting forgiveness (i.e., being forgiven a fine) for failing parity tests due to sampling variability in the random variable underlying the parity test statistic. We then explain the CLEC view that granting such requests constitutes theft of the CLECs' actual and potential local market. Three tenets support this view: (i) The rationale for forgivenesses is based on an unrealistic hypothetical -- that the ILECs always provide parity service. (ii) Forgiveness arguments and rationales ignore type II error -- if it were taken into account, it would likely more than offset the extent of type I error that serves as the statistical justification for forgivenesses. (iii) Finally it is noted that only an extreme version of one of two alternative views of the parity testing scenario statistically justify the granting of forgivenesses. Next a detailed examination of the two alternative views is offered. It is shown that a pure "Parity of Process" view is the only approach to parity testing that offers ILECs some hope of statistical legitimacy for forgivenesses (and, then only if type II error is ignored). A "Parity of Outcomes" view does not admit to random variation so that forgivenesses have no statistical justification. Even a hybrid of the two views refutes the appropriateness of forgivenesses.

The remainder of the paper assumes that the pure Parity of Process approach has been judged acceptable (a major problem in itself from a CLEC perspective) and asks, "What is the correct number of forgivenesses that should be granted to the ILEC?" We argue that the answer to this question is the expected number of type I errors, which is given by the number of tests undertaken times the level of significance of the tests. This is the appropriate value because it is the value that the number of type I errors would tend

toward for a large number of tests conducted month after month. In fact, to be more accurate, this number should be weighted by some measure of the probability that the ILEC is providing full parity service. In addition, many ILEC PAPs, particularly those affected by the "Texas Plan", demand that the number of forgivenesses be given by a "K-Table". We examined the history of the K-Table and its evolution via the Texas plan. We then showed that K-Tables demand considerably more forgivenesses than are justified by sound statistical theory. This result implies that if forgivenesses are to be based on sound statistical principles, they should be calculated as the expected value of a binomial random variable, not drawn from some K-Table.

We conclude by offering the CLEC perspective on random variation, forgivenesses, and K-Tables. In summary, we suggest that there is at best only a limited and uncertain rationale for forgivenesses; the idea should be scrapped. Should some forgivenesses be granted as state policy, at least grant only the statistically justified number. This requires doing away with the K-Table as a calculator of forgivenesses..