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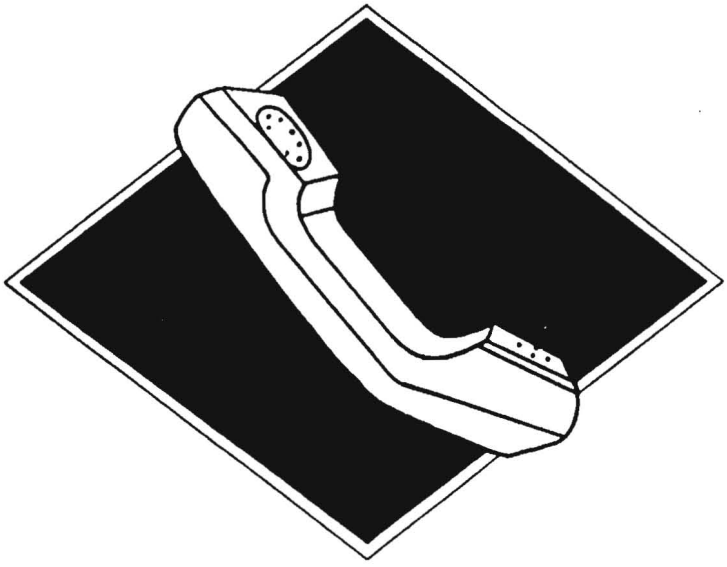

SOUTHERN BELL TELEPHONE AND TELEGRAPH COMPANY

REPAIR PROCESS CONTROLS

FEBRUARY 1993

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By Authority of
The State of Florida for
The Public Service Commission
Division of Research and Regulatory Review

SOUTHERN BELL TELEPHONE AND TELEGRAPH COMPANY

[redacted]

REPAIR PROCESS CONTROLS

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By Authority of
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Division of Research and Regulatory Review
Bureau of Regulatory Review

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1.0 EXECUTIVE SUMMARY

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1.1 Background

This audit by the Division of Research and Regulatory Review was performed at the request of the Division of Communications to assist in the overall investigation of Southern Bell's repair reporting practices in Docket 910163-TL. As a result of both proven and alleged instances of falsification of repair records by Southern Bell employees, the Commission is investigating the Company's process of providing and reporting maintenance and repair service.

1.2 Objectives

The objectives of this audit were to identify the maintenance and repair controls presently and previously in place, to assess the adequacy of those controls, and to determine whether Company management has adequately performed its role in directing and controlling the repair process.

1.3 Scope

The major focus of the audit was the controls surrounding the maintenance and repair process. At the request of the Division of Communications, an effort was made to compare the controls presently in place to those in place in prior years.

In general, the time frame examined covered the period 1986 through 1992. Since many of the problems regarding repair falsification came to light in 1990, the controls in place during 1990 became a specific point of focus. Similarly, particular attention was paid to the control changes implemented in 1991 and 1992 as a result of these problems.

The area of operations examined centered upon the Installation and Maintenance Centers (IMCs) which handle the maintenance and repair of all residential and simple business customers. The roles of other line and staff operating units involved in the maintenance and repair function were also reviewed in examining the trouble reporting and repair process and related controls.

1.4 Methodology

For the purpose of auditing the Company's maintenance and repair practices and

procedures, information was gathered beginning in April 1992 through interviews, field visits to maintenance centers, document requests, and formal discovery. Company personnel interviewed represented a cross-section of management levels, staff support, and craft employees involved in the maintenance and repair process. Based upon analysis of the information examined, the findings and conclusions listed below were developed for consideration by the Division of Communications.

A draft of this report was provided to the Company to verify the factual accuracy of its contents. Based upon the Company's response, certain revisions were made to statements of fact. However, no changes to the intent of the findings or conclusions were made as a result of the Company's input.

1.5 Findings

The following audit findings are discussed in detail in Section 6.0 of the report.

Adequacy of Controls - 1990 and Prior

Finding 1: Repair process controls in place during and before 1990 were inadequate.

Finding 2: Network staff review coverage was inadequate during and before 1990.

Finding 3: Managers' attitudes towards attaining Commission Rule 25-4.070 performance index requirements were inappropriate.

Finding 4: Repair process training was inadequate during and before 1990.

Adequacy of Management's Response to Problems

Finding 5: Management's response to instances of repair records falsification discovered before August 1990 was inadequate.

Finding 6: Management's response to the 1988 Internal Audit of LMOS security was inadequate.

Finding 7: Changes implemented during 1991 and 1992 represent significant control improvements.

Adequacy of Present Controls

Finding 8: **Further control additions and improvements are needed to protect against recurrence of repair reporting falsification.**

2.0 OVERVIEW OF REPAIR PROCESS

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2.1 Report Origination

The flow of the repair process, depicted on Exhibit 1, usually begins with a customer originating a trouble report by dialing "611." The call is received at one of two Centralized Repair Service Attendant Bureaus (CRSABs) located in Jacksonville and Miami. Once the call is received at the CRSAB, the customer is given the option of reporting the trouble condition through the Audichron Interactive Report Ordering system (AIRO), which guides the caller to input information regarding the service problem via telephone touch-tone keys. If the AIRO option is not selected, the caller is automatically connected with the next available live repair service attendant (RSA) at either CRSAB. The RSA records the pertinent information given by the customer, and provides the customer with a commitment time by which the trouble will be cleared.

2.2 Testing and Screening

While the repair service attendant is receiving the trouble information, the line in question is automatically tested by the Mechanized Line Testing (MLT) system to diagnose the cause of the problem. Based upon the results of the tests, the trouble may be routed to the appropriate Installation and Maintenance Center for dispatch direct to a service technician (ST). All other troubles are routed to the appropriate IMC for further determination of handling and resolution.

At the IMC, all of the trouble report information including MLT results is read by the Auto-Screener system, which currently screens for a match with 13 predetermined conditions that will result in the trouble being statused Out of Service and routed for dispatch to a service technician in the field. The Company estimates that about 38% of trouble reports are currently handled by Auto-Screener without assistance from maintenance administrators (MAs). If the Auto- Screener does not find one of these specified conditions existing, the trouble is routed to the maintenance administrators in the IMC for further screening and disposition.

Based upon additional MLT results or communication with the customer, the maintenance administrator seeks to resolve the trouble reports that have not been readily diagnosed and dispatched. All pertinent information gathered by the maintenance administrator, and his/her handling of the trouble is recorded in the Loop Maintenance Operating System (LMOS). The maintenance administrator makes a determination of how the trouble report should be handled by either resolving it and notifying the customer, or by routing it for dispatch to a service technician.

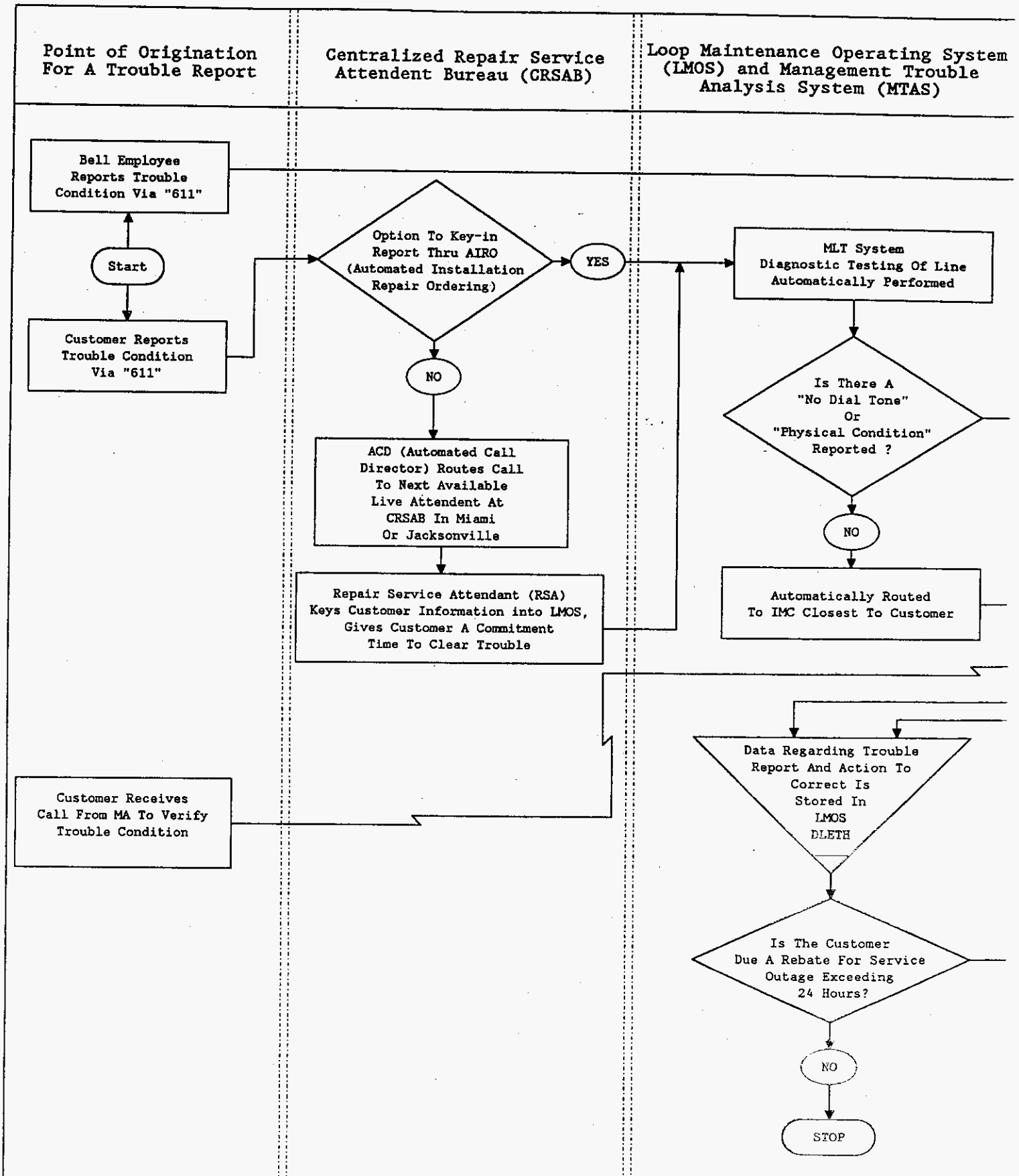
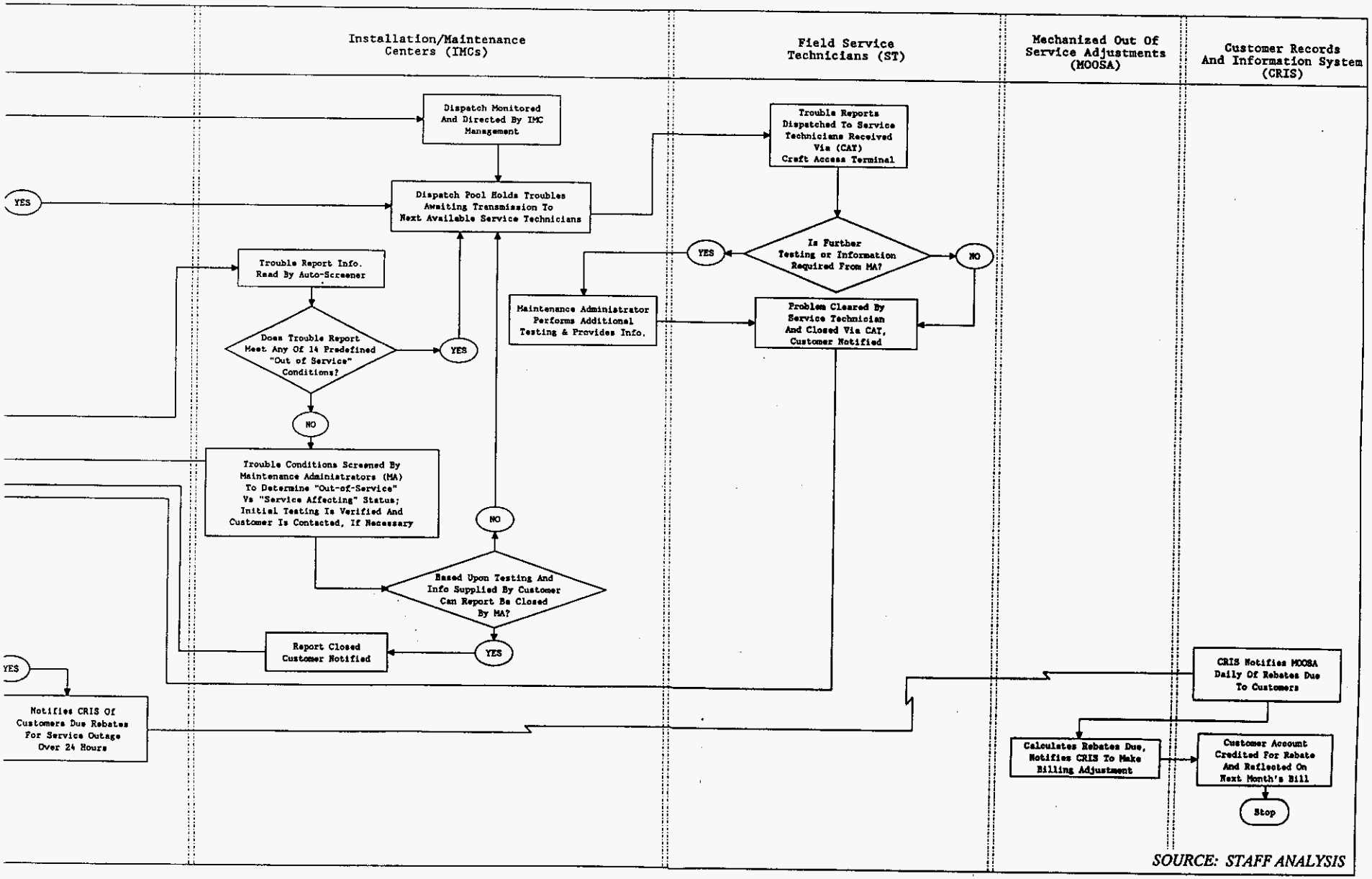

Point of Origination For A Trouble Report
Centralized Repair Service Attendent Bureau (CRSAB)
Loop Maintenance Operating System (LMOS) and Management Trouble Analysis System (MTAS)
Bell Employee Reports Trouble Condition Via "611"
Start
Customer Reports Trouble Condition Via "611"
Option To Key-in Report Thru AIRO (Automated Installation Repair Ordering)
YES
NO
ACD (Automated Call Director) Routes Call To Next Available Live Attendent At CRSAB In Miami Or Jacksonville
Repair Service Attendant (RSA) Keys Customer Information into LMOS, Gives Customer A Commitment Time To Clear Trouble
MLT System Diagnostic Testing Of Line Automatically Performed
Is There A "No Dial Tone" Or "Physical Condition" Reported ?
NO
Automatically Routed To IMC Closest To Customer
Data Regarding Trouble Report And Action To Correct Is Stored In LMOS DLETH
Is The Customer Due A Rebate For Service Outage Exceeding 24 Hours?
NO
STOP
Customer Receives Call From MA To Verify Trouble Condition

EXHIBIT 1

SOUTHERN BELL
Trouble Report Handling Process
(As Of June 1992)

EXHIBIT 1



SOURCE: STAFF ANALYSIS

2.3 *Dispatch and Repair*

The pool of trouble reports awaiting dispatch is monitored by assistant managers in the IMC who set handling priorities and seek to efficiently direct trouble reports to the service technician in the field. For example, trouble reports statused as Out of Service that are in jeopardy of exceeding the 24 hour period for resolution are highlighted in trouble analysis reports available to IMC management. Special priority is given to these trouble reports in order to restore service promptly.

Trouble reports are dispatched electronically to the service technicians via their portable Computer Access Terminals (CATs). The CATs provide the information reported by the customer, MLT test results, and other information added by the maintenance administrator or CRSAB attendant who initially handled the report. The CAT also creates a detailed daily record of the ST's activities, time elapsed between repairs, and other information used by Installation and Repair managers to monitor service technician activity.

At the point a trouble is pulled up by the ST, LMOS' Auto Reject feature performs an additional MLT test to verify that the originally detected problem still exists. If not, the dispatch is rejected, and the trouble is returned to the IMC for re-screening by the MA, since the problem may no longer require a service call.

As a trouble report is dispatched to a particular ST, his employee code and the time of dispatch are recorded as part of the trouble history. On the site, the service technician performs inspections and tests to isolate the cause of the trouble, and may repair or replace malfunctioning equipment, such as dropwire. For billing and timekeeping purposes, the service technician must determine whether the cause of the trouble involves the customer's inside wiring or Customer Provided Equipment (CPE), such as telephone sets or jacks. If this is the case, the customer may be charged for the repairs, unless he/she subscribes to a Southern Bell maintenance plan.

2.4 *Closing and Recording*

Once a dispatched trouble is repaired by the ST, the customer is notified, and the information is stored in the LMOS system to provide the basis for record keeping and results monitoring. In addition, LMOS records and maintains a complete history of the handling of a repair, known as the Display Extended Trouble History (DLETH). This provides an ongoing record of what was done, when, and by whom in resolving the trouble report.

3.0 CONTROLS

3.0 CONTROLS

3.1 Procedural and System Controls

3.1.1 BellSouth Practices

The Company's basic procedural guidelines for the trouble reporting and repair are set down in BellSouth Practices (BSP) 660-169-013BT, 660-169-12BT, and 660-169-011BT. BSP 660-169-013BT delineates the type, cause and disposition codes used to handle trouble reports. BSP 660-169-012BT discusses the specific trouble report items that are monitored by the Company through its internal Customer Service Quality Indicators, and by the Commission through the Schedule 11A, 11B, and 11C monthly reports required under Commission Rule 25.4.70. BSP 660-169-011BT describes the report categories (Customer Direct, Employee Originated, etc.) that determine whether the trouble report will be included in the Schedule 11 service quality indices.

These three BSPs have been in place for the entire period covered by the scope of this review, with relatively minor revisions in 1989 and 1991. In addition to the BellSouth Practices themselves, BellSouth issues Regional Letters (RLs) which serve to clarify or modify a specific BSP until formal revision and ratification is complete.

During December 1991 and April 1992, significant changes in the trouble reporting and repair process were initiated through Regional Letters 91-12-034SV and 92-04-033BT. These changes are detailed in sections 5.1 and 5.2 of this report.

3.1.2 LMOS and MTAS

The trouble reporting and repair process is directed by the Loop Maintenance Operating System (LMOS), which controls the reporting, handling and record keeping functions. LMOS is actually a family of systems that work together to accomplish these functions. In performing its role, LMOS coordinates systems and applications which control the testing (Mechanized Line Testing or MLT), screening (Auto-Screener), dispatching, monitoring, and closing of trouble reports.

LMOS has two basic components, the Front End and the Host, that are responsible for handling different phases of the trouble report and repair process. The Front End records and tracks trouble reports from the time they are received until the repair is completed, verified, closed and the information is sent to the LMOS Host.

The Host has two main functions. First, it stores and maintains detailed line record

information on each subscriber. Second, it creates and maintains historical data based on closed trouble reports for each telephone number.

After reports are closed, the Host coordinates the summary analysis and results reporting through the Mechanized Trouble Analysis System (MTAS). Each day, MTAS captures from LMOS some of the information contained in the closed out troubles. MTAS retains sufficient information from each trouble report to reconstruct the nature of the problem reported and all action taken by the Company. For example, for a particular trouble, MTAS can identify the type code, the MLT results, who dispatched the trouble, which service technician received the dispatch, the disposition and cause codes he assigned, when he cleared it, the time service was restored, and more. This data is retained 65 days for analysis.

Through MTAS, standardized reports are routinely generated which analyze trouble report handling information for use by management. In addition, Installation and Maintenance Center managers may generate customized reports for a variety of uses such as assessing the degree of compliance with procedures, diagnosing the cause of a problem in handling the load, or studying the processing and resolution of a sample of trouble reports.

3.1.3 MOOSA

Another trouble report and repair handling system application driven by LMOS is MOOSA, the Mechanized Out of Service Adjustment process. Based upon specific criteria, MOOSA credits accounts eligible for a rebate as required by Commission Rule 25-4.070 for a service interruption of over 24 hours.

According to the *BellSouth CRIS User Guide*, each day, LMOS identifies to the Customer Records and Information System (CRIS) the accounts that are due MOOSA adjustments. Once these are identified, rebates due are calculated and sent to the Customer Records and Information System (CRIS) to credit the customers' bills. Multi-line accounts are currently sent to the Customer Service Department for manual calculation and posting of rebates. The MOOSA process verifies that each rebate identified by LMOS is eventually calculated and credited, as discussed in section 3.5.8 of this report, employing the MOOSA tracking system to reconcile accounts identified to CRIS for rebates versus rebates actually awarded.

Commission Staff analyses of samples of accounts potentially due rebates for service interruptions during 1990 reveal a major error in the Company's specified criteria for awarding service interruption rebates. This error results from the Company's misinterpretation of Commission Rule 25-4.070, and improperly deprives some customers of deserved rebates. Based upon the Company's current rebate criteria, customers who

experience a 24 hour service interruption that is found to have been caused by customer premises equipment (jacks, inside wiring, telephone sets) are excluded from receiving rebates.

However, the Commission's rule implies that rebates should be awarded in such instances. Paragraph (1)(b) of Rule 25-4.070 states, ". . . if the company finds that it is the customer's responsibility to correct the trouble, it must notify or attempt to notify the customer within 24 hours after the trouble was reported." Therefore, if 24 hours has elapsed before the customer is notified (or notification is attempted), the Company has not complied with this requirement. Therefore the customer should be awarded a rebate.

As discussed in section 5.1.7 of this report, bulk-dispatched Out of Service troubles exceeding 24 hours for resolution were not recognized in the MOOSA process as being due a rebate for the service interruption. These troubles were specifically excluded by the Company through the MOOSA rebate criteria until May 1991. Other than the rule interpretation and bulk-dispatch problems, Staff's analyses indicate an acceptable degree of accuracy in identifying and awarding rebates.

3.2 Review and Audit Controls

3.2.1 Network Staff Reviews

Periodic reviews by the Company's Installation & Maintenance/IMC Support Staff (or Network Staff) of IMC repair practices and operating results have been, and continue to be, a major component of Southern Bell's system of controls on the trouble handling and reporting process. These Network Staff reviews have proven capable of detecting the presence of repair records falsification. However, despite the potential value of these reviews, they were only sporadically performed over the period 1986 through 1990.

These operational reviews have been used by management as a monitoring tool to measure results and highlight areas in need of improvement. In contrast to internal audits, these Network Staff reviews can provide more detailed and more frequent evaluations of the operations of the repair process. From a control standpoint, these reviews offered an independent, objective assessment of adherence to Company procedures. In addition, they provide a means of measuring efficiency, productivity, training, and quality of customer service.

A variety of types of Network Staff reviews have been conducted including Operational Reviews, Technical Performance Reviews, Procedure and Statusing Reviews, and Key Results Reviews, all of which address subject areas pertaining to Maintenance Center operations. Of primary interest for purposes of this report is the Procedure and Statusing Review, and specifically its Standardization Review Module. The Standardization

Review provides an assessment of the proper handling and coding of trouble reports through sampling of specified types of trouble reports handled during the study period.

For example, as of 1990, Standardization Reviews usually included evaluations of the handling of samples in the following categories: Employee Reports, Excluded Reports, Missed Premises Reports, CPE (Customer Premises Equipment) Codes, Out of Service Statusing, No Access Statusing, Non-Network Codes, CON (Carried Over No) Statusing, and Auto Reject. As discussed in section 5.2.2 of this report, a new IMC Review Package was introduced during May 1992.

As shown on Exhibit 2, over the period 1985 through 1990, 41 Network Staff reviews of various types were conducted throughout the state. The reviews conducted over this period are concentrated in the years 1985 and 1990. Of the total, 15 or 37% were conducted during 1985, while 14 or 34% were conducted in 1990. During the four year period from 1986 through 1989, just 12 reviews were conducted--only one during 1989, and two in 1987. The concentration of reviews in 1990 coincides with the detection of the problems at the North Dade IMC (discussed in detail in section 4.1.1), which appears to have triggered a flurry of review activity. Although 17 reviews were conducted over this six year period in the North Florida region, 11 date back to 1985, and none were conducted in 1986 and 1989.

Distribution of IMC Network Staff Reviews							
	1985	1986	1987	1988	1989	1990	1985-90
North Fla Region	11	0	2	1	0	3	17
Southeast Fla Region	3	5	0	2	0	4	14
South Fla Region	1	0	0	1	1	7	10
Florida Totals	15	5	2	4	1	14	41

EXHIBIT 2 *SOURCE: Response to Staff's Third Set of Interrogatories, Item 11.*

According to the Company's response to Staff's 3rd Set of Interrogatories, Item 12, over this period reviews were scheduled as directed by higher management rather than on the basis of a routine schedule. If no specific problems were perceived to exist, or if no changes requiring an inquiry into compliance were implemented, an extended period of time could apparently elapse without any Network Staff reviews being conducted.

3.2.2 Internal Audits

Another component in Southern Bell's system of controls regarding the repair process has been the Internal Audit. These internal audits assess the adequacy of systems and controls rather than technical performance issues, and in general provide less detail regarding the handling of trouble reports than the Network Staff reviews.

Over the period January 1984 through May 1992, 41 internal audits related to the repair functions were conducted by Southern Bell. Of these, 32 or 78% were conducted during the four year period 1988 to 1991, while nine or 22% were conducted during the four years 1984 through 1987. No audits were conducted during the first five months of 1992. According to the Company, during 1991, five additional audits were conducted under direction of the Legal Department, including audits of LMOS, MOOSA and FPSC Schedule 11 reporting accuracy. These audits were not reviewed by Commission Staff due to the Company's assertion of claims of attorney work product and attorney-client communication privileges.

Scheduled internal audits are prioritized on the basis of a risk assessment system which results in auditing an area of perceived greater risk on a more frequent basis. During the period reviewed, each scheduled audit was conducted every one to five years, based upon a point scoring system designed to assess each audit topic's individual risk. Audits may also be requested by management (such as those directed by the Legal Department) based upon a perceived need to analyze or investigate a particular area.

4.0 CONTROL PROBLEMS

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4.1 Documented Control Problems

Despite the existence of procedural and audit controls, instances of abuse and control failures have occurred during the period reviewed. A review of such instances provides insight into the adequacy of the controls in place at the time, the methods used to circumvent them, and other areas where abuse potentially could occur without proper attention by management. The documented control problems discussed below are cited as examples and should not be viewed as the only instances of breakdowns in controls relating to the repair process.

4.1.1 North Dade

In many ways, the current investigation of Southern Bell's repair practices dates back to a 1990 Network Staff review that detected fraudulent activity at the North Dade Installation and Maintenance Center. The review sampled 50 August 1990 trouble reports originally statused Test OK (TOK) but closed to an Out of Service (OOS) status. The detailed trouble histories for 39 of the reports lacked a VER code, or Mechanized Line Test result, that supported the Out of Service status given. Also the OOS status was not supported by the narrative required of the maintenance administrator to substantiate the reasons for such a status change. The reviewer noted that all but two of these TOK/OOS reports were handled by the same Maintenance Administrator on or about the last day of the month.

The Company's security investigation resulted in admissions from an Assistant Manager and a Maintenance Administrator that, at the direction of the IMC Manager, they had improperly re-statused these Test OK reports as Out of Service before closing them. This served to inflate the base of troubles cleared, thereby increasing the North Dade District's percentage of Out of Service troubles cleared within 24 hours reported on the Schedule 11A results. Filed quarterly, the Schedule 11A reports indicate whether each exchange has met the Commission's requirement that at least 95% percent of OOS troubles be cleared within 24 hours.

The Company's security investigation determined that two months earlier, 156 additional reports had been "incorrectly statused" by a North Dade Assistant Manager, once again at the end of the month (June 30, 1990). However, this incident was apparently not viewed as intentional falsification.

The significance of the timing of both this incident and the August falsifications is that on or about the last day of a month, it can be determined whether an IMC is likely to

miss the Commission's 95% OOS cleared requirement, and if so, what number of additional troubles cleared would be needed to attain the 95% mark. An employee willing to pad the base of troubles need not do so early in the month since enough time remains for the index to be met without such manipulation.

In addition, the Network Staff review detected problems in the use of the CON, or Carried Over - No, intermediate status code. When used properly, an Out of Service trouble report could be carried over past the 24 hour point without being counted against the 95% objective, if the customer requested a commitment time beyond the standard commitment time offered at the time the trouble was reported. However, the review detected that 13 of 50 sampled troubles were improperly statused CON, and noted, "In all cases the report was statused to CON to eliminate an Out of Service Over 24 result because of extended appointment intervals." Although the reviewer does not elaborate further, he/she implies that the incorrect use of the CON status code was intentional in these instances where customers merely requested extensions on appointment times that apparently were not beyond the standard commitment time being offered.

4.1.2 Gainesville

In response to the discovery of repair records falsification at the North Dade IMC, the Company's Network staff organization performed mini-reviews of TOK trouble reports statused Out of Service at all Florida IMCs. At the Gainesville IMC, this mini-review uncovered fraudulent activity similar to that in the North Dade case. A sample of 50 Out of Service trouble reports from the month of October 1990 closed as TOK was found to include 34 fictitious reports generated at random from consecutive entries in the Gainesville telephone directory.

The impact of these false reports was to inflate the Gainesville district's October 1990 Schedule 11A percentage of Out of Service troubles cleared within 24 hours. Further review by Network Staff of all September and November 1990 Test OK reports statused as Out of Service before closing revealed that a total of 160 false reports had been entered.

In addition to these falsely created trouble reports, the Company's follow-up security review in Gainesville also discovered apparent abuse of the CON intermediate status code. During November 1990, trouble reports were statused CON 15 times by an unknown employee using the same fictitious employee code used in the fraudulent restatusing of Test OK troubles as Out of Service.

From a controls perspective, the weaknesses and control failures evidenced by the North Dade restatusing of Test OK troubles as Out of Service reports apply to the Gainesville case as well. A major difference between the North Dade and Gainesville falsifications was that in the latter case, a fictitious employee identification number was used

in the creation of the 34 trouble reports initially detected. The use of the fictitious employee number was intended to prevent the identification of the actual perpetrator(s). In fact, the Security organization was unable to conclusively identify the responsible party or parties.

The control failure pointed out by the anonymous creation of trouble reports is noted in the Company's security report, which states, "There is no on-line program in [LMOS] that would provide an audit trail to identify a particular terminal position regarding activity to a specific subscriber record, or the position use to originate a trouble report." Since the trouble reports in question could have been generated from any one of over 40 LMOS access terminals, they could have been entered by almost any Gainesville IMC employee. Furthermore, since LMOS allowed the use of a fictitious employee identification code, the identification of the guilty employee(s) was further frustrated.

However, according to the Company's response to Staff's 3rd Set of Interrogatories, Item 19, this security feature was not implemented in Florida until November 1991.

4.1.3 Similar Repair Reporting Irregularities

Despite the attention given to the problems detected at the North Dade IMC, identical problems at other IMCs had been previously discovered and made known to Company management through review reports. As noted, the North Dade falsification was detected through a review of Test OK troubles improperly statused as Out of Service. However, this particular problem was not new to the Company, nor was it an isolated occurrence.

For purposes of illustration, three additional examples of this identical repair reporting problem are discussed below. It should be noted that Network Staff reviews detected numerous instances of other types of significant deviations from Southern Bell's repair handling procedures, some of which are discussed in section 4.2 of this report.

4.1.3.1 North Dade (1988)

Two years before the 1990 North Dade review, a June 1988 Network Staff review found that 21 of 25, or 84%, of the Test OK/Out of Service trouble reports sample were incorrectly statused as Out of Service at the time they were closed. Neither the VER code test results indicator nor the closing narrative supported the statusing of these troubles as OOS. The reviewer's recommendations advised, "Out of Service statusing on Test OK troubles needs to be reviewed .... The overstating of the Out of Service base ... is having

a dramatic impact on the official results in the OOS over 24 hours and analysis would be impossible."

The letter of transmittal accompanying the review report indicates the problems detected may have existed for some time, stating, "In some cases these areas were identified on previous reviews as requiring attention and they continue to be a problem . . . . All of the deviations were thoroughly discussed with your local managers and corrective measures . . . were recommended to be [put] in place immediately." Any prior efforts by management to solve the problems noted in this review had apparently been unsuccessful. Since the same problem noted in this 1988 review surfaced once again in 1990, any corrective action taken during this period was also apparently ineffective.

4.1.3.2 Central Dade (1989)

Over a year before the 1990 North Dade problems were detected, a July 1989 Network Staff review of the Central Dade IMC sampled 25 Test OK/Out of Service troubles and found that all 25 had been improperly statused Out of Service at closing. All were Service Affecting troubles closed as Out of Service. The reviewer recognized the motive underlying these procedural violations stating, "The most prevalent problem with the Out of Service statusing is the making of Test-OK troubles Out of Service. These troubles were not Out of Service and were shown Out of Service to overstate the OOS base thereby understating OOS over 24 hour result. This procedure must be stopped if any meaningful analysis is to be accomplished."

Despite this strongly worded recommendation by the Network Staff, the problem of Test OK troubles being statused Out of Service had still not been corrected at the time of the next Central Dade Operational Review in December 1990. The reviewer found that nine of the 12 trouble reports (75%) sampled at that time had been incorrectly statused Out of Service according to the VER code test results indicators and the closing narratives. Once again, any actions taken by management to correct the serious problem noted in 1989, apparently were ineffective.

4.1.3.3 Miami Metro (1990)

An October 1990 Operational Review of the Miami Metro IMC found that 100% of the 20 TOK/Out of Service trouble reports sampled were improperly statused at closing, apparently by the same Maintenance Administrator. The OOS classification was not supported by the VER code test results indicator, according to the reviewer. These circumstances are identical to those found at North Dade a few months before.

Similar problems in the statusing of TOK trouble reports as Out of Service were noted at Miami Metro in a January 1988 Standardization Review. Of the 33 TOK/Out of

Service trouble reports sampled, 39% had been statused Out of Service incorrectly according to the VER code results and narratives. Although the Network Staff reviewer recommended that Out of Service statusing on TOK troubles should be reviewed on a regular basis, this problem continued and actually increased in severity as indicated by the 1990 review results at this center.

4.2 Potential Continuing Control Problems

In addition to the actual documented instances of repair records falsification, various opportunities for abuse of the repair reporting system either have existed or continue to exist within the repair handling process.

Many of these problem areas have been highlighted in the Network Staff reviews in the form of high error rates in the handling of certain types of trouble reports. These instances may or may not have involved intentional falsification, however, they do represent a potential weakness if an employee were to attempt to abuse the system.

4.2.1 Statusing of Out of Service Versus Service Affecting

As seen in the manipulation of Test OK troubles at North Dade, improper statusing of Service Affecting troubles as Out of Service can be used to manipulate Schedule 11A index results. This would add to the number of troubles successfully cleared within the 24 hour time limit. Conversely, improperly statusing Out of Service troubles as Service Affecting could be used to manipulate Schedule 11A results when a heavy workload causes the IMC to miss the 24 hour deadline. The latter form of manipulation has a cost impact on the customers involved since they are not eligible for a rebate if the trouble is incorrectly statused as Service Affecting.

The Network Staff reviews conducted over the period 1985-1990 indicate a pattern of incorrect Out of Service statusing. In 1990 alone, review samples of troubles with Mechanized Line Test results indicating an Out of Service condition were incorrectly statused as Service Affecting 86% of the time at South Dade, 80% at North Dade, 45% at Miami Metro, and 44% at Central Dade. In 1985, error rates above 20% in this category were found in reviews of the Gainesville, Orlando, and North Miami IMCs.

The accuracy of Out of Service statusing in the IMC hinges upon the performance of the maintenance administrators, who are called upon to apply judgement and experience in correctly making this determination. In addition to the problem of subjectivity, the complexity of the trouble handling process results in honest misinterpretations and errors in statusing.

As was the case at North Dade, if a maintenance administrator is directed to, or decides to manipulate Out of Service versus Service Affecting statusing, there are no specific systems controls preventing this activity. Therefore, this form of falsification could recur under current conditions.

4.2.2 Use of Cause Codes

Potential for manipulating the percentage of Out of Service troubles cleared within 24 hours also exists in the exclusion of trouble reports caused by specific conditions considered to be beyond the Company's control. For example, trouble reports attributed to weather-related cause codes (lightning, moisture, wind) or caused by non-employees (customers, other utilities) are exempted from counting against the Company's Schedule 11A results.

Therefore, an incentive exists to over-use these exempt cause codes in a situation where for example, an IMC is in danger of failing to meet the 95% mark on restoring service within 24 hours. In determining the appropriate cause code to use, the service technician in the field is frequently required to interpret the evidence at hand. Due to the necessarily subjective nature of this decision, it would be difficult to prevent the use of an exempt cause code where it did not rightfully apply. For example, a service interruption due to a disconnected drop wire could be attributed to "wind" instead of improper installation, if service technicians were urged by a manager to use exempt cause codes wherever possible.

Although no documented instances of using exempt cause codes to falsify repair reporting results have been identified, managers have urged employees to make full use of exempt cause codes. At present there are no specific controls to prevent improper use of exempt cause codes in this way. Increased use of controls aimed at detection is needed, including spot checks by supervisors, internal audits, and Network Staff reviews.

4.2.3 Classification of Customer Reports as Employee Reports

In calculating service quality indicators such as FPSC Schedule 11A results, employee-originated (EO) trouble reports are not counted for measurement purposes. Clear guidelines are set down in BellSouth Practice 660-169-011BT to distinguish customer direct (CD) reports from employee-originated reports.

However, despite these guidelines, significant errors have been detected by the Network Staff reviews of trouble handling in the IMC. For example, in 1990 employee-originated reports sampled in reviews of the South Dade and South Broward IMCs revealed error rates of 83% and 76%, respectively. In both instances, the reviewer noted that most of these "looked like normal customer reports," suggesting a possibility that customer direct reports may have been improperly recorded as employee-originated, although no such

documented instances are known.

During a period when an IMC is having difficulty keeping up with the workload, an incentive would exist to decrease the number of customer direct reports by classifying them as EO reports. Any of these reports requiring over 24 hours for restoration of service would therefore not count against the 95% out of service index.

Although the controls in place as late as 1990 would not have prevented an intentional falsification of this type, the recent limitations on the number of employees authorized to create employee trouble reports, described in section 5.1.4 of this report, may discourage such activity today.

4.2.4 Classification of Customer Reports as Customer Excluded

Trouble reports originated by customers are divided into two separate classifications: customer direct (CD) and customer exclude (CX). CD reports are reports of typical network troubles made direct to a Company employee either in person or by phone. The CX category includes non-repair inquiries, calls to cancel a prior trouble report, and certain types of calls regarding service order activity or problems accessing other subscribers. Since CX reports are not counted for measurements such as the Schedule 11A index, improper classification between these categories directly impacts attaining the 95% objective.

A widespread pattern of incorrectly categorizing CD reports as CX has existed for some time. Of the 36 Network Staff reviews conducted between 1985 and 1990, provided in response to Staff's Third Request for Production of Documents, Items 1 and 4, in 11 instances over 20% of the trouble reports sampled were found to inadequately support their exclusion. In five other instances, over 50% of the excluded trouble reports were unsupported. Although the Network Staff reviewers frequently recommended additional training for MAs, this problem has continued.

No instances of intentional incorrect statusing of CD reports as CX have been documented, however no controls exist to prevent this method from being used to manipulate repair results.

4.2.5 Exclude Field on Final Status Mask

A potential problem related to improper exclusion of CD reports as CX is the use of the exclude field by MAs on the Final Status (FST) mask. By entering an "X" in this field, a maintenance administrator causes the trouble to be omitted from the calculation of the Schedule 11A index and other measurements. As with other excluded trouble reports, a history of the trouble is captured and maintained by LMOS.

According to the Company's response to Staff's 5th Set of Interrogatories, Item 46, intended uses of this field include "excluding trouble reports for non-billed features, non-telephone company broken poles, and wiretap investigations." These examples represent situations which rightfully should not constitute a trouble report, and should not be counted in the Schedule 11 performance indices.

In July 1992, an LMOS enhancement added a flag to the DLETH record indicating the use of this field in closing a trouble report. Although this provides an audit trail of sorts, there are no specific controls which would prevent an employee from improperly populating this field with an "X" in order to decrease the pool of trouble reports used in calculating the Schedule 11A percentage of Out of Service troubles cleared within 24 hours. During a heavy workload period in an IMC, for example, during a period of wet weather, this feature could be used to limit the number of "misses" over 24 hours.

4.2.6 Creation of Fictitious Trouble Reports

One of the most common types of documented repair reporting fraud has been the creation of fictitious trouble reports. As discussed in section 4.1.2, this occurred in the Gainesville IMC for purposes of "padding the base" of Out of Service troubles cleared to improve the Schedule 11A Out of Service more than 24 hour index results. Similarly, during October 1990, the South Dade IMC Manager caught a now-retired employee in the act of creating fictitious trouble reports straight from a stack of telephone directories.

Other instances of employees creating fictitious trouble reports have involved service technicians attempting to pad their individual productivity ratings. For instance, in a September 1990 Network Staff review of the Palm IMC, 83 of 100 employee reports sampled were found to be unsupported by the required narrative to substantiate the authenticity of the trouble. The reviewer observed that over 40% of the 1,184 Employee Originated (EO) reports cleared by service technicians were cleared within 10 minutes, noting, "These reports may be being generated to help increase the task per day on which the technician and supervisor are being evaluated."

During 1990 and 1991, Southern Bell disciplined several service technicians for the same activities suggested by this reviewer. In locations ranging from Pensacola to Jacksonville to Miami, three employees were terminated and five suspended or warned for fraudulently creating trouble reports and arranging to have them assigned to themselves for handling.

The Company has recently implemented control changes limiting access to the LMOS masks for creating trouble reports (discussed in section 5.1.4 of this report) and eliminating "troubles handled per day" quotas for STs (discussed in section 5.1.9). However, the creation of fictitious trouble reports could still be accomplished today as a result of pressure

exerted by a manager in need of improved Schedule 11 results, as was the case at North Dade in 1990 and possibly in other instances. Given the difficulty of preventing this type of falsification, heavier reliance on controls such as Network Reviews and Internal Audits which serve to detect falsification are needed.

4.2.7 Manipulation of Clear Time/Final Status Time

Since repair objectives such as the Schedule 11A Out of Service > 24 index are based upon the time elapsed between the receipt of the initial report and the restoration of service, accurate measurement of time is essential. Many changes in the handling of trouble reports have impacted the reporting of "clear time."

Prior to the current computerized environment, service technicians were required to call a maintenance administrator upon completing a repair to report the cause code, disposition code, clear time and close time. Frequently an hour or more may have elapsed between the point a service technician cleared a trouble condition, and the point he reported it to a maintenance administrator for closing. Due to this lag, a maintenance administrator would have, for example, entered a clear time of 11:30 AM at 1:30 PM, based upon the time reported by the ST. This entirely proper retroactive reporting of the actual point that service was restored was known as "backing up time" to many Company employees.

However, under these circumstances, the maintenance administrator had no means of verifying the time reported by the ST, and no specific restrictions prevented improperly reporting clear times. Therefore, the opportunity existed, for example in an instance where 25 hours had elapsed in clearing a trouble, for the service technician to "back up time" in another sense of the term, by falsely reporting a clear time within the 24 hour deadline. Due to the nature of this activity, no trace or audit trail would necessarily have been left, making it nearly impossible to document even if it had been performed on a regular basis.

Still, allegations of improper "backing up" of clear times have persisted among the Company's employees. The disciplinary action described in section 5.1.10 taken during 1992 by the Company against some IMC managers may have been based upon instances of falsely "backing up time" according to depositions of disciplined employees, taken in Docket 910163-TL. One Pensacola Maintenance Administrator stated in her deposition that her Manager authorized the "backing up" of clear times that exceeded the 24 hour mark by up to 15 minutes. The Maintenance Administrator stated that she questioned this procedure, but was told by the Manager that this was not "cheating" since the service technicians may have delayed calling after the trouble was cleared.

The possibility of committing this form of reporting fraud has been reduced by the change from the use of a computer-generated Final Status Time for measuring the 24 hour

deadline. (For more detail, refer to section 5.1.2 of this report.) The computer-generated Final Status Time cannot be falsified. However, under present circumstances, a service technician could still manipulate the system to avoid passing the 24-hour point in repairing a trouble. For example, if a service technician observes that a trouble is about to cross the 24-hour mark, he could falsely report a trouble as being cleared even if he does not actually restore service until a few minutes after the 24 hours has elapsed. If there is no processing delay at the LMOS Host, this would trigger LMOS to assign a computer-generated Final Status Time of less than 24 hours before the trouble was actually resolved. With the problem of meeting the 24-hour deadline resolved, the ST could then complete the tasks necessary to restore service.

5.0 MANAGEMENT'S RESPONSE TO CONTROL PROBLEMS

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5.1 Management's Response to Procedural and Systems Control Problems

A number of control changes regarding the repair process were instituted by the Company since the last quarter of 1991. Most, if not all of these changes were made in direct response to the control problems and allegations discussed in sections 4.1 and 4.2 of the report. As such, these changes represent the Company's recent efforts to respond to and correct these problems. Some of these control changes are included in the terms of Southern Bell's October 1992 settlement with the Office of Statewide Prosecution. It is not clear whether these control changes were proposed by the Company or the Office of Statewide Prosecution.

In addition, the Company has taken disciplinary action against over 100 employees as a result of the general security investigation conducted under the direction of the Southern Bell Legal Department.

5.1.1 Installation and Maintenance Center Personnel Retraining

As a result of investigating repair records falsification at the North Dade and Gainesville IMCs, management became concerned that a lack of understanding of trouble cause and disposition codes existed among many IMC personnel. During the latter half of 1991 all maintenance administrators, dispatch clerks, assistant managers and managers in the IMCs were required to attend refresher training sessions conducted by Network Staff. These training sessions covered the basic procedures spelled out in BellSouth Practices 660-169-013BT, 660-169-12BT, and 660-169-011BT.

Although appropriate, management's response in this area was unnecessarily delayed. Evidence suggests that a training problem substantially predated the detection of the North Dade and Gainesville incidents in 1990 and that management was aware of the problem.

Through 1990, the recommendations and findings contained in numerous IMC reviews concurred that training deficiencies existed. In addition,

Management's response to the audit conceded the need for continued training.

5.1.2 Length of Service Interruption Based On Final Status Time

Also in response to the repair problems and allegations, the Company enacted a

significant control change in requiring that regulatory reports (including the PSC Out of Service Over 24 objective) and customer rebates would be measured based upon the Final Status Time rather than the reported cleared time. This change was dictated in Regional Letter 91-12-034SV (dated December 31, 1991) and formally incorporated in BSP 660-169-012BT (Issue F, dated January 1992).

According to the Company, this change was intended to eliminate the previous distinction and confusion between the "clear time" (point at which service was restored) and "close time" (point at which technician is prepared to leave the job site). Because of this distinction, employees on occasion felt they were being asked to improperly "back up" clear times that were substantially earlier than close times.

Final Status Time is the point at which the LMOS system accepts and records the trouble as cleared. There may on occasion be significant delays between the clear time and the Final Status Time that is recorded by LMOS. All other things being equal, the measurement change from trouble report receipt time to Final Status Time instead of clear time will require the Company to report additional "misses" in the Schedule 11A index where service was actually restored within 24 hours.

The Company has analyzed the impact on Schedule 11A results due to the change to measuring to Final Status Time over the first 10 months of 1992. As a result of the change, an additional 51 exchanges have failed to meet the requirement that 95% of service interruptions be restored within 24 hours. Southern Bell's 1992 Schedule 11A results indicate that during the first six months of 1992, 113 exchanges failed to meet this 95% requirement. According to the Company's analysis, 22 of these missed exchanges, about 19%, were due to the change to FST as the measurement basis. This analysis indicates that the Company's Schedule 11A results may appear to reflect more of a decline in timely resolution of service interruptions than is actually the case. Instead, as far as these 22 exchanges are concerned, only the means of measurement has changed. As a result, the reporting change hinders the intended purpose of the measurement index.

However, from the standpoint of controls, this change represents an improvement in that service technicians and maintenance administrators no longer have the ability to manipulate the time shown as the clear time, since the Final Status generated by LMOS are beyond their control. Therefore, a service technician or maintenance administrator could no longer improperly improve Schedule 11A results by backing up a clear time that has already exceeded the 24 hour period, since the Final Status Time will reflect the true time of closure within LMOS. However, as noted in section 4.2.7, in certain circumstances, a service technician could prematurely report a trouble to have been cleared to beat the 24-hour deadline improperly.

5.1.3 Auto-Screen Rule Standardization

An additional change mandated by Regional Letter 91-12-034SV and the 1992 issue of BSP 660-169-012BT was the adoption of a single statewide set of Auto-Screener rules. Thirteen specific Out of Service criteria represented by combinations of type codes and VER codes (MLT results) were selected by Network Staff and are restricted from being changed by local management. Any future changes to these criteria must be approved and implemented by regional staff in Jacksonville and headquarters staff in Atlanta.

Further, IMC management will no longer be allowed to maintain additional sets of Auto-Screener criteria for use during wet weather. From a control standpoint, this change reduces IMC management's ability to fine tune the number of troubles rated Out of Service by manipulating the number subjected to the judgement of MAs and managers.

5.1.4 Limited Access to Trouble Report Creation

As mentioned, a major element in the Gainesville repair records falsification was the lack of adequate controls restricting computer system access. This control problem was addressed in a number of changes announced in April 1992 through Regional Letter 92-04-033BT. This letter requires approval by a Pay Grade 5 manager for an employee to be allowed access to the trouble creation screens, or "masks." Records of the authorized employees are required to be maintained by the IMC.

In addition, use of the Access Networking System (ANS) is now required to provide security over LMOS access. ANS contains user profiles which include each end-user's login ID, unique password, and authorized LMOS transactions. Therefore, access to LMOS is gained only by inputting a valid login ID and password, and even then the user is limited to specified types of transactions appropriate to that user's function. Another system access control is an automatic logoff feature when a terminal is not in use for ten minutes. This feature would limit the impact of an unauthorized employee making entries on a terminal left unattended.

Also announced in this Regional Letter, the Company created an Employee Trouble Entry mask (ETE) through which all Employee Originated (EO) or Referred In (RI) troubles are to be entered. The standard Trouble Entry Mask (TE) will continue to be used for Customer Direct (CD) trouble reports. In addition, Regional Letter 91-12-034SV prohibits employees from reporting troubles through the AIRO system unless the trouble pertains to the employee's personal telephone service. Some of the service technicians who were caught and disciplined for creating fictitious trouble reports in 1990 and 1991 used AIRO to anonymously report these non-existent trouble reports.

Management has indicated that further directions suggest the authorization of employees in the IMCs to create trouble reports should be limited to 10% (or 10 employees,

whichever is less). The Company states that its aim is to limit access and control accuracy.

From a control standpoint, the limited access to trouble entry screens and the login/password security afforded by ANS are significant additions to control against unauthorized entry of false repair information such as occurred in Gainesville. The reduced population of employees authorized to create trouble reports would run a greater risk of detection under these new controls. Similarly, the creation of the Employee Trouble Entry mask restricts access for creation of employee originated trouble reports, increasing the risk of detection for an employee creating false reports.

The prohibition of use of AIRO by employees to report troubles was a necessary step by management to discourage creation of false reports. However, no control exists to enforce this prohibition. Due to the necessary accessibility of AIRO, it is virtually impossible to prevent an employee from abusing the system if he/she chooses to do so.

5.1.5 Elimination of CON Status Code

Regional Letter 91-12-034SV and BSP 660-169-012BT also called for the elimination of the intermediate status code of Carried Over No (CON) which was used when the customer requested an appointment time that exceeded the 24 hour period for clearing an Out of Service or Service Affecting condition. Once statused CON, the 24 hour clock was effectively stopped, since the delay resulted from the customer's request.

Despite its intended purpose, the CON status could have been manipulated to stop the 24 hour clock on a trouble report by an employee seeking to avoid a missed deadline. Company management states that the elimination of CON status was implemented because it recognized the CON transaction presented an opportunity for abuse. The Security organization's investigation report indicates such abuse may have actually occurred at the Gainesville IMC, although it was unable to document this to be the case.

As a result of this change, the transactions where CON could legitimately have been utilized will now be reflected as "misses" at restoring service within 24 hours. However, some control change was necessary to prevent abuse.

5.1.6 Prevention of Obsolete Disposition and Cause Code Use

Regional Letter 91-12-034SV also announced measures to eliminate and prevent the use of cause and disposition codes that are no longer valid. As a temporary measure beginning January 1, 1992, IMC management would be provided with weekly MTAS reports that identified employees having used obsolete codes to close trouble reports. These reports allowed managers to keep abreast of any training problems and to quickly resolve them. The long-term solution to discontinue use of no-longer-valid codes was an LMOS software

change implemented in mid-1992 that prevents the entry of obsolete cause and disposition codes.

5.1.7 Rebates Awarded for Bulk Dispatched Troubles

As of mid-1991, any bulk-dispatched Out of Service troubles exceeding 24 hours for resolution were not recognized by the MOOSA process as being due a rebate for the service interruption. This problem was identified in the Gainesville area during April 1991 as a result of a Commission staff service evaluation according to the Company's response to Staff's 5th Set of Interrogatories, Item 38. Corrective action was taken in May 1991 by deleting the exclusion of bulk-dispatched trouble reports from the MOOSA rebate criteria. Refunds for rebates denied under this practice were awarded by the Company statewide.

5.1.8 MOOSA to CRIS Interface Added for Verifying Rebates

As of January 15, 1992 an added MOOSA-CRIS interface allows the Company to identify specific types of service interruption rebates to be forwarded to Customer Services for manual handling and adjustment. These include multi-line accounts and other transactions which are rejected from the normal MOOSA rebate calculation. The goal is for these manually handled transactions to be completed the next day.

To monitor and document the handling of rebates forwarded to CRIS, the MOOSA Tracking System (implemented in October 1991) produces a daily CRIS Reconciliation Report. The accuracy of the reported transactions is verified by the Regional Accounting Office through daily sampling of rebates awarded. The results are returned to the MOOSA Area Staff Coordinator to complete the loop.

These additions provide an extra layer of protection against unprocessed rebates being delayed or deleted by CRIS and provides necessary separation of duties through the verification of the processed rebates by a third party, i.e., the Regional Accounting Office.

5.1.9 Reliance on External Service Quality Indicators

Management acknowledged in interviews that achieving desired PSC performance index requirements had replaced a proper concern for the quality of customer service. In response, management has sought to re-establish the importance of customer service as the ultimate goal of the Network organization.

Beginning in 1992, Network Department management sought to emphasize external service indicators such as TELSAM instead of using PSC indices as a sole determinant of service quality. For example, managers are evaluated in part based upon TELSAM results pertinent to their area of responsibility.

Another example of this shift in emphasis is the change in performance requirements for service technicians in the field. Prior to 1992, service technician performance was evaluated in part upon the number of troubles handled daily. Currently instead of being required to handle at least five or six troubles daily, STs are encouraged to spend additional time on each assignment to detect and correct all current and potential repair problems to the complete satisfaction of the customer. According to preliminary studies in Southeast Florida, on average, service technicians are completing fewer calls daily, however, offsetting improvements have been observed in fewer repeat troubles. A net result in terms of controls is that service technicians now have less incentive to create fictitious trouble reports or to falsify the amount of time spent on a particular service call.

It is likely that the repair falsification problems that occurred in Gainesville and North Dade, as well as those alleged elsewhere resulted at least in part from internal pressure placed upon managers and their employees to meet PSC index objectives and other internal productivity objectives. To the extent this was the case, the change in emphasis to other service quality measurements can reduce the motivation for falsification. However, this change in philosophical emphasis alone does not entirely remove the incentive to falsify results that will affect PSC indices.

5.1.10 Disciplinary Action Against Managers and Employees

In response to both the results of security reviews triggered by the August 1990 discovery of repair record falsification at the North Dade IMC, Southern Bell has taken disciplinary action against selected management employees throughout the state. According to the Company, a total of 112 employees were disciplined. The action taken ranged from counseling and warning entries on the employees' personnel records to compensation penalties, and termination.

Nearly all of the cases of disciplinary action resulted from the findings of the general security investigation directed by Southern Bell's Legal Department. Since the Company asserts that this investigation is protected under claims of attorney-client privilege and attorney work product privilege, the specific reasons for the disciplinary action against each employee has not been disclosed. Despite the lack of specific information on the causes of these disciplinary action, the Company has admitted that a number of employees were "found to have falsified customer trouble reports" and "condoned the falsification of customer trouble reports," according to its responses to Public Counsel's First Request for Admissions, Statements Number 3 and 4.

In fact, the employees themselves have not been informed of the specific reasons why they were disciplined. From a controls standpoint, this approach is a cause for concern because it defeats the underlying purpose of the controls provided by investigations and reviews, as well as the disciplinary process itself.

Without the essential information on their violations, the disciplined managers have no means of identifying the specific problem or problems in need of correction. In some instances certain employees may be able to infer the reasons behind their own discipline. However, in most cases, these employees may not know what, if anything, they did wrong and may therefore be unable to correct a continuing problem.

5.2 Management's Response to Review and Audit Control Problems

5.2.1 Quarterly IMC Internal Compliance Reviews

In late 1991, the performance of quarterly IMC self-reviews became mandatory for all IMC managers. These reviews consist of the same modules examining IMC performance that are examined in Network Staff reviews. They are conducted by the local manager and reported to the three Network General Managers. Documentation of the results is required to be kept for five years.

Properly conducted, these self-reviews should prove to be a valuable control which would allow timely detection of problems in the handling of trouble reports, including attempts to falsify repair results. In comparison to the reviews performed by the Network Staff organization, the quarterly self-reviews have the advantage of being much more frequent. However, since they are self-reviews they do lack the independent viewpoint and objectivity provided by the Network Staff reviews. Therefore, both self-reviews and continued periodic Network Staff reviews are needed to provide a complete and objective picture of IMC performance and compliance with procedures.

5.2.2 Revision of Installation Maintenance Center Review Package

The IMC Review Package used in Network Staff reviews was revised and standardized on a BellSouth-wide basis as of May 29, 1992. Prior to its release, the package was tested on a South Central Bell IMC in Alabama. The frequency of performing the Network Staff reviews in Florida and the other BellSouth states has not yet been determined. Network Support Staff management has indicated each IMC may be reviewed on an annual basis. If so, this would represent a substantial increase in the frequency of reviews displayed in Exhibit 2.

The expanded IMC Review Package now includes submodules examining "questionable activity processing", "screening effectiveness", "force/load balance", and "TELSAM results". The subject areas addressed in the new Standardization and Compliance Review section now includes all of the former areas of review. In addition, the managers attending the exit interview, or audit results meeting, are documented within the report to increase accountability.

5.2.3 IMC Results Monitored by Network Vice-President's Staff

Beginning in January 1992, a member of the Network Vice-President's staff has been charged with the responsibility of conducting ongoing reviews of IMC results, in parallel with both the quarterly self-reviews, and the Network Staff reviews. This additional review and analysis can be conducted through MTAS without the knowledge of IMC management and personnel, providing another layer of control in detecting irregularities in the handling of trouble reports. Any operational problems will be discussed with IMC management. Any integrity-related problems will be reported directly to the Vice-President.

5.2.4 PSC Compliance Position Added

In August 1991, a position was created on the staff of the Network Vice-President with the sole function of monitoring PSC rule compliance and results. This position is intended to provide additional monitoring of trends, results and problems related to the PSC service indices which were a root cause of the instances of repair record falsification.

5.2.5 Network Staff Review Reporting Procedure Changes

The Company has revised the procedures for operational reviews requiring that specific management positions receive feedback, formal follow-up reports be produced on all adverse findings, the performance of follow-up reviews, and the retention of supporting documentation. Regional Letter 92-05-038BT was issued on May 29, 1992 introducing the standardized Installation Maintenance Center Regional Review Package, and related procedures. These new requirements specify procedures for feedback and follow-up in response to a review. Informal and then formal feedback meetings are now required for local management and the review team, who agree on plans for correcting weaknesses noted in the reviews. Any integrity issues detected are required to be reported to the review team leader who in turn reports them to the appropriate company officer, such as the Network Vice-President.

In addition to the meetings, written feedback is required to be provided to responsible line management (manager, operations manager, general manager, and vice-president) as well as staff management (operations manager, director, and assistant vice-president). Written documentation of the improvement plan must be provided within 14 days after the formal feedback meeting. Follow-up reviews of sub-modules rated "unsatisfactory" will be performed within three months of the review. All review documentation is to be retained for five years.

6.0 FINDINGS

6.0 FINDINGS

6.1 Adequacy of Controls: 1990 and Prior

Finding 1: Repair Process Controls In Place During And Before 1990 Were Inadequate.

As described in sections 4.1 and 4.2 of this report, the documented instances of fraudulent or questionable trouble report handling provide clear and convincing evidence that the Company's repair process controls were inadequate as late as 1990. These incidents were widespread, involving the North Dade, Gainesville, Central Dade, Metro Miami, South Broward, and Palm Installation and Maintenance Centers. Company employees were, over an extended period of time, able to use a variety of methods in different locations throughout the state to manipulate the trouble report handling process. Therefore, these problems support the conclusion that control weaknesses were systemic rather than isolated occurrences.

In addition, as discussed in section 5.0 of this report, the Company has voluntarily implemented several control changes and improvements in response to these instances of repair system falsification. Having assessed its trouble reporting and repair process in response to serious problems, the Company apparently found its controls to be lacking and in need of these additions and changes to ensure proper handling of trouble reports.

Finding 2: Network Staff Review Coverage Was Inadequate During And Before 1990.

As noted in section 3.2.1 of this report, the performance of Installation and Maintenance Center reviews by the Network Staff Support organization was sporadic over the period 1985 through 1990. The reviews that were conducted were concentrated in the years 1985 (13 reviews) and 1990 (16 reviews), while only seven were conducted between 1986 and 1989.

In addition to the imbalance over time, the reviews were not balanced geographically. After 1985, an average of just one review per year was conducted in the North Florida region, while most of the South Florida reviews were conducted in 1990. The Southeast region was virtually ignored over the period 1987 through 1989, with only two reviews conducted.

Ironically, as indicated in sections 4.1 and 4.2 of this report, the potential value of

these reviews is underscored by the fact that when they were conducted, they were successful in detecting many instances of falsification and violation of procedures.

Finding 3: Managers' Attitudes Towards Attaining Commission Rule 25-4.070 Performance Index Requirements Were Inappropriate.

The root cause of the falsifications described in section 4.1 of this report was managers attempting to meet the requirements of Commission Rule 25.4.70 at any cost. This philosophy resulted in direct and/or indirect pressure being applied to motivate employees at the North Dade and Gainesville IMCs to knowingly violate rules and procedures, presumably to enhance their own performance ratings or those of their superiors. In these documented instances, the pressure was exerted by IMC management. Although it is not known whether this pressure was internally generated or external in origin. However, it is apparent that some IMC managers either perceived fraudulently attaining these performance index results to be worth risking their careers, or failed to recognize the risk involved in doing so.

Viewing the Commission's Schedule 11 performance indices as an end in themselves represents a misinterpretation of their intended purpose. These indices should serve as an indicator of the quality of service provided by the Company to its customers rather than goals to be attained. The appropriate goal should be service to the customer. As mentioned in section 5.1.9, the Company has sought to re-establish customer service as the underlying goal of the Network Department.

However, the Company should not be relieved of its obligation to comply with the requirements of Commission rule 25-4.070 as a result of this recent re-emphasis on customer service. In fact, proper attention to quality customer service should ultimately result in improved results towards meeting these requirements.

Finding 4: Repair Process Training Was Inadequate During and Before 1990.

A continuing need for additional training of personnel involved in the handling of trouble reports and repairs was consistently pointed out by the results of Network Staff reviews, as mentioned in section 5.1.1. In numerous instances training was specifically recommended, while in others, high error rates in trouble handling indicated a lack of understanding of proper procedures.

Some instances of apparent falsification may have actually represented an ignorance of proper procedures, and vice-versa. However, in either case, emphasizing adherence to proper procedures through retraining can diminish ignorance and deter fraud.

6.2 *Adequacy of Management's Response to Problems*

Finding 5: Management's Response To Instances Of Repair Records Falsification Discovered Before August 1990 Was Inadequate.

Although the discovery of the North Dade and Gainesville falsifications beginning in August 1990 focused top-level management attention on investigating and correcting problems associated with falsified repair reporting, the handling of similar problems previously discovered at other Installation and Maintenance Centers is equally important.

These additional documented instances of repair records falsification are significant for two reasons. First, from a control perspective, management's failure to properly address and correct the problems detected through the Network Staff reviews in itself represents a control failure. The purpose of the reviews is frustrated if management fails to act upon the findings presented.

Second, the additional instances of actual or possible falsification that predate the August 1990 discovery of fraudulent activity at North Dade and Gainesville should have triggered equally vigorous responses from management. As discussed in section 4.1.3, these earlier instances at the North Dade, Central Dade, and Miami Metro IMCs were virtually identical, were detected through the same means, and were clearly recognized as serious problems by the Network Staff reviewers.

These earlier instances of repair falsification, though made known to management through Network Staff review reports, failed to trigger the extensive corrective action and close scrutiny that began in August 1990. Decisive management action taken at an earlier date could have prevented future occurrences and reduced the negative impact these events have had upon ratepayers, the Company and its employees.

Finding 6: Management's Response To The 1988 Internal Audit Of LMOS Security Was Inadequate.

However, the Company did not provide this security control until August 1991, well after the Gainesville falsifications had occurred. Lack of sufficient corrective action taken to protect access to LMOS allowed the perpetrator to anonymously create fictitious trouble reports, with reduced possibility of being detected.

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Finding 7: Changes Implemented During 1991 And 1992 Represent Significant Control Improvements.

Taken as a whole, the control changes described in section 5.0 of this report should have a meaningful impact upon the integrity of information provided through the trouble report handling process. Some of these control changes are included in the terms of Southern Bell's October 1992 settlement with the Office of Statewide Prosecution. It is not clear whether these control changes were proposed by the Company or the Office of Statewide Prosecution. Regardless of their origin, these changes represent targeted efforts to resolve the more serious control problems, both in terms of preventing and detecting future abuses.

For example, prevention of the creation of false trouble reports to artificially increase the percentage of service interruptions cleared within 24 hours is enhanced through limiting the number of employees charged with trouble report creation. Also, the improper backing up of reported trouble clear times can be prevented through the current use of the computer-generated Final Status Time. On the other hand, since no system of controls is fraud-proof, the Company appears to have recognized a need to enhance its capability for detecting falsified results through improved Network Support Staff review methods, and proper response to problems uncovered through these efforts.

Some of these control changes and additions could have been made earlier in instances where the associated problems came to light as early as 1988 or 1989, but received inadequate attention by management. However, this fact does not reduce their value now that these various control changes and additions have been made.

Unintended impacts of some of the control changes may require future adjustments on the part of the Company. For example, as stated in sections 5.1.2 and 5.1.5 of the report, the effect on Schedule 11A results from the measurement of service outages to Final Status. The Company's own analysis indicates that the change to FST caused the 95% requirement to be missed approximately 20% more often since the change causes some troubles cleared

within 24 hours to be reported as having required over 24 hours.

The results of an increased emphasis on customer relations by field service technicians and a resultant reduction in number of customers served by each service technician daily may also negatively affect the Schedule 11A results as STs may tend to take more time resolving service outages through this approach.

6.3 Adequacy of Present Controls

Finding 8: Further Control Additions and Improvements Are Needed To Protect Against Recurrence Of Repair Reporting Falsification.

As noted in section 4.2 of this report, the potential for repair falsification still exists in several areas. Many portions of the trouble handling process are inherently difficult to completely protect from falsification, and it is unrealistic to expect any system of controls to completely prevent fraud. However, a careful review of both previously used and potential methods of falsification such as those noted in sections 4.1 and 4.2 could result in the development of additional controls which would further reduce the recurrence of fraud.

In general, the control improvements made during 1991 and 1992 represent efforts to solve specific targeted problems. A broader effort to evaluate the trouble reporting and repair process in terms of controls may be necessary to detect control weaknesses that have not yet developed into serious problems.

In addition, substantial emphasis should be placed upon controls aimed at detecting falsification once it is attempted, such as internal audits and Network Staff reviews. Although management has not always properly utilized the results of reviews and audits, these controls have been effective in detecting the presence of fraud or control weaknesses.

Based on the findings of this report, the following additional controls should be strongly considered:

1) Require the Company to increase the frequency of Network Staff IMC reviews by adopting and adhering to an annual review schedule. As indicated in section 3.2.1, Network Staff review frequency was not adequate during the period 1985 through 1990. The performance of these reviews should not be made known in advance to the IMCs.

2) Require the Company to increase the use and capabilities of Auto-Screener in handling and processing trouble reports. For example, this could include

increasing the percentage of troubles processed by Auto-Screener, and improving its processing capabilities beyond merely screening for 14 specified sets of conditions. Potential benefits include reduced opportunities for falsification, decreased human error and subjectivity. Over the past few years, the percentage of troubles handled by Auto-Screener has increased from about 31% in 1990 to about 38% in 1992.

3) Require the Company to automate the process of assigning the Service Affecting versus Out of Service status to trouble reports prior to routing them to an IMC. This could be accomplished through comparison to a predetermined combinations of trouble report data characteristics similar to Auto-Screener.

4) Require the Company to develop automated edit routines programmed to prevent service technician logic errors in combinations of cause codes, disposition codes, VER codes, and other inputs. This will increase data accuracy and restrict opportunities for falsification.

5) Require the Company to eliminate the capability for a trouble report to be excluded for measurement purposes by means of a single entry to the LMOS Final Status mask. This will reduce the capability to "hide" a problem trouble report, such as an OOS over 24 hours old by means of excluding it. Since the intended uses of this field are to exclude examples such as trouble reports on non-billed features, non-telephone company broken poles, and wiretap investigations, a very limited use and need for this field appears to exist. In comparison to the risk of misuse and manipulation, the benefits of retaining this field are small. Therefore, it should be eliminated. Reports such as the non-billed features and wiretap investigations should be handled via the Customer-Excluded (CX) category upon receipt. If this Final Status field is not eliminated, a means of monitoring and investigating the troubles excluded through its use should be developed.

6) Require the Company's Internal Auditing Department to conduct a comprehensive audit of maintenance and repair controls in cooperation with the Network Staff Organization and relevant computer system support personnel. Since the Company's efforts have largely centered upon the control weaknesses that have <u>actually</u> caused problems to date, a proactive logical second step is to identify <u>potential</u> problems. Such an audit was not among those. It could be used to identify additional needs for fraud prevention controls.

7.0 APPENDICES

7.0 APPENDIX

7.1 GLOSSARY OF TERMS AND ACRONYMS

AIRO (Audichron Interactive Repair Ordering) - Automated system of trouble report entry which allows the caller to input information regarding the service problem via telephone touch-tone keys.

ANS (Access Networking System) - LMOS-based system controlling LMOS access based upon each end-user's login ID, unique password, and authorized LMOS transactions.

Auto-Screener - LMOS-based system that routes for dispatch all trouble reports meeting any one of specified combinations of VER codes and type codes.

BSP (BellSouth Practice) - Official BellSouth system procedural guidelines.

CAT (Computer Access Terminal) - Portable computer terminal used by service technicians in the field primarily to receive dispatched troubles and to record the handling and closing of the trouble.

Cause Code - Three digit code identifying the cause of the reported trouble such as Company employee or non-employee action, plant or equipment, or weather.

Clear Time - Point in time when customer's ability to place and receive calls is restored.

CON (Carried Over No) - Intermediate status assigned to trouble reports when customer asks for an extended repair commitment time beyond that being offered.

CPE (Customer Premise Equipment) - Telephone sets, jacks and other customer-owned equipment located on the customer's premises beyond the network protector, or point of demarcation.

CRIS (Customer Record and Information System) - Billing and customer information operating system.

CRSAB (Centralized Repair Service Attendant Bureau) - One of two trouble report receiving facilities located in Jacksonville and Miami which generate and route

trouble reports to nearest IMC.

Disposition Code - Four-digit code identifying the source of the defect or problem that was resolved to clear the trouble such as defects in Company equipment, customer provided equipment, customer error, or other condition.

DLETH (Display Extended Trouble History) - LMOS history of all trouble reports made on a particular telephone number including a record of all screening, handling and repair action taken.

FST (Final Status Time) - Point in time when LMOS host receives a closed trouble report.

IMC (Installation and Maintenance Center) - Network Department operations unit usually responsible for trouble report handling, monitoring, and dispatching functions.

LMOS (Loop Maintenance Operating System) - Family of systems controlling repair and maintenance handling processes including reporting, handling and record keeping functions.

MA (Maintenance Administrator) - IMC employees responsible for screening, testing, dispatching, monitoring, and resolution of trouble reports.

MLT (Mechanized Line Testing System) - LMOS-based automated trouble diagnostic system.

MOOSA (Mechanized Out of Service Adjustment System) - LMOS-based process that identifies customers due rebates for service interruptions of over 24 hours, calculates rebates, and instructs CRIS to credit the affected accounts.

MTAS (Management Trouble Analysis System) - System used to extract and analyze LMOS trouble report handling results.

OOS (Out of Service) - Trouble report status assigned by an MA, ST, or Auto-Screener when the customer is unable to receive or place calls.

OOS>24 (Out of Service Over 24 Hours) - Trouble reports involving service interruptions over 24 hours in length.

RL (Regional Letter) - Official pronouncements which clarify or modify a specific BellSouth Practice until formal revision and ratification of a practice is

complete.

RSA (Repair Service Attendant) - CRSAB employees whose function is to receive initial calls from customers and originate trouble reports.

SA (Service Affecting) - Designation given to non-Out of Service trouble reports, i.e. those that do not prevent customer from receiving or placing calls. Examples include static and intermittent interference from other lines.

Schedule 11A - Monthly report required by Commission Rule 25.4.70 indicating whether each exchange has cleared at least 95% percent of OOS troubles within 24 hours.

Schedule 11B - Monthly report required by Commission Rule 25.4.70 indicating whether each exchange has cleared at least 95% percent of SA troubles within 72 hours.

Schedule 11C - Monthly report required by Commission Rule 25.4.70 indicating whether each exchange has experienced less than 6.0 trouble reports per hundred access lines, and less than 20% repeated trouble reports (troubles recurring within 30 days.)

ST (Service Technician) - Field technician whose responsibilities include both installation of new service and repair and resolution of trouble reports.

TELSAM (Telephone Service Attitude Measurement) - A series of customer service monitoring surveys regularly conducted by an outside contractor.

Trouble - Any trouble report, initiated by either customer or Company employee, including Out of Service conditions and Service Affecting problems.

TOK (Test OK) - Disposition code assigned when follow-up MLT results indicate the original trouble condition no longer exists.

VER Code - (Verification Code) A coded designation of MLT test results captured by and reported through LMOS.