BEFORE THE MISSOURI PUBLIC SERVICE COMMISSION

IN THE MATTER OF THE PETITION OF	)	
DIECA COMMUNICATIONS, INC.	)	
D/B/A COVAD COMMUNICATIONS COMPANY	)	
FOR ARBITRATION OF INTERCONNECTION	)	Case No.
RATES, TERMS, CONDITIONS AND RELATED	)	TO-2000-322
ARRANGEMENTS WITH SOUTHWESTERN	)	
BELL TELEPHONE COMPANY	)	

REBUTTAL TESTIMONY
OF
JOHN C. DONOVAN

ON BEHALF OF DIECA COMMUNICATIONS, INC. D/B/A COVAD COMMUNICATIONS COMPANY, FOR ARBITRATION OF INTERCONNECTION RATES, TERMS, CONDITIONS, AND RELATED ARRANGEMENTS WITH SOUTHWESTERN BELL TELEPHONE COMPANY

DATED: January 28, 2000

TABLE OF CONTENTS

PAGE

I. INTRODUCTION AND SUMMARY

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is John C. Donovan and my business address is 11 Osborne Road, Garden City, New York 11530.

Q. ARE YOU THE SAME JOHN C. DONOVAN WHO TESTIFIED PREVIOUSLY IN THIS DOCKET?

A. Yes; I filed direct testimony in this Docket on January 7, 2000, on behalf of Covad Communications Company ("Covad") concerning technical issues regarding Southwestern Bell Telephone Company, Inc. ("SWBT") response to Covad's Petition for Arbitration. My curriculum vita provided as Attachment JCD-1 thereto presents my qualifications and experience as they relate to the issues in this proceeding. .

Q. WHAT IS THE PURPOSE OF THIS TESTIMONY?

A. My rebuttal testimony addresses the arguments presented in the January 7, 2000 direct testimonies of John P. Lube and James R. Smallwood.

Q. PLEASE SUMMARIZE YOUR REBUTTAL TESTIMONY.

A. The purpose of my testimony is to provide factual and technical support for Covad's Petition.

As I stated in my *Direct Testimony*, I see one of my roles in this case as being able to provide to this Commission, as an outside consultant, information and

evidence regarding generally accepted outside plant practice in the industry. SWBT's case appears to be grounded in the argument that, it is not the way outside plant should be, but the way outside plant happens to be in SWBT's Missouri territory. There are well established engineering practices, first promulgated by AT&T General Departments and Bell Laboratories prior to divesture of the Bell System, and then published by Bellcore (now known as *Telcordia Technologies*). These practices have been adopted by all Regional Bell Operating Companies, including SWBT; they specify how outside plant shall be planned, engineered, and constructed. We have evidence that SWBT has corporate engineering practices that are very specific regarding how outside plant shall be planned, engineered, and constructed. Yet the fact remains that SWBT wishes to levy excess and unreasonable charges on Competitive Local Exchange Carriers ("CLECs") because their outside plant does not meet those standards that SWBT has had for 30 years.

SWBT has a problem with databases that should have been populated with loop makeup data. However, SWBT's witnesses tell us that the databases do not contain loop makeup data, or that the data is unreliable. This condition exists, even though the Loop Facility Assignment Control System ("LFACS") has been well known in the industry to be the repository for that information since the 1980's.

SWBT's own engineering practices, and the testimony of its witnesses, agree that load coils should not be placed on loops of less than 18,000 feet. Yet SWBT tells

us that load coils are there. SWBT says that if we find a load coil where they should not be (between 12,000 and 18,000 feet), they will take one load coil off of one pair at each of 3 locations. Over time, multiple visits and reentries will eventually pulverize the insulation of pairs in the splice, creating service problems to all customers served on pairs that traverse that splice point, even though SWBT's Missouri copper fills are very low (conversely, spare pairs are very high). They will charge the CLEC for each single visit to deload one pair, rather than removing unnecessary load coils in groups of 50 pairs at a time.

SWBT's own engineering rules support industry practice that for 30 years has said that there should be no bridged tap, or bridged tap so limited as to not pose a problem for digital services. Yet SWBT tells us that excessive bridged tap is there. Compounding the problem is SWBT's position, just like its position on load coil removals, that it will only take one bridged tap off of one pair. Over time there will be multiple visits, with the same negative service consequences mentioned above, even though SWBT's Missouri copper fills are very low, and even though such low cable fills have been factored into the recurring cost of the loop. They will charge the CLEC for each visit to remove a bridged tap from one pair rather than removing bridged pairs in groups of 50 pairs at a time. Then, to make matters worse, SWBT intends to charge the CLEC to restore excessive bridged tap over 30 percent of the time, whether they actually do so or not, because SWBT claims that this is the more efficient thing to do, even if it violates industry practice, violates its own engineering corporate practices, and as I

pointed out in my Direct Testimony, causes cable troubles to be analyzed into the wrong location.

In addition to charging CLECs to correct missing records conditions and plant conditions that SWBT should be fixing for itself, the times to do such tasks are excessive. I stand on my offer to demonstrate before this Commission what it takes, and how long it takes, to remove load coils, bridged taps and repeaters from pairs in a typical splice case.

I recommend that this Commission require that SWBT remove load coils for any copper loop of less than 18,000 feet, in concert with its filing to do so for any copper loop of less than 12,000 feet. I recommend that this Commission require that SWBT remove excessive bridged tap that does not meet CSA guidelines (and SWBT's own engineering practices) of bridged tap or end tap longer than 2,000 feet for an individual bridged tap or 2,500 feet total bridged tap.

II. LOOP MAKEUP INFORMATION SHOULD ALREADY BE IN SWBT'S DATABASES.

Q. WHY DO YOU STATE THAN SWBT SHOULD ALREADY HAVE LOOP MAKEUP INFORMATION IN ITS DATABASES?

A. I was personally involved in early implementation of the Loop Facility Assignment Control System ("LFACS") in the 1980's. That system was designed to replace thousands of clerks who would sit around a giant rotating set of file bins that contained ledgers of cable pairs. Any engineering change would be posted into the "Cable Books", and such a cable book would be accessed by a

clerk for a new service order. The mechanization of this data allowed many orders to flow through the cable pair assignment system without human intervention in the Assignment Office. I am familiar with this process from having had very large Assignment Offices in midtown Manhattan. The LFACS database was designed to allow the inclusion of cable makeup information. In addition, because of the critical nature of load coils, loops of any length are noted as either loaded or non-loaded. In addition, bridged tap manifests itself in the fact that a single cable pair will appear in multiple block terminals. Before LFACS, cable books were organized by cable and pair, it was easy to determine that there was bridged tap on the pair. The mechanized systems have that capability. Also, since the existence of a digital repeater will not allow a POTS line to work, such a condition should always be noted in the cable and pair record, in my experience.

Q. DOES THE DATABASE HAVE THE LOCATIONS OF LOAD COILS, BRIDGED TAPS AND REPEATERS?

A. No, not usually. However, Covad does not care where the interferors are. Covad needs to know if there are interferors, or if the line is "interferor-free".

Q. DO YOU DISAGREE THEN WITH MR. LUBE'S DIRECT TESTIMONY ABOUT THE ITEMS OF INFORMATION REQUIRED?

A. Yes. On page 7 of his *Direct Testimony*, Mr. Lube claims that the following information, that Covad is not interested in, is only partially mechanized or not mechanized at all:

> Actual [loop] length by gauge
> Number of load coils
> Location of load coils

Location of bridged tap
Location of repeaters

Covad is interested in the following:

Actual loop length
Presence of load coils
Presence of bridged tap
Length of bridged taps

As I mentioned earlier, the indicator for both load coils and repeaters should be available for 100% of SWBT's loops in their LFACS database, because they effect daily POTS service requests.

Also of interest is that if, for some reason, Covad were to request a manual loop qualification, SWBT's cost studies assume that the engineer will have to redo all of the manual loop qualification work, otherwise known as a "length and gauge study", instead of using what has already been done for manual loop qualification. I recommend that the Commission disallow such double-counting.

III. THERE SHOULD BE NO CHARGE FOR LOAD COIL REMOVAL FOR LOOPS LESS THAN 18,000 FEET.

Q. WHY DO YOU BELIEVE THERE SHOULD BE NO CHARGE FOR LOAD COIL REMOVALS ON LOOPS LESS THAN 18,000 FEET?

A. In my *Direct Testimony* I included a lengthy discussion of the evolution of generally accepted outside plant design standards. I believe that the record is clear that load coils are needed for loops in excess of 18,000 feet. SWBT's witness, Mr. Lube, covers that in his *Direct Testimony*:

> The current design of copper loops for voice-frequency transmission requires the placement of load coils on loops longer than 18,000 feet.[1]

In addition, this topic was discussed at length during Mr. Lube's deposition with the following result:

> Q: And under that [H88] standard, load coils are only placed on loops beyond 18,000 feet; is that correct?
>
> A: If you are referring to the H88, that's correct.

Q. DOES SWBT CLAIM LOOPS OF LESS THAN 18,000 FEET WOULD HAVE LOAD COILS?

A. Yes. This is discussed on page 11 of Mr. Lube's Direct Testimony. He states two exceptions for load coils on loops of less than 18,000 feet. The first example, which is rare, involves old PBX lines. He states,

> First, earlier design criteria may have called for the loading of those pairs. For instance, loading of loops less than 18,000 feet **was** necessary for certain PBX services. [emphasis added]

Such a requirement has not existed for many years, customers were charged high prices for such special circuits, and there is no reason to charge a CLEC to correct such an antiquated special services line that should have been restored to normal condition on disconnect, funded by the PBX disconnect charge. The other reason given by SWBT is,

> ...because of the evolution of the loop network, some of those [long loaded] pairs may not be needed for those longer distances, due to changes in customer density (i.e.,

[1] Lube Direct at 10.

movement from one area to another) or the deployment of fiber optics for longer loops. As a consequence, load coils originally placed for longer loops do exist on loops now shorter than 18,000 feet.[2]

Mr. Lube then goes on to state that load coils do not harm POTS service, but he offers no explanation as to why unnecessary load coils, a potential point of failure in the network, should not all be removed at the next construction job opportunity.

Q. ISN'T IT POSSIBLE THAT SOME OF THOSE LOAD COILS MIGHT BE NEEDED IN THE FUTURE?

A. No. Those load coils were made obsolete when distant customers were converted to DLC systems. If growth were to occur, SWBT's engineering practices require that such customers be served on DLC, since they are beyond 18,000 feet.

IV. THERE SHOULD BE NO CHARGE FOR THE REMOVAL OF A DIGITAL REPEATER FROM A LINE.

Q. IS SWBT REQUESTING THE ABILITY TO CHARGE CLECS TO REMOVE DIGITAL REPEATERS?

A. Yes. Digital repeaters are normally deployed in a repeater case, frequently seen as a white plastic waffle-like square box on a telephone pole. A repeater case usually contains several repeater cards.

Frankly, I have never heard of a company attempting to charge for this before. Besides the fact that charges for copper T-1s in the industry normally call for installation charges and disconnect charges that care for this condition, digital

[2] Ibid. at 11.

repeaters are a hindrance on the line for normal service. Any non-T-1 line assigned to such a repeatered line is a mistake, unless it is the last spare pair available. Such a condition is normally handled similar to a "Clear Defective Pair" condition, at SWBT's cost.

Q. DO YOU AGREE WITH MR. SMALLWOOD'S PROPOSED COSTS TO REMOVE A REPEATER FROM A LINE?

A. No, I do not agree with SWBT's position on this issue. Should the Commission decide to allow SWBT to remove a single repeater impediment on a line, then the costs are incorrect. If only one line is to have the repeater case treatment removed, then the cost effective job is to place a "shunt" plug in the repeater. In such a case, the expensive repeater card is removed and returned to inventory, and a "shunt" plug is placed in the repeater case slot to complete the circuit straight through the case. The plug is de minimis in cost, and the work effort is actually profitable for SWBT, because they can now return the expensive repeater plug-in to inventory – something I believe they should have done immediately upon disconnect to conserve the cost of investment carrying charges.

V. THERE SHOULD BE NO CHARGE FOR THE REMOVAL OF EXCESSIVE BRIDGED TAPS.

Q. DO YOU AGREE WITH SWBT'S POSITION THAT BRIDGED TAP IN EXCESS OF 2500 FEET IS OK?

A. No. The evidence regarding industry standards and practices are clear. SWBT does not deny the existence of Serving Area Concept ("SAC") design, published

in the 1970's by AT&T General Departments and Bell Laboratories. Mr. Lube recalled that in his deposition.[3] He also stated

> My recollection is that, that one of the data requests given to Southwestern Bell by Covad actually asked a question about the desired maximum amount of multiple plant, actually also known as bridged tap, where the maximum is 2,500 feet and no individual tap more than 2,000 feet, and I believe our response to that provided the, the cite in Southwestern Bell's guideline or in Southwestern Bell's documentation for that guideline.[4]

Q. DO YOU AGREE WITH SWBT'S POSITION THAT BRIDGED TAPS ARE GOOD, OR AT LEAST NOT HARMFUL?

A. No. Bridged taps are detrimental, from an electrical engineering standpoint for three reasons 1) it introduces unnecessary capacitance into the line which creates loss of signal strength or loudness, especially at higher frequencies; 2) it can act as a long antenna hanging off the line, which can introduce additional hum or noise; and 3) as I discussed in my *Direct Testimony*, efforts to use fault locating equipment on a defective pair causes the trouble to appear to be at a location where it is not – at the bridged splice point.

Q. DO YOU AGREE WITH SWBT'S POSITION THAT THE USE OF BRIDGED TAPS IS THE FISCALLY RESPONSIBLE THING TO DO, SO THAT SUFFICIENT CABLE CAPACITY WOULD NOT HAVE TO BE PLACED FOR EVERY POSSIBLE PRESENT AND FUTURE CUSTOMER LOCATION?

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[3] Lube Deposition at 75.

[4] Ibid. at 72.

A. No, I do not agree. Neither does the telecommunications industry, and neither does SWBT's corporate staff -- the engineering standards, methods, and procedures organization. First of all, Mr. Lube's statement that,

> Without the use of bridged tap, sufficient cable capacity would have to be placed for every possible present and future customer location to have dedicated loops that extend all the way back to the serving central office.[5]

The industry literature is clear that outside plant planning for distribution cables should be sized such that the ultimate number of pairs should be placed from the Serving Area Interface to each potential Living Unit.

> Distribution plant usually consists of smaller cables that connect the feeder plant to the customer's NI [NID]. Distribution plant is designed to meet the ultimate requirements for an area (meaning the greatest customer demand expected for the life of the plant being designed).[6]

Feeder cable is sized differently so that although the "last mile" is sized for the ultimate, feeder cables may be reinforced over time between the central office and the Serving Area Interface.

> The relief period for wire [copper] feeder plant varies between companies, but typically ranges from 4 to 15 years.[7]

Mr. Lube is simply wrong about this.

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[5] Lube Direct Testimony at 13.

[6] Bellcore, *Telecommunications Transmission Engineering*, Third Edition, p. 91 (see Attachment JCD-3.4 to Donovan Direct Testimony).

[7] Ibid. p. 91.

Q. MR. LUBE TAKES THE POSITION THAT THE INDUSTRY STANDARDS, AND SWBT CORPORATE POLICIES ARE JUST GUIDELINES, AND THAT EACH ENGINEER HAS THE ABILITY TO FOLLOW THEM AS HE OR SHE SEES FIT. DO YOU AGREE?

A. No; absolutely not. I would be surprised if SWBT's headquarters sanctioned such anarchy. Mr. Lube attempts to dodge the attack that generally accepted outside plant concepts (such as the Serving Area Concept and the Carrier Serving Area concept) are followed, almost at an engineers whim. In his deposition, Mr. Lube stated

> Q: So under normal conditions, a SWBT engineering group would follow the [engineering] guidelines?
>
> A: Well, in a perfect world with unlimited budget, you know, funds, whatever, the guidelines would be followed, to the maximum extent that you could.[8]

Mr. Lube also states,

> A: ...That just isn't always possible, though, even, even in a brand-new build. The multiple plant does afford some, some flexibility ... so the engineers are able to achieve flexibility with multiple plant that they otherwise would not have.[9]

and,

> There are times – let me put it this way; a guideline is merely a guideline, and it is not a condition of employment. In this instance, we're not talking about something that's related to ethics, and so forth, but in these types of guidelines, it is not impossible for engineers to have to do things that more specifically meet the requirements of the job he's building, and these guidelines, in that sense, are

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[8] Lube Deposition at 71.

[9] Ibid. at 67-68.

> merely guidelines to be followed whenever possible but they are not absolutely binding.[10]

Q. DOES MR. LUBE AGREE WITH HOW YOU HAVE STATED THE INDUSTRY GUIDELINES?

A. Generally yes. In his deposition, Mr. Lube stated that he recognized the Serving Area Concept details and the Carrier Serving Area concept details that I presented in my Direct Testimony as having been industry standards since before 1984.[11]

Q. DOES MR. LUBE AGREE THAT SWBT'S CORPORATE GUIDELINES ARE ESSENTIALLY THE SAME AS THOSE CONCEPTS?

A. Yes. Mr. Lube has stated,

> I'm not aware of any deviations between Southwestern Bell's guidelines and the original AT&T [Serving Area Concept] guidelines or any other guidelines.[12]

Q. DO YOU HAVE EXPERIENCE IN WRITING CORPORATE ENGINEERING GUIDELINES, IN SUPERVISING ENGINEERING GROUPS WHO MUST DRAW WORK PRINTS IN A VARIETY OF SITUATIONS WHERE GUIDELINES MAY OR MAY NOT BE FOLLOWED, AND IN ACTUALLY DESIGNING JOBS YOURSELF?

A. Yes. I joined the Bell System in 1972, right about the time SAC guidelines were published. I engineered jobs, and helped package hundreds of jobs, called estimate cases, for middle management and upper management approval. That work was done in Long Island, New York. There was a significant amount of plant replacement occurring. You see, the original Levittown development, built

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[10] Ibid. at 70-71.

[11] Ibid. at 82.

after World War II, was designed under the concept of multiple plant, and envisioning that only two out of three households would ever actually want telephone service. Engineers were directed to follow SAC guidelines 30 years ago to correct this condition.

More generally speaking, I have supervised small engineering groups of 2 to 30 engineers, as well as large engineering and construction groups – as many as 500 employees and contractors. At any level, if an engineer did not follow local guidelines, that was a case that had to be explained to his or her boss. If an engineer did not follow corporate guidelines, that was a serious case – a case wherein at least middle management became involved. If an engineer violated generally accepted industry practice – that was a case for retraining.

As Managing Director for Engineering and Construction Methods & Procedures at the NYNEX Corporation, I was responsible for the research of, creation of, publication of, and implementation of corporate engineering policies and guidelines. As a Managing Director, I was held personally accountable if field engineers were routinely not following corporate guidelines – and I made sure that the field followed such guidelines. I do not know what the policy is at SWBT, but I believe it should be similar.

These types of practices are not unstructured directions from corporate. They are expected to be followed. There is no excuse – certainly no documented excuse –

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[12] Ibid. at 82.

certainly no documented excuse for failing to following the Serving Area Concept and the Carrier Serving Area concept promulgated in SWBT's Transport Engineering and Construction Policies. I believe that such a clear meaning should be taken into account in denying SWBT's costs for line conditioning in this proceeding.

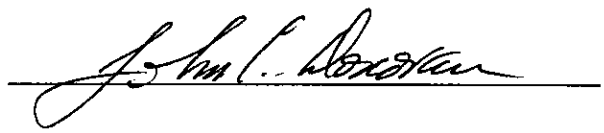
Q. DOES THIS CONCLUDE YOUR REBUTTAL TESTIMONY?

A. Yes, it does. I reserve the right to supplement this testimony, however, to reflect information obtained through depositions and the additional data responses that the Commission has directed SWBT to produce in response to Covad's Motion to Compel.

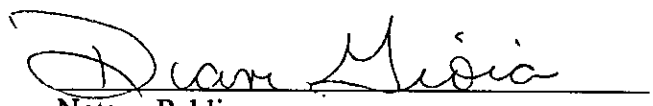
VERIFICATION

STATE OF NEW YORK)
) SS:
COUNTY OF NASSAU)

Comes now JOHN C. DONOVAN, being of lawful age and duly sworn, who states that he is the witness who has provided the foregoing testimony, that he has prepared and read the foregoing testimony, and that the information contained therein is true and accurate to the best of his knowledge and belief.



Subscribed and sworn to before me on this 26 day of January, 2000.



Notary Public

DIANE GIOIA
Notary Public, State of New York
No. 01GI5066872
Qualified in Nassau County
Commission Expires October 7, 2000

My commission expires: