BEFORE THE ILLINOIS COMMERCE COMMISSION

Docket No. 05-0675

Direct Testimony of Larry G. Parker
On Behalf of AT&T Illinois

AT&T Illinois Exhibit 1.0

PUBLIC

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DIRECT TESTIMONY OF LARRY G. PARKER

ON BEHALF OF SBC ILLINOIS

I. INTRODUCTION, BACKGROUND AND QUALIFICATIONS

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Larry G. Parker. My business address is 225 West Randolph Street, HQ 27C, Chicago, Illinois 60606.

Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?

A. I am employed by Illinois Bell Telephone Company ("Illinois Bell" or "SBC Illinois") as State Regulatory Advocate - Regulatory Affairs supporting SBC's Industry Markets (wholesale) business unit.

Q. PLEASE DESCRIBE YOUR WORK EXPERIENCE.

A. Prior to entering my current position in 1998, I performed both retail and wholesale regulatory functions as a Director of Regulatory for Illinois Bell from 1995 to 1998. I worked from 1993 to 1995 in Ameritech's Consumer Services business unit as the Director of Cost and Performance Management in the Finance Department. From 1983 to 1993, I worked in the Regulatory Department of Illinois Bell as a Director of Regulatory Affairs with primary responsibilities covering Exchange Carrier Relations, Separations, Interstate Access Revenue Requirements Development, Interstate Earnings Management, National Exchange Carrier Association Carrier Common Line Pool Settlements and Capital Recovery. From 1979 to 1983, I worked in Illinois Bell's Network Engineering Department as a Manager of Central Office Engineering and as a

Manager of Network Switching Design. From 1976 to 1979, I worked in Illinois Bell's Network Planning Department as a Manager performing engineering economic studies for Operational Support Systems. From 1975 to 1976, I worked as a Supervisor of craft employees in provisioning and maintaining data communications circuits for major business customers in Chicago. I began my telecommunications career at Illinois Bell as an Engineer in Chicago Operations in 1974.

Q. WHAT IS YOUR EDUCATIONAL BACKGROUND?

A. I hold an MBA in Finance, Marketing and International Business from the University of Chicago, and a BS in Electrical Engineering from Purdue University.

Q. WHAT ARE YOUR CURRENT DUTIES AND RESPONSIBILITIES?

A. In my current position, I am responsible for analyzing various regulatory issues as they impact SBC wholesale services. I also manage various wholesale docket issues before the Illinois Commerce Commission ("Commission") and I ensure that tariffs filed with the Commission relating to wholesale service offerings are in compliance with current Commission policies.

Q. HAVE YOU TESTIFIED PREVIOUSLY BEFORE THIS COMMISSION?

A. Yes, I presented testimony in Docket 99-0511, Docket 96-0069, Docket 95-0563, Docket 92-0117 and Docket 89-0033.

II. <u>PURPOSE OF TESTIMONY</u>

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. The purpose of my testimony is to first describe SBC Illinois' objective in this proceeding, to give a brief overview of the testimony presented in support of that objective and to provide a brief history of SBC Illinois' billing experience implementing and provisioning direct current ("DC") power to CLEC collocation arrangements in SBC Illinois central offices. I then comment on the current CLEC DC power arrangements and their relationship to the Commission's DC power fusing limits in 83 Illinois Administrative Code Part 785.55. Finally, I explain that there are significant disparities between the way SBC Illinois is required to bill for collocation power and the way other Illinois ILECs such as Verizon are permitted to bill for the same thing, as seen from their collocation tariffs and/or federal Section 251/252 interconnection agreements ("ICAs").

III. <u>OVERVIEW OF SBC ILLINOIS' TESTIMONY</u>

Q. WHAT IS SBC ILLINOIS' OBJECTIVE IN THIS PROCEEDING?

A. SBC Illinois is requesting Commission authorization to change the methodology it uses in its Collocation Tariff (Ill. C.C. No. 20, Part 23, Section 4) to bill CLECs for the DC power that CLECs use to power equipment they place in collocation arrangements in SBC Illinois central offices.[1] This change is necessary because the current methodology ("metering") cannot accurately measure the power consumed by CLECs and results in under-billing averaging approximately 30% to 50%. SBC Illinois proposes an alternative methodology under which CLECs can order the precise amount of power capacity they

[1] All power used by telecommunications equipment (CLEC and ILEC) inside SBC Illinois central offices is direct current ("DC") power.

need and SBC Illinois will bill them for that capacity, on a "per amperage" or "per amp" basis.

Q. PLEASE PROVIDE A BRIEF SUMMARY OF SBC ILLINOIS TESTIMONY BEING PRESENTED IN SUPPORT OF THAT OBJECTIVE.

A. In support of its objective and in order to layout a coherent picture of SBC Illinois' current collocation power provisioning and billing concerns, SBC Illinois offers testimony from four additional witnesses.

Roman Smith of SBC Local Interconnection Marketing begins his testimony by identifying the policy considerations that the Commission should have in mind as it reviews SCB Illinois' tariff filing to modify the way it charges for collocation power. According to Mr. Smith, any system for charging CLECs for collocation power should produce accurate charges – CLECs should not be underbilled or overbilled. Underbilling would create a subsidy to CLECs and overbilling would create an unfair advantage for SBC Illinois. Mr. Smith also believes that there should be a close correlation between the collocation power that a CLEC orders to meet its collocation power requirements and the power charges that the CLEC incurs, so that a CLEC that only needs a small amount of power is charged a commensurately lesser amount than a CLEC that needs a lot of power. Finally, Mr. Smith believes that the Commission should consider whether the system it approves is cost-effective and easy to administer, and whether it can be implemented without causing undue disruptions. Against this backdrop, Mr. Smith explains that power metering –i.e., SBC Illinois' current method of measuring the amount of DC power consumed by a CLEC on a per kilowatt hour basis – is inherently inefficient and, in the

case of SBC Illinois, typically results in under-measurement (and therefore under-billing) ranging between 30% and 50% on average. This has been the case since 2001 when the current metering system was originally implemented and remains true today. The inefficiency of the current metering system, first identified in 2002, accounts for an annual revenue loss to SBC Illinois of approximately $3.319 million - $4.646 million. From this Mr. Smith concludes that a new arrangement is essential. Mr. Smith then describes SBC Illinois' "Per Amp" tariff proposal and explains that it is a better, more commercially reasonable alternative because CLECs pay for power on the basis of the precise amount of DC power capacity that they order. For example, if a CLEC requires 23 amps of power to operate the equipment in its collocation arrangement, it can request (i.e., order) that SBC Illinois provide power leads to its collocation arrangement that are fused appropriately to accommodate 23 amps of power. SBC Illinois will bill the CLEC for the precise amount of power ordered, in this example, 23 amps. Mr. Smith further explains that SBC Illinois is offering a "Power Fuse Reduction" feature that permits a CLEC to easily modify its existing power arrangement to change the amp capacity at its collocation site – so that its power capacity can better match its equipment power consumption. Under the "Power Fuse Reduction" feature, Mr. Smith explains that upon payment of the existing tariff service order charge, SBC Illinois will be responsible for the costs associated with any re-fusing and re-cabling required to implement the requested power reduction. Last, Mr. Smith proposes to apply the most recent shared and common cost factor of ******BEGIN CONFIDENTIAL***** *****% from Docket No. 02-0864 (instead of the *****% shared and common factor from Docket No. 98-0396) to the converted per amp cost of $**** developed by SBC Illinois witness Ms. Brissenden. This produces a rate of $9.80 per amp applicable to CLECs versus a rate of $**** per

amp that would result using the old shared and common cost factor from Docket No. 98-0396.

END CONFIDENTIAL

Marvin Nevels of SBC Network Regulatory covers network power engineering policy issues regarding collocation power consumption. Mr. Nevels describes how collocated equipment is powered by -48 volt direct current ("DC") power. He further describes the components of power provisioning, i.e., power supply and power delivery. Mr. Nevels provides an overview of the major components of power supply, which includes Power Plant Distribution Bays, Battery Distribution Fuse Bays ("BDFBs"), Commercial AC (alternating current) Power, DC Power Plant (e.g., batteries, rectifiers, and power boards), Fuses, Generators, Primary Cabling, and Cable Racking. With regards to power delivery, Mr. Nevels discusses the Secondary Cabling (battery and return feeds from the Power Plant or BDFB), and its Cable Racking to collocation arrangement. With the central office electrical structure and design background established, Mr. Nevels goes on to describe how electricity flows from the power plant to and through the CLECs collocated equipment. Mr. Nevels then describes the current power metering architecture implemented by SBC Illinois to measure the power consumed by equipment in CLEC collocation arrangements. He explains that this system has serious shortcomings because it fails to measure the power used by CLECs; in particular, it fails to measure the current flow that passes through frame grounds to the central office grounding system. Mr. Nevels points out that the current leaking to ground, on the order of 30% to 50%, has been validated by an independent third-party (Telcordia Technologies), and that this unmeasured usage is never billed to CLECs. Next, Mr. Nevels provides his engineering perspective with regard to SBC Illinois' "per amp" tariff proposal and why he believes it

would be superior to the current power metering arrangement, i.e., it eliminates the leakage problem and eliminates the need for costly metering equipment such as Power Metering Units, wiring and shunt measuring devices.

Jeanne Muellner, SBC Network Engineering, is an SBC power engineer with extensive hands-on experience with power delivery and consumption in SBC Illinois central offices. Ms. Muellner provides a virtual central office power tour to familiarize the parties to this proceeding with the basic components of SBC Illinois central office power infrastructure. Ms. Muellner provides a detailed overview of the frame ground DC current leakage problem associated with the current collocation DC power metering architecture being used by SBC Illinois. Ms. Muellner validates through more recent studies the findings of the 2002 Telcordia Technologies study that power return-lead metering cannot accurately measure power consumed by CLEC collocated equipment. Ms. Muellner's study, conducted at several SBC Illinois central offices where CLECs are currently collocated, found leakage as high as 90% at one CLEC arrangement and averaging 38% across the central offices she studied. This provides solid, recent evidence that significant return current is not being measured and therefore, on average, CLECs are not being billed for all DC power they are consuming. Ms. Muellner also provides supporting facts that back-up Mr. Nevels' conclusion that supply-side metering would require significantly more shunts, shunt bars, overhead racking space, leads to Power Metering Units ("PMUs"), and PMUs. Furthermore, Ms. Muellner points out that the potential for equipment damage and personnel injury would increase as well with this added equipment. In addition, there is a history of PMU maintenance problems that would be compounded by the additional PMUs required for supply-side metering.

Stephanie Brissenden is a cost analyst in SBC's Finance Organization and is responsible for explaining where SBC Illinois obtained the costs that support the "per amp" rate included in the proposed tariff. She describes the 1998 cost study developed by SBC Illinois to support its current collocation tariff "per kilowatt hour" cost structure for DC power consumption and SBC Illinois' proposed conversion of the "per kilowatt hour" cost structure to a "per amp" cost structure. Ms. Brissenden explains why it makes sense to convert commercial AC (alternating current) power costs on a per kilowatt hour basis to DC power units (amps), and why that cost of power must be added to the DC power plant cost (already expressed on a per DC amp basis) in order to determine total DC power provisioning costs on a per amp basis. Ms. Brissenden explains that the kilowatt hour to amps conversion factor, inherent in the existing Commission-approved cost study from TELRIC compliance Docket No. 98-0396, is easily used to convert the underlying cost of ***BEGIN CONFIDENTIAL*** $**** per kwh (supporting the $0.28 per kwh rate in SBC Illinois' Collocation Tariff) to a per amp cost structure of $**** per amp. As discussed above, Mr Smith starts with the cost developed by Ms. Brissenden and applies the most recent approved shared and common cost factor of ****% from Docket No. 02-0864 (which is lower than the****% shared and common factor from Docket No. 98-0396) to arrive at a rate of $9.80 per amp. Ms. Brissenden attests to the fact that billing CLECs a rate based on costs of $**** per amp instead of $**** per kwh is cost neutral to both CLECs and SBC Illinois, and elimination of the leakage problem inherent in the current metering architecture provides SBC Illinois with opportunity to more effectively recover its costs of provisioning power to CLEC collocation arrangements. ***END CONFIDENTIAL***

IV. HISTORY OF COLLOCATION DC POWER METERING IN ILLINOIS

Q. SHORTLY AFTER IMPLEMENTATION OF TA96, WHAT BILLING METHOD FOR DC POWER CONSUMPTION WAS PREDOMINATE IN ILLINOIS BELL INTERCONNECTION AGREEMENTS?

A. Prior to the Commission's February 17, 1998 Order in Docket 96-0486/96-0569, Illinois Bell had Commission approved negotiated/arbitrated ICAs with a "per amp" provision for billing DC power consumption to CLECs. Included among these CLECs were AT&T; Frontier (Global Crossing); KMC Telecom; MCIMetro Access Transmissions; MidCom Communications; Nextlink; Teligent, LLC; U.S. Xchange, LLC; and Sprint. Each of these ICAs contained a rate element in its respective Pricing Schedule for Collocation listed as *"Power Consumption/per Fuse AMP"* with monthly charge of *$6.87*. Parties had negotiated and agreed to this "per amp" provision, and to my knowledge, no party had negotiated or argued for any form of power metering.

Q. WHY DID ILLINOIS BELL IMPLEMENT COLLOCATION POWER METERING IN THE FIRST PLACE?

A. The general issue of charges for collocation power first became an issue in Illinois in the original TELRIC proceeding in Docket No. 96-0486/96-0569. There, the Commission recognized that SBC Illinois legitimately imposes a power consumption charge on collocating CLECs to "cover costs that the electric utility imposes, as well as necessary items such as back-up batteries and generators, and the incremental cost for ventilation". *Investigation Into Forward Looking Cost Studies and Rates of Ameritech Illinois for Interconnection, Network Elements, Transport and Termination of Traffic*, Second

Interim Order dated February 17, 1998 (“*Second Interim Order”*) at 98. Illinois Bell’s power consumption charges in its proposed tariff were rejected and it was directed to “recalculate the charges along the lines suggested by Staff”. *Second Interim Order* at 99.

Q. HOW DID ILLINOIS BELL INTERPRET WHAT THE COMMISSION MEANT BY THIS DIRECTIVE?

A. Staff’s position, obscurely summarized at page 99 of the Commission’s Order, reads:

> ***Staff suggested that the power consumption charges should be based on usage and not per-circuit capacity of the equipment located in the cage. (Tr. 2111) Staff proposed that Ameritech should be directed to recalculate those charges and either provide a cost on a per-unit basis, which is measured for power consumed or reduce the charge to a square foot basis, which closely mirrors its actual charges.***

Based on this language, it was apparent that Staff was looking for some type of methodology that correlates the amount billed to the CLEC’s demand for collocation power. Significantly, Staff did not foreclose the option of a “per square foot” methodology, or some other approach, that would “closely mirror actual charges”.

Q. DID ANY PARTY RECOMMEND A PRACTICAL MEANS BY WHICH DC POWER CONSUMPTION COULD BE MEASURED IN A TELECOM CENTRAL OFFICE ENVIRONMENT?

A. I have reviewed the record in Docket 96-0486/96-0569 and cannot find any suggestion in Staff’s testimony or briefs that provides direction or guidelines as to how such direct current (“DC”) power measurement could be accomplished, nor any indication that Staff had knowledge of whether such measurements were currently being done anywhere

within the telecom industry. I was also unable to find in the record any practical solution to power measuring provided by any other party to the proceeding.

Q. WHAT DID ILLINOIS BELL DO TO IMPLEMENT THE COMMISSION'S ORDER REGARDING MEASUREMENT OF DC POWER USAGE?

A. Illinois Bell power engineers implemented a DC power measurement architecture referred to as *battery return-lead* power metering that was thought to be sufficient in meeting the Commission's directive. However, as discussed later in my testimony, *battery return-lead* metering is seriously flawed. Mr. Smith, Mr. Nevels and Ms. Muellner provide details on this flawed architecture in their testimonies.

Q. HOW LONG DID IT TAKE FOR ILLINOIS BELL TO IMPLEMENT ITS DC POWER METERING ARCHITECTURE?

A. Because no such technology was readily available to implement, Illinois Bell worked with an outside engineering firm ("Marconi", now known as "Emerson Network Power") to develop a means of measuring DC power consumption for installation in our central offices where CLECs were collocated. Mr Nevels discusses this in more detail. Although the Commission Order was issued February 17, 1998, and Illinois Bell was required to file compliance tariffs effective April 18, 1998, it took roughly two and a half years to design, engineer, furnish and install our DC power metering (*battery return-lead*) architecture.

Q. HOW DID ILLINOIS BELL BILL COLLOCATED CLECS FOR DC POWER CONSUMPTION DURING THE METERING IMPLEMENTATION PERIOD?

A. At the time of Commission's Order, even though existing Illinois Bell interconnection agreements with collocation provisions included a "per amp" DC power consumption rate structure, Illinois Bell interpreted the Commission's Order as strongly indicating a conversion to Staff's suggested usage measurement (metering) approach. Although I was not directly involved in the billing implementation, its my understanding that billing to CLECs on a per amp basis was either discontinued or not implemented as a result of the Commission's *Second Interim Order* until the power metering architecture was put in place. As a result of these decisions, Illinois Bell did not bill CLECs for collocation power they used for nearly two years. In fact, CLECs were informed by their respective SBC account managers regarding the new billing directive, what the rate structure would entail, when billing would commence (mid-2001), and how back-billing would be handled for those CLECs who had not been billed for power as a result of Commission's *Second Interim Order*. Back-billing was confined to six months in arrears, therefore for CLECs with billing commencing in June 2001, back-billing was limited to December 2000. For billing commencing in July 2001, back-billing was limited to January 2001, and so on.

Q. YOU MENTIONED ABOVE THAT IILINOIS BELL FILED A COMPLIANCE TARIFF EFFECTIVE APRIL 18, 1998 APPLICABLE TO METERING, EVEN THOUGH THE METERING ARCHITECTURE WAS NOT AVAILABLE UNTIL 2001. IS THAT CORRECT?

A. Yes.

Q. WHAT WAS THE RATE STRUCTURE?

A. Yes. Based on the *Second Interim Order*, Illinois Bell developed power measurement rates applicable to provisioning DC power to CLEC collocation arrangements. The rate structure included four elements as follows:

	Recurring Charge	***Nonrecurring Charge***
Power Measurement - Per Customer Arrangement	-	*$2,911.85*
Power Measurement Billing Charge - Per Customer Arrangement	*$11.49*	-
Power Measurement Engineering Charge - Per Existing Non-Measured Arrangements Only		*$272.47*
Power Consumption - Per KWH	*$0.28*	-

Q. WHAT ILLINOIS BELL COSTS WERE EACH OF THESE RATE ELEMENTS DESIGNED TO RECOVER?

A. The Power Measurement rate element recovers cost for purchase and installation of Power Metering Units. The Power Measurement Engineering rate element recovers cost for installing shunts and associated wiring. The Power Measurement Billing Charge coveres monthly CABS bill processing costs. The Power Consumption rate element recovers the monthly DC power consumed by CLEC on a per kilowatt hour basis.

Q. DID THE COMMISSION SUBSEQUENTLY REVIEW THESE RATES?

A. Yes. The Commission reviewed the DC power measurement rates along with all other Illinois Bell UNE/Interconnection rates in a compliance proceeding and approved the above listed power measurement rates. *Investigation into the Compliance of Illinois Bell Telephone Company with the Order in Docket 96-0486/0569 Consolidated Regarding the*

Filing of Tariffs and the Accompanying Cost Studies for Interconnection, Unbundled Network Elements and Local Transport and Termination and Regarding End to End Unbundling Issues, Docket 98-0396, dated October 16, 2001 at 51-52.

Q. HOW WOULD THIS RATE STRUCTURE CHANGE UNDER SBC ILLINOIS' PROPOSAL TO CONVERT TO A "PER AMP" BILLING METHODOLOGY?

A. The Power Measurement, Power Measurement Billing Charge and Power Measurement Engineering Charge would be eliminated. The Power Consumption Charge of $0.28 per KWH would be converted to a "per amp" charge of $9.80. Ms. Brissenden and Mr. Smith discuss this in greater detail.

Q. HOW HAS ILLINOIS BELL'S DC POWER METERING ARCHITECTURE PERFORMED SINCE IMPLEMENTATION?

A. As Mr. Nevels and Ms. Muellner discuss in more detail in their respective testimony, what we initially believed would be a workable DC power metering architecture did not perform up to our technical expectations. Early in 2002, during some routine network reliability tests in our Chicago Superior central office, our engineers discovered that a significant percentage of DC current provisioned to CLEC collocation arrangements was bypassing the measuring devices (shunts) placed on the battery return leads by-way of frame grounds. (Most central office equipment is located in frames which have a ground conductor tied to the central office ground system. As Mr. Nevels explains in greater detail, grounding is necessary to prevent damage to equipment.) The electric current leaking through the frame grounds was never measured by the monitoring shunts installed on the battery return leads and therefore was never recorded by the Power

Metering Units ("PMUs") that record power usage. Based on the leakage test results at the Superior central office and what we had actually billed CLECs collocated at Superior central office during the month of January 2002, we estimated that approximately 36% of DC current was leaking to frame grounds and was not being measured. Extrapolating to all Illinois Bell central offices with CLEC collocation arrangements, we estimated an annual revenue loss of $2.4 million.

Q. HAS ILLINOIS BELL CONTINUED TO BILL CLECS FOR DC POWER CONSUMPTION UNDER ITS POWER METERING ARCHITECTURE?

A. Yes. For lack of a better alternative and to remain complaint with its tariff, Illinois Bell has continued to bill (and under bill) using its power metering system.

Q. HAS ILLINOIS BELL DONE ANYTHING SINCE EARLY 2002 TO FURTHER INVESTIGATE THE SCOPE OF THIS DC POWER METERING PROBLEM?

A. To further validate the DC current leakage problem, Illinois Bell asked Telcordia Technologies, Inc. ("Telcordia") to conduct a more comprehensive test in several additional Illinois Bell central offices, as well as the Superior central office. The additional offices were the Franklin, Canal and Illinois Dearborn central offices. As discussed in Mr. Nevels testimony, Telcordia determined from these additional tests that metering on the battery return lead simply cannot provide an accurate measurement of the load current. Telecordia concluded that average leakage could range between 30% to 50%.

Q. WHAT CONCLUSIONS DID ILLINOIS BELL DRAW FROM THE STUDIES YOU MENTION ABOVE?

A. We learned that much of today's central office equipment is designed with the power return leads connected to frame ground (i.e., no isolated return leads). As a result, current passing through the equipment installed on the frame has multiple paths through the central office to return to the battery source and does not flow over an isolated lead where power consumed by the equipment can be measured accurately. Mr. Nevels and Ms. Muellner provides more detail on this leakage issue which is also summarized in the findings of the Telcordia study attached to Mr. Nevels' testimony. Because of this frame-grounding design characteristic, return lead power metering is not technically feasible. SBC Illinois also concluded that there was no target average leakage percentage that could be used to adjust billing to CLECs to account for this leakage problem. Furthermore, a percentage increase to existing tariff rates is not a viable solution to this problem because an average leakage percentage rate adjustment would under charge some CLECs while over charging others. As Mr. Smith and Mr. Nevels discuss in their testimonies, the "per amp" proposal best meets the objectives of the Commission's *Second Interim Order* because it closely matches what an individual CLEC pays with the power that the CLEC uses, allows SBC Illinois to more accurately recover the cost of power provided and provides the CLEC with a low cost means of powering down (i.e., reducing fuse size) when necessary through the "Power Fuse Reduction" feature of SBC Illinois; proposed tariff.

Q. HAS ILLINOIS BELL REVENUE BEEN AFFECTED BY USE OF THE DC POWER METERING ARCHITECTURE?

A. Yes. Over the four plus years (mid-2001 to present) the metering architecture has been in effect pursuant to the *Second Interim Order*, I estimate that Illinois Bell has under-recovered cost (i.e., incurred revenue losses) due to under billing of collocation DC power consumption to CLECs in the approximate amount of $10 million. This is based on the annual $2.4 million loss discussed earlier in my testimony incurred in each of the past four years. Of course, this amount could be higher or lower depending on number of active metered collocation arrangements in place during this period of time. This figure is probably conservative because SBC Illinois has also been unable to bill certain amounts due to periodic failure of Power Metering Units that record the power usage measurements, thus resulting in lack of kilowatt-hour data needed to bill CLECs and a further revenue shortfall. The periodic failure of the Power Metering Units is described in more detail in the testimony of SBC Illinois witness Ms. Muellner.

V. <u>ADMINISTRATIVE RULE 785.55 IMPLICATIONS</u>

Q. WHAT IS RULE 785.55?

A. Rule 785.55 is a sub-set of 83 Illinois Administrative Code Part 785 *"Joint Rules of The Illinois Commerce Commission, The Office of the State Fire Marshal, and the Illinois Emergency Management Agency: Fire Protection and Emergency Services for Telecommunications Facilities"*. Rule 785.55 covers various Technical Requirements. (See Schedule LGP-1 attached). Rule 785.55(a) sets standards for fusing electrical DC power leads in telecommunications central offices and I believe would be applicable in preventing a CLEC (and SBC Illinois) from 'over-fusing", i.e., provisioning excessive

power fuse capacity to a collocation arrangement (or SBC Illinois equipment arrangement). The rule reads as follows:

> *All direct current (DC) power supply service feeds shall be fused at a level not to exceed the rated capacity of the smallest conductor used in the feed, or 200% of the maximal operational consumption of the feed, whichever is smaller.*

This rule limits the DC amperage fuse capacity that CLECs (as well as ILECs) are allowed in powering equipment arrangements inside Illinois central offices.

Q. WHAT DOES RULE 785.55(a) HAVE TO DO WITH THE TOPIC OF THIS PROCEEDING, I.E., CLEC DC POWER CONSUMPTION IN SBC ILLINOIS CENTRAL OFFICES?

A. SBC Illinois' tariff proposal includes a "Power Fuse Reduction" feature that permits CLECs to reduce the fused capacity of power to their collocation arrangements at a vastly reduced cost. By that I mean any costs incurred by SBC Illinois for vendor engineering, rearranging fuses at BDFB or Power Board, restenciling power plant and re-tagging cables, updating power records, and, if necessary, removing and provisioning power cables would not be billed to the CLEC when a power reduction is requested to comply with Rule 785.55(a). If SBC Illinois charged for this work activity, it would come at a significant cost to CLECs. Rather than these costs, SBC Illinois proposes to assess only its currently tariffed service order charge. Per the terms of the proposed tariff, this "Power Fuse Reduction" option, while voluntary, most likely will not be available for an extended period of time because CLECs will presumably take advantage of it to correct any mis-sizing of fuses they have created over the past four years. Once these corrections have been made, it is not clear that SBC Illinois should have to bear these expenses

without cost recovery. While it is not the main purpose of SBC Illinois' tariff proposal, the "Power Fuse Reduction" option can be used by CLECs to reduce the fused capacity of power feeds to bring them into compliance with Rule 785.55(a) if currently out of compliance. In this way, SBC Illinois' proposal has collateral benefits that the Commission should consider in evaluating the tariff proposal.

Q. CAN YOU EXPLAIN HOW RULE 785.55(a) OPERATES.

A. Only in layman's terms. A fuse serves the function of severing an electrical circuit if the flow of power in that circuit becomes too high. This is a safety feature that shuts off electric current in a circuit that might otherwise be damaged or cause a fire. My understanding of the Rule is that it is designed to prevent situations where a fuse will fail to trip (and break the circuit) even when there is a short circuit because it has such a high capacity relative to the actual load on the circuit. So, for example – and this is illustrative only - if the actual load on a circuit is 20 amps and the circuit has a 200 amp fuse, it may be possible that a short in the circuit would draw 100 amps, creating a total draw of 120 yet failing to trip the 200 amp fuse. In this situation, the short could go undetected and could case a fire or other damage.

Q. WHY IS THIS RULE IMPORTANT TO EMPHASIZE IN THIS PROCEEDING?

A. If any CLEC collocation power arrangements in SBC Illinois central offices are out of compliance with this rule, the "Power Fuse Reduction" feature presents a convenient, inexpensive opportunity for a CLEC to come into compliance by requesting a reduction in their DC amperage fuse capacity. Compliance is essential to reliable customer service and neither a CLEC, SBC Illinois or the Commission can tolerate the safety risk of non-

compliance, should it exist, to continue. The May 8, 1988 Hinsdale central office fire which resulted in major service outages is reason enough to understand why compliance to Rule 785.55(a) is a necessity. One of the contributing causes of that central office catastrophe was the failure of a fuse to trip when a DC power cable shorted to an armored cable in a cable rack. SBC Illinois is ready to work with both the Commission and CLECs to monitor compliance with this rule. Without CLECs' cooperation, SBC Illinois would lack sufficient knowledge regarding the power capacity of the CLECs collocated equipment.

Q. DO YOU HAVE ANY REASON TO BELIEVE THAT CLECS ARE NOT IN COMPLIANCE WITH THE RULE?

A. I have no such knowledge, however, the historical conditions under which DC power has been provisioned to CLECs certainly lends itself to this possibility. What I mean by this is that SBC Illinois has provided the power capacity to CLECs, as requested, with very little knowledge of the power requirements of the equipment being installed and made operational by the CLEC in its collocation arrangement. If equipment has been taken out of service or removed by CLEC, it's possible that an over-fusing condition has been created.

Q. SHOULD SUCH SAFETY RISKS BE IDENTIFIED, HOW WILL SBC ILLINOIS ACCOMMODATE COMPLIANCE?

A. SBC Illinois is making available in its tariff proposal upon payment of a service order charge, a "Power Fuse Reduction" feature that CLECs can avail themselves to, at no

additional cost, in order to reduce fuse capacity to a level in compliance with Rule 785.55(a).

VI. OTHER ILLINOIS ILECS ALREADY USE THE "PER AMP" METHODOLOGY SBC ILLINOIS PROPOSES HERE

Q. WHAT DO YOU ADDRESS IN THIS SECTION OF YOUR TESTIMONY?

A. I explain that there is no uniform method among Illinois ILECs to bill CLECs for DC power consumption. In fact, other ILECs in Illinois use a "per amp" methodology that SBC Illinois is seeking in its proposed tariff.

Q. WHAT DC POWER CONSUMPTION BILLING METHOD IS UTILIZED BY OTHER ILLINOIS ILECS?

A. To answer this question, I reviewed various interconnection agreements listed on the Illinois Commission's website as approved by Commission. In addition, I researched Illinois ILEC collocation tariffs on the Center for Communications Management Information (CCMI) "Telview" website (http://www.telview.com/). Based on this investigation, I determined that other ILECs in Illinois utilize a "per amp" billing methodology.

Q. PLEASE DESCRIBE YOUR REVIEW OF NON-SBC INTERCONNECTION AGREEMENTS.

A. I reviewed a cross-section of approved ICAs for other Illinois ILECs listed on the Commission's website. For each ICA reviewed, I searched for terms and conditions

applicable to the provision of DC power to collocated CLECs. I was able to identify eight ILECs in Illinois other than SBC Illinois that have ICAs with CLECs. These eight ILECs were Verizon North/Verizon South, Inc. ("Verizon"), Citizen Communications Company ("Citizen"), Gallatin River Communications LLC ("Gallatin River"), C-R Telephone Company, El Paso Telephone Company, LaHarpe Telephone Company, McNabb Telephone Company, Odin Telephone Exchange, Inc., and Yates City Telephone Company. The ICAs with C-R Telephone Company, El Paso Telephone Company, LaHarpe Telephone Company, McNabb Telephone Company, Odin Telephone Exchange, Inc., and Yates City Telephone Company were with cellular carriers and collocation was not involved.

For Verizon, I sampled ICAs approved from 2000 through 2005. Several Verizon ICAs list the DC power billing methodology as follows: *"DC Power per 40 Amps: 2-feeds"*. The monthly recurring rate is *$432.09*. Other Verizon ICAs list the DC power billing methodology as follows: *"DC Power Facility and Utility - Utility, Power Supply, Fuse Panels and Fuses, 40 amps"*. The monthly recurring rate is *$565.68*. At least one Verizon ICA list the following: "*GTE will provide such collocation for purposes of interconnection pursuant to the terms and conditions in the applicable federal and state EIS tariffs."* At least one Verizon ICA adopted from Florida list "*DC Power per 40 amps at recurring rate of $571.00"*. On at least three occasions a Verizon ICA adopted from California refers to a "*California Collocation tariff*". The remaining Verizon ICAs reference Verizon's Illinois Collocation Tariff. Under that scenario, Verizon's Collocation tariff list the DC power billing methodology as follows: *"DC Power per month per load amp (10 amp minimum)" at $10.25 monthly recurring rate and*

"Environmental Conditioning per load amp DC power (10 amp minimum)" at $1.84 monthly recurring rate.

For Citizen, I sampled ICAs approved from 2001 through 2005. I identified five Citizen ICAs with collocation provisions. All of these ICAs listed the DC power billing methodology as follows: *"DC Power per 40 Amps: 2-feeds"*. The monthly recurring rate is *$487.49*.

For Gallatin River, I identified two ICAs with collocation provisions. One ICA listed the DC power billing methodology as follows: *"DC Power Facility and Utility"* with monthly recurring rate of *$9.00/amp*. The second ICA listed the DC power billing methodology as follows: *"DC Power per 40 Amps: 2-feeds"*. The monthly recurring rate is *$487.49*.

From this review, I conclude that all ILECs with ICAs in Illinois, other than Illinois Bell, utilize a form of "per amp" billing for the provisioning of DC power to CLEC collocation arrangements.

Q. PLEASE DESCRIBE YOUR REVIEW OF NON-SBC TARIFFS.

A. On the "Telview" website, for each Illinois ILEC tariff I could identify, I searched for terms and conditions applicable to the provision of DC power to collocated CLECs. I could only identify one other ILEC in Illinois (other than Illinois Bell) that has a Section 251(c)(6) collocation tariff on file at Commission. That tariff, belonging to Verizon, contains a form of "per amp" DC power consumption billing methodology (see Schedule

LGP-4). Verizon's Collocation tariff list the DC power billing methodology as follows: *"DC Power per month per load amp (10 amp minimum)" at $10.25 monthly recurring rate and "Environmental Conditioning per load amp DC power (10 amp minimum)" at $1.84 monthly recurring rate.* I believe Verizon's collocation tariff was passed to file after the *Second Interim Order* in Docket No. 96-0486/96-0569 that required Illinois Bell to include power measurement (metering) in its collocation tariff.

Q. WHAT DO YOU CONCLUDE FROM THESE FACTS?

A. I conclude that the Commission has created a *de facto* double standard with regard to ILEC collocation tariffs when it comes to billing for DC power consumption. I know of no guidelines issued by Commission that promotes such a disparity in treatment among Tier 1 ILECs. There is certainly no provision in the Commission's Interconnection Rules, 83 Illinois Administrative Code Part 790.330 – Collocation, that allows for such disparate treatment. (see Schedule LGP-2 attached)

VII. <u>CONCLUSION</u>

Q. BASED ON YOUR TESTIMONY AND THE TESTIMONY OF THE OTHER SBC ILLINOIS WITNESSES, WHAT ACTION DO YOU RECOMMEND THE COMMISSION TAKE ON SBC ILLINOIS' PROPOSED TARIFF?

A. I believe the Commission's decision requiring Illinois Bell to implement power metering was lacking a supporting record in Docket 96-0486/96-0569. Furthermore, in spite of Illinois Bell's best efforts to comply with *Second Interim Order*, the fact is that there is no economically feasible power metering methodology for use in today's central office environment. Lacking such technology, Illinois Bell should be allowed to operate under

a "per amp" billing methodology as all other ILECs are allowed. Illinois Bell's "per amp" proposal and "power reduction" proposal will allow for an orderly conversion from the current "per kwh" power metering billing methodology, eliminate the leakage problem contributing to under-recovery of costs, and facilitate CLEC power reductions to address any collocation arrangements currently supplied with excess DC power capacity. It also permits CLECs to order power in single-amp increments, so it closely matches the power they need with the amount they are charged for power. Finally, Illinois Bell's power reduction product will facilitate CLECs' compliance with the Commission's fire-prevention rules (Rule 785.55) and will thereby increase safety inside central offices and protect the public switched network from potentially catastrophic fires and/or loss of service.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes it does.