ACF is expressed on an expense-to-expense relationship for application to all products, services and elements in Verizon VA's studies; it expresses the relationship between company-wide common overhead expense (adjusted to remove avoided retail costs) and total expenses less common expenses.

Q. Why is it appropriate to express the Common Overhead ACF as an expense-to-expense relationship?

A. This methodology assigns the expenses to all categories of services, products and elements, not just those for which Verizon VA has made identifiable investments. This is appropriate given the nature of common overhead. All services and elements utilize some amount of common overhead (*e.g.*, company facilities and administration) and thus contribute to the amount of common overhead costs, but not all Verizon VA services contain any asset-related investment.

For example, while no investment is associated with a Verizon VA technician who performs a service order installation, that installation consumes human resources time and contributes to the level of human resource expense borne by Verizon. Thus, it is appropriate that the non-recurring rates that reflect recovery of the costs associated with the service order installation activity also include an allocation of the human resources expenses driven by that activity. If the Common Overhead ACF were expressed as a relationship to investment, then products and services without

investment would not bear their share of the cost of common overhead. Expressing the factor as an expense-to-expense ratio ensures that all charges, including non-recurring charges, include a share of overhead costs.

Q. Is the Common Overhead ACF specific to Virginia?

A. No. Overhead expenses were aggregated on a Verizon East-wide basis. This more accurately reflects the consolidated operations of a multi-state business organization for these overhead functions.

Q. What adjustments were made to the common overhead expenses?

A. To determine the amount of common overhead expense to be allocated to the wholesale operations of Verizon VA, the total common overhead expenses were reduced by the respective avoided retail cost percentages for the specific common overhead accounts in which Verizon identified retail avoided costs. The avoided retail cost percentages are developed according to the process described in the retail discount section of this testimony.

Q. What Common Overhead factor did Verizon VA use as an input in its recurring studies?

A. Verizon used 7.98%.

Q. What Common Overhead factor did Verizon VA use as an input in its non-recurring studies?

A. Verizon used 8.86%.

Q. Why is the Common Overhead factor used in the non-recurring studies different from the one used in the recurring studies?

A. The Common Overhead factor in the recurring studies is applied to certain product costs that already have been adjusted to forward-looking levels through the application of the FLC factor. Specifically, as discussed above, the FLC factor is applied in the development of the Network, Wholesale Marketing, and Other Support Costs ACFs. In the non-recurring studies, this is not the case; none of the non-recurring expenses are subjected to the FLC factor. Accordingly, a fully adjusted Common Overhead factor is used when calculating the non-recurring costs, but not when calculating the recurring costs. This results in an equitable allocation of common overhead expenses, with no UNE rate element bearing more (or less) than its fair share.

8. Gross Revenue Loading ACF

Q. What is the Gross Revenue Loading ACF?

A. The Gross Revenue Loading ACF is applied against Verizon VA revenue to account for regulatory assessments and uncollectibles.

Q. How was the Gross Revenue Loading ACF calculated?

A. The Gross Revenue Loading ACF is comprised of Virginia-specific regulatory commission assessments, as determined from Verizon VA's financial databases, as well as Virginia-specific access and resale uncollectible revenue adjusted for regional retail uncollectibles (as discussed more fully in the resale discount section of this testimony). The regulatory assessments are divided by the total Virginia revenues, while the wholesale uncollectibles are divided by Virginia wholesale revenues.

9. Right-to-Use (RTU) ACF

Q. How were software costs (RTU fees) treated in the studies?

A. All software RTU fees (fees associated with the use of vendor software) were capitalized, based on recent changes in accounting rules. These changes and the factor development are explained in the Cost Manual, Attachment B.

10. The Forward-Looking Conversion Factor

Q. Why is it appropriate to employ an FLC factor?

A. The calculation of ACFs based on a ratio of forward-looking expenses to current investments created the need for the FLC factor. As explained above, ACFs such as the Network, Wholesale Marketing, Other Support, and Common Overhead ACFs were calculated by dividing forward-looking expenses (*i.e.*, current expenses that were adjusted so as to be forward-

1 looking) by current investments. Thus, when these ACFs are applied to
2 current investment levels, they produce forward-looking calculations of
3 expenses. However, if these ACFs were applied to investment levels that
4 were discounted from current levels pursuant to TELRIC requirements, these
5 ACFs would produce an understatement of actual forward-looking expenses.
6 Without an adjustment to these ACFs to counteract this effect, the net
7 result would be that purchasers of UNEs would realize expense savings
8 beyond any that could be identified or ascribed to any particular cost-cutting
9 initiative. In other words, expenses would be artificially reduced.
10 For example, there is no reason to believe that the replacement of one
11 loop technology by an alternative technology with a 10% lower investment
12 per loop would reduce Verizon VA's legal or executive expenses at all, much
13 less by 10%. Nor is there any basis to assume that aggressive future
14 discounts in material prices of equipment would produce reductions of like
15 magnitude in the maintenance and administration costs of that equipment. In
16 order to avoid a gross under-identification of costs, some of the factors used
17 to identify Verizon VA's carrying costs must be adjusted.
18 A further demonstration of the need for this kind of adjustment is
19 illustrated in Table A, assuming for illustrative purposes:

20 (1) A level of forward-looking expenses of $300

21 (2) A level of current investment of $1,000

1 (3) A level of forward-looking investment of $800

2

TABLE A				
Application of a Forward-Looking Conversion (FLC) Factor				
(Example Demonstrating a Shortfall)				
Line	Item	Source	Amount	Comments
1	Forward-Looking Expense		$300	Estimate of True Forward-Looking Expense
2	Current Investment		$1,000	Investment Denominator of ACF Ratio
3	Annual Cost Factor (ACF)	L1 / L2	.3000	Calculated ACF
4	TELRIC Investment		$800	Forward-Looking Investment
5	Purported TELRIC Expense	L4 x L3	$240	Pseudo "Forward-Looking" Expense
6	Shortfall	L1 – L5	$60	Unidentified Additional True Forward-Looking Expense

3

4 As Table A shows, applying to TELRIC-adjusted investment levels an ACF
5 developed as the ratio of forward-looking expenses to current investments produces
6 a cost shortfall — of $60 in the example. The FLC factor is applied to correct for
7 this unintended expense shortfall.

8

Q. How does the FLC factor work?

A. The FLC factor corrects for the expense shortfall identified above by adjusting the denominator of the ACF (*i.e.*, the current investment levels) by an amount designed to offset, without overcompensating for, the magnitude of the expected TELRIC discount applied to Verizon VA's investment levels.

Q. Does the FLC factor apply to all ACFs?

A. No. The FLC factor applies only to those ACFs (*e.g.*, Network, Wholesale Marketing, Other Support, and Common Overhead) that are (1) calculated as a ratio of forward-looking expenses to current investments and (2) used to recover expenses that are not correlated with the value of the investment. For example, as noted above, there is no basis for assuming that the cost of maintaining a particular piece of equipment would depend in any way upon whether Verizon VA could negotiate a $10,000 purchase price or a $9,000 price for that piece of equipment. Similarly, the marketing effort to support a wholesale offering and the cost associated with that effort would be independent of fluctuations in the relevant equipment material prices.

By contrast, the capital-related factors (*i.e.*, Depreciation, Return, Interest, Federal/State Income Taxes, and Other Taxes) were not FLC adjusted, because the costs that they calculate *are* directly correlated with the level of investment identified. Likewise, the Gross Revenue Loading ACF

1 does not need to be adjusted, because that ACF is calculated as a ratio of
2 expenses to revenues, not expenses to investments.
3 Finally, common overhead expense is not highly correlated to
4 material discount levels or any efficiencies achieved through the deployment
5 of different technologies. However, as noted above, the Common Overhead
6 ACF will be applied to certain UNE costs that already reflect the application
7 of the FLC. Therefore, in calculating the ACF_{COH}, the FLC only should be
8 applied to the portion of UNE costs that have not been adjusted already (*i.e.*,
9 the capital-related cost portion). In sum, Verizon VA applied the FLC only
10 where a TELRIC-mandated reduction in investment levels could not be
11 assumed to produce a comparable reduction in expenses.
12
13 **Q. How was the FLC factor developed?**
14 A. The most accurate calculation of the FLC ratio would require Verizon VA to
15 compare the total plant investments in the TELRIC filing with the total plant
16 investments contained in Verizon VA's accounting records. But this
17 calculation cannot be developed until the TELRIC decisions in these
18 proceedings are completed and the Commission has adopted the relevant
19 assumptions with respect to the TELRIC investment totals.

Verizon VA accordingly relied on an evaluation of data supplied in the recently litigated New York UNE proceeding.[16] This data suggests that a ratio of TELRIC investment to current investment of between 75% and 80% is a reasonable approximation going forward. Verizon VA conservatively used an 80% ratio in its cost studies.

Q. Please explain the effects of applying the FLC factor to the ACFs.

A. The FLC Factor adjusts each component part of the ACFs to properly match the investments or expenses used to create the ACFs with those used to calculate the forward-looking expenses in the recurring studies. Table B below, which is an extension of Table A previously provided, shows the consequences of an FLC Factor that adjusts for a situation where the level of forward-looking investment assumed in the studies is less than the level of investment used to develop the ACFs.[17]

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[16] *See* Recommended Decision on Module 3 Issues by Administrative Law Judge Joel A. Linsider in New York Case 98-C-1357, (New York State Public Service Commission, May 16, 2001) ("Recommended Decision" or "RD") at 39.

[17] For further explanation of how the FLC factor is applied, see the Cost Manual at 26.

TABLE B				
Application of a Forward-Looking Conversion (FLC) Factor				
(Example Correcting for a Shortfall)				
Line	Item	Source	Amount	Comments
1	Forward-Looking Expense		$300	Estimate of True Forward-Looking Expense
2	Current Investment		$1,000	Investment Denominator of ACF Ratio
3	Annual Cost Factor (ACF)	L1 / L2	.3000	Calculated ACF
4	TELRIC Investment		$800	Forward-Looking Investment
5	Purported TELRIC Expense	L4 x L3	$240	Pseudo "Forward-Looking" Expense
6	Shortfall	L1 – L5	$60	Unidentified Additional True Forward-Looking Expense
7	FLC Adjustment Factor	L4 / L2	.8000	Forward-Looking Conversion Factor
8	Adjusted ACF	L3 / L7	.375	Identifies Appropriate Amount of Expense
9	TELRIC Expense	L4 x L8	$300	Appropriate Level of Forward-Looking Expense
10	Shortfall	L1 – L9	$0	Shortfall Eliminated

E. DEAVERAGING: GENERAL ISSUES

Q. To what extent is Verizon VA required to deaverage its rates for the network elements considered in this filing?

A. The Commission's TELRIC regulations require states to "establish different rates for elements in at least three defined geographic areas within the state to reflect geographic cost differences."[18]

Q. Do Verizon VA's rates currently comply with the deaveraging requirements?

A. Yes. Verizon used three different density zones when calculating rates for elements whose costs varied geographically.

Q. For what elements will the rates differ between the zones?

A. Verizon VA is proposing different zone-based rates only for loops and certain subloop components. It is not appropriate to develop deaveraged rates for other elements, because the costs of other elements do not show the same sensitivity to subscriber density and distance from the subscriber to the central office.

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[18] 47 C.F.R. § 51.507(f).

Local Loops

V. LOCAL LOOPS
(JDPL Issues II-1 to II-1-d; II-2-c-d; IV-30; IV-36)

A. IN GENERAL

Q. What will this section of the testimony address?

A. It will address the recurring cost of the unbundled local loop element in all its forms; the testimony also addresses xDSL-compatible loops and related services, for which there are recurring and non-recurring costs. First, the loop element is explained, the basic loop technology is illustrated, and the forward-looking technology assumptions are identified. Next, the relevant utilization factors — which will be applied to the relevant loop investments — are discussed, and then the cost analysis is described. The loop costs can be found in VZ-VA CS, Vol. 1 - Vol. IV, Parts B-B17.

Q. What is a "local loop?"

A. The first major functional component of a local exchange network, the local loop, is comprised of all the physical transport facilities that connect an end user customer location to a wire center (also called a central office), where loop facilities serving a particular geographic area (and interoffice cable facilities) terminate on physical arrays called "distribution frames." Heavily populated suburban wire centers typically have a large number of shorter loops. Rural wire centers cover larger areas with fewer customers, and thus have fewer but much longer and more expensive loops.

Q. How does the Commission define the "local loop" network element?

A. FCC Rule 47 C.F.R. § 51.319(a) defines the unbundling requirement for the "local loop" network element as follows:

> (a) Local loop and subloop. An incumbent LEC shall provide nondiscriminatory access, in accordance with § 51.311 and § 251(c)(3) of the Act, to the local loop and subloop, including inside wiring owned by the incumbent LEC, on an unbundled basis to any requesting telecommunications carrier for the provision of a telecommunications service.
>
> (1) Local loop. The local loop network element is defined as a transmission facility between a distribution frame (or its equivalent) in an incumbent LEC central office and the loop demarcation point at an end-user customer premises, including inside wire owned by the incumbent LEC. The local loop network element includes all features, functions, and capabilities of such transmission facility. Those features, functions, and capabilities include, but are not limited to, dark fiber, attached electronics (except those electronics used for the provision of advanced services, such as Digital Subscriber Line Access Multiplexers), and line conditioning. The local loop includes, but is not limited to, DS1, DS3, fiber, and other high capacity loops ...
>
> (2) Subloop. The subloop network element is defined as any portion of the loop that is technically feasible to access at terminals in the incumbent LEC's outside plant, including inside wire. An accessible terminal is any point on the loop where technicians can access the wire or fiber within the cable without removing a splice case to reach the wire or fiber within. Such points may include, but are not limited to, the pole or pedestal, the network interface device, the minimum point of entry, the single point of interconnection, the main distribution frame, the remote terminal, and the feeder/distribution interface ...

B. TYPES OF LOOPS CONSIDERED IN THIS TESTIMONY

Q. What types of unbundled loops does Verizon VA offer?

A. Verizon VA offers all of the loop types described in FCC Rule 47 C.F.R. § 51.319(a). Specifically, Verizon VA offers:

(1) Two- and four-wire analog loops;

(2) Off-premise extension unbundled loops;

(3) ISDN/BRI (two-wire digital loops);

(4) Digital four-wire (56 and 64 Kbps) loops;

(5) Two- and four-wire customer-specified signaling loops;

(6) DS1/ISDN PRI loops;

(7) DS3 (high capacity) loops;

(8) xDSL-compatible loops;

(9) Subloops; and

(10) Dark fiber loops.

The cost studies develop costs for each of these, except for xDSL-compatible loop and off-premise extension loop costs, which are based on other loop costs established by the studies.

Q. What is a two-wire analog loop?

A. A two-wire analog loop is a transmission circuit consisting of two wires that are used to both send and receive voice conversation in the 300-3000 MHz frequency range. This is the basic loop type used for providing voice-grade POTS service.

Q. What is a four-wire analog loop?

A. A four-wire analog loop consists of two pairs, one to transmit and one to receive. It is used in certain private line and data service applications.

Q. What is an off-premise extension unbundled loop?

A. An off-premise extension unbundled loop is a service that allows subscribers to receive phone calls placed to the same telephone number at two different subscriber locations. The cost for an off-premise extension unbundled loop is the same as the cost for a basic two-wire analog loop.

Q. What is an ISDN/BRI loop?

A. An ISDN/BRI loop is a two-wire digital loop that is engineered for the transmission of certain high-speed data services.

Q. What is a digital four-wire loop?

A. A digital four-wire loop is a four-wire loop that is engineered for the transmission of digital data service applications.

Q. What are two- and four-wire customer-specified signaling loops?

A. These loops are two- and four-wire loops designed to be compatible with special signaling equipment which is used to interact with customer premises equipment, such as certain PBXs, that have specific signaling requirements.

Q. What is a DS1/ISDN PRI loop?

A. This is a four-wire loop engineered to support DS1 transmission. It can be used, among other things, to provide ISDN – Primary Rate Interface (PRI) service to an end-user customer.

Q. Please explain DS3 loops, xDSL-compatible loops, subloops, and dark fiber loops.

A. These elements are each explained and discussed in separate subsections below.

C. TECHNICAL ASSUMPTIONS, UTILIZATION FACTORS, AND COSTS FOR SPECIFIC LOOP TYPES

1. Two- and Four-Wire Analog Loops; ISDN/BRI Loops; Digital Four-Wire (56 and 64 Kbps) Loops; DS1/ISDN PRI

a) Description of loop architecture

Q. What function is performed by a loop?

A. The purpose of a loop is to carry a signal (for example, representing a voice communication) between a customer's premises and a central office, with distortion and diminution of the signal maintained at an acceptable level.

Q. What facilities are required to provide this functionality?

A. The primary components of a loop are:

(a) cable (*i.e.*, the physical medium that actually carries the signal);

(b) structure facilities that physically support the cable (*e.g.*, poles and conduit);

(c) equipment needed to convert and combine signals (*e.g.*, DLC equipment, multiplexers);

(d) terminals, including serving area interfaces and distribution terminals;

(e) drop wire that connects the distribution terminal to the network interface device (NID); and

(f) the NID (*i.e.*, the connection point between the drop wire and the subscriber's inside wiring).

Q. What types of cable are utilized in loops?

A. In general, loop cable can be either copper (which conducts signals as electrical impulses) or optical fiber (which conducts signals as light pulses). The copper cable consists of an outer plastic tube or sheath containing hundreds and even thousands of individual copper wires. The fiber cable consists of an outer plastic tube or sheath containing many hair-thin fiber strands. Large fiber cables can contain several hundred strands that are usually grouped in 12-strand units called "ribbons."

Q. What is the design that Verizon VA has utilized for its existing loop plant?

A. Each wire center usually is located at or near the geographic center of the area served to minimize the average length of the loop facility needed to reach each customer location. Working telephone circuits are served with a dedicated transmission facility, extending from the customer's premises to the main distribution frame in the local wire center. This dedicated facility may be composed of copper wires, digital carrier channels on fiber strands, or a combination of the two.

To make construction and administration manageable and to utilize facilities more efficiently, cable emerges from the wire center in large size sheaths and is tapered to smaller and smaller cables as it branches out to the

customers. Thus, a typical loop facility route may be thought of as a tree with the trunk rooted in the wire center and the branches spreading out to the customers. Cables are divided and spliced to smaller units at each of the branches.

In residential or small commercial zones, an SAI (sometimes called a feeder distribution interface, or FDI) usually is established at a point where the main facility route from the wire center, called the "feeder," branches to a smaller area called a distribution area, typically containing a few hundred customers. Smaller copper cables called "distribution" cables fan out through the area to provide connections to all customer locations. The SAI allows any available feeder facility (whether a copper pair or a digital carrier channel on a fiber strand) to be connected to any available distribution pair. It thus can be used to manage growth and demand peaks in a distribution area, allowing a smaller number of feeder pairs to serve distribution pairs in a particular distribution area. This promotes increased utilization of feeder facilities, as explained in more detail in the discussion of utilization factors below.

The location of the SAI is designed to economically maximize the fraction of loop length transported by feeder facilities. Feeder facilities are inherently more efficient than distribution facilities for two primary reasons: (1) feeder facilities can be constructed with higher capacity facilities (including fiber, in many cases) that have lower per-unit costs, and (2) the

most expensive components of feeder facilities (RT electronics for fiber feeder and copper cable for copper feeder) can be operated efficiently at higher utilization rates than distribution facilities, as explained in more detail below. Thus, extending the feeder facilities as far as possible economically minimizes the length of the distribution cables, which must be sized to accommodate demand peaks, as will be explained more fully below.

At a pole or building near a group of customers, a properly sized number of distribution pairs is terminated in an apparatus called the distribution terminal (also called the "drop" or "local access terminal"), typically a small box, where individual copper pairs can be connected to a customer via a "drop wire." The drop wire is a small cable, usually two or four wires, that connects the distribution terminal to the customer's premises.

Q. Please describe the evolution of the technology of the loop.

A. In recent years, the development of digital electronic systems and optical transmission has increasingly provided a new and more economic way to build loop facilities, utilizing what is known as "digital loop carrier" (DLC) technology, discussed briefly above. DLC technology converts voice and other analog signals into a digital signal that can be combined or "multiplexed" with other such signals and sent over a shared "carrier" facility. The first DLC systems used copper pairs for transmission of the digital signal back to the wire center, but today DLC systems using optical

fiber systems are the most efficient DLC technology. The cost of DLC technology initially made it economically efficient only for use on longer subscriber loops that required a greater number of costly add-ons (such as load coils and repeaters) when served with copper feeder facilities, or on routes with highly concentrated demand. As the cost to deploy fiber-fed electronic systems has decreased, its use has become more economical on shorter feeder routes and on routes with less concentrated demand.

Q. Please describe the architecture of a typical DLC loop.

A. The typical modern DLC loop facility is a hybrid. On most modern loops, the facility consists of a fiber optic feeder cable from the wire center to a point close to the SAI, where the feeder cable branches off to the distribution area. At this point, the fiber connects to an electronic device called a remote terminal, which then connects to the SAI or FDI using copper sub-feeder cable. Distribution cable connects the SAI or FDI to a distribution terminal, which is then connected to the customer premises by a copper drop cable. Depending on population density, the RT and SAI are located as close to the customers as possible, thus minimizing the length of the distribution cable and maximizing the substitution of fiber for copper. In very concentrated applications like high rise, multi-unit dwellings (or other customer locations — typically businesses — with more than 150 lines), it is economically efficient to install the optical RT in the basement or other common space in

the building and completely eliminate the need for copper feeder and distribution cable. In other areas, some copper sub-feeder and distribution cable is required to bring together enough customer lines to efficiently use the expensive RT facility.

Q. How do optical DLC facilities terminate at the wire center?

A. In the wire center, the optical DLC cable terminates on the wire center's fiber distribution frame (FDF) and is connected from there, by fiber cabling, to a piece of equipment called the central office terminal (COT). The COT has the same basic components as the RT; it contains the mate of the RT's SONET multiplexer, a TSI system, and a channel interface system. The COT channel interfaces are used to connect DS0 or DS1 loop channels to digital circuit switches, interoffice transport facilities or other loops. DLC systems support a variety of channel interface units that allow the DLC system to interconnect with the whole range of physical switch and transport interfaces employed in the industry. These interfaces include several types of DS1 connections, basic rate ISDN (BRI), and a number of analog wire connections. Channelized DS1 (groups of 24 multiplexed DS0's) connection options for DLC are called "integrated" or IDLC because they allow interconnection to a digital switch or transport facility without decoding the DS0 channels — that is, they allow the entire, integrated group of 24 DS0s to interconnect directly to the digital switch. The BRI and analog wire DLC

connection options are called "universal" or UDLC because they provide the reverse functionality of the RT channel units: they return the customer signal to its original analog line format, allowing interconnection of an individual analog channel via a copper wire interface. The universal interface can be connected to any type of voice frequency switch port or telecommunications equipment on the main distribution frame in the central office.

Attachment C to this testimony contains a diagram showing the different types of loop architecture.

Q. What is meant by an "integrated group of 24 DS0s?"

A. DS0 (Digital Signal 0 Level) is a unit of digital signal (64 Kbs) that provides an information-carrying channel within a digital facility. In general, a DS0 channel provides sufficient digital signal to carry one standard voice grade signal with a 3Khz bandwidth. Higher-capacity digital signals such as "DS1s" and "DS3s" can be constructed by grouping together (multiplexing) lower-capacity signals (a DS1 channel can carry 24 DS0 channels, a DS3 channel can carry 28 DS1 channels). This is called the "channelized" format of these signals. The same signal rates can be structured in an unchannelized format that provides access to the whole digital signal capacity for a single high speed data pipe. Thus, the "integrated group of 24 DS0s" refers to a group of 24 DS0 channels that are multiplexed and delivered on a single DS1 1.544 Mbs digital line interface.

1

2 **Q. Are there different types of IDLC?**

3 A. Yes. There are two types of IDLC digital switch connections: TR-008 and
4 GR-303. (These labels refer to the Bellcore technical requirements
5 documents that describe the interfaces.) The TR-008 interface, which is the
6 most commonly deployed, creates dedicated DS0 circuits from the digital
7 switch to each channel unit at an RT. Once established, these dedicated DS0
8 circuits can be administered and assigned like individual copper feeder pairs.
9 The one-to-one relationship between pairs and DS0 channels makes it
10 possible to manage TR-008 IDLC loops using the same OSS as is used for
11 the copper feeder.

12 A GR-303 interface group consists of a number of logically
13 associated DS1 channel groups interconnecting an RT and a local digital
14 circuit switch. The group may contain anywhere from one to 28 DS1s.
15 Unlike the TR-008 interface, the GR-303 interface group does not create a
16 dedicated DS0 channel for each RT channel unit. Rather, when a customer
17 initiates or receives a call, the digital switch initiates control signals to the RT
18 to use its TSI to make a connection between an idle DS0 channel connected
19 to a switch port and the RT channel unit requesting service. GR-303
20 therefore does not connect any idle lines to the switch. This functionality is
21 called "concentration." By allowing concentration among the digital ports on
22 the switch and the COT, the GR-303 interface can be operated with less than