ATTACHMENT 4

ACHIEVED FILL FACTORS[1]

	HM	JA Support	SBC Opposition
Copper Distribution Overall Zone 1 Zone 2 Zone 3[2]	51.6%[3] 53.6% 50.3% 40.5%	Overview: Fill should be forward-looking (which is likely to increase), as endorsed in OANAD and by the FCC. HM 5.3 adopts a very conservative approach to fill as it includes sufficient spare to meet future growth, which is a cost that should be assigned to future customers. (Joint Applicants Opening Comments, 10/18/02, pp. 29-31. Joint Applicants Rebuttal Comments, 3/12/03, pp. 63-64.)	In selecting input values (such as fill), the Joint Applicants' engineers were engaged not in the planning of a real-world, fully functioning network that provides all services and demand, but rather the development of a cost model to be used primarily in litigation. SBC Reply Comments 2/7/03, p. 32. SBC's proposed fills -- not Joint Applicants' -- are based on facts supported by an efficient, real-world, operating network. McNeill Reply, Decl., 2/7/03, pp. 19-22. SBC's fills are typical of utilization rates achieved by facilities–based carriers, and Joint Applicants provide no facts to support, and TELRIC does not call for, the conclusion that forward–looking fills are higher. Smallwood Rebuttal, pp. 43–45. SBC's actual distribution fill levels, not Joint Applicants', are the result of the efficient, cost-minimizing strategy that recognizes the need for: (1) the activities associated with additional line requests, (2) reinforced distribution cables (a very expensive and labor intensive activity), and (3) the added expense of accommodating fluctuating demand, all while meeting Commission-set service intervals. McNeill Reply Decl., 2/7/03, pp. 19-20.

[1] Neither party agrees that the other party's text is an accurate representation of what is actually in the record.

[2] Joint Applicants grouped a handful of wire centers that were not included in the three Commission-adopted zones as zone "999" in our filings. Those wire centers could be left as a distinct zone or merged into the existing zones as SBC suggests. Joint Applicants do not expect that they would have any material affect on overall results using either approach. They are included in the statewide results reported throughout this document.

[3] The achieved fill represents values from HM 5.3 as filed on 3/18/03 with Joint Applicants' Rebuttal Comments. As such, this figure is slightly different than the 52.0% fill figure stated in declarations that referenced an earlier presentation of HM 5.3.

	HM	JA Support	SBC Opposition
		As filed, HM 5.3 explicitly reports overall achieved fills for copper distribution and copper feeder.	The only achieved fill number that the HM model produces directly is the overall distribution fill and copper feeder. All other fill numbers (by zone and other network fills) are based on side calculations, and the process for such calculations is not described in any HM documentation.
		HM 5.3's inclusion of spare for growth overstates TELRIC by assigning costs caused by future customers to current customers. (Murray Declaration, 10/18/02, ¶¶ 36-38. Klick Declaration, 10/18/02, ¶¶ 29-34. Donovan Declaration, 3/12/03, ¶¶ 191-194. Murray Declaration, 3/12/03, ¶¶ 32-39.)	Because SBC has been operating under incentive regulation and increasing competition, current fill levels are reasonable. Tardiff Rebuttal Decl., 3/12/03 p. 9. Because spare capacity is not "used up" as Ms. Murray and Mr. Klick erroneously claim, current users are not being charged for costs attributable to future demand. Tardiff Rebuttal Decl., 3/12/03, pp. 9-10.
		Joint Applicants apply a .75 "sizing factor" to distribution cable. The achieved distribution fill is significantly less than the raw cable sizing factor. (Mercer Declaration, 10/18/02, Exhibit RAM-4, Model Description, p. 52 and Exhibit RAM-5, pp. 37-38.)	Joint Applicants' cable sizing factor, which builds only to meet existing demand, is contrary to the industry standard for sizing cable, thereby ignoring the inherent volatility and uncertainty in location of demand in even the most developed areas, and resulting in only 32 million distribution pairs as compared to the existing 52 million. McNeill Reply Decl., 2/7/03, pp. 10-11; Murphy Reply Decl., 2/7/03, pp. 52-53.
		Industry changes and competition will lead to higher fill. Moreover, forward-looking, efficient fill is different than embedded fill. (Donovan Declaration, 10/18/02, ¶¶ 101-104 and 112-118. Donovan Declaration 3/12/03, ¶¶ 187-190.) Joint Applicants' fill results are consistent with SBC's own guidelines. (Donovan Declaration, 10/18/02, ¶¶ 103-104 and 121.)	Since higher fills reduce the amount of spare pairs available, which increases maintenance related activities and causes longer service intervals, the proper conclusion is that competition will result in decreased fills and the contention that future fill will be higher than current fill has no factual support. McNeill Reply Decl., 2/7/03, p. 20; Cass Rebuttal Decl., 3/12/03, pp. 5-6. To support their arguments,

	HM	JA Support	SBC Opposition
		Joint Applicants' approach tends to result in an achieved fill of about 50%, which is low enough to provide sufficient facilities for almost twice the current demand, which is enough to last for the economic life of the plant. (Donovan Declaration, 10/18/02, ¶ 119.)	Joint Applicants use SBC engineering guidelines out of context and ignore that there have been no changes in technology or engineering guidelines that warrant increasing copper cable fill factors. McNeill Reply Decl., 2/7/03, pp. 22-26; Murphy Reply Decl., 2/7/03, p. 52. Well-designed distribution plant should never come any-where close to a utilization of even 50%, because changes in local demand concentrations can be accommodated only at considerable expense or hardship, and HM 5.3's combination of inappropriate cable sizing factors and fills leads to a 42% understatement of distribution pairs SBC has actually built. McNeill Reply Decl., 2/7/03, p. 12; Murphy Reply Decl., 2/7/03, p. 53. Joint Applicants use of unfounded, untested distribution fill factors threatens to compromise the efficiency and reliability of SBC's network (only 10% dispatches for primary residential service orders), and Joint Applicants fail to account for any increased operating costs as they drive up fills. Bash Rebuttal Decl., 3/12/03, p. 19.
Fiber Feeder Overall Zone 1	Utilized Fibers 79.6% / 39.8%[4] 82.2% / 41.1%	HM 5.3 uses 4 fibers per DLC RT site, which equates to a 50% cable sizing factor, since two redundant fibers are provided for each two service fibers. HM 5.3 then selects the next largest cable, which results in substantial additional "breakage"	Joint Applicants offer absolutely no support for the unreasonable fiber cable fill rate that they recommend." Smallwood Rebuttal Decl., 3/12/03, pp. 57-58. Joint Applicants' cable sizing factor is unrealistic because it leaves no

[4] HM 5.3 provides full strand redundancy to each DLC (*i.e.*, for every 2 fiber strands provisioned to meet existing service demand, HM 5.3 also places 2 lit strands that are reserved as back-ups to the strands actually in use). The first percentage provided indicates the percentage of (a) fiber strands in use plus redundant backup fiber strands to (b) all fiber strands placed. It is also possible to consider lit but unused backup strands as part of spare capacity. Thus, the second percentage is the percentage of (a) fiber strands in use (not including backups) to (b) all fiber strands placed (which is equivalent to the first percentage divided by two). Joint Applicants are unable to determine based on the record documentation how SBC's fiber feeder fill percentages treat backup strands because SBC provided no support in the record for its calculation of fiber feeder fill percentages.

	HM	JA Support	SBC Opposition
Zone 2 Zone 3 SBC Formula[5] Overall Zone 1 Zone 2 Zone 3	78.8% / 39.4% 72.9% / 36.5% 59.4% / 29.7% 61.6% / 30.8% 60.6% / 30.3% 48.2% / 24.1%	spare since HM 5.3 models fiber cables in fixed sizes of 6, 12, 24, 26, 48, 72, 96, 144, 216 and 288 strands. This is consistent with the approach that the FCC adopted in its Synthesis Model (Donovan Declaration, 10/18/02, ¶¶ 109-110. Mercer Declaration, 10/18/02, Exhibit RAM-4, Model Description, pp. 53 and 57 and Exhibit RAM-5, pp. 14 and 68.) Joint Applicants' approach is consistent with both FCC findings and with SBC's own prior advocacy. (Donovan Declaration, 3/12/03, ¶¶ 203-208.) Joint Applicants do not agree that "channel" fill on fiber is a meaningful concept. Fiber strands are glass and do not have "channels." Fiber can accommodate nearly unlimited capacity depending on the electronics deployed on each end of the fiber. (See footnote 5, above.)	administrative spare capacity that is necessary to perform maintenance and accommodate customer moves and relocations. Such assumptions would render the network nonfunctional. (Joint Applicants' 50% cable sizing factor accounts for redundant fiber and is a 100% cable sizing factor in HM 5.3). Murphy Reply Decl., 2/7/03, p. 53. In addition, HM's fiber cable fill rate only captures a portion of the true fiber utilization. JA's ignore the fact that unless the DLC equipment that is connected to the fiber is running at 100% (which neither party agrees is appropriate), there is a "channel" fill on the fiber (*i.e.*, if the fiber has a capacity of 100 channels, and only 50 are "working", the channel utilization is 50%). Thus as computed in LoopCAT (see SBC's support for fiber feeder fill), the appropriate fill is the **product** of the fiber cable fill and the DLC channel fill. In addition, because SBC's LoopCAT model already includes the investment for the additional redundant pair (see LoopCAT, tab Fiber_Cable_Unit_invt, column "E"), there is no need to divide by 2 as JA's have done.
Copper Feeder		Joint Applicants' achieved copper feeder fill is similar to the OANAD-adopted value of 76%. This	Joint Applicants' feeder fills are unfounded, unsupported and at odds with the actual fills

[5] SBC's calculation of LoopCAT fiber feeder fill not only considers which fibers are used (as noted above, it is not clear whether this includes backups) but also applies an adjustment to used fibers based on the DLC chassis fill. That additional adjustment occurs when SBC multiplies its fiber feeder fill by the "DLC Chassis fill" (*a.k.a.*, "DLC Equipment Hard-Wired Equipment" fill). Although Joint Applicants do not believe SBC's approach provides a meaningful or appropriate fill measurement for fiber feeder, we have reproduced that calculation here to provide the best possible "apples-to-apples" match with the numbers shown below for LoopCAT. As discussed in the preceding footnote, this number is first presented considering lit backup strands as utilized and then presented considering backup strands as spare (which is equivalent to the first number divided by two).

	HM	JA Support	SBC Opposition
Overall Zone 1 Zone 2 Zone 3	77.5% 77.8% 77.0% 75.9%	achieved fill results from applying a sizing factor input, which is similar to the factor applied to copper distribution cable but with some variation by customer density, to the available copper cable sizes and SBC's actual customer density. (Donovan Declaration, 10/18/02, ¶¶ 120 and 122. Mercer Declaration, 10/18/02, Exhibit RAM-4, Model Description, pp 53 and 57 and Exhibit RAM-5, pp. 67-8.)	experienced by efficient carriers operating actual networks. SBC experiences a high correlation between its network utilization levels and service provisioning costs, and in the last ten years has never had copper feeder utilization above 70%. In 1996, SBC approached 70%, and in fact experienced increased network maintenance costs. The Joint Applicants' inflated fill factor ignores operational realities, is based on speculation, and would increase network costs in the long run. McNeill Reply Decl., 2/7/03, pp. 19-21.
DLC Equipment 1) Hard-Wired Equipment Overall Zone 1 Zone 2 Zone 3	 74.6%[6] 74.9% 77.0% 66.1%	1) Hard-wired Equipment: HM 5.3 recognizes that, due to the significant capacity changes in going from one cabinet and/or CEV unit size to the next largest available unit, utilization of the common equipment in cabinets and CEVs is relatively low. (Donovan Declaration, 10/18/02, ¶¶ 24 and 129. Mercer Declaration, 10/18/02, Exhibit RAM-4, Model Description, p. 32) Mr. McNeill states this same issue as the driver in determining DLC hard-wired fill and notes that SBC's achieved fill is in fact over 70%. (McNeill Declaration, 2/7/03, ¶ 39.) HM 5.3 reflects the full range of DLC systems that SBC actually purchases and deploys in its network, in contrast to LoopCAT, which does not include many possible DLC configurations. (Donovan/Pitkin/Turner Declaration, 2/7/03, ¶¶ 353-361.) HM 5.3 achieves a DLC common (*i.e.*,	By ignoring all of these very real operating constraints, HM 5.3 is able to achieve DLC utilization levels that would never be achievable under actual operating conditions. McNeil Reply Decl., 2/7/03, ¶39. In addition, even assuming that the "sizing factor" is appropriate (which it is not), computed fills can still be grossly inflated by assuming a ridiculous number of system sizes. Smallwood Rebuttal Decl., 3/12/03, pp. 53-56. As an example, HM 5.3 assumes 15 DLC equipment sizes (Mercer declaration, Attach. RAM-5, p. 70) in contrast to the 4 modeled in LoopCAT. Clearly, the greater the number of equipment sizes equates to less "breakage," inflated fills, and higher administrative and inventory costs (none of which have been reflected in HM 5.3). Mr. Donovan's statement that 75% is consistent with SBC's claimed fills is completely

[6] The achieved fill represents values from HM 5.3 as filed on 3/18/03 with Joint Applicants' Rebuttal Comments. As such, this figure is different than the 72.9% fill figure stated in declarations that referenced an earlier presentation of HM 5.3.

	HM	JA Support	SBC Opposition
2) Plug-In Equipment Overall Zone 1 Zone 2 Zone 3	 89.9% 89.9% 89.9% 89.8%	"hard wired") equipment fill below 75%, which is entirely consistent with SBC's claims regarding the common equipment fill that it actually achieves. (Donovan Declaration, 3/12/03, ¶¶ 209-218.) 2) Plug-in Equipment: Plug-ins can achieve much higher fill rates than copper feeder because additional service requirements can be very efficiently addressed by simply installing additional channel units at the RT site. Thus relief can be accomplished in a matter of minutes instead of the several months required to reinforce copper feeder facilities. Plug-in DLC channel unit cards weigh less than a pound and can be installed any time a technician is on the feeder route, or on an annual routine maintenance visit basis. SBC Engineering practices support very high fill for DLC plug-ins. Although HM 5.3 could reasonably model a forward-looking network that operates at close to 100% less one year's growth rate, we have conservatively used a 90% utilization sizing factor for the plug-in line cards. (Donovan Declaration, 10/18/02, ¶ 24 and 147. Mercer Declaration, 10/18/02, Exhibit RAM-5, p. 91. Donovan Declaration, 2/12/03, ¶¶ 216-218.) Mr. McNeill establishes that SBC's actual practice is to place plug-ins for growth over the next six to twelve months. (McNeill Declaration, 2/7/03, ¶ 38, fn. 29.)	with SBC's claimed fills is completely misleading. Reviewing his Rebuttal Declaration reveals that the 75% figure refers to CEV concrete vault fill, not DLC equipment fills. Contrary to Joint Applicants' assertions, a high fill rate for circuit cards is not easily achieved. Much more is required than simply adding a circuit card when a customer turns up service, and pulling the card when a customer stops service. Additional factors like inventory management, technician travel time vs. up-front installation, and the difficulty of location reusability have not been thoroughly considered in Joint Applicants' plug-in fills. Smallwood Rebuttal Decl., 3/12/03, p. 54. "Joint Applicants' claim that their 90 percent DLC utilization rate is 'conservative'; but this value is significantly higher than the current DLC utilization in SBC Californias' network. In fact, the highest DLC utilization SBC California has achieved in the last ten years (*i.e.*, slightly over 70%) is still significantly below Joint Applicants' 'conservative' value. "McNeill Reply Decl., 2/7/03, ¶39."

	HM	JA Support	SBC Opposition
SAIs/FDIs Overall Zone 1 Zone 2 Zone 3	 67.8% 69.4% 66.0% 60.8%	HM 5.3 sizes SAIs based on 3.5 pairs per living unit (2 distribution terminations + 1.5 feeder terminations), plus 2 pairs per business line plus special services requirements (Donovan Declaration, 3/12/03, ¶ 95, footnote 61). As with many other types of telecommunications equipment, SAIs are generally manufactured in a limited range of standard sizes. (Mercer Declaration, 10/18/02, Exhibit RAM-5, p. 45. Donovan Declaration, 3/12/03, ¶¶ 97-100.) HM 5.3 achieved SAI fill is conservatively low at an average of 67.8%	Again, by modeling too many SAI sizes, Joint Applicants have reduced breakage and thus inflated utilizations. (As shown in Mercer Declaration Attach. RAM-5, HM 5.3 models 12 SAI sizes vs. LoopCAT's 8.) HM 5.3 clearly models SAIs that are not found in a real world network. As Mr. McNeil states in his Reply Declaration (p. 16), "[i]t is not surprising that not a single ILEC utilizes such large SAIs." In addition, almost 75% of the SAIs modeled in HM 5.3 are undersized, thus further inflating the fills. Tardiff Reply Decl., 2/7/03, p. 46. Joint Applicants calculations highlight the fundamental problem that HM 5.3 builds too small of a network through its cable sizing factors, and DLC and SAI sizing practices. Joint Applicants essentially compare twice the number of lines (one connection each for feeder and distribution) with the total capacity of the SAIs HM 5.3 installs. To see this, observe that the "WC data" worksheet of the relevant Excel file (column U) shows a total of about 53 million connections at SAIs. Because there are about 17 million working lines represented in HM 5.3, twice the number of lines divided by 53 million is about 2/3. Clearly, this "fill" does not account for the need to connect the pairs that are the basis for the distribution and feeder fills shown above. In fact, the distribution fill implies that you need 2 connections for every line and the feeder fill of about 0.75 implies 1.33 connections per line. Thus, the required SAI capacity would be 3.33 x 17 million, which would exceed the 53 million connections provided by HM 5.3.

ATTACHMENT 4

	HM	JA Support	SBC Opposition
Premises Termination 1) Business Overall Zone 1 Zone 2 Zone 3 2) Residence Overall Zone 1 Zone 2 Zone 3	 57.5% 57.2% 58.0% 57.9% 54.2% 53.7% 54.9% 54.9%	HM 5.3 assumes a 2-pair termination for each (non-Multiple Dwelling Unit "MDU") residence and a 6-pair termination for each (non-MDU) business location. (Mercer Declaration, 10/18/02, Exhibit RAM-5, p. 16.) This sizing method results in the conservatively low achieved fill ratios indicated here.	HM 5.3 also fails to adhere to standard network design principles, which require that two or more pairs be built to serve each subscriber location. Murphy Reply Decl., 2/7/03, p. 52. Clearly, HM 5.3 has undersized the residential premises termination. In addition, these fills do not appear to include multi-dwelling units.

ATTACHMENT 4

ACHIEVED FILL FACTORS

	LoopCAT	SBC Support	JA Opposition
Copper Distribution Overall Zone 1 Zone 2 Zone 3	 41.68% 41.80% 42.46% 43.90%	There is a trade off between investing in spare capacity and incurring operating expenses and future higher facility augmenting costs and SBC has had the economic incentive since 1989 to reach the most efficient level of spare capacity so that long run, overall costs are minimized. Because TELRIC requirements require that fills reflect SBC's actual usage and SBC's long term experience is the best indicator of the future, SBC's proposed fills are based on what SBC can really achieve operating a forward-looking efficient network. Bash Opening Decl., 10/18/02 pp. 18-37, Attachments CMB 4-12; Rebuttal Decl., 3/12/03 6-9, 17-27, 34-42; Smallwood Opening Decl., 10/18/02 pp. 4-16; Smallwood Rebuttal Decl., 3/12/03 32, 43-45, 47, 48, 53-56, 57-59, 65-68; Aron Opening Decl., 10/18/02, pp. 32-37; Aron Rebuttal Decl., 3/12/03 46-47, 55-56; Cohen Opening Decl., 10/18/03, pp. 11-12; SBC Rebuttal Brief 44-46; Tardiff Rebuttal Decl., 3/12/03, pp. 15-16, 34-37; Makarawicz Rebuttal Decl., 3/12/03, pp. 25-29; Cass Rebuttal Decl., 3/12/03 pp. 5-6 ; PreProcess Fill Tab in LoopCAT contains the achieved fills for suburban, urban, and rural wire centers and the attached worksheet calculates the statewide averages and zone averages.	LoopCAT does not directly produce any of the achieved fill numbers presented in this document and the calculations for producing those numbers do not appear anywhere in the record. Overall: SBC's fill is based on its embedded network data, which is the cumulative result of decades of now sunk investments based on different demand characteristics, technical limitations, regulatory incentives, etc. (Joint Applicants' Reply Comments, 2/7/03, p. 44.) There is no basis for expecting that embedded data is a reasonable proxy for forward-looking, efficient fill. The FCC has found that fill levels as low as those in LoopCAT are inappropriate in a TELRIC analysis. (Murray Declaration, 2/7/03, ¶¶ 34-37 and 103-104.) SBC's embedded fills are not consistent with its own engineering guidelines for forward-looking plant. (Donovan/Pitkin /Turner Declaration, 2/7/03, ¶¶ 261-268.) SBC's claim that even modest increases from its embedded fill would result in increased maintenance expenses is contradicted by SBC's own actual forward-looking engineering practices (Donovan/Pitkin /Turner Declaration, 2/7/03, ¶¶ 409-413), by its own LoopCAT results (*id.*, ¶¶ 428-430), and by the data it attempts to rely on to make that claim

	LoopCAT	SBC Support	JA Opposition
			(*id*., ¶¶ 418-420). SBC's practice shows it is striving to increase fill (*id*., ¶¶ 261-268 and 409-411), but that its embedded plant is dominated by routes SBC built with inefficiently large levels of excess capacity. (*Id*., ¶¶ 423-427.) SBC further understates fill by assuming a substantially lower level of 2nd line deployment in LoopCAT than occurs in its actual network. (*Id*.. ¶¶ 162-164.)
Fiber Feeder Overall Zone 1 Zone 2 Zone 3	 16.22% 14.81% 17.36% 20.11%	 See above summary of position and citations Calculation (as defined in LoopCAT, TAB Fiber_Cable_Unit_invt, column J) = DLC Chassis fill* Active fiber strand percentage DLC Chassis fill from PreProcess Fill Tab in LoopCAT Active Fiber strand percentage from User_Input Tab in LoopCAT (line 23)	 SBC's calculation of fiber feeder fill in LoopCAT incorrectly determines the percent of active fiber strands serving a DLC system. This error significantly overstates fiber costs. (Donovan/Pitkin/Turner Declaration, 2/7/03, ¶¶ 370-371.)
Copper Feeder Overall Zone 1 Zone 2 Zone 3	 66.20% 64.95% 68.67% 71.42%	 See above summary of position and citations PreProcess Fill Tab in LoopCat	 SBC's reliance on embedded fill factors for copper feeder ensures that its fill estimate does not reflect an efficient level because SBC counts the very low fill on old copper facilities where SBC has subsequently overlaid its old network with fiber plant. For example, SBC's extensive Project Pronto program calls for SBC to place duplicate facilities, all of which are included in LoopCAT.

	LoopCAT	SBC Support	JA Opposition
			(Donovan/Pitkin/Turner Declaration, 2/7/03, ¶¶ 141-156.) The LoopCAT copper feeder calculations are not consistent with SBC's own guidelines (*id*., ¶¶ 154 and 269-273.)
DLC Equipment			
1) Hard-Wired Equipment Overall Zone 1 Zone 2 Zone 3	 47.40% 43.40% 50.72% 58.76%	See above summary of position and citations PreProcess Fill Tab in LoopCAT	See above summary of positions and citations for Feeder. <u>Hard-wired equipment</u>: SBC's DLC Hard-Wired Equipment (*a.k.a.*, "Common Equipment") fill in LoopCAT is much lower than fills currently set for SBC by other state regulators. (Donovan/Pitkin/Turner Declaration, 2/7/03, ¶ 348.) As noted above, SBC is placing new "overlay" fiber and DLC facilities on top of its older copper plant but is only gradually moving customers from all copper loops to those new facilities. Thus, use of these historic DLC fill levels in a forward-looking cost study is particularly inappropriate.
2) Plug-In Equipment Overall Zone 1 Zone 2 Zone 3	 53.10% 48.87% 56.66% 65.93%	See above summary of position and citation PreProcess Fill Tab in LoopCAT	<u>Plug-in equipment</u>: SBC's LoopCat assumptions are inconsistent with its own engineering guidelines. Because plug-ins have a relatively small capacity and are placed on an as needed basis it is reasonable to achieve much higher fill. (Donovan/Pitkin/Turner Declaration, 2/7/03, ¶¶ 350-352.)

	LoopCAT	SBC Support	JA Opposition
SAIs/FDIs			
Overall	47.20%	See above summary of position and citations	SBC's approach of applying its distribution fill factors to the number of FDI terminations effectively double-counts the spare terminations required at the FDI. This occurs because SBC already applies an effective fill adjustment by assuming three terminations per loop when it initially sizes the FDI in LoopCAT. (Donovan/Pitkin/Turner Declaration, 2/7/03, ¶ 289-298.)
Zone 1	46.46%	Computed using 2/3 distribution fill, 1/3 feeder fill	
Zone 2	47.92%		
Zone 3	50.94%		
Premises Termination			
1) Business		See above summary of position and citations	SBC's business premises termination fill relies on lines per business rather than considering the actual number of business locations, which is incorrect because many businesses can be located in the same building. (Donovan/Pitkin/Turner Declaration, 2/7/03, ¶¶ 230-232.)
Overall	45.60%	Yearly_Input Tab in LoopCAT	
Zone 1	46.94%		
Zone 2	43.73%		
Zone 3	41.16%		
2) Residence		See Above summary of position and citations	SBC's residential premises termination fill is incorrect because it understates the level of 2nd line penetration, improperly models high density terminations in multiple dwelling units, and ignores the existence of smaller 2-pair NID sizes, which SBC actually deploys. (Donovan/Pitkin/Turner Declaration, 2/7/03, ¶¶ 198-201and 222-233.)
Overall	17.58%	PreProcess Fill Tab in LoopCAT	
Zone 1	17.81%		
Zone 2	17.72%		
Zone 3	17.80%		

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