i. Would this result in any additional NRC's being accessed to the CLEC for the corrected service order? Please provide an example explaining this condition and all NRC's that would result from thereof.

d. If Verizon processed a CLEC UNE service order request and the CLEC provided the correct address on the UNE service order, (e.g., a "Two Wire Loop NEW initial"), and possibly the Field Installation needed a new assignment as suggested by Field Installation tasks 6 & 7, because the information contained in the OSS which produced the assignments was incorrect, would this result in a non-recurring cost?

i. Please identify the specific cost causer under this condition.

136. Please explain why Field Installation task #10 "Place block and/or drop wire from serving terminal to Network Interface Device (NID)" is not used in any non-recurring cost calculations? (This task has a 0% Connect Typical Occurrence factor for all elements indicated in the NRCM)

a. Does Verizon not expect to use this task when provisioning any CLEC UNE request?

b. Is this task considered a "recurring" or "non-recurring" cost activity?

c. If this task is a recurring cost, please explain how travel time associated with moving a technician to the terminal location (to place the Drop Wire as suggested in Field Installation task #10) is recovered in the recurring rates. Please quantify this travel amount as it pertains to the recurring rates.

d. If this task is a non-recurring cost activity, please explain and provide all reasons why it was not included in any non-recurring cost calculations.

i. Please also identify any and all other tasks that would be non-recurring cost activities that are not included in the calculations provided by the NRCM. Please provide all documentation, the person's responsible, etc, for making the decisions not to include these cost.

137. Please explain why Field Installation task #11 "Place Network Interface Device (NID) at premise where one does not already exist" is not used in any non-recurring cost calculations? (This task has a 0% Connect Typical Occurrence factor for all elements indicated in the NRCM)

a. Does Verizon not expect to use this task when provisioning any CLEC UNE request?

b. Is this task considered a "recurring" or "non-recurring" cost activity?

c. If this task is a recurring cost, please explain how travel time associated with moving a technician to the customer's location (to place the NID as suggested in Field Installation task #11) is recovered in the recurring rates. Please quantify this travel amount as it pertains to the recurring rates.

d. How does the Verizon non-recurring rate design (the proposed non-recurring costs in this proceeding) protect the CLEC from double recovery of any costs that might be assumed in the recurring rates for elements, if a CLEC UNE service order request was issued and the only field installation tasks that were necessary were those associated with the Drop Wire and NID placement? Please explain all Field Installation NRC's tasks that would or would not be assessed to the CLEC under these conditions.

138. Please explain why Field Installation task #12 "Place and option any electronics associated with Enhanced Digital Unbundled Services." is not used in any non-recurring cost calculations? (This task has a 0% Connect Typical Occurrence factor for all elements indicated in the NRCM)

a. Does Verizon not expect to use this task when provisioning any CLEC UNE request?

b. Is this task considered a "recurring" or "non-recurring" cost activity?

c. If this task is a recurring cost, please explain how travel time associated with moving a technician to the electronics' location (to place and option any electronics associated with Enhanced Digital Unbundled Services as suggested in Field Installation task #12) is recovered in the recurring rates. Please quantify this travel amount as it pertains to the recurring rates.

d. How does the Verizon non-recurring rate design (the proposed non-recurring costs in this proceeding) protect the CLEC from double recovery of any costs that might be assumed in the recurring rates for elements, if a CLEC UNE service order request was issued and the only field installation tasks that were necessary were those associated with placing the electronics, the Drop Wire and or the NID placement as suggested by Field Installation tasks 10, 11, and 12? Please explain all Field Installation NRC's tasks that would or would not be assessed to the CLEC under these conditions.

139. Verizon states on page 6 of the NRC Panel Rebuttal Testimony, "Verizon VA's model differs in two respects. First, it recognizes that no system is 100%

perfect, so that in the real world some fallout will occur at the ordering stage even for types of orders that are designed to flow through electronically. Second, Verizon VA's NRCM recognizes that not all UNE orders can or should be designed to be handled automatically, because it would be neither cost-efficient nor practical to create the necessary OSS and mechanized processes for every kind of order a CLEC could submit." Please identify and quantify all non-recurring costs pertaining to the following:

a. What percentage of data residing in Verizon's Service Ordering OSS's is assumed to be accurate and would not cause service order fallout?

b. Please identify all of the "types of orders that are designed to flow through electronically" that Verizon assumed in the service ordering non-recurring cost calculations. Understanding this list would exclude the conditions when the CLEC may have caused fallout due to errors in content or format. AT&T/WorldCom seek to understand the types of orders that are and are not designed to flow through electronically.

140. Verizon states on page 7 of the NRC Panel Rebuttal Testimony, "in general, the percentage of orders that are handled manually will be reduced in the future" for each element please indicate the percentage of orders that will be reduced manually as a result of OSS/Software enhancements. If Verizon cannot quantify this percentage please state so.

141. Verizon states on page 8 of the NRC Panel Rebuttal Testimony, "AT&T/WorldCom ignore the possibility of (and costs for) fallout at the ordering stage. (See Walsh Direct Testimony at 33.) But Verizon VA encounters situations in which orders that were designed to flow through electronically fall out in the ordering stage, often due to CLEC actions. The Typical Occurrence Factor(s) for the Telecom Industry Services Operating Center (TISOC) have been modified to account for costs of handling requests that fall out. While such occurrences meet even AT&T/WorldCom's definition of fallout, their model fails to take account of any resulting costs in the ordering stage."

a. Please quantify the percentage of fallout which would result in NRC cost preformed by the TISOC, that are direct results of situations "often due to CLEC actions"

142. On page 9 of the NRC Panel Rebuttal Testimony, Verizon states "If a UNE, or the necessary process for ordering that UNE, is complex and requires numerous levels of checks and coordination, designing a flowthrough process would be time-consuming and costly, if it could be done at all."

a. The NRCM identifies 3 order types (conditions involving NEW Accounts, Changes to existing Accounts, and modifications to pending service order

requests) in which the TISOC performs manual work. What percentage of manual intervention preformed by the TISOC was assumed for order types that were not complex?

b. How does the NRC rate design account for conditions when CLEC service orders are not complex as suggested by this caption?

143. On page 10 of the NRC Panel Rebuttal Testimony, Verizon states "One type of order that requires manual intervention by design is a service order for more than five new POTS loops at a single location. To process such an order, Verizon VA's TISOC representatives must request that Verizon VA's outside plant engineers perform a facility check to verify that there are enough facilities at that particular location to fulfill the request. Obviously, in designing its network, Verizon VA has had to use its best engineering judgment to estimate how many total lines end users will use. Such an estimate may not have accounted for an order containing an unusually large number of lines at a single premises."

a. Please quantify the percentage of orders that Verizon assumed "requires manual intervention by design" because "requests would include more than five new POTS loops at a single location" and thus involve the activities of the TISOC.

i. If Verizon can not quantify this amount, estimate the amount of service requests that would be for multiple elements ordered under a single service order in which the TISOC manual involvement would be necessary and reflected in the NRC service ordering rates.

144. On page 11 of the NRC Panel Rebuttal Testimony, Verizon states "As discussed in the Verizon Panel Testimony on Unbundled Network Element and Interconnection Costs, filed on July 31 ("Direct Panel Testimony"), another example of an order that requires manual processing is an order for a Digital Designed Loop for xDSL. This type of order requires multiple tasks and coordination that cannot be handled electronically."

a. The NRC associated with "ADSL/HDSL Loop New Initial" shows a service ordering "Connect Forward Looking Adjustment" of 59%. Is this reduction due to any OSS enhancements expected in the forward-looking period? If so please quantify that percentage. Please identify all changes to the current service ordering OSS that were considered in the "Connect Forward Looking Adjustment"

i. If the reduction was the result of some productivity improvements, please identify all other elements within the NRCM that would

reflect productivity improvements, and identify those amounts related to only productivity improvements.

145. On page 12 of the NRC Panel Rebuttal Testimony, Verizon states "In keeping with its desire to enhance flowthrough of as many orders as possible, Verizon has mechanized the handling of some CLEC changes. For instance, requests to cancel an order generally will flow through electronically, and CLEC changes to due dates will flow through under certain conditions. Verizon has already included this flowthrough in its cost study assumptions."

    a. What if any additional NRC's will result for a CLEC request that is canceled. Please explain what NRC costs would be accessed to a CLEC when a CLEC issues a new service order request (as an example of a Two Wire Loop New Initial") and prior to the due date the CLEC decides to issue a cancellation of that request.

    b. What, if any, additional NRC's will result for a CLEC request that is modified to reflect a new due date. Please explain what NRC costs would be accessed to a CLEC when a CLEC issues a new service order request (as an example of a Two Wire Loop New Initial") and prior to the due date the CLEC decides to issue a modification of that request to delay the due-date by 15 days. Please provide all relevant costs (assume a location that has never had service, such as a new house)

146. On page 12-13 of the NRC Panel Rebuttal Testimony, Verizon states, "One example would be the assignment of facilities needed for the installation of a new DS1 loop. DS1 facilities in the local loop are not inventoried in Verizon's Loop Facility Assignment and Control System (LFACS) because that system is not equipped to handle the demands of multi-channel facilities like a DS1. As a result, orders for DS1 loops are directed to the Mechanized Loop Assignment Center (MLAC) and are then forwarded to the Outside Plant Engineer for manual handling. That engineer reviews the order, relates the request to engineering records, and, if DS1-capable facilities are in the area, assesses the availability of spare DS1 facilities. If such spares exist, the Engineer assigns the appropriate facility to the order and directs the assigned order to the Circuit Provisioning Center (CPC) for design. This manual handling is done by design because the volume of UNE DS1s is low, and the complexity of designing a system to flow through every possible type of UNE DS1 would result in costs that far exceed any savings from the elimination of manual handling."

    a. Please identify where NRCM reflects the engineer's time and associated NRC to "assign the appropriate facility to the order and direct the assigned order to the Circuit Provisioning Center (CPC) for design"

        i. If the Outside Plant Engineer's task (as described above) is not properly reflected in the NRCM, please explain why it is not.

ii. Please identify all conditions in which the Outside Plant Engineer may be needed to assist in providing facilities for UNE requests, and indicate how the costs for the engineer's time are recovered.

147. On page 15 of the NRC Panel Rebuttal Testimony, it states, "A good example is the provisioning of a Four-Wire Loop UNE – Initial. Based on empirical data, Verizon VA's forward-looking model assumes that this UNE will require manual assignment due to "fallout" 4% of the time. In general, this 4% occurrence rate for this part of the provisioning process is the functional equivalent of AT&T/WorldCom's 2% fallout assumption. However, AT&T/WorldCom simply stop there and fail to recognize that there are further steps in the provisioning process where manual tasks may be required. For example, based on empirical data, the RCCC needs to manually resolve roadblocks on an order for a Four-Wire Loop UNE about 25% of the time; Verizon's model adjusts this downward on a forward-looking basis to 5%."

a. Please provide all empirical data that reflects the RCCC needing to manually resolve roadblocks on an order for a Four-Wire Loop UNE.

i. Please identify what roadblocks are.

ii. Please identify each cost causer for each roadblock condition provided in subpart (i) to this question.

148. Verizon states on page 25 of the NRC Panel Rebuttal Testimony, "Even though the AT&T/WorldCom NRCM documentation itself states that design time is required for certain services, the model provides for either no work time for services that require design or an insufficient amount of time. For example, the AT&T/WorldCom NRCM documentation states that the unbundled four-wire loop "by its very nature, constitutes a designed service/circuit." (NTAB at 37.) Yet the work steps for this element do not allow any activity time (or cost) for design work and mention the CPC only as it relates to the AT&T/WorldCom NRCM's unsupported 2% fallout. See, e.g., NTAB, Att. A at 12 (detailing the work steps for Element 11, four-wire install). AT&T/WorldCom thus admit that this service is designed, but ignore the work activities required for design except in 2% of the cases."

a. Please identify all of the design time that is identified and accounted for tin the NRCM provided by Verizon's "Four Wire New Initial" element. If no design time is accounted for please explain why not.

b. Please explain why the CPC work-group is not reflected in the NRC costs for the "Four Wire New Initial"

c. Please explain how the RCCC technician can identify design problems as indicated by RCCC task #6 "Contact CPC to resolve design problems." Please explain why there is no corresponding CPC NRC cost associated with the RCCC task #6.

   i. Are the corrections provided by the CPC as a result of the RCCC task #6 a non-recurring cost? If so, please identify all reason for not including this cost in the "unbundled four-wire loop" element.

   ii. Please provide justification as to the 20% occurrence factor that the RCCC technician will need the assistance of the CPC to resolve design problems."

   iii. Please identify all design problems that Verizon is referring to by RCCC task 6.

149. Verizon states on page 26 of the NRC Panel Rebuttal Testimony, "The fact is that design of a DS1 or DS3 interoffice facility is not a matter of fallout — the need for such work is inherent in the element. No system of which we are aware can "electronically design" such an element 98% of the time as AT&T/WorldCom apparently and erroneously assume. Verizon VA's model appropriately reflects that designing a DS1 interoffice facility will take, on average, approximately 25 minutes in a forward-looking environment. The design work includes working with inventories and provisioning characteristics of multi-vendor equipment for which industry standard OSS do not exist"

   a. Is Verizon aware of any system that can "electronically design" DS1 & DS3 interoffice facilities. If so what percentage of the time would this occur?

   b. Please explain why there is no "CPC-Specials" tasks identified in VZ-VA's NRCM when Verizon provisions a "IOF Voice Grade" as apposed to DS1 or DS3 interoffice facility.

      i. Please provide a complete identification of the network components that would be used to provide "IOF Voice Grade" as apposed to DS1 or DS3 interoffice facility.

150. The "Two Wire Analog-Digital UNE-P New Initial" CO Wiring NRC rates reflect the cost for a CLEC's service order that is provisioned with UDLC or copper facilities from the costs identified NRCM Worksheet Tab #1 "Two Wire New Initial" and specifically identifies CO Frame task #11 as "Place new cross connection(s) (including intermediate tie pairs) and test to insure dial tone leaves the central office OK or circuit has continuity. Connect CLEC dial tone/OE Appearance (port) to vertical cable and pair location on MDF."

a. Since there is an assumption that the "Two Wire Analog-Digital UNE-P New Initial" would require for UDLC and Copper facilities to connect VZ OE to cable and pair location on MDF, why wasn't CO FRAME task 12 assumed?

   i. Please identify all persons, documents and correspondence, which assumed CO frame Task #11 should be used to reflect the correct process by which Two Wire Analog-Digital UNE-P New Initial would be provisioned.

   ii. Please identify the frequency of occurrence in which jumpers would need to be placed if CO Frame task 12 was assumed as opposed to task 11.

   iii. Please identify all UNE-P elements that do not reflect connecting VZ OE to cable and pair location on MDF.

      (A) For each UNE-P element above please state the frequency of occurrence in which jumpers would need to be placed.

151. Verizon states at 38 of the NRC Panel Rebuttal Testimony, "Verizon VA generally will dispatch a field technician to install a UNE loop in four instances: (1) for new loops where there is no drop wire from the serving terminal to the premises, no NID, and no pre-established cross-connection of the feeder cable to the distribution cable at the FDI; (2) when an existing loop is requested and there is no "cut through" — that is, feeder pair and distribution pair are no longer connected at the FDI; (3) when a CLEC requests a migration of a customer currently served on Integrated Digital Loop Carrier (IDLC), to move the end-user's service to copper or UDLC to allow the hotcut; and (4) at the request of a CLEC, usually to allow tagging of the new loop at the NID for easier identification by the CLEC."

   a. Please identify the percentage of facilities from the total 2 and 4 wire loop facilities assumed in the recurring rates where new loops would not reflect drop wire from the serving terminal to the premises.

   b. Please identify the percentage of facilities from the total 2 and 4 wire loop facilities assumed in the recurring rates where new loops would not reflect the placement of a NID's at the customer premises.

   c. Please identify the percentage of facilities from the total 2 and 4 wire loop facilities assumed in the recurring rate development where new loops would not reflect a "cut through" — that is, feeder pair and distribution pair are no longer connected at the FDI.

i. Please identify how many of the 2 or 4 wire loop facilities reflect the condition where the cross-wire at the FDI is assumed to be connected and working, or connected and idle (i.e. cut through).

d. Please identify from the NRCM which elements would reflect the NRC cost associated with "at the request of a CLEC, usually to allow tagging of the new loop at the NID for easier identification by the CLEC."

i. Would Verizon ever dispatch to allow tagging of any existing loop at the NID for easier identification by the CLEC? If so what would be the NRC?

152. Produce all analyses and documents that were relied upon, reviewed, or considered by Dr. Tardiff or Verizon that support and/or contradict the following statement at Page 5, Lines 3-6 of the Rebuttal Testimony of Dr. Tardiff: "The Modified Synthesis Model relies on an estimated line count for 2002, which assumes an increase of 2.6 million lines at existing customer locations -- 63 percent more than Verizon VA's 1998 line count."

153. Produce all analyses and documents that were relied upon, reviewed or considered by Dr. Tardiff or Verizon that support and/or contradict the following statement on Page 5, Lines 21-23 of the Rebuttal Testimony of Dr. Tardiff: "This is less than one-third of the estimate produced by the Synthesis Model, and is 56% less than the cost estimate filed by AT&T WorldCom in Virginia just four years ago."

154. Produce all analyses and documents that were relied upon, reviewed or considered by Dr. Tardiff or Verizon that support and/or contradict the following statements on page 6 of the Rebuttal Testimony of Dr. Tardiff:

a. "The Modified Synthesis Model estimates that a brand new network can be deployed throughout Virginia with a minimal investment of approximately $455 per line."

b. "...an estimate that is a fraction of the $3,000 per-line investment made by competitive local exchange carriers ("CLEC's") between 1997 and 2000."

c. "The Modified Synthesis Model's investment levels are less than one-half of Verizon's VA's total investment. "

d. "The model estimates that the total investment required to re-build Verizon's entire Virginia network (and grow it by 30%) is only $3 billion.

e. "This is only $700 million more than Verizon VA spent on upgrades and expansions in four years (year-end 1996 to year-end 2000)"

f. "For example, the Model's estimates only account for 12% of Verizon VA's land and support assets expenses, 32 percent of Verizon VA's cable and wire expense, 54 percent of Verizon's VA's digital switching expenses, and 76 percent of Verizon VA's circuit equipment expenses."

155. State all facts serving as the basis for the following statement on Page 7 of Dr. Tardiff's Rebuttal Testimony: "First, as Mr. Pitkin admits, the Synthesis Model was not designed to measure company specific UNE costs" and provide any and all documents that support and/or contradict that statement.

156. Page 10 of the Rebuttal Testimony of Dr. Tardiff states that, "[i]n the process, the Model has assigned copper facilities to areas served by fiber feeder and vice versa. Therefore, assuming hypothetically, that the Model's initial determination of loop facilities was correct, it then assigns some of the resulting costs to loops that did not cause them."

    a. Specifically identify each and every copper facility assigned to areas served by fiber feeders and every fiber facility assigned to an area served by copper facilities.

    b. Quantify the affect of this phenomenon on the overall loop cost.

    c. Produce any and all analyses and documents that were relied upon, reviewed or considered by Dr. Tardiff or Verizon that support and/or contradict the statement that "the Model has assigned copper facilities to areas served by fiber feeder and vice versa [and] [t]herefore, assuming hypothetically, that the Model's initial determination of loop facilities was correct, it then assigns some of the resulting costs to loops that did not cause them."

157. Referring to Pages 6-7 of Dr. Tardiff's Rebuttal Testimony which states that, "AT&T/WorldCom has modified the Synthesis Model by picking and choosing those changes that work to its advantage, thereby ensuring that the Synthesis Model produces unrealistically low UNE cost estimates that benefit AT&T/WorldCom, but will inhibit the development of economically efficient competition in Virginia."

    a. Identify each and every input change that AT&T/WorldCom has modified that "work[ed] to its advantage" as alleged.

    b. Identify each and every input that AT&T/WorldCom did not change because it was disadvantageous to do so.

158. Produce all analyses and documents that were relied upon, reviewed or considered by Dr. Tardiff or Verizon that support and/or contradict the following statement on Page 27 of Dr. Tardiff's Rebuttal Testimony: "Specifically, when comparing the direct loop costs produced by the Synthesis

Model to Mr. Pitkin's version, the results are as follows: $9.82 for the Synthesis Model versus $4.21 for the Modified Synthesis Model."

159. Produce all analyses and documents that were relied upon, reviewed or considered by Dr. Tardiff or Verizon that support and/or contradict all numbers in Table 1 on page 28 of Tardiff's testimony, including all associated files such as inputs, results, workfiles and intermediate files used to develop the direct loop cost in each sensitivity listed in Table 1.

160. Produce all other sensitivities runs on the Synthesis Model and the associated inputs, results, workfiles and intermediate files used to develop each sensitivity.

161. Produce all analyses and documents that were relied upon, reviewed or considered by Dr. Tardiff or Verizon that support and/or contradict the following statements on Page 30 of the Rebuttal of Dr. Tardiff's testimony.

    a. "Thus, the almost 30 percent "reduction" from the Synthesis Model's direct cost of $9.82 to $7.01 merely reflects the false economies produced by Mr. Pitkin's temporal mismatch between future line growth and existing customer locations."

    b. "Third, the Modified Synthesis Model assumes that the company-wide relationship between special access and business lines applies to each distribution area, i.e., Mr. Pitkin's projections assume that special access lines are about 1.66 times the number of business lines and this multiple is used in every distribution area."

162. Page 31 of the Rebuttal Testimony of Dr. Tardiff states that "[i]f Mr. Pitkin's assumption were implemented in the real-world, a low fill factor would be necessary to ensure that there is sufficient spare capacity during the relief planning period for increases in demand, administrative purposes, and allowances for defective cables."

    a. Produce all analyses and documents that were relied upon, reviewed or considered by Dr. Tardiff or Verizon that support and/or contradict the foregoing statement.

    b. Provide the effective fill factors supporting Mr. Tardiff's criticisms of the Modified Synthesis Model.

163. Produce all analyses and documents that were relied upon, reviewed or considered by Dr. Tardiff or Verizon that support and/or contradict the following statement on Page 32 of Dr. Tardiff's Rebuttal Testimony that "...the sum of feeder and distribution route distances is 20 percent lower in the Modified Synthesis Model."

164. Produce all analyses and documents that were relied upon, reviewed or considered by Dr. Tardiff or Verizon that support and/or contradict the following statement on Page 32 of Dr. Tardiff's Rebuttal Testimony: "Mr. Pitkin's reduction in the road factor is a blatant form of double-counting."

165. Produce all analyses and documents that were relied upon, reviewed or considered by Dr. Tardiff or Verizon that support and/or contradict the following statement on Pages 32-33 of Dr. Tardiff's Rebuttal Testimony: "And on this basis, when Mr. Pitkin's inputs are used, the beta version of the Synthesis Model produces cost estimates that are closer to its original version than to Mr. Pitkin's cost estimates ($4.55 compared to $4.69 and $4.21 shown in Table 1 for the Synthesis Model and the Modified Synthesis Model, respectively)," including model runs and associated files such as inputs, results, workfiles and intermediate files used to develop these values.

166. Produce all analyses and documents that were relied upon, reviewed or considered by Dr. Tardiff or Verizon that support and/or contradict the following statement on Page 33 of Dr. Tardiff's Rebuttal Testimony: "As Table 2 below demonstrates, the total cost of the loop decreased by a surprising 56 percent over the four years between AT&T/WorldCom's previous filing of the HAI Model, Release 3.1 and their current filing of the Modified Synthesis Model."

167. Produce all analyses and documents that were relied upon, reviewed or considered by Dr. Tardiff or Verizon that support the HAI Model, Release 5.0a costs presented in Table 2 on Page 34 of Dr. Tardiff's Rebuttal Testimony.

168. Produce all analyses and documents that were relied upon, reviewed or considered by Dr. Tardiff or Verizon that support and/or contradict all numbers presented in Table 3a and Table 3b on Pages 36-37 of Tardiff's testimony.

169. Produce all analyses and documents that were relied upon, reviewed or considered by Dr. Tardiff or Verizon that support and/or contradict the following statement on Page 39 of Tardiff's testimony. "Between 1996 and 2000, Verizon VA invested about $2.3 billion in its total plant in-service."

170. Produce all analyses and documents that were relied upon, reviewed or considered by Dr. Tardiff or Verizon that support and/or contradict the following statements on Page 39-40 of Dr. Tardiff's Rebuttal Testimony.

    a. "In contrast, the Modified Synthesis Model claims that an investment of $3 billion is sufficient to serve almost 6.7 million lines in Virginia -- an investment of only about $455 per-line."

    b. "In contrast, the Synthesis Model produces an investment per-line of $887 when lines are measured as voice-grade equivalents, and $1,046 when physical channels are used."

171. Produce all analyses and documents that were relied upon, reviewed or considered by Dr. Tardiff or Verizon that support and/or contradict the following statement on Page 41 of Dr. Tardiff's Rebuttal Testimony. "To put this comparison in context, when the Commission established price caps for AT&T in 1989, it estimated that AT&T could reduce its costs by 3 percent per-year."

172. Produce all analyses and documents that were relied upon, reviewed or considered by Dr. Tardiff or Verizon that support and/or contradict the following statement on Page 41 of Dr. Tardiff's Rebuttal Testimony. "For example, 2000 ARMIS data show that Verizon VA owns approximately 284,732 equivalent poles in Virginia and the Commission reports a current-cost-to-book-cost ratio of 2.39 for poles (i.e., if all existing poles were replaced with new ones, pole investment would be 2.39 times higher than book investment)."

173. Produce all analyses and documents that were relied upon, reviewed or considered by Dr. Tardiff or Verizon that support and/or contradict all numbers presented in Table 4 on Page 43 of Tardiff's testimony.

174. Produce all analyses and documents that were relied upon, reviewed or considered by Dr. Tardiff or Verizon that support and/or contradict the following statement on Page 45 of Dr. Tardiff's Rebuttal Testimony.

    a. " ...the Modified Synthesis Model produces overall distribution lengths that are approximately 1.2 times MST."

    b. "Moreover, 535 clusters of the 5,331 clusters, or approximately 10 percent, contain <u>less</u> distribution route distance than the minimum distance necessary to connect all locations."

    c. "For 1,314 clusters (23.8 percent), the Model estimates less distribution length than 1.1 times the MST and for 4,011 clusters (75 percent) the Model estimates less than 1.3 times the MST."

175. Produce all analyses and documents that were relied upon, reviewed or considered by Dr. Tardiff or Verizon that support and/or contradict the following statement on Page 46 of Tardiff's Rebuttal Testimony: "The Modified Synthesis Model systematically understates the investment in OSP by assuming that OSP costs decrease over time."

176. Produce all analyses and documents that were relied upon, reviewed or considered by Dr. Tardiff or Verizon that support and/or contradict the following statements on Page 50 of Dr. Tardiff's testimony.

    a. "For example, if lines were growing at 3 percent annually, and 4 percent capacity is needed for administrative fill, installing a switch with enough

capacity for the 17.5-year life assumed by the Modified Synthesis Model would require 70 percent initial spare capacity."

b. "Because spare capacity would be substantially increased (on the order of 30 percent over the life of the switch), the initial investment and capital costs would also increase."

177. Produce all analyses and documents that were relied upon, reviewed or considered by Dr. Tardiff or Verizon that support and/or contradict the following statements on Page 58 of Dr. Tardiff's testimony:

a. "If the book investment in buildings were 5 percent of total plant investment and the Modified Synthesis Model calculated a total network investment of $3 billion, then the Modified Synthesis Model's building investment would be $150 million."

b. "Next, this amount is reduced by 32 percent, because the Modified Synthesis Model assumes that the services supported by the USF do not include toll and special access."

178. Produce all analyses and documents that were relied upon, reviewed or considered by Dr. Tardiff or Verizon that support and/or contradict the following statement on Page 60 of Dr. Tardiff's Rebuttal Testimony: "In fact, I estimate that the average ratio of support assets to network assets based on current costs is 18 percent higher than the average ratio based on book costs."

179. Produce all analyses and documents that were relied upon, reviewed or considered by Dr. Tardiff or Verizon that support and/or contradict the following statements on Page 60 of Dr. Tardiff's Rebuttal Testimony.

a. If the "Synthesis Model produced a reasonable level of plant investment (which it does not), general support costs would be underestimated by about 43 percent."

b. "In contrast, Mr. Pitkin has effectively reduced this ratio by 32 percent by erroneously applying the Commission's USF reduction. Thus, Mr. Pitkin's adjustment relative to the correct adjustment is 0.68/1.18 = 0.57."

180. Produce all analyses and documents that were relied upon, reviewed or considered by Dr. Tardiff or Verizon that support and/or contradict the following statements on Page 61 of Dr. Tardiff's Rebuttal Testimony. "However, the calculations apparently are not operating as intended, because only about $81 million of these expenses are included in the UNE costs."

181. Provide the basis for and all supporting analyses and documentation for the following statements on page 5 of Murphy's your Rebuttal Testimony.

a. "...combine nationwide and state-specific inputs in a manner that is inconsistent with the Model's algorithms."

b. "...do not reflect Verizon VA's (or any other real company's) operating realities."

182. Provide the basis for and all supporting analyses and documentation for the following statement on page 6 of Mr. Murphy's Rebuttal Testimony.

a. The Modified Synthesis Model improperly assumes that all high-speed services are provisioned on copper loops, despite the fact that some high-speed services (i.e., DS-3 services) can only be provisioned over coaxial or fiber optic cable.

b. Quantify the amount high speed services that are provisioned over coaxial or fiber optic cable within Verizon's VA's network.

183. Provide the basis for and all supporting analyses and documentation for the following statements on page 6 of Mr. Murphy's Rebuttal Testimony. "By ignoring over $645 million dollars in DCS investment, the Modified Synthesis Model builds an interoffice network is not able to transport calls."

184. Provide the basis for and all supporting analyses, calculations and documentation for the following statements on page 7 of Mr. Murphy's Rebuttal Testimony.

a. "The Model estimates an average drop length of only 24 feet – 50 percent shorter than the average length estimated by the Synthesis Model, and one-third of the average drop length estimated in a national study."

b. "The Model builds outside plant to only 5,575 distribution areas, despite the fact that there are actually 11,500 distribution areas in Verizon VA's network."

c. "The Model's inappropriate treatment of special access services understates the estimated loop costs by an extraordinary 50 percent."

d. "The switch line growth rate (forecasted demand) reflected by the Model is over 4 times greater than the growth rate realized by Verizon in the year 2000."

e. "The growth rate of call usage ("DEMs") reflected in the Model is nearly two times greater than the amount experienced by Verizon in the year 2000."

185. Provide all sensitivity runs performed on the Synthesis Model or Modified Synthesis Model by Mr. Murphy or under his direction.

186. Provide the underlying runs and analysis used to develop all results presented in Table 1 of Mr. Murphy's Rebuttal Testimony on page 14.

187. Provide all analyses, documentation and underlying model runs used to support the following statements on page 14 of Mr. Murphy's Rebuttal Testimony.

   a. "...AT&T/WorldCom's changes also affect plant investment in other ways, such as a 50 percent reduction in the drop length."

   b. "...SONET investment is understated by up to $784 million. "

188. Provide all supporting analyses and documentation for the following statements on page 20 of Mr. Murphy's Rebuttal Testimony.

   a. "Verizon VA has over 11,500 distribution areas in its network"

   b. "...Modified Synthesis Model develops only 5,575 serving areas."

189. Provide all supporting analyses and documentation for the following statements on page 28 of Mr. Murphy's Rebuttal Testimony.

   a. "Modified Synthesis Model... models a network in which 27 percent of the serving areas exceed 600 living units."

   b. "AT&T/WorldCom's cost study for Virginia generates 5,575 serving areas in which 4,377 serving areas have 600 or fewer households, and 1,197 serving areas (27 percent of the total) have more than 600 households. Of the 1,198 serving areas that exceed 600 households, 584 serving areas contain 800 or more households."

190. Regarding the following criticism presented in Mr. Murphy's Testimony on page 31. "Mr. Pitkin failed to notice that Verizon VA's increase in special access line count in the year 2000 was the result of a change in the way Verizon VA defined those lines; it was not the result of a high growth rate as Mr. Pitkin incorrectly assumed. Mr. Pitkin ignored the footnote in the ARMIS report for special access lines that stated, "Data changed significantly over previous years due to adjustments required to meet the Commission's revised reporting requirements."

   a. Provide year 2000 special access line counts under the prior year's reporting methodology.

191. Provide all analyses, documentation and underlying model runs used to support the results presented in Table 3 on page 34 of Mr. Murphy's Rebuttal Testimony.

192. Explain the basis for and meaning of the following statement on page 34 of Mr. Murphy's Rebuttal Testimony. The $5.49 cost per-loop is the product of the

Synthesis Model's default methodology, which develops total loop costs based on somewhat more, but not totally, appropriate loop requirements for special access lines."

193. Provide all supporting documentation and analyses for the following statements on page 35-36 of Mr. Murphy's Testimony.

    a. Verizon-VA had approximately *****Begin Verizon-VA proprietary***XXXXX ***End Verizon-VA Proprietary** DS-1 special access services

    b. "....and approximately *****Begin Verizon-VA proprietary***XXX ***End Verizon-VA Proprietary** DS-3 special access services at year end 2000."

    c. "The DS-1s require approximately *****Begin Verizon-VA proprietary***XXXXX ***End Verizon-VA Proprietary** physical loops (e.g., 2 copper pairs per DS-1 that terminate at no more than (and probably significantly less than) *****Begin Verizon-VA proprietary***XXXXX ***End Verizon-VA Proprietary** customer locations"

    d. "...and the DS-3s would require *****Begin Verizon-VA proprietary***XXX ***End Verizon-VA Proprietary** physical fiber and/or coaxial loops terminating at no more than (and probably significantly less than) *****Begin Verizon-VA proprietary***XXX ***End Verizon-VA Proprietary** customer locations. "

194. Provide all supporting documentation and analyses for the following statements on page 36 of Mr. Murphy's Testimony. "He would thus have caused the Model to build approximately 1.4 million physical loops (e.g., pairs) based on year 2000 data as opposed to the *****Begin Verizon-VA proprietary*** XXXXX***End Verizon-VA Proprietary** physical loops actually required for the DS-1s."

195. Provide all supporting documentation and analyses for the following statements on page 37 of Mr. Murphy's Testimony. ".. the Commission can and should summarily reject the Modified Synthesis Model on the basis of this lack of sophistication and inability to properly account for "All Services" that use the network."

    a. List every instance and example in which the Modified Synthesis Model lacks sophistication.

    b. List every instance and example and quantify in which the Modified Synthesis Model does not properly account for all services.

c. For every item identified in item a and b, explain in detail how Verizon's model deals within in greater sophistication and properly accounts for all services specifically identify where and how this item is addressed in Verizon's cost model.

196. Provide all supporting documentation and analyses for the following statements on page 43 of Mr. Murphy's Testimony. "Mr. Pitkin further assumes, inappropriately, that 90 percent of the network is DS-1s and 10 percent is DS-3s."

    a. Provide Verizon-VA's mix of DS-1s and DS-3s for 2000 and projected through 2005.

197. Provide all supporting documentation and analyses for the following statements on page 45 of Mr. Murphy's Testimony. "...the Modified Synthesis Model only builds approximately 50 percent of the serving areas that actually exist in Verizon VA's network and does not maximize the length of the feeder portion of the loop."

198. Provide all supporting documentation and analyses for the following statements on page 45 of Mr. Murphy's Testimony. "This sum is a mere fraction of what any efficient carrier would incur to provide the unbundled loop."

199. Provide all supporting documentation and analyses for the following statements on page 46 of Mr. Murphy's Testimony. "Because the Model builds an average drop length of only 24 feet, numerous housing units and business locations will not get physically connected to the network"

200. Regarding the following statement on page 47 of Mr. Murphy's Rebuttal Testimony, "Modified Synthesis Model's data inputs, some dating back to 1983." Specifically identify each and every input that the Modified Synthesis Model's date back to 1983.

201. Provide all supporting documentation and analyses for the following statement on page 47 of Mr. Murphy's Testimony. "....involve switches that are not capable of provisioning the technology for which the Modified Synthesis Model is developing UNE costs."

202. Provide all supporting documentation and analyses for the following statements on page 56 of Mr. Murphy's Testimony.

    a. "The effect of this change would reduce the switching element cost estimate for local usage nearly in half (43 percent)."

    b. "Conversely, it would double the cost estimate of the switch port functionality, thereby driving up prices for residence and business customers with lower usage."

203. Provide all supporting documentation and analyses for the following statements on page 57 of Mr. Murphy's Testimony.

   a. "The Modified Synthesis Model uses projected year 2002 demand data and produces approximately 605,000 trunks, which are spread among its seven types of trunk groups."

   b. "Mr. Pitkin's trunk estimate for the year 2000 fell 18 percent short of Verizon VA's trunk count."

204. Regarding the following statement on page 59 of Mr. Murphy's Rebuttal Testimony. "The Modified Synthesis Model understates the number of access trunks because it fails to recognize that demand for access trunks (trunks connecting ILEC switches to interexchange carriers ("IXCs"), CLECs, and Cellular switches) is a function of how many trunks are ordered by these carriers."

205. Regarding the following statement on page 62 of Mr. Murphy's Rebuttal testimony. "...without knowledge of the actual office-to-office traffic requirements along the fiber rings developed in the Model, there is no way of determining whether the quantity of ADMs is anywhere near correct.

   a. Identify and quantify all incorrect ADMs in the aforementioned criticism.

   b. Provide all documentation and supporting analysis for this criticism.

206. Provide all supporting documentation and analyses for the following statements on page 63 of Mr. Murphy's Testimony.

   a. "In Virginia, 1,293 inter-office ADMs would be required, not 569 as the Modified Synthesis Model calculates."

207. "For example, AT&T/WorldCom calculate approximately $14.15 per-line for ADM and DCS investment."

208. Provide all supporting documentation and analyses for the following statements on page 65 of Mr. Murphy's Testimony. "In addition, the Modified Synthesis Model understates ADM and DCS investment by approximately $750 million."

209. Identify all inputs in which are referred to in the following criticism appearing on page 65 of Mr. Murphy's Rebuttal Testimony. "The Modified Synthesis Model's switch data, some of which is almost twenty years old."

210. Provide the basis for and all supporting documentation and analyses for the following statement on page 65-6 of Mr. Murphy's Rebuttal Testimony. Identify and quantify each an every instance in which the following statements occur.

a. "[The Modified Synthesis Model's] contain switches that are not capable of provisioning the technology for services such as ISDN and CLASS and they will not work with the SS7 signaling network.

b. "Because the Model builds insufficient switches and inter-office facilities, customers would frequently be unable to complete calls on the network."

211. Provide the basis for and all supporting documentation and analyses for the following statement on page 67 of Mr. Murphy's Rebuttal Testimony. "As a result, the ability to meaningfully evaluate the impact of other input changes, code changes, and implementation errors (such as the structure sharing adjustment) is lost."

212. Provide the basis for and all supporting documentation and analyses for the following statement on page 69-70 of Mr. Murphy's Rebuttal Testimony." Mr. Pitkin is wrong in suggesting that the Common Support expenses included in the Modified Synthesis Model for USF cost calculations should be excluded when determining UNE costs."

213. Provide the basis for and all supporting documentation and analyses for the following statement on page 76 of Mr. Murphy's Rebuttal Testimony. "While this alternative approach is applied incorrectly, it is nevertheless an improvement on his methodology for Corporate Operations Expenses."

214. Regarding the following statements on page 87 of Mr. Murphy's Rebuttal Testimony. "The Model's utilization factors for copper feeder cable, which range from 70 percent to 82.5 percent depending on the density zone, also are unreasonably high for a forward-looking network." "The Model's target utilization levels fail to provide sufficient spare capacity to accommodate these needs."

a. Provide the effective fill factors that correspond to the target fill factors identified above.

215. Provide the basis for and all supporting documentation and analyses for the following statement on page 89 of Mr. Murphy's Rebuttal Testimony. "The Model uses an effective percent utilization of 100 percent."

216. Provide the basis for and all supporting documentation and analyses for the following statements on page 90 of Mr. Murphy's Rebuttal Testimony. Specifically include Verizon documentation above and beyond the Panel Testimony page cite.

a. "This platform flaw results in approximately an 11 percent understatement of the DLC line card investment given Mr. Riolo's inappropriately high utilization recommendation."

b. "...and approximately a ***Begin AT&T Proprietary*** 25 percent ***End AT&T Proprietary*** understatement of the line card investment."

c. "...given Verizon VA's more appropriate ***Begin Verizon-VA Proprietary*** 80 percent ***End Verizon-VA Proprietary*** factor."

217. Provide all supporting documentation and analyses for the following statements on page 91 of Mr. Murphy's Rebuttal Testimony. "The Modified Synthesis Model's proposed methodology produces an unreasonably low figure of $8 per-line for main distribution frame ("MDF") and power investment."

218. Regarding the following statements in Mr. Murphy's Rebuttal Testimony on page 98-9. Ostensibly, Mr. Pitkin bases the need for such an adjustment on the simplistic assumption that, in instances where feeder and distribution cables follow the same route, the cables will share the same structure." "Yet, Mr. Riolo offers no quantifiable or verifiable support for his assumption that a significant amount of structure is shared in Virginia."

a. Identify the quantity of route miles and percentage of total route miles in which Verizon-VA's feeder and distribution cables follow the same routes

b. Identify the Verizon's feeder and distribution structure sharing percentages within the Verizon-VA network.

219. Provide the basis for and all supporting documentation and analyses for the following statements on page 100 of Mr. Murphy's Rebuttal Testimony. " This method of accounting for structure sharing ...[is] ...inconsistent with the Model's logic that reflects sharing of structure between the feeder and inter-office transport elements."

220. Provide the basis for and all supporting documentation and analyses for the following statements on page 102-3 of Mr. Murphy's Rebuttal Testimony. "If he had done so, Mr. Pitkin would have found that the Modified Synthesis Model generated less than 85 percent of the actual cable sheath miles in VA."

221. Provide the basis for and all supporting documentation, including analyses and model runs to support the following statements on page 103 of Mr. Murphy's Rebuttal Testimony. "Mr. Pitkin's change to the road factor from 1.0 to .9 results in a decrease in plant investment by more than $107 million and a decrease in loop cost by $0.29."

222. Provide the basis for and all supporting documentation and analyses for the following statement on page 104 of Mr. Murphy's Rebuttal Testimony. "Over 80 percent of the OSP loop network modeled is comprised of distribution facilities, which in the real world are built to specific sizing factors at the time of installation with no intention of augmentation."

223. Provide the basis for and all supporting documentation and analyses for the following statement on page 104 of Mr. Murphy's Rebuttal Testimony. " In addition, when upgrading their feeder network over the past 10 years or so, ILECs have replaced copper cables with fiber facilities, and have removed the copper cable because of its salvage value."

224. Provide the basis for and all supporting documentation and analyses for the following statement on page 104-5 of Mr. Murphy's Rebuttal Testimony

    a. "I believe an average drop length of 51.9 feet is also understated. "

    b. "An analysis of AT&T/WorldCom's Model outputs shows an average drop length of only 23.8 feet -- less than 50 percent of the average drop length in the default run."

    c. "This is a ridiculously low drop length, even for small dense clusters."

225. Provide the basis for and all supporting documentation, including analyses and model runs that support the following statement on page 108 of Mr. Murphy's Rebuttal Testimony. "In making this change, Mr. Riolo causes plant investment to drop by $365 million and the loop cost to be understated by $0.59."

226. Provide the basis for and all supporting documentation, including analyses and model runs that support the following statement on page 110 of Mr. Murphy's Rebuttal Testimony. "In making this one change, Mr. Riolo reduces plant investment by $99 million and understates loop costs by $0.26."

227. Identify each and every data point referred to in the following statement on page 113-114 of Mr. Murphy's Rebuttal Testimony. "Even a cursory analysis of the data used in Mr. Pitkin's forecast shows that his 6-year average includes vintage data that should be excluded."

    a. Provide the basis for and all supporting documentation, including analyses for the aforementioned statement.

228. Regarding the following statement that appears on page 116 of Mr. Murphy's Rebuttal Testimony. "The Synthesis Model does not include a method for updating its customer location database to reflect Mr. Pitkin's forecasted year 2002 ARMIS demand data, and does not have the mechanized logic to assign forecasted statewide lines to individual wire centers."

    a. Provide the number of households and business locations that Verizon-VA served in the year 200 as well as projects to serve through 2005. Provide this data by wirecenter if available, or by the most detailed level available.

229. Provide the basis for and all supporting documentation, including analyses and model runs that support the following statement on page 117 of Mr. Murphy's Rebuttal Testimony. "The Model is not only treating all residential line growth

as additional lines, but it is also having the absurd effect of reclassifying existing primary residential lines to secondary lines."

230. Identify and Quantify the effect of the following statement from page 117 of Mr. Murphy's rebuttal testimony. "This overstatement of additional lines results in artificial efficiencies in the loop design and a significant understatement of loop costs."

231. Provide the basis for and all supporting documentation, including analyses and model runs that support the following statement on page 119 of Mr. Murphy's Rebuttal Testimony.

   a. "The Modified Synthesis Model uses a 100 percent utilization factor for fiber strand, which is unrealistic and works to minimize costs. "

   b. "The Modified Synthesis Model uses an unreasonably low $9 per-line for MDF and power investment, which should have been at least $45 per-line according to the updated source. "

   c. "The Modified Synthesis Model understates central office construction costs."

   d. "The Modified Synthesis Model uses unrealistic structure sharing inputs that lower loop costs by $0.78 per loop and reduce the plant investment by $293 million. "

   e. "The Modified Synthesis Model erroneously reduces the Synthesis Model's road factor default input from 1.0 to .9, and thereby decreases the cost of the loop by $0.29 and reduces the plant investment by $107 million."

   f. "The Modified Synthesis Model's use of incorrect plant mix reduces the cost of the loop by $0.59 and reduces the plant investment by $365 million. "

   g. "The Modified Synthesis Model uses unsupported DLC inputs that reduce the cost of the loop by $0.26 and reduce the plant investment by $99 million. Collectively, the impact of the selection of input values by AT&T/WorldCom produces costs that are vastly understated."

Respectfully submitted,

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Dated: September 5, 2001

CERTIFICATE OF SERVICE

I do hereby certify that true and accurate copies of the foregoing Objections to AT&T/WorldCom's Tenth Set of Data Requests were served via hand delivery this 5th day of September, 2001, to:

Dorothy Attwood (8 copies)
Chief
Common Carrier Bureau
Federal Communications Commission
445 12th Street, S.W.
Washington, DC 20554

I do hereby certify that true and accurate copies of the foregoing Objections to AT&T/WorldCom's Tenth Set of Data Requests were served via overnight mail and electronic mail this 5th day of September, 2001, to:

Mark A. Keffer
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AT&T
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I do hereby certify that true and accurate copies of the foregoing Objections to AT&T/WorldCom's Tenth Set of Data Requests were served via hand delivery and electronic mail this 5th day of September, 2001, to:

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