(Decision No. C92-1350-E)

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF COLORADO

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IN THE MATTER OF PROPOSED RULES REGARDING THE COSTING AND PRICING OF TELEPHONE SERVICES.	))))	DOCKET NO. 92R-596T ERRATA NOTICE

NOTICE OF PROPOSED RULEMAKING REGARDING THE COSTING AND PRICING OF TELEPHONE SERVICES

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Mailed Date: October 30, 1992
Adopted Date: October 28, 1992
(Decision No. C92-1350)
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The mailing of the Public Utilities Commission "NOTICE OF PROPOSED RULEMAKING REGARDING THE COSTING AND PRICING OF TELEPHONE SERVICES" ("Notice"), in this docket, failed to include:

1) the proposed rule/proposal: [DRAFT OPTION #1]; and

2) the proposed rule/proposal: [DRAFT: OPTION NO. 2].

The attached set of proposed rules [options], submitted by this errata are the two separate proposed rules/proposals referred to in the Notice.

Colorado Public Utilities Commission Decision No. C92-1350, "NOTICE OF PROPOSED RULEMAKING REGARDING THE COSTING AND PRICING OF

TELEPHONE SERVICES" is hereby amended to include the attached DRAFT OPTION #1 and DRAFT: OPTION NO. 2 as the two separate proposed rules. These two proposals represent separate options being considered by the Commission on the issues presented in this proceeding.

A list detailing the principle differences between the two options is appended to this errata.

THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF COLORADO

Bruce N. Smith

BRUCE N. SMITH
Executive Secretary

Dated at Denver, Colorado, this
3rd day of November, 1992

DRAFT OPTION #1

RULES PRESCRIBING PRINCIPLES FOR COSTING AND PRICING OF REGULATED SERVICES OF TELECOMMUNICATIONS SERVICE PROVIDERS

BASIS, PURPOSE, AND STATUTORY AUTHORITY

The basis and purpose for these rules are to standardize the determination of costs and to set forth the principles for pricing of regulated services of telecommunications service providers in the State of Colorado. The Colorado Public Utilities Commission (Commission) is entrusted with the regulation of rates and charges of all products and services offered by telecommunications providers under its jurisdiction. In the regulation of those rates and charges, the Commission has the responsibility to ensure that the rates and charges are just and reasonable (*See* § 40-3-101 *et seq.*, C.R.S.).

The advent of competition into many telecommunications markets and the deregulation of products and services by either state or federal authorities has complicated greatly the Commission's responsibility for ensuring the justness and reasonableness of rates and charges of telecommunications services regulated by the Commission. These rules provide specific guidelines for all telecommunications providers in order to perform appropriate cost analyses; to ensure just and reasonable rates; and to provide appropriate tests for prohibited cross-subsidization.

The rules are intended to clarify the important distinction between the determination of "costs" and the setting of prices, and to make more transparent the important policy determinations that are typically obscured in the allocation of fully distributed costs. Additionally, by explicitly providing a nomenclature regarding the problem of uneconomic embedded investment, it is intended to facilitate an appropriate solution to this potentially serious situation. The determination of costs based on total service long run incremental cost is necessary in order to determine the existence of prohibited cross-subsidy or illegal restraint of trade under section 15-40-106. Total service long run incremental cost is generally defined in these rules to be the price floor. While fully distributed costs properly attributable to regulated services are necessary to determine the revenue requirement for regulated services, these rules recognize the confusion that results when fully allocated costs are utilized as the basis for making pricing decisions. While the fully distributed costs properly attributable to regulated services can be useful information in determining just and reasonable prices, the usefulness of such fully distributed costs will depend on such circumstances as the presence or absence of competitive alternatives, and the presence or absence of Uneconomic Costs.

These rules do not conflict with any other provision of law, and there are no duplicating or overlapping rules.

The statutory authority for these rules is § 40-2-108, C.R.S.

RULE 1: DEFINITIONS AND SERVICE DESCRIPTIONS

Rules 2 through 6 are applicable to all telecommunications service providers whose rates are regulated by the Commission. Rule 6 provides for exceptions and waiver for specific providers or services.

RULE 2: DEFINITIONS

As used in these rules, unless the context otherwise requires:

(1) **An Application:** A formal pleading filed by a LEC with the Commission requesting that a service, or group of services, be reclassified from monopoly to competitive. An advice letter and any other form of tariff filing will not be considered a formal Application. Applications filed by LECs pursuant to these rules must be noticed to the public in accordance with Commission orders so that the public may have an opportunity to participate in a formal hearing on the Application. A formal hearing is required on all Applications filed under these rules.

(2) **A Joint Cost:** A cost that occurs when the production

process involves intermediate or final outputs that maintain fixed proportions with respect to two or more services.

(3) **Average Total Cost:** The total cost of producing a given quantity of output, divided by the total number of units produced.

(4) **A Fixed Cost:** One invariant with respect to the volume of output, within the relevant planning horizon.

(5) **Average Fixed Cost:** The sum of the relevant fixed costs of producing a given quantity of output, divided by the total number of units produced.

(6) **A Service-Specific Fixed Cost:** A cost caused by the existence of a specific service. It does not vary with changes in the number of units produced but would be eliminated if the specific service were not offered.

(7) **A Variable Cost:** A cost that changes (but not necessarily proportionately) with the number of units produced (volume of output).

(8) **Average Variable Cost:** The summation of all variable costs of producing a given quantity of output, divided by the total number of units produced.

(9) **A Sunk Cost:** A cost that has already been incurred and

is considered irretrievable. Such a cost cannot be avoided, even by discounting production entirely.

(10) **Marginal Cost:** The change in total cost resulting from an extremely small change in output. In mathematical terms, marginal cost is the first derivative of the total cost function with respect to output.

(11) **Total Incremental Cost:** The change in total cost resulting from an increase or decrease in output. In mathematical terms, total incremental cost equals total cost assuming the increment is produced, minus total cost assuming the increment is not produced.

(12) **Total Service Incremental Cost:** The change in total cost resulting from adding or deleting a service.

(13) **Total Service Incremental Revenue:** The change in the firm's total revenues resulting from adding or deleting a service.

(14) **Average Service Incremental Cost:** The total service incremental cost divided by the total number of units of the service.

(15) **Incremental Service Incremental Cost:** The change in total cost resulting from increasing (or decreasing) the quantity

of output of a service by a small number of units, divided by that small number. If the cost function is smooth and the increment is sufficiently small, incremental service incremental cost will approximate marginal cost.

(16) **A Direct Cost:** A cost specifically attributable to the production of an individual service, without requiring the use of allocations to separate it from costs incurred in the production of other services.

(17) **A Common Cost:** A cost incurred when two or more services are produced by the firm using some of the same facilities and resources.

(18) **Long-Run Costs:** The costs incurred by a firm operating in a planning horizon where many elements of the production process are fixed and cannot be readily varied, including the size and type of facilities and other utilized resources.

(19) **Short-Run Costs:** The costs incurred by a firm operating in a planning horizon where many elements of the production process are fixed and cannot be readily varied, including the size and type of certain utilized facilities.

(20) **Total Cost:** The sum of all costs incurred by the firm to produce any given level of output; it includes both fixed and variable costs.

(21) **Cost/Price Floor:** A minimum level below which a LEC shall not price a service.

(22) **Cross-subsidy:** A service (or group of services) is being subsidized if the total revenue resulting from the service (or group of services) is less than the total service long run incremental cost of providing that service (or group of services).

(23) **Economic Costs:** The costs that the LEC would incur if it were to construct its plant and facilities using current, best technology at today's prices. The physical positioning of the facilities would not necessarily change, but the technology employed would be up-to-date.

(24) **A Fully Competitive Service:** A service, or group of services, for which a LEC does not have monopoly power.

(25) **Imputation:** When monopoly and competitive services are combined or monopoly services are used as an input by a LEC to provide a service, the tariff price of the monopoly service must be included in the cost/price floor for the service.

(26) **Local Exchange Carrier or LEC:** A provider of Part 2 and Part 3, Title 40, Article 15, services that are regulated by the Commission.

(27) **Monopoly Power:** Monopoly Power means that competition cannot produce its typical outcomes and benefits. Monopoly power is determined by a consideration of the following factors:

a. Determination of the relevant market, which is determined by product and geographic substitutability on both the demand and supply sides of the market;

b. The market share of the particular service held by the LEC in the relevant market;

c. The supply responsiveness (or elasticity) of competitors in the relevant market, which is basically an assessment of entry and expansion conditions of competitors; and

d. The market demand characteristics in the relevant market, which means the more elastic the total market demand is, the more customers view other services as substitutes or alternatives for the LEC service in question.

(28) **Partially Competitive Service:** A service, or group of services, for which a LEC still possesses monopoly power but the service, or group of services, is sufficiently competitive to warrant some pricing flexibility.

(29) **Prohibited Cross-Subsidy or Illegal Restraint of Trade:**

Unless otherwise provided by the Commission, a service is being illegally priced in violation of section 40-15-106 if the total revenue resulting from the service is less than the sum of the revenues that would be received for an equal quantity of bottleneck monopoly inputs from competing telecommunications suppliers plus the Total Service Long Run Incremental Cost of the remaining inputs used to produce the service.

(30) Price Ceiling: A maximum level above which a LEC shall not price a service.

(31) **Services:** Intrastate telecommunications products or services offered by LECs.

(32) **Definition of Total Service Long Run Incremental Cost:** Total service long run incremental cost is equal to the firm's total cost of producing all of its services assuming the service (or group of services) in question is offered minus the firm's total cost of producing all of its services excluding the service (or group of services) in question.

(a) The definition of total service long run incremental cost does not require that an estimate of total service long run incremental cost can only be made by doing two total cost studies and subtracting one from the other. An estimate of total service long run incremental cost can be made directly.

(b) Total service long run incremental cost is a forward looking concept and should, therefore, include the costs that the firm would incur today if it were to install its network from scratch, but assuming that the geographic locations of routes and possible switching locations are the same as those available to the firm today.

(c) Total service long run incremental cost is a long run concept that includes both volume sensitive and non-volume sensitive cost specific to the service (or group of services) in question.

(33) **Unbundling:** The rate elements and tariff provisions for a monopoly service must be desegregated to the lowest level practicable to permit customers to buy the features and functions desired without having to purchase unneeded features and functions.

(34) **Uneconomic Costs:** The difference, should one exist, between the economic costs and the booked costs of intrastate regulated services. If uneconomic costs exist, prices for services may exceed the economic costs, in the aggregate, in order for the LEC to cover its revenue requirement.

RULE 3: SERVICE APPLICABILITY

Colorado statute (§ 40-15-101 *et seq.*, C.R.S.) categorizes telecommunications service regulation into three segments: Deregulated ("Part 4"), Emerging Competitive ("Part 3"), and Regulated Telecommunications Services ("Part 2"). The statute, Commission decisions (*see* 4 CCR 723-24) have provided the categorization of specific telecommunications services into three regulatory schemes.

(1) With the exception of the definition of Prohibited Cross-Subsidy, the rules have no applicability to telecommunications services deregulated under statute (Part 4 services, § 40-15-401, C.R.S.), except as noted. Prices for deregulated services are assumed to be determined by competitive markets with additional protection provided by applicable Commission rules.

(2) Emerging competitive telecommunications services (Part 3 services) will be treated under these rules differently dependent upon the amount of actual demonstrated competition for each service.

(a) Emerging Competitive Telecommunications services (Part 3 Services) for which the Commission has determined competition is sufficient to warrant relaxed regulatory treatment shall be priced and costed according to Rule 5 for Emerging Competitive Services, below.

(b) Emerging Competitive Telecommunications services (Part 3 Services) for which the Commission has not made a determination regarding the level of competition or has determined that competition is absent or negligible (*i.e.*, the provider has monopoly power or significant market power for the service(s)) shall have costs and prices determined according to Rule 4 for Regulated Telecommunications Services below.

(3) Regulated Telecommunications Services (Part 2 Services) shall have costs and prices determined according to Rule 4 for Monopoly Regulated Telecommunications Services, below.

RULE 4: COSTING AND PRICING FOR MONOPOLY SERVICES

(1) Determination of the Cost/Price Floor of Monopoly Services.

(a) The methodology to determine the cost/price floor of monopoly services of LECs shall be Total Service Long Run Incremental Cost. This methodology follows the concepts provided in definitions in Rules 2(29) and 2(32).

(b) The methodology must include the relevant costs for billing, marketing, advertising, and network costs in addition to any other relevant costs associated with the service.

(c) The total Service Long Run Incremental Cost Study provided for any specific monopoly service shall be updated whenever the relevant costs change or as requested by the Commission.

(2) Determination of the Price of Monopoly Services.

(a) The Commission shall set the price for all monopoly services. That price may not be below the cost/price floor as defined in Rule 4(1) nor above the price ceiling of stand-alone costs, or its surrogate, *e.g.*, current prices. The regulatory objective of the Commission in establishing prices for monopoly services shall be to set the price above but as close to Total Service Long Run Incremental Costs as is practical under the circumstances, subject to public policy considerations that should be made explicit.

(b) The only exception to Rule 4(2)(a) will be when the Commission specifically has determined that for reasons of public policy, the price for a monopoly service may be below the Total Service Long Run Incremental Cost.

(c) When a monopoly service, with Commission approval, is priced below its respective Total Service Long Run Incremental

Cost Floor, the amount of the cross-subsidy required and the source of the cross-subsidy will be identified and specifically approved by the Commission.

(d) The price of monopoly services, as set by the Commission, may include, if approved by the Commission, all or some portion of the uneconomic costs of the LEC in order for the LEC to recover its revenue requirement. The amount of uneconomic cost to be recovered by monopoly services must be specifically identified by service and the Commission may consider these costs in setting the price for individual monopoly service.

(e) All monopoly services shall be unbundled to the lowest level practical on a reasonably prompt schedule based on the evidence presented at the hearing and as set forth in the Commission's decision.

(f) Unless otherwise determined by the Commission, any changes in the rates for monopoly services must undergo the traditional tariff review process prior to implementation. This includes, but is not limited to, revenue neutral rate changes of any monopoly service.

(g) In the terms and conditions of the tariff, the prices for any monopoly service shall not be restricted regarding the resale, sharing, and usage of the service. If it is impracticable to remove immediately any resale, sharing, and usage restrictions, the Commission shall determine when the restrictions will be removed.

(h) The Commission shall retain its audit and complaint powers over monopoly services.

RULE 5: COSTING AND PRICING FOR EMERGING COMPETITIVE SERVICES

(1) **Determination of the Cost/Price Floor of Partially Competitive Services.**

(a) The cost/price floor for partially competitive services shall be the Total Service Long Run Incremental Cost. The cost/price floor also shall include imputation, as defined in Rule 2(25).

(b) A LEC may request that the Commission review the existing cost/price floor for partially competitive service. Such request shall be made by filing a formal petition with the Commission. The petition shall provide support for the cost/price floor with a revised TSLRIC study, and the inclusion of the appropriate imputation.

(2) **Determination of the Price of Partially competitive Services.**

(a) A price band may be established by the Commission for the flexible pricing of services that have been classified as partially competitive. The band shall be based upon a cost/price floor (Rule 5(1)) and a price ceiling (Rule 5(2)(c)).

(c) The price ceiling for all partially competitive services shall be based upon stand-alone costs, or its surrogate, *e.g.*, current tariff prices.

(d) A LEC may change the price for a partially competitive service if the old and new prices are within the approved price band.

(e) The Commission shall specifically identify how much, if any, of the uneconomic costs of the LEC that shall be recovered in the prices of partially competitive services. The LEC should be given reasonable flexibility subject to Commission approval to determine what specific partially competitive services will recover these uneconomic costs.

(f) Upon a Commission order declaring the service, or group of services, as partially competitive, the LEC shall replace the existing tariff pages with a Price List including terms and conditions.

(g) Subsequent price changes within the approved price band may be made on 14 days' notice. The changes shall be made by filing a transmittal Letter and the revised Price List pages.

(h) In the terms and conditions of the price list, the prices for any partially competitive service shall not be restricted regarding the resale, sharing, and usage of the service.

(i) The Commission shall retain its audit and complaint powers over partially competitive services.

(3) Changes to the Commission approved price ceiling shall be made by the LEC filing a formal petition with the Commission. Such petition should contain sufficient information to support the price ceiling change.

RULE 6: COSTING AND PRICING RULES FOR FULLY COMPETITIVE SERVICES

(1) Determination of the cost/price floor of Fully Competitive Services.

(a) The proper cost/price floor for fully competitive services shall be based on Total Service Long Run Incremental Cost. The cost/price floor also shall include amounts for imputation, as defined in Rule 2(25).

(b) A LEC may request that the Commission review the existing cost/price floor of a fully competitive service. Such request shall be made by filing a formal petition with the Commission. The petition shall provide support for the cost/price floor change with revised TSLRIC study and the inclusion of appropriate imputation amounts.

(2) Determination of the Price of Fully Competitive Services.

(a) The LEC may charge any price above the cost/price floor for fully competitive services.

(b) The Commission shall specifically identify how much, if any, of the uneconomic costs of the LEC that must be recovered in the price of fully competitive services. The LEC should be given reasonable flexibility to determine which specific fully competitive services will recover the uneconomic costs.

(c) Upon a Commission order declaring the service, or group of services, as fully competitive, but still under Commission regulation, the LEC may withdraw the existing tariff page and may, at the option of the LEC, replace the tariff pages with an Informational Price List, including terms and conditions.

(d) Informational Price List changes may be filed on five days' notice. The changes must be made by filing the appropriate informational Letter and the revised Informational

Price List pages.

(e) In the terms and conditions of the Informational Price List, the prices of fully competitive services shall not be restricted regarding resale, sharing, and usage of the services.

(f) The Commission shall retain its audit and complaint powers over fully competitive services still subject to regulation.

(3) If a service is fully competitive, the Commission may decide that the service will be deregulated and treated as a Part 4 service.

RULE 7: COST STUDIES TO BE PROVIDED TO COMMISSION

A. Contents

(1) The cost study results submitted by a telephone utility must specify the type of costs being estimated, using the definitions of these rules.

(2) The utility must identify its estimates as long-run or short-run, using the definitions of these rules.

(3) For practical reasons, all cost studies require a degree

of simplification and approximation, and no study can be perfectly accurate. However, the telephone utility's studies must be consistent with the type of costs being estimated, as described in standard microeconomic theory and more specifically defined in these rules.

(4) The utility must explicitly identify all instances in which its estimate deviates either from standard microeconomic theory or from the specific definitions below. A written explanation must be provided which justifies each such deviation on the basis of data limitations, methodological simplicity, or other practical considerations. The explanation must be sufficiently clear and detailed to allow interested parties to judge whether or not the deviation is justified and to understand its potential significance.

(5) The utility must explicitly identify which costs (and which elements of the production process) it considers fixed within the specified (long-run or short-run) planning horizon, and which costs it considers variable.

(6) The utility must explicitly identify any included sunk costs and separately quantify the reduction in cost estimates that would result from the exclusion of these sunk costs.

(7) The utility must explicitly identify all joint/common costs and specify those included in the cost study and those

excluded. The utility must separately quantify the reduction in the cost estimates that would result if joint/common costs were excluded.

B. Cost Estimate Requirements

(1) In any incremental cost estimate submitted, the increment of output analyzed must be relevant to the issues under consideration.

(2) Any set of cost estimates submitted as support for existing or proposed prices must include an estimate of either marginal cost or incremental service incremental cost, though it need not be limited to these.

(3) Any cost estimate submitted as support for a claim that a service is (is not) being subsidized must include an estimate of total service incremental cost. Proof that the utility's total service incremental revenues are less than (more than) the total service incremental cost is considered proof that the service is (is not) being subsidized.

(4) In any incremental cost estimate submitted, the estimated change in costs must approximate the cost deference between a "business as usual" scenario accommodating existing and future demand and a scenario assuming output levels that are higher (lower) by the relevant increment (decrement).

(5) A cost estimate for a service that utilizes or displaces another service offered by the utility must reflect the opportunity cost associated with the other service. For example, the cost estimate for message toll service must reflect the opportunity cost of access revenues that are foregone when the customer purchases toll service from the utility instead of from a competitor.

C. Required Workpapers

(1) When a telephone utility submits a cost estimate to the Commission, it must simultaneously file a complete set of supporting workpapers and source documents.

(2) The workpapers must clearly and logically present all data used in developing the estimate and provide a narrative explanation of all formulas or algorithms applied to these data. These must allow others to replicate the methodology and calculate equivalent or alternative results using equivalent or alternative assumptions.

(3) The workpapers must clearly set forth all significant assumptions and identify all source documents used in preparing the cost estimate.

(4) The workpapers must be organized so that a person unfamiliar with the study will be able to work from the initial investment, expense, and demand data to the final cost estimate.

Every number used in developing the estimate must be clearly identified in the workpapers as to what it represents. Further,the source should be clearly identifiable and readily available, if not included with the workpapers.

(5) **Any input expressed as a "dollars per minute," "dollars per foot," "dollars per loop," dollars per port," and the like must be traceable back to the original source documents containing the number of dollars, minutes, feet, loops, ports, and the like from which these figures were calculated.**

(6) **To the extent practicable, all data and workpapers must be provided in machine readable form on diskettes using standard spreadsheet or database software formats such as Lotus 1-2-3 or Excel. Each diskette must contain a "read me" or similar file that defines the contents of each file on the diskette and contains an explanation of the definitions, formulas, equations, and data provided on the diskette.**

(7) **An index or detailed table of contents of the workpapers and source documents must be provided.** In addition, to the extent practicable, a cross index should be included that will allow other parties to track key numbers through the various source documents, workpapers, and exhibits.

RULE 8: EXCEPTIONS AND WAIVERS

(1) Any local exchange provider having fewer than 50,000 local access lines shall be in compliance with the intent of these rules by providing the Commission with its required filing information under the Colorado Commission's Cost Allocation Rules for Telecommunications Service and Telephone Utilities Providers (see 4 CCR 723-27).

(2) If this Commission has previously granted a provider, by order, a specific form of costing and pricing for a specific service, such grant shall not be changed by this rule.

(3) The Commission may permit variance from these rules for good cause shown if it finds compliance to be impossible, impracticable, or unreasonable, if not otherwise contrary to law.

DRAFT: OPTION No.2

RULES PRESCRIBING PRINCIPLES FOR COSTING AND PRICING OF REGULATED SERVICES OF TELECOMMUNICATIONS SERVICE PROVIDERS

BASIS, PURPOSE, AND STATUTORY AUTHORITY

The basis and purpose for these rules are to standardize the determination of costs for pricing of regulated services of telecommunications service providers in the State of Colorado. The Colorado Public Utilities Commission (Commission) is entrusted with the regulation of rates and charges of all products and services offered by telecommunications providers under its jurisdiction. In the regulation of those rates and charges, the Commission has the responsibility to ensure that the rates and charges are just and reasonable (*See* § 40-3-101 *et seq.*, C.R.S.).

The advent of competition into many telecommunications markets and the deregulation of products and services by either state or federal authorities has complicated greatly the Commission's responsibility of determining whether rates and charges of telecommunications services regulated by the Commission are just and reasonable. These rules provide specific guidelines for all telecommunications providers in the area of appropriate market and cost analyses which underlie just and reasonable rates.

These rules do not conflict with any other provision of law, and there are no duplicating or overlapping rules.

The statutory authority for these rules is §§ 40-2-108, 40-3-101, and 40-3-110 C.R.S.

RULE 1: APPLICABILITY

Rules 2 through 7 are applicable to all telecommunications service providers whose rates are regulated by the Commission. Rule 7 contains provisions for exceptions and waivers for specific providers or services.

RULE 2: DEFINITIONS

As used in these rules, unless the context otherwise requires:

(1) **Average Cost Pricing**: A pricing rule which adds a mark-up onto average variable cost of a product to cover the average total cost of that product.

(2) **Average Fixed Cost**: The sum of the relevant fixed costs of producing a given quantity of output, divided by the total number of units produced.

(3) **Average Service Long Run Incremental Cost**: Total service long run incremental cost divided by the total number of units of the service.

(4) **Average Total Cost:** The total cost of producing a given quantity of output, divided by the total number of units produced. Average total cost is equal to the sum of average variable cost and average fixed cost.

(5) **Average Variable Cost:** The summation of all variable costs of producing a given quantity of output, divided by the total number of units produced.

(6) **Bundling:** a situation in which the rate elements and tariff provisions for a monopoly service are aggregated so that customers may not buy some features and functions within the collection without buying them all.

(7) **Cost Accounting Standards**: Standards developed from work by cost accounting standards use five criteria to assign costs to products, services, or customer classes:

(a) Cost Causation: Costs should be assigned to the revenue-producing products or services that cause those costs to be incurred;

(b) Traceability: Costs are assigned using the cost attribute that permits the resources represented by the costs to be identified in their entirety with a revenue-producing activity;

(c) Variability: Costs that vary in total with variations in some measure of the volume of activity that is associated with the revenue-producing product or service but that are not traceable to a revenue-producing product or service, are assigned to the revenue-producing product or service based upon the estimated rate of variability;

(d) Capacity Required: Costs of capacity are assigned according to whether they are necessary for the performance of the service. Cost avoidability is the test for capacity costs; and

(e) Beneficiality: Costs are assigned based upon the benefit if that cost is necessary to render that service.

(8) **Cost/Price Floor**: A minimum level below which a provider shall not price a service.

(9) **Direct Cost**: A cost specifically identifiable with the production of an individual service, without requiring the use of allocations to separate it from costs incurred in the production of other services.

(10) **Economies of Scale**: Economies of scale exist if the average cost of producing any group of services increases less than proportionately to an increase in quantity of those services.

(11) **Economies of Scope**: Economies of scope exist if the cost of producing any group of services by one firm is less than the sum of the costs of producing the same group and quantities of those services by two or more firms providing mutually-exclusive subsets of those services.

(12) **Elasticity of Demand:** The percentage change in the quantity demanded of a service divided by the percentage change in the price of the service.

(13) **Elasticity of Supply**: The percentage change in the quantity supplied of a service divided by the percentage change in the price of the service.

(14) **Fixed Cost**: Costs which are invariant with respect to the volume of output, within the specified planning horizon. Such a cost must be paid regardless of how many units the firm produces, or whether it produces at all, as long as the firm does not withdraw the factors of production entirely from the relevant market.

(15) **Fully Competitive Service**: A service, or group of services, for which a provider does not possess undue economic power.

(16) **Fully Distributed Costs**: The Costs derived from the process of assigning the total historical accounting costs of the firm to individual products or services using cost accounting, engineering, and economic standards.

(17) **Functional Component:** A cost element or group of cost elements representing the smallest feasible level of unbundling capable of being tariffed and offered as a service.

(18) **Historical Costs**: The investment or expenses incurred at the time an input or resource is purchased, which is not necessarily equal to the costs of replacing the input or resource in the current time. Historical costs are directly obtainable from accounting records of the firm.

(19) **Imputation**: In the instance where monopoly and competitive services are combined or monopoly services are used as an input by a provider to provide either a final or intermediate service, imputation is the practice whereby the tariff price of the monopoly service must be included in the cost/price floor for the service.

(20) **Incremental Service Incremental Cost**: The change in total cost resulting from increasing (or decreasing) the quantity of output of a service by a small number of units, divided by that small number. If the cost function is smooth and the increment is sufficiently small, incremental service incremental cost will approximate marginal cost.

(21) **Joint Cost**: A cost that occurs when the production process involves intermediate or final outputs that maintains fixed proportions with respect to two or more services.

(22) **Local Exchange Carrier or LEC**: A provider of Part 2 and Part 3, Title 40, Article 15, services that are regulated by the Commission.

(23) **Long-Run Costs**: The costs incurred by a firm operating in a planning horizon where most, if not all, elements of the production process can be freely varied, including the size and type of facilities and other utilized resources.

(24) **Marginal Cost**: A theoretical change in total cost resulting from an extremely small change in output. In mathematical terms, marginal cost is the first derivative of the total cost function with respect to output.

(25) **Marginal Cost Pricing**: A theoretical practice in economics where a firm prices its competitive products at marginal cost of the last unit of output.

(26) **Monopoly**: In its strictest sense of the term, a firm is a monopoly if it is the only supplier of services for which there are no substitutes but many buyers. The simple economic analysis of monopoly relaxes the assumption of no substitutes, but assumes that the monopolist faces a relatively stable and predictable downward-sloping market demand curve.

(27) **Monopoly Power**: the market power exerted by a firm in a market where the Competitive process cannot produce its theoretical outcomes and benefits. Monopoly power is determined by a consideration of the following factors:

a. Relevant market, which is determined by service and geographic substitutability on both the demand and supply sides of the market;

b. The market share of the particular service held by the regulated telecommunications service provider in the relevant market;

c. The supply responsiveness (or elasticity) of competitors in the relevant market, which is basically an assessment of entry and expansion conditions of competitors; and

d. The market demand characteristics in the relevant market. For example, the more elastic the total market demand is, the more customers view other services as substitutes or alternatives for the provider's service in question.

(28) **Natural Monopoly**: Natural monopoly exists if a single firm produces its set of outputs at less cost than could be achieved by dividing that set among two or more firms.

(29) **Overhead Costs**: Those shared costs related to the production of <u>all</u> services offered by a firm.

(30) **Partially Competitive Service**: A service, or group of services, for which a provider still possesses monopoly power but the service, or group of services, is sufficiently competitive to warrant some pricing flexibility.

(31) **Perfect Competition**: A market structure is perfectly competitive when the following conditions hold:

(a) There are a large number of firms each with an insubstantial share of the market;

(b) The firms produce a homogeneous service using identical production processes and possess perfect information;

(c) There is free entry into and exit from the industry.

Perfect competition implies that both marginal revenue and average revenue are equal to price in long run equilibrium. Thus, firms are price takers and can sell as much as they are capable of producing at the prevailing price.

(32) **Price Ceiling**: A maximum level above which a regulated telecommunications service provider shall not price a service.

(33) **Price Discrimination**: There are two major types of price discrimination: first, one that charges different prices to different groups of consumers; and, second, one that charges different prices to the same consumer for different units of the same product. Preconditions for price discrimination are: (1) the firm's ability to identify different market segments as having different elasticities of demand; and (2) the prevention of resale by those customers who can buy at the lower prices.

(34) **Provider**: Provider means telecommunications service provider.

(35) **Ramsey Pricing**: The practice of pricing all products and services such that the sum of consumer and producer welfare is maximized, subject to relevant regulatory constraints.

(36) **Residual Pricing**: A service is residually priced if its price is set so that revenues from the service equal all costs not covered by revenues from all other services offered by the firm once their prices are set.

(37) **Service-Specific Fixed Cost**: A fixed cost caused by the existence of a specific service. It does not vary with changes in the number of units produced but would be eliminated if the specific service were not offered.

(38) **Services**: Intrastate telecommunications products or services offered by providers.

(39) **Shared Cost**: A cost incurred for facilities and resources used in common in the

production of two or more services.

(40) **Short-Run Costs**: The costs incurred by a firm operating in a planning horizon where many elements of the production process are fixed and cannot be readily varied, including the size and type of certain utilized facilities.

(41) **Stand Alone Cost**: The total cost incurred by a firm to produce a given volume of a service as if it were the sole service produced by that firm.

(42) **Sunk Cost**: A cost that has already been incurred and is considered irretrievable. Such a cost cannot be avoided, even by discontinuing production entirely.

(43) **Total Cost**: The sum of all costs incurred by the firm to produce any given level of output; it includes both fixed and variable costs.

(44) **Total Incremental Cost**: The change in total cost resulting from an increase or decrease in output. In mathematical terms, total incremental cost equals total cost assuming the increment is produced, minus total cost assuming the increment is not produced.

(45) **Total Service Incremental Revenue**: The change in the firm's total revenues resulting from adding or deleting a service.

(46) **Total Service Long Run Incremental Cost**: Total service long run incremental cost is equal to the firm's total cost of producing all of its services assuming the service (or group of services) in question is offered minus the firm's total cost of producing all of its services excluding the service (or group of services) in question.

(a) The strict definition of total service long run incremental cost requires that it be calculated by first doing two total cost studies and then subtracting one from the other. On the other hand, an estimate of total service long run incremental cost can be made directly.

(b) The strict definition of total service long run incremental cost is in terms of its being a forward looking concept which should, therefore, include the costs that the firm would incur today if it were to install its network from scratch. On the other hand, an estimate of total service long run incremental cost can be generated by assuming that the geographic locations of routes and possible switching locations are the same as those available to the firm today and that the types of technological change in the future can be anticipated. In making this estimate, the assumptions behind it should be made explicit; in addition, the estimating procedure should reflect the time period in which the resulting prices are anticipated to be in effect.

(c) Total service long run incremental cost includes both fixed and variable costs specific to the service (or group of services) in question.

(d) The total service long run incremental cost for a group of services is at least equal to the sum of the total service long run incremental costs of the individual services within the group. If the total service long run incremental cost for the group is greater than this sum, the difference is equal to the shared costs attributable to the group of services. In other words, these shared costs are, part of the total service long run incremental cost of the group but are not part of the total service long run incremental cost of any individual service within the group.

(47) **Unbundling:** A situation in which the rate elements and tariff provisions for a monopoly service are desegregated to the lowest level practicable to permit customers to buy the features and functions desired without having to purchase unneeded features and functions.

(48) **Variable Cost:** A cost that changes (but not necessarily proportionately) either with the number of units produced of a given set of services or with the number of services provided.

RULE 3: SERVICE APPLICABILITY

Colorado statute (§ 40-15-101 *et seq.*, C.R.S.) categorizes telecommunications service regulation into three segments: Deregulated ("Part 4"), Emerging Competitive ("Part 3"), and Regulated Telecommunications Services ("Part 2"). The statute, Commission decisions, and Commission rules (*see* 4 CCR 723-24) have provided the categorization of specific telecommunications services into three regulatory schemes. The level of actual competition in a specific service is the primary determinant for the extent of regulation of that service under the statute.

(1) These rules have no applicability to telecommunications services deregulated under statute (Part 4 services, § 40-15-401, C.R.S.). Prices for deregulated services are assumed to be determined by competitive markets with additional protection provided by applicable Commission rules.

(2) Emerging competitive telecommunications services (Part 3 services) will be treated under these rules differently dependent upon the amount of actual demonstrated competition for each service.

(a) Emerging competitive telecommunications services (Part 3 Services) for which the Commission has determined competition is sufficient to warrant relaxed regulatory treatment shall be covered under Rule 5 for Emerging Competitive Services, below.

(b) Emerging competitive telecommunications services (Part 3 Services) for which the Commission has not made a determination regarding the level of competition or has determined that competition is absent or negligible (*i.e.*, the provider has monopoly power or significant market power for the service(s)) shall be covered under Rule 4 for Fully Regulated Telecommunications Services below.

(3) Regulated telecommunications services (Part 2 Services) shall be covered under Rule 4 for Fully Regulated Telecommunications Services, below.

RULE 4: FULLY REGULATED TELECOMMUNICATIONS SERVICES

(1) **Costing of Fully Regulated Telecommunications Services:**

(a) Cost studies which include, but are not limited to total service long run incremental costs, fully distributed costs, and stand alone costs, must be provided. If it is not feasible to provide a particular cost study, a written explanation of why this cannot be done must be filed. This explanation must be approved by the Commission.

(b) Cost studies must be performed either for all specific service offerings or for all functional components that make up the entirety of services offered. The provider shall notify the Commission in writing of its intent to use either service level or functional level cost studies.

(c) Cost studies must use, where relevant, the cost accounting standards defined above to properly include all costs identifiably related to a given service. Any deviation from the cost accounting standards must be clearly stated and a justification provided. These deviations must be approved by the Commission.

(d) Cost studies must include, but are not limited to the relevant costs for billing, marketing, advertising, and network costs in addition to any other relevant costs associated with the service.

(e) Cost studies for bundled service offerings or service offerings that utilize any other tariffed service must impute the tariffed rate as a part of the cost of the bundled service.

(f) Cost studies must be approved by the Commission.

(g) Individual cost studies for each service or functional element must not have been performed more than three years prior to their being filed.

(2) **Pricing of Fully Regulated Telecommunications Services.**

(a) The commission shall set the prices for all fully regulated telecommunications services. The price for each service must be set so that the following conditions are satisfied:

(i) Total revenue from the given service is equal to or greater than its total service long run incremental cost.

(ii) Total revenue from any group of services in which the given service appears is equal to or greater than the total service long run incremental cost of the group of services.

(iii) Total revenue for the given service (or any group of services in which the given service appears) is equal to or less than either the stand-alone cost for the service (or group of services) or a Commission-approved surrogate.

As an example, consider the access loop. The access loop is not a separate service but rather is necessary for the provision of many telecommunications services. As such, costs associated with he access loop will not appear in the total service long run incremental cost of any single service requiring the access loop but will appear as part of the total service long run incremental cost of the entire group of services requiring the loop. Consequently, prices must be set so that the sum of the revenues from all services requiring the access loop covers not only the sum of the total service long run incremental costs for the individual services but also the shared cost of the loop. Finally, in regards to the computation of stand alone costs, since each service in this group requires the access loop, the entire cost of the loop will appear in the stand alone cost for each of these services.

(b) The only exception to Rule 4(2)(a) will be when the Commission specifically has determined that, for reasons of public policy, the price for a fully regulated telecommunications service may be below the cost/price floor established in rule 4(2) (a).

(c) When a fully regulated telecommunications service, with Commission approval, is priced below its respective cost/price floor, the dollar amount below the cost/price floor and the source from which that deficit is made up must be identified and specifically approved by the Commission.

(d) The prices of fully regulated telecommunications services, as set by the Commission, may include some portion of the overhead costs provider in order for the provider to recover its overall revenue requirement. The amount of these overhead costs to be recovered by Fully Regulated Telecommunications services must be specifically identified by service; these amounts represent the contributions of various services to the covering of overhead costs. these amounts are to be determined by a series of public policy considerations which should be made explicit. These public policy considerations shall include, but are not limited to the following:

(i) Cost studies, at a minimum, both total service long run incremental costs and fully distributed costs

(ii) Market studies to determine market structure, extent of competition, etc.

(iii) Elasticity studies of demand and supply

(iv) Focus group results

(v) Survey results

(vi) Social obligations, e.q., promotion of universal service and absence of rate shock

(vii) Statutory restrictions

(e) Unless otherwise determined by the Commission, any changes in the rates for fully regulated telecommunications services must undergo the traditional tariff review process prior to implementation. This includes, but is not limited to, revenue neutral rate changes of any fully regulated telecommunications services.

(f) Residual pricing may not be used for any services.

(g) Nothing in this rule shall be construed to limit the Commission's powers to do all things necessary in fulfilling its statutory duties.

RULE 5: EMERGING COMPETITIVE SERVICES

(1) **COSTING OF EMERGING COMPETITIVE SERVICES.**

The cost studies needed in rule 5 must conform to the specifications outlined in Rule 4.

(2) **Pricing of Emerging Competitive Services.**

(a) The cost/price floor for emerging competitive services shall be determined as outlined in Rule 4 (2) (a). The cost/price floor shall also include imputation, as defined in Rule 2.

(b) The price ceiling for emerging competitive services shall be the per unit stand-alone cost or a Commission-approved surrogate. e.g., current price.

(c) A provider may request that the Commission review the existing price floor or price ceiling for an emerging competitive service. Such request shall be made by filing a formal petition with the Commission. The petition shall provide support in the form of a revised cost study, with the inclusion of appropriate imputation.

(d) The exact form of regulation of an emerging competitive service will be specified in the Commission order(s) granting relaxed regulatory treatment pursuant to the Commission's **Rules Regulating Emerging Competitive Telecommunications Service (4 CCR 723-24)**.

RULE 6: COST STUDIES TO BE PROVIDED TO COMMISSION

(1) Contents

(a) The cost study results submitted by a telephone utility must specify the type of costs being estimated, using the definitions in Rule 2 of these rules.

(b) For practical reasons, all cost studies require a degree of simplification and approximation, and no study can be perfectly accurate. However, the telephone utility's studies must be consistent with the type of costs being estimated, as defined in Rule 2 of these rules.

(c) The provider must explicitly identify all instances in which its estimate deviates from the specific definitions in Rule 2 of these rules. A written explanation must be provided which justifies each such deviation on the basis of data limitations, methodological simplicity, or other practical considerations. The explanation must be sufficiently clear and detailed to allow interested parties to judge whether or not the deviation is justified and to understand its potential significance.

(d) The provider must explicitly identify which costs (and which elements of the production process) it considers fixed within the specified planning horizon, and which costs it considers variable.

(e) The provider must explicitly identify any included sunk costs and separately quantify the reduction in cost estimates that would result from the exclusion of these sunk costs.

(f) The provider must explicitly identify all shared and overhead costs and specify those included in the cost study and those excluded. The provider must separately quantify the reduction in the cost estimates that would result if shared and overhead costs were excluded.

(g) Nothing in this rule shall be construed to limit the Commission's powers to do all things necessary in fulfilling its statutory duties.

(2) **Cost Estimate Requirements**

(a) In any incremental cost estimate submitted, the increment of output analyzed must be relevant to the issues under consideration.

(b) In any incremental cost estimate submitted, the estimated change in costs must approximate the cost difference between a "business as usual" scenario accommodating existing and future demand and a scenario assuming output levels that are higher (lower) by the relevant increment (decrement).

(c) A cost estimate for a service that utilizes or displaces another service offered by the provider must reflect the opportunity cost associated with the other service. For example, the cost estimate for message toll service must reflect the opportunity cost of access revenues that are foregone when the customer purchases toll service from the utility instead of from a competitor.

(3) **Required Workpapers**

(a) When a provider submits a cost estimate to the Commission, it must simultaneously file a complete set of supporting workpapers and source documents.

(b) The workpapers must clearly and logically present all data used in developing the estimate and provide a narrative explanation of all formulas or algorithms applied to these data. These workpapers must allow others to replicate the methodology and calculate equivalent or alternative results using equivalent or alternative assumptions.

(c) The workpapers must clearly set forth all significant assumptions and identify all source documents used in preparing the cost estimate.

(d) The workpapers must be organized so that a person unfamiliar with the study will be able to work from the initial investment, expense, and demand data to the final cost estimate. Every number used in developing the estimate must be clearly identified in the workpapers as to what it represents. Further,the source should be clearly identifiable and readily available, if not included with the workpapers.

(e) Any input expressed as a "dollars per minute," "dollars per foot," "dollars per loop," dollars per port," and the like must be traceable back to the original source documents containing the number of dollars, minutes, feet, loops, ports, and the like from which these figures were calculated.

(f) To the extent practicable, all data and workpapers must be provided in machine readable form on diskettes using standard spreadsheet or database software formats such as Lotus 1-2-3. Each diskette must contain a "read me" or similar file that defines the contents of each file on the diskette and contains an explanation of the definitions, formulas, equations, and data provided on the diskette.

(g) An index or detailed table of contents of the workpapers and source documents must be provided. In addition, to the extent practicable, a cross index should be included that will allow other parties to track key numbers through the various source documents, workpapers, and exhibits.

RULE 7: EXCEPTIONS AND WAIVERS

(1) Any local exchange provider having fewer than 50,000 local access lines shall be in compliance with the intent of these rules by providing the Commission with its required filing information under the Colorado Commission's Cost Allocation Rules for Telecommunications Service and Telephone Utilities Providers (see 4 CCR 723-27).

(2) If this Commission has previously granted a provider, by order, a specific form

of costing and pricing for a specific service, such grant shall not be changed by this rule.

(3) The Commission may permit variance from these rules for good cause shown if it finds compliance to be impossible, impracticable, or unreasonable, if not otherwise contrary to law.

AMENDMENTS TO RULES PRESCRIBING THE PROVISION OF CERTAIN PRODUCTS AND SERVICES WITHIN OPEN NETWORK ARCHITECTURE 4 CCR 723-12

RULE 2 - GENERAL

2.4 Each individual product or service will be reviewed by the Commission on a case-by-case basis. The LEC will have the burden of proving that any prices of present or proposed Basic Service Elements (BSEs) or Complementary Network Services (CNSs) are consistent with the following general pricing guidelines:

2.4.1 All prices for regulated ONA products and services must be just and reasonable in accordance with §40-3-101, C.R.S. AND THE COMMISSION'S RULES PRESCRIBING PRINCIPLES FOR COSTING AND PRICING OF REGULATED SERVICES OF TELECOMMUNICATIONS SERVICE PROVIDERS (4 CCR 723-XX).

4.3 UNBUNDLING OF LOCAL EXCHANGE PROVIDER SERVICES

4.3.1 LECs shall provide ESPs with the necessary services of the LEC to serve as building blocks to bring new enhanced services to consumers. The LECs shall be responsive to ESP requests in unbundling their services. ~~to the extent that is technically and economically feasible.~~

4.3.1.1 ALL FULLY REGULATED TELECOMMUNICATIONS SERVICES, AS SUCH TERM IS USED BY THE COMMISSION IN ITS RULES PRESCRIBING PRINCIPLES FOR COSTING AND PRICING OF REGULATED SERVICES OF TELECOMMUNICATIONS SERVICE PROVIDERS (4 CCR 723-XX), SHALL BE UNBUNDLED TO THE LOWEST LEVEL PRACTICAL ON A REASONABLY PROMPT SCHEDULE. EACH PROVIDER SHALL SUBMIT A SCHEDULE

FOR COMMISSION APPROVAL WITHIN SIX WEEKS OF THE EFFECTIVE DATE OF THIS RULE. THE SCHEDULE SHALL PROVIDE FOR COMPLETION OF UNBUNDLING WITHIN THREE YEARS OF THE EFFECTIVE DATE OF THIS RULE.

4.3.1.2 IN THE TERMS AND CONDITIONS OF THE TARIFF, THE PRICES FOR ANY REGULATED TELECOMMUNICATIONS SERVICE SHALL NOT BE RESTRICTED REGARDING THE RESALE, SHARING, AND USAGE OF THE SERVICE. IF IT IS IMPRACTICABLE TO REMOVE IMMEDIATELY ANY RESALE, SHARING, AND USAGE RESTRICTIONS, THE COMMISSION SHALL DETERMINE WHEN THE RESTRICTIONS WILL BE REMOVED.

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Some Differences Between
OPTION No. 1 and
OPTION No. 2

Item	OPTION No. 1	OPTION No. 2
Cross-subsidization	Cross-subsidization is defined and then used in the discussion of the pricing of monopoly services. Prohibited cross-subsidy or illegal restraint of trade is also included in the list of definitions.	Cross-subsidization is not explicitly defined but conditions for determining price floors are outlined for both monopoly and emerging competitive services.
Service Classifications	Monopoly, emerging competitive, and fully competitive services are treated separately.	Monopoly and emerging competitive services are treated separately. No section is devoted to fully competitive services.
Price Floors	A price floor for a given service is defined as the total service long run incremental cost for that service.	Price floors are determined such that the revenue of each service covers its total service long run incremental cost and the sum of the revenues of each group of services covers the total service long run incremental cost of that group of services.
Economic/ Uneconomic Costs	These terms are included in the list of definitions. Moreover, the amount of uneconomic costs covered by the price of each service must be identified.	These terms are not included in the list of definitions.
Common Costs	This term is included in the list of definitions.	This term is not included in the list of definitions. In place of it the terms "shared cost" and "overhead cost" are used. Moreover, the amount of overhead costs covered by the price of each service must be identified.
Fully Distributed Costs	This term is not included in the list of definitions, though reference is made to its possible usefulness in determining prices of monopoly services. This usefulness depends upon the extent of competition and uneconomic costs.	This term is included in the list of definitions and is then specified as one of several factors to be considered when making pricing decisions for monopoly services.

Bundling/ Unbundling	Unbundling is including in the list of definitions and the issues are discussed in 4 (2) (e) and 4 (2) (g).	Both terms are included in the list of definitions. The issues are discussed as amendments to the existing ONA rules (4 CCR 723-12).
Residual Pricing	This term is not included in the list of definitions.	This term is included in the list of definitions. Residual pricing of monopoly services is prohibited.
Cost Study Specifications in Rule 4 (Monopoly Services)	These studies must include costs for billing, marketing, advertising, and the network and must be updated when costs change or if requested by the Commission.	These studies must include TSLRIC, FDC, and stand alone costs, must indicate whether costs are related to services or functional components, must use cost accounting standards, must include costs for billing, marketing, advertising, and the network, must include imputations where relevant, must be approved by the Commission, and must be updated at least every three years.
Pricing in Rule 4 (Monopoly Services)	No list of areas of consideration in the pricing process is given.	A nonexhaustive list of areas of consideration in the pricing process is given.
Rule 5 (Emerging Competitive Services)	Other than establishing price floors and ceilings in ways analogous to those in Rule 4, procedures for establishing and maintaining price bands as a flexible pricing alternative are specified.	Other than establishing price floors and ceilings in ways analogous to those in Rule 4, regulation of these services should be governed by existing statutes and part 3 rules.
Fully Competitive Services	These services are treated in ways similar to emerging competitive services except that there is no price ceiling and pricing flexibility is even greater.	This classification is not included.