Measured Service

(Decision No. 89729)

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF COLORADO

* * *

RE: INVESTIGATION AND SUSPENSION OF PROPOSED CHANGES IN TARIFFS -- COLORADO PUC NO. 5 - TELEPHONE, MOUNTAIN STATES TELEPHONE AND TELEGRAPH COMPANY, DENVER, COLORADO 80202.	INVESTIGATION AND SUSPENSION DOCKET NO. 1042

November 23, 1976

STATEMENT

BY THE COMMISSION:

On April 1, 1976, Mountain States Telephone and Telegraph Company (hereinafter "Mountain Bell" or "Respondent") filed with the Commission its Advice Letter No. 1195, dated April 1, 1976, accompanied by the following tariff sheets:

COLO. PUC NO. 5 - TELEPHONE

Colo. Sheet No.	PUC Revision No.		Cancels Colo. Sheet No.	Cancels PUC Revision No.
		General Exchange Tariff - Colorado		
9	4th	Section 15 - Service Charges	9	3rd
		Local Exchange Tariff - Colorado		
9A	Original			
63	3rd		63	2nd

Mountain Bell states that the instant filing was made in response to the Commission's Decision No. 87701 dated October 30, 1975, in Docket No. 930 Phase II ordering paragraph 6, which directed Mountain Bell to file Usage Sensitive Rate Plans to be offered, on an optional basis, to all residential customers in the Denver Zone of the Denver Metropolitan Exchange except those residential customers served from the Denver West Central Office (where usage sensitive pricing technology is not presently available).

By Decision No. 88671, the Commission set the tariffs for hearing commencing May 14, 1976, at 10 a.m., and suspended the effective date of the same until November 27, 1976. The decision also provided that any person, firm, or corporation desiring to intervene as a party in the proceeding could do so by filing an appropriate pleading with the Commission on or before May 10, 1976. On or before May 14, 1976, the following parties were granted leave to intervene in the proceeding: David C. Stroh, pro se; Edward Phillip Kurz, pro se; Legal Aid Society of Metropolitan Denver, represented by William F. Benjamin, Esq.; and Denver Board of Education, represented by Benjamin L. Craig, Esq.

Hearings were commenced in this matter on May 14, 1976, and continued on the following dates: July 13, August 4, August 10 and September 23, 1976.

During the course of the hearings the Commission heard testimony from the following witnesses: Lloyd L. Leger, Vice President and Colorado General Manager, Mountain Bell; Dr. George Parkins, Supervising Engineering Analyst of the Staff of the Commission; Carl Stenmark, Deputy Superintendent of Denver Public Schools; John G. Glesne, Manager - Economic Analyses; Phillip G. Keeling, Systems Engineering - Central Office Switching; R. W. Simpson, Network Operations Supervisor; Paul J. Adessa, Rate and Tariff Specialist, Mountain Bell, and twenty public witnesses.

During the course of the proceedings 27 exhibits were submitted into evidence.

FINDINGS OF FACT

1. Respondent, Mountain States Telephone and Telegraph Company is an operating telephone company providing telephone service to various parts of the State of Colorado and certain other states. The intrastate operations of Respondent conducted in Colorado are subject to the jurisdiction of this Commission.

2. In Decision No. 87701 issued October 30, 1975 (Investigation and Suspension Docket No. 930-Phase II), the Commission ordered Mountain Bell to file within four months after the effective date of that decision, usage-sensitive rate plans to be offered, on an optional basis, to all customers in the Denver Zone of Metro 65 (with the exception of those customers served from the Denver West office).

3. In response to the Order in Decision No. 87701, on April 1, 1976, Mountain Bell filed its Advice Letter No. 1195 accompanied by the following tariffs:

COLORADO PUC NO. 5 - TELEPHONE

Colo. Sheet No.	PUC Revision No.		Cancels Colo. Sheet No.	Cancels PUC Revision No.
		General Exchange Tariff - Colorado		
9	4th	Section 15 - Service Charges	9	3rd
		Local Exchange Tariff - Colorado		
9A	Original			
63	3rd		63	2nd

4. The usage-sensitive rate plan, contained in the above-mentioned tariffs, would establish an optional single party residential telephone service, available to customers in the Denver Zone of the Metro 65 calling area (with the exception of those customers served from the Denver West office where electronic switching technology is not available). The rate consists of two parts: A fixed access charge of $6 per month and a schedule of usage charges based on (1) the frequency of calls, (2) duration, and (3) distance of calls, when such calls are made outside of the Denver Zone. The City Planned Calling (hereinafter "CPC") plan, as originally proposed by Mountain Bell, is not based on the cost of providing that service. The CPC plan is designed to attract approximately 14,000 customers to the plan so as not to outstrip the availability of technology necessary to provide the service. The CPC plan rate makes

no charge for calls within the Denver Zone which comprise 75% of the calls that are likely to be made by customers subscribing to the service. Accordingly, only 25% of the expected calls to be made will be charged on a usage-sensitive basis. Finally, the CPC plan as proposed does not include a time-of-use factor in the charges.

5. The CPC plan proposed by Mountain Bell would measure distance by establishing four concentric geographic zones in the Metropolitan Denver Exchange and charge progressively more for the duration of each particular call made to Zones II, III, and finally IV. While the factors of frequency, duration and distance are all cost related, they are not all equally significant. In ESS (electronic switching system) offices, distance is the least significant factor related to cost. The measurement of distance through the use of zones or bands is not acceptable to the public generally because of its potentially divisive effects on the community of interests which exist throughout the Metropolitan Denver area and which developed, in part, as a result of the implementation of the Metro 65 toll-free calling area.

6. Implementation of a usage-sensitive plan in the Metropolitan Denver Exchange, on an optional and pilot basis, will enable those customers who make relatively infrequent or low use of the telephone to save money. At the same time, implementation of the plan on a pilot project basis, will provide Mountain Bell and the Commission valuable data with which to evaluate the market response to such a plan and the effects on the pattern of usage for customers subscribing to the plan. As a result of inflation and increased utilization, low-usage customers are subsidizing the high-usage customers in the Denver Exchange. The revenues earned by Mountain Bell have not kept pace with increased usage, with the result that Mountain Bell has been compelled to seek rate relief on a more frequent basis.

7. With the exception of the distance factor mentioned above, the optional usage-sensitive pricing plan should measure frequency, duration and time of use which are all cost related. The usage charges should be based upon the actual variable costs of providing that service. The costs presented by Dr. Parkins, as modified by the rebuttal testimony of Mountain Bell witness John G. Glesne, are just and reasonable. To provide simplicity and understandability for the public, charges should be based on a one minute interval. The discount schedule included in the rate should be the same as the interstate toll discount schedule presently utilized by Mountain Bell. This will promote uniformity and understandability by the public. The access charge should be low enough to be of economic benefit to low usage customers and to promote customer choice of the usage-sensitive pricing plan in sufficient numbers to provide meaningful data with which to evaluate the efficacy of expansion or modification of such plans. An optional rate of the following form will meet all of the above objectives:

1.	Access charge:	$4 per month
2.	Usage charge:	First minute - $.07 Each additional minute - $.007
3.	Discount schedule:	Full rate - Monday through Friday - 8 a.m. to 5 p.m.
		35% Discount - Sunday through Friday - 5 p.m. through 11 p.m.
		60% Discount - All other times
4.	Availability:	Not available simultaneously to customers who receive other types of residential telephone service at the same location.

DISCUSSION

Except in the larger Metropolitan areas in the United States, residential telephone rates have typically consisted of a flat monthly charge for local service. The simplicity of a flat rate structure attained general public acceptance during the years when utility rates were relatively stable. During the so-called stable era, increased telephone costs occasioned by growth and inflation were offset, in large part, by gains in productivity attributable to both labor and technological advances. During the past several years, however, the historical pattern described above significantly has been altered by an accelerating inflation rate which has, in some years, out-paced corresponding gains in productivity. This has resulted in more frequent requests for increased rates by Mountain Bell at a time when the consumer disposable income has declined.

In 1965, Mountain Bell was authorized by the Commission to implement a flat rate pricing scheme in the entire Metropolitan Denver area, which became known as "Metro 65."

Metro 65 was created by combining separate exchanges and eliminating former long-distance and local inter-zone call charges. The Denver Metro calling area now covers approximately 2,300 square miles and approximately 600,000 customers, most of whom pay a flat-rate charge for unlimited calling within the Denver Metro area. All customers pay the same rate for the same grade of service regardless of the number of calls, length of conversations or distances involved. Usage, of course, is not the same for all customers.

Upon establishment of Metro 65, utilization of local telephone service increased markedly over the pre-1965 experience. While such increased utilization may have operated to encourage universal subscription to telephone service, at some point increased utilization resulted in increased need for capital expenditures by Mountain Bell and ultimately the need for increased revenues.

As early as 1972, in Case No. 5495, the Commission recognized that the establishment of a measured service offered the potential of a more equitable distribution of costs in providing telephone service. A substantial portion of these costs are related to the usage of the network. With flat-rate pricing, these costs are allocated equally to high and low users alike. By developing a rate for local service which includes charges for usage, much like the present toll rate design, the opportunity is offered to the low user of such service to minimize charges for telephone service while the high user bears a more equitable portion of those costs. Although it was not deemed feasible to implement a universal usage-sensitive rate with the network technology as it existed in 1972, the Commission has maintained a continuing interest in this area. In Investigation and Suspension Docket No. 930, Decision No. 87701 dated October 30, 1975, the Commission directed Mountain Bell to develop an optional, usage-sensitive, residential rate to be offered in all electronic switching system offices of the Denver Zone of the Metropolitan Denver Exchange. Mountain Bell's Advice Letter No. 1195 and the accompanying tariffs proposing the CPC service, were filed in response to Decision No. 87701, and are the subject of this proceeding.

The CPC plan filed by Mountain Bell proposed a two-part rate consisting of a fixed access charge of $6.00 per month and a schedule of usage charges based on the number of calls, the duration of each such call, and the distance involved. The purpose of the access charge, as explained by Mountain Bell, was to reimburse the company for the cost of providing telephone service which did not vary with the usage of that service. These costs include such items as the annual carrying charges on subscriber plant (station equipment, inside wiring, drop, and loop) and the similar costs involved with central office equipment. They also include such expense items as commercial expense and corporate overhead. The purpose of the usage charges, on the other hand, is to reimburse the company for those costs of providing service which vary directly with the amount of usage of that service. These costs include primarily switching, trunking and billing expenses. In the CPC plan, the Metropolitan Denver Exchange was divided into four bands. Band I consisted of the Denver Zone of the Metropolitan Denver Exchange which is essentially the City and County of Denver.* Bands II, III and IV essentially included geographical areas in the Metropolitan Denver Exchange moving out at greater distances from the Denver Zone. For example, Lakewood is included in Band II, Golden in Band III, and Boulder in Band IV. Under the CPC plan, there would be no usage charge for calls made within the Denver Zone; however, for calls from Band I to the outlying bands, charges would be based upon the frequency of calls, duration of calls and the distance covered. These charges were applied to basic calling time periods of four-minute durations. For example, a call from Denver to Boulder, located in Band IV, would result in a charge of 40¢ for the first four minutes of conversation and 28¢ for each additional four-minute interval of conversation thereafter. The usage charges, as proposed, did not include a discount schedule for off-peak calling.

As the testimony of Mountain Bell witness Lloyd Leger demonstrated, Mountain Bell performed certain marketing studies on such an optional plan and essentially arrived at the access and usage charges of the CPC plan to dictate a market acceptance of the plan which Mountain Bell with the current available technology would be able to meet. Since the measurement of the various usage factors mentioned above is dependent upon the availability of ESS storage capability, Mountain Bell was concerned that an over-acceptance of this optional plan would require the expenditure of additional funds to increase that capacity. As later explained by Mountain Bell witness Phillip Keeling, Mountain Bell had sufficient ESS capacity to serve 14,000 customers under the CPC plan. The market studies conducted by Mountain Bell, by coincidence, indicated that with those charges as proposed under the CPC plan, approximately 14,000 customers would choose the optional service. Mr. Leger testified that the charges were not in any way based on the cost of providing such a service.

The CPC plan, as originally proposed, would not include charges for calls made within Band I or the Denver Zone. From studies conducted by Mountain Bell, approximately 75% of the calls made by customers choosing this plan would be within Band I. Thus, only 25% of the calls made by those customers would actually be measured in terms of frequency, duration, or distance. As mentioned above, Mountain Bell did not intend to provide any off peak discount under the plan for even 25% of the calls that would be subject to being measured.

During the hearings held on the proposed plan, Dr. George Parkins of the Commission's Staff presented an alternative usage-sensitive rate consisting of a $5 per month access charge and a revised schedule of usage charges. Under Dr. Parkins' plan, the Metroplitan Denver Exchange would be divided into three bands instead of the four proposed by Mountain Bell. Essentially, Dr. Parkins combined Mountain Bell's original CPC plan Bands I and II into his Zone 1 and maintained the same two outer zones. The usage charges, proposed by Dr. Parkins, would be applicable to all calls, even those within Band I, and would include charges based on all four usage elements: frequency, duration, distance, and time of day and/or week. A basic calling time period of one minute was utilized by Dr. Parkins for the usage charges.

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* The Denver Zone does not precisely coincide with the City and County of Denver boundaries. There was substantial testimony by public witnesses concerning numerous schools and other public buildings located within the Denver boundaries, but in Mountain Bell's Band II, which potentially may result in a charge for calls to those facilities by customers subscribing to the CPC plan.

As explained by Dr. Parkins in his testimony, the alternative was developed by attempting to determine the actual costs of providing access to the service, which costs are reflected in the $5 access charge, and the costs that are directly attributable to usage of the service, which are reflected in the usage charges. By proposing a plan which provided for measurement of all four usage factors on each call, Dr. Parkins opined that the Mountain Bell CPC plan was inadequate in that regard. It should be noted, however, that by proposing that all calls be measured, the optional service would be available to fewer persons because of the limitation of ESS storage capabilities.

In rebuttal testimony, Mountain Bell, through its witnesses, criticized Dr. Parkins' plan in three areas:

(1) The use of three bands instead of four, according to Mountain Bell, nearly eliminated distance as a significant element;

(2) The usage charges proposed by Dr. Parkins fell short of covering all the actual variable costs, because of the omission of certain expenses; and

(3) The 100% discount for off-peak calling, proposed by Dr. Parkins, was not economically justified.

Mountain Bell then proposed two alternative usage-sensitive rate plans: (a) a modified Dr. Parkins' plan, and (b) a modification of the original Mountain Bell CPC proposal. The modified Dr. Parkins' plan, as proposed by Mountain Bell, consisted of a $5 per month access charge and a schedule of usage charges containing four bands, higher usage charges than imposed by Dr. Parkins on all calls, and a discount schedule for off-peak calling similar to the present interstate toll discount schedule. The one-minute calling period was retained. In the modified Mountain Bell plan, lower usage charges than originally included and a discount scheduled for off-peak calling were proposed, while the four-minute calling periods were maintained. Mountain Bell witness, Paul J. Odessa testified that Mountain Bell had abandoned its original CPC proposal as outlined by Mr. Leger and proposed that the Commission adopt both the modified Dr. Parkins' plan and the modified Mountain Bell plan presented on rebuttal. The purpose of offering both plans, according to Mr. Odessa, would be to provide the customers with more than one option, thus giving Mountain Bell and the Commission more marketing information upon which to base any future expansion of the plans, or modification of the plans.

It is quite clear from the testimony in this proceeding from Mountain Bell's witnesses as well as Dr. Parkins that an optional pilot usage-sensitive telephone plan should be offered in the Metropolitan Denver area. However, as evidenced by the number of plans and alternative plans that were proposed in this proceeding, there is some disagreement among the experts as to the precise design of that plan or plans to be implemented. While this proceeding has illustrated that rate design is an art rather than a science, a common theme for which there is some consensus, emerged from the plans proposed by Dr. Parkins and Mountain Bell witnesses on rebuttal.

Ideally, a usage-sensitive pricing plan should be designed to reimburse Mountain Bell as accurately as possible for the actual costs incurred in providing that service. That optimal rate design, however, is tempered by such "real world" problems as available technology and public acceptance. For example, while the Commission has not verified the figures, it appears that the access charges proposed by all of the witnesses may not fully compensate Mountain Bell for the costs of providing that access. The access design modification was made by all the witnesses to facilitate public acceptance of the proposed plan. With respect to the measurement of usage, the relationship of usage factors to the provision of service, available technology, and public acceptability bear heavily on the final design of a particular usage-sensitive plan.

While the factors of frequency, duration, distance and time of day are all cost related, they are not equally significant. In ESS offices, for instance, switching costs are principally related to the frequency of calls. Trunking costs, on the other hand, are related to all three factors, but frequency and duration are the most significant. Of all the factors, distance is the least related to usage costs. Moreover, as was made clear by the public testimony presented during the proceedings, customers are very concerned over the effect that the usage-sensitive plan, which includes distance as a factor, would have on the Metropolitan Denver "community." While the public has accepted the distance factor for long-distance toll usage, the introduction of such a pricing element for local exchange service was thought by most witnesses to be divisive of the community's interest that has developed as a result of the Metro 65 toll-free calling area. Moreover, Dr. Parkins, in his plan minimized distance as a factor by increasing the size of Zone I, thereby recognizing the low priority of distance in terms of cost and the lack of public acceptance. The Commission at this time concludes that distance should not be measured at all as an element of pricing in the implementation of the initial pilot usage-sensitive pricing plan. This does not preclude the possibility that at some future time additional, optional usage-sensitive rates incorporating the distance factor as a pricing element may be offered if it appears that such a rate would be in the public interest.

The Commission believes that the plan initially authorized should be based, to the extent possible, on cost and include measurement of the other three usage-sensitive factors of frequency, duration and time of use. As previously mentioned, the access charge theoretically is designed to recover the costs of providing the service which does not vary with usage; however, in order to assure that some consumers will subscribe to this service as opposed to the other competing services available, it is necessary to set that access charge at a level which will effectuate that purpose and provide a low-cost alternative for those customers who are willing to subscribe to limited service. With respect to the usage charge, the Commission believes that the utilization of a one-minute interval in the rate, as proposed in the Dr. Parkins' plan, would be more understandable to the public. However, the Commission agrees with Mountain Bell's rebuttal witnesses that Dr. Parkins omitted some usage costs in his calculations which should be included. Additionally, the Commission believes that it will be in the public interest to avoid the possibility of a needle peak in off-peak hours and in providing uniformity with the interstate toll rates. Thus the discount schedule of the optional usage-sensitive pricing plan should not be 100% in off-peak hours and days, as recommended by Dr. Parkins, but rather the discount schedule utilized by Mountain Bell for its interstate toll rates. Accordingly, the Commission will hereinafter authorize Mountain Bell to file tariffs implementing an optional usage-sensitive pricing rate in the following form:

1.	Access charge:	\$4 per month
2.	Usage charge:	First minute - 7.0¢ Each additional minute - 0.70¢
3.	Discount schedule:	Full rate - Monday through Friday - 8 a.m. to 5 p.m.
		35% Discount - Sunday through Friday - 5 p.m. through 11 p.m.
		60% Discount - All other times
4.	Availability:	Not available simultaneously to customers who receive other types of residential telephone service at the same location.

The above rate will be for one-party service, and will be offered to customers in the Denver Zone or the Denver Metropolitan Exchange who are or can be served by an ESS office. These charges will be applicable to all calls from the Denver Zone to all areas of the Denver Metropolitan Exchange.

Finally, in order to have this plan fully understood by the public, Mountain Bell should advertise widely the availability and the design of the optional plan, together with all attendant costs thereof, the Commission recognizes, of course, that by measuring usage elements on each call made by those customers accepting the service, it will be available to fewer customers than the 14,000 proposed in the original plan. Thus, Mountain Bell should advise the consumers of the limited availability of this service and establish a mechanism for initial subscription to the plan by consumers, and subsequent subscription as more ESS storage capability becomes available. Also, in order to provide Mountain Bell as well as the Commission with information as to the type of customers who subscribe to the service and the resulting effects on their usage, Mountain Bell should conduct extensive tracking studies.

CONCLUSIONS ON FINDINGS OF FACT

1. The Commission has jurisdiction of this matter pursuant to CRS 1973, 40-3-101, 40-3-102, 40-3-111 and 40-6-111.

2. The tariffs filed by Mountain Bell proposing implementation of an optional usage-sensitive plan are not just and reasonable and should be permanently suspended.

3. The rates and tariffs, as hereinafter ordered, are just and reasonable, and will not adversely affect Mountain Bell's revenues.

4. Mountain Bell should be required to institute an informational program explaining fully the optional usage-sensitive pricing plan to all of its residential customers in the Denver Zone (with the exception of those located in the West Denver area). Additionally, Mountain Bell should be required to institute a procedure for subscription to the plan by customers initially, and subsequently as more ESS storage capability becomes available.

5. Mountain Bell should be required to conduct studies of the type of customers who subscribe to the optional plan as hereinafter ordered and the resulting effects on their usage, for the purpose of evaluating future expansion or modification of such usage-sensitive pricing plans.

An appropriate Order will be entered.

O R D E R

THE COMMISSION ORDERS THAT:

1. The following-described tariffs, of Mountain States Telephone and Telegraph Company filed April 1, 1976, be, and hereby are, cancelled and rendered void, and their use, on or after the effective date of this decision, is prohibited:

COLORADO PUC NO. 5 - TELPEHONE

			Cancels	
Colo. Sheet No.	PUC Revision No.		Colo. Sheet No.	PUC Revision No.
		General Exchange Tariff - Colorado		
9	4th	Section 15 - Service Charges	9	3rd
		Local Exchange Tariff - Colorado		
9A	Original			
93	3rd		63	2nd

2. Mountain States Telephone and Telephone Company shall file tariffs within thirty (30) days of the effective date of this decision, implementing the decision herein, offering a pilot usage-sensitive rate, on an optional basis, to its residential telephone customers in the Metropolitan Denver Exchange (with the exception of those customers in the West Denver area) as described in the above Findings of Fact and Discussion.

3. Mountain States Telephone and Telegraph Company shall institute a new informational program fully explaining the optional usage-sensitive pricing plan and all attendant costs thereof, to its residential customers located in the Denver Zone of the Metropolitan Denver Exchange (with the exception of those located in the West Denver area).

4. Mountain States Telephone and Telegraph Company shall establish a procedure for the initial and future subscription by customers to the optional usage-sensitive pricing plan herein ordered and shall file a written report with the Commission on or before the sixtieth (60th) day following the effective date of this Order, setting forth the reasonable details of said procedure and the actions it has taken to effectuate the same.

5. Mountain States Telephone and Telegraph Company shall conduct studies of the market response to the usage-sensitive rate as well as the effects on usage as a result of subscription to that rate, and shall advise the Commission on a quarterly basis, by written report, of the data obtained from those studies.

6. Any motion which is presently pending and has not been disposed of otherwise, be, and hereby is, denied.

This Order shall be effective twenty-one (21) days from the day and date hereof.

DONE IN OPEN MEETING the 23rd day of November, 1976.

THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF COLORADO

Commissioners

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