

Decision 90 03 033 MAR 14 1990

ORIGINAL

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

In the Matter of the Application of)
CN Communications, a Nevada)
corporation, for a Certificate of)
Public Convenience and Necessity.)

Application 89-05-004
(Filed May 4, 1989)

In the Matter of the Application of)
Citizens Utilities Company of)
California (U 87 C) for a)
certificate of public convenience)
and necessity to provide public)
utility exchange telephone service)
and to construct telephone lines)
and related facilities in a certain)
portion of Lassen County.)

Application 89-07-019
(Filed July 13, 1989)

Cooper, White & Cooper, by Mark P. Schreiber,
Attorney at Law, for CN Communications, and
E. Garth Black, Attorney at Law, for
Citizens Utilities Company of California,
applicants.

Kristin A. Ohlson, Attorney at Law, for Pacific
Bell, protestant.

Nossaman, Gunthner, Knox & Elliot, by Jose E.
Guzman, Jr., Attorney at Law, for Rural
Telephone Company, interested party.

Lionel B. Wilson, Attorney at Law, Ramesh
Joshi, and Maurice Crommie, for Division of
Ratepayer Advocates.

Edward Suriaga, for the Commission Advisory and
Compliance Division, Telecommunications
Branch.

O P I N I O N

Summary

This decision grants the certificate of public
convenience and necessity (CPCN) requested by applicant, Citizens
Utilities Company of California (Citizens) to:

1. Expand its Janesville and Herlong exchanges
in Lassen County, California to include 53

and 48 square miles of unfiled territory, respectively, and thereby provide exchange telephone services via landwire systems to 12 and 30 potential customers who need and are awaiting those services.

2. Establish a new Ravendale exchange in Lassen County to include approximately 280 square miles of unfiled territory, including the communities of Ravendale, Termo, and Madeline along 30 miles of Highway 395 to provide exchange telephone services to approximately 120 potential customers who have long awaited and vitally need these services. The exchange telephone services in the Ravendale exchange will be provided using International Mobile Machines Corporation (IMM) Basic Exchange Telephone Radio System (BETRS) Ultraphone digital radio systems, a new technology, which will provide complete privacy of communications and all the usual service features normally available to customers on landwire telephone systems.

In view of the proposed significant investment in radio equipment (\$4,586 to serve each customer in the Ravendale exchange) and the fact that there is only one source (manufacturer) of this particular state-of-the-art equipment, the order also requires Citizens' shareholders to bear one-half the risk of any premature abandonment of this specialized equipment during its recommended 15-year life cycle. Because of the benefits of certain lessened costs to Citizens' ratepayers, they are required to bear the remaining 50% of the investment risk for use of this equipment.

Background

Citizens has filed an application requesting that the Commission issue a CPCN for authority to expand its Janesville and Herlong exchanges to serve additional customers, and to establish a new Ravendale exchange, all located in rural portions of Lassen County.

In the expansion of its Janesville exchange, Citizens would include two areas totaling about 53 square miles of unfilled territory to serve approximately 12 new customers. One area involves about 42 square miles located generally northeast of the community of Litchfield; the second contains approximately 11 square miles and is situated southeast of the community of Wendel.

The proposed expansion of the Herlong exchange would include a total of about 48 square miles of unfilled territory, 46 square miles of which are located generally along the east side of the Sierra ordinance depot. The remaining two square-mile area is situated about four miles southeast of the community of Doyle on the east side of Highway 395. Approximately 30 potential customers would subscribe to telephone services in the expanded area when they are available.

The Janesville and Herlong exchange expansions will be served with buried cable and subscriber carrier systems extended from existing facilities. The central offices in these exchanges will employ digital switching systems manufactured by Northern Telecom, Inc. Service will only be provided on one-party individual lines even in the remotest portions of the expanded exchange areas. Customers will also be able to subscribe to all the modern service features generally available from Citizens' newest digital offices today.

Citizens' proposed new Ravendale Exchange would encompass approximately 280 square miles of rural unfilled territory east and west of Highway 395 including the communities of Ravendale, Termo, and Madeline in Lassen County. Citizens estimates that about 120 potential customers will subscribe to telephone services in the proposed Ravendale exchange when they are available. The potential customers, other than those located in the three small communities, are for the most part situated on large parcels covering one or

more square miles of land and used principally for cattle grazing or for growing hay crops.

Because of their widely scattered premises, the cost of traditional overhead or buried copper telephone cable to serve these prospective customers would be very expensive. Therefore, Citizens plans to use state-of-the-art BETRS¹ digital radio systems in the new Ravendale exchange. Citizens also proposes to place some buried cable facilities to serve clusters of potential customers in the small communities.

By a ruling of the assigned administrative law judge (ALJ) dated July 20, 1989, this application was consolidated for hearing with Application (A.) 89-06-040 filed on June 14, 1989 by Rural Telephone Company (Rural), an Idaho corporation, and A.89-05-004 filed on May 4, 1989 by CN Communications (CN), a Nevada corporation. Rural's A.89-06-040 sought a CPCN to establish new Termo and Turtle Mountain exchanges in Lassen County which would have encompassed the areas proposed to be served by Citizen's Ravendale and Herlong exchanges. Rural's application also requested authority to establish a separate Ball's Ranch exchange and thus compete in CN's proposed new Toiyabe exchange (A.89-05-004).

Subsequently, Rural was granted authority by the Idaho Public Service Commission to serve a new (Shoup) exchange in northern Idaho, and on September 7, 1989, Rural withdrew A.89-06-040 to be able to concentrate its efforts and resources on the establishment of the Shoup exchange. By D.89-10-001 dated October 5, 1989, the Commission dismissed Rural's A.89-06-040 without prejudice leaving Citizens' A.89-07-019 uncontested.

1 BETRS utilizes digital transmission technology to provide complete privacy and all of the same single party telephone features to a customer that are normally provided by a regular single party metallic pair (copper) telephone service.

A prehearing conference was held on August 18, 1989 in the then consolidated matters involving A.89-05-004 (CN), A.89-06-040 (Rural), and A.89-07-019 (Citizens) to determine when the respective applicants and the Commission's Division of Ratepayer Advocates (DRA) would be ready to present evidence in those proceedings and where the hearings should be held to afford interested persons an opportunity to be heard. Hearings regarding new or expanded telephone services in Lassen County were set for October 31 and November 1, 1989 in Susanville reserving the date of October 30, 1989 for the ALJ and other interested parties to field visit the areas of Lassen County to be served by the then competing applications of Rural and Citizens.

With Rural's A.89-06-040 dismissed, there remained no opposition to Citizens' A.89-07-019 at the hearings in Susanville on October 31 and November 1, 1989. Citizens' counsel then requested that A.89-07-019 be separated from these consolidated proceedings and considered on its own merits.

**Description of Applicant and its
Technical and Financial Capability**

Citizens is a California corporation and a wholly-owned subsidiary of Citizens Utilities Company (Parent), a Delaware corporation, with its administrative and corporate headquarters located in Stamford, Connecticut. Parent oversees electric, gas, telephone, water and wastewater utility operations and paging services to over 454,000 consumer connections in more than 500 communities and participates in 12 cellular partnerships in 12 states across the nation.²

Citizens provides utility telephone service to approximately 57,000 access lines and water service in various

² Source: Citizens Utilities Company 1988 Annual Report to Stockholders, appended as Exhibit 10 to A.89-07-019.

areas of California. Citizens' principal office for telephone operations is located at 1035 Placer Street, Redding, California 96049. Citizens currently provides telephone service to areas adjacent to the unfiled areas it seeks to serve by this application in Lassen County.

By virtue of its long history of providing telephone service in California and additional support from its parent, Citizens has the technical ability to carry out the necessary design and construction to extend telephone services to all of the areas of Lassen County proposed to be served by A.89-07-019.

Citizens also appended to its application its latest available balance sheet and income statement for the five month period ended May 31, 1989. In its California utility operations Citizens lists a net plant investment of \$197,853,863; total operating revenues of \$37,624,797; and net income of \$10,811,637³ for the first five months of 1989. Based on these data, it is clear that Citizens possesses the necessary financial resources to undertake this new or expanded communications business in Lassen County, California.

Field Visit

On October 30, 1989, the ALJ, accompanied by Citizens' Susanville District Manager, its attorney, its Rates and Regulatory Manager and its Transmission Engineer toured⁴ parts of the proposed Ravendale exchange and the areas proposed for the expansion of its Janesville and Herlong exchanges. The field visit also included a comprehensive tour of Citizens' Susanville

3 This amount would yield \$25,947,928 in net income if annualized for a 12-month period.

4 Counsel for DRA and the DRA staff witnesses were given the opportunity to participate in the tour, but declined since the staff witnesses had earlier participated in a more comprehensive tour as part of their field investigation for this proceeding.

telephone central office containing its modern digital switching system, its mechanized operator service positions, and its customer billing and accounting facilities. It also included an extensive tour of its separate Susanville service center and vehicle and equipment yard. The overall tour was a brief version of the field trip provided for the DRA staff as a part of its investigation of Citizens' ability to undertake the expansion of its service areas in the Janesville and Herlong exchanges and to establish the new Ravendale exchange.

While visiting the service center, Citizens' personnel described and demonstrated their abilities to respond to customer maintenance problems for both landline and radiotelephone service. Citizens maintains a staff of Federal Communications Commission (FCC) licensed radiotelephone technicians who are available to perform all necessary radio maintenance for the utility at its Susanville service center.

The Citizens service center at Susanville makes use of electronic data processing for reasonably rapid testing of customer lines and for clearing records of service problems. Citizens maintains ample quantities of cable, equipment (including work equipment), and necessary vehicles (including snow cats) in ready condition to render prompt service to its telephone customers in all types of weather.

Citizens arranged to have on display at the service center, and open for inspection, samples of each piece of the IMM BETRS radio equipment that it planned to use in the new Ravendale exchange. The ALJ had an opportunity to inspect the IMM BETRS equipment with particular attention to the Ultraphone customer radio unit. This device was not designed for field maintenance but is instead intended to be removed and returned as a complete unit to the IMM factory service center in Philadelphia. The IMM Ultraphone customer radio unit weighs about 18 pounds net

or 20 pounds when packaged for shipment, not including its antenna or power supply.

An inspection of the unit with its access cover removed revealed that it did not have any removable modules or cards. Instead it had a very large circuit board that was screwed and hard-wired (soldered) in place covering other components and circuits. It was estimated that a typical repair to this unit would require about one hour⁵ or more after placing this unit on the service bench at IMM's factory service center because of the nature of its design and construction.

Hearing Summary

Two days of hearings were held in Susanville on October 31 and November 1, 1989 yielding 212 pages of transcript. Testimony was taken on need for the services, rates for provision of the needed services, and, most significant, the methods to be used to provide the needed services and the potential life cycle costs for the BETRS radio equipment being recommended for the new Ravendale exchange area. Testimony was received from seven witnesses, three for Citizens, two for IMM, one for DRA,⁶ and one public witness (the postmistress of Madeline, California). Her testimony included the presentation of statements of numerous members of the public, in the area of the proposed Ravendale exchange, who could not be present at the hearings because of work commitments or other valid reasons. Two other persons from Madeline and Ravendale, respectively, provided statements for the

5 This estimate was arrived at as an educated guess upon discussion of several possible unit failures by Citizens' Transmission Engineer and the ALJ.

6 The testimony of a second DRA witness who prepared part of the DRA staff exhibit (Exhibit 6) was received by stipulation of the parties to its admission without his presence (Tr. pp. 208-210).

record as well. Ten exhibits were identified and subsequently received in evidence.

Hearings were concluded on November 1, 1989, and this application was submitted upon receipt of four late-filed exhibits due on November 30, 1989 or on receipt of the reporter's transcripts, whichever occurred later. Volume 2 of the transcript was received on December 15, 1989.

Expansion of the Janesville
and Herlong Exchanges

The proposed expansions of the existing Janesville exchange to include about 53 square miles of unfiled territory and provide telephone service to approximately 12 new customers and the proposed expansion of the Herlong exchange to include about 48 square miles of unfiled territory and provide telephone service to approximately 30 potential customers were considered routine in nature. The reason Citizens included these two exchange expansions in this application, rather than seeking such expansion approval by advice letters, was that Rural had earlier filed A.89-06-040 encroaching on these exchange area expansions.

All of the parties at the hearings agreed that the Janesville and Herlong exchange expansions were necessary and that Citizens' proposed methods of serving the expanded areas from existing plant as well as new direct buried cable and subscriber carrier facilities were reasonable and proper. Since the new construction to serve the potential customers is to be placed underground, it can be seen with reasonable certainty that there would be little, if any, significant impact on the environment in these rural areas.

The only remaining concerns were regarding rate treatment for these new service areas within the Janesville and Herlong exchanges. The rates for these expanded exchange areas were considered along with the rates developed for the Ravendale exchange at the hearing. In addition, at the time of the hearings,

Citizens stated that on October 2, 1989 it had filed Advice Letter 469 to eliminate monthly mileage charges applicable to one-party (individual line) telephone service outside of the base rate and special rate areas of its exchanges. Since Citizens' central offices were upgraded in recent years to handle primarily one-party service, it has become more difficult and technically a poor strategy to actually provide party-line service to customers who would prefer one-party service. The result of Advice Letter 469 was to create uniform rates for one-party services within each of Citizens' exchanges, although the rates in different exchanges may still differ due to differing costs of service or calling areas. The elimination of mileage charges affected 821 business and 6,561 residential customers served by Citizens in the suburban areas of its exchanges, saving them an estimated \$574,579.20 each year according to Citizens' Advice Letter 469 (Exhibit 7).

The reason for calling attention to this filing at the hearing was that, as a result of Advice Letter 469, the new areas to be served in the Janesville, Herlong, and Ravendale exchanges would automatically benefit from the elimination of mileage charges, and the rates for one-party service will be uniform throughout the expanded areas of each exchange.

Advice Letter 469 became effective on November 13, 1989. Therefore, the monthly rates set forth in Appendix A to this order for the expanded areas of the Janesville and Herlong exchanges and for the entirety of the new Ravendale exchange will be uniform without mileage charges.

Proposed Ravendale Exchange

As noted in the background discussion (supra), the proposed Ravendale exchange would encompass about 280 square miles of rural unfilled territory east and west of Highway 395 in Lassen County, including the three communities of Ravendale, Madeline, and Termo. The road sign identifying Ravendale states that its elevation is 5,297 feet and it has a population of 20 persons. The

size of this community typifies the communities of Madeline and Termo which are actually smaller in population. Nonetheless, these rural communities represent farm areas that have long been settled and have needed telephone service all along. However, due to their widely scattered premises, often placing customers more than a mile apart, Citizens has not heretofore considered it profitable or worthwhile to extend exchange cable facilities to the premises and farms in the area now proposed for the Ravendale exchange.

Certain premises such as the Ravendale School and the Madeline General Store are currently served by Citizens with toll station telephone service.⁷ Toll stations cannot be directly dialed, thus requiring that every incoming and outgoing call be operator-handled.⁸

While to some persons the use of a small number of toll station telephones may appear to have some nostalgia and thus is quaint in modern-day life, this opinion is not shared by the people who reside in Ravendale, Madeline, and Termo.

Kristin Luanne Montgomery, the postmistress of Madeline, California, testified as to the longstanding need for the service. She also read and presented ten statements from other persons in addition to her own, suggesting that exchange telephone service in the area of the Ravendale exchange is vital and necessary and long

7 Toll station telephones are billed for each outgoing call made as a toll call and have no free local calling area.

8 To call the Madeline General Store from any phone (San Francisco, for example) a person would dial 0-0 to reach the AT&T Communications of California (AT&T-C) long-distance operator and would ask her for Madeline #1 which is the toll station number of the Madeline General Store. After a few seconds, the phone at the Madeline General Store will ring, if all goes well, and the line is not busy. What the caller is not aware of is that the AT&T-C operator actually calls a Citizens' operator in Susanville, and Citizens' operator then manually rings the Madeline #1 toll station using a special code at her computerized service position.

overdue. According to Montgomery, Citizens told local residents repeatedly that it planned to upgrade the system, but then nothing seemed to change. Many persons do not have even a toll station on a party-line because of the high cost quoted by Citizens to install such a service.

Some felt that Citizens' representatives would say one thing and then it would do something else and could not be trusted regarding the need to upgrade service. One person contended that it was not until Rural filed to serve the area that Citizens took some notice and began making attempts to look at ways to improve service to the area.

On the question of need, Montgomery read numerous statements fully supporting the need for the proposed Ravendale exchange. Three brief and noteworthy statements were as follows:

1. From Jack McGawa, Madeline, California:

"A house about four and a half miles from town burned completely down a few months ago because the neighbors had to drive all the way to Madeline to start the fire alarm siren instead of being able to phone. If they would have phoned in the alarm, at least part of the house might have been saved. For safety because of accidents along the highway and so on, a decent phone service that we can rely on is essential." (Tr. p. 82.)

2. From Ted Riggs, a retired General Telephone employee:

"Phones are essential here, being so remote. And good telephone service in this remote area is more than essential. To date Citizens Utilities record of service has been very poor. We're tired of being treated as a stepchild." (Tr. pp. 82-83.)

3. From Laurie Holdaway, Madeline, California:

"There are people in the outlying areas who definitely need a phone; because of children in school or old people or infirm

people. Also the bad winters make it definitely necessary to have a phone. Private enterprise is almost impossible in this area because of the poor phone service." (Tr. pp.83-84.)

Montgomery concluded by saying that "everyone in the area wants a phone. And if it has to be with Citizens Utilities, so be it. But we have a basic distrust of Citizens Utilities." (Tr. p. 85.)

Carl McGrew, principal of the Ravendale Elementary School presented a statement based on the school officials' concerns for the public need for telephone service in the area. He said that the school had one of the few toll station telephones in the area and:

"We had calls made by many people in the whole community on our school telephone. That would not concern us except that [it] is also occurring during school time. And many times that phone was nonoperational, especially during the winter time.

"During this last year I contacted the sheriff's department in order to try to develop some kind of an emergency procedure in which the sheriff or the ambulance or somebody else could be notified in case of an accident at school or a community member.

"During the last three years we have had two major accidents in which the people appeared at school bleeding, pouring blood from all their body, and they came in once in the middle of the Christmas program with the kids on the Christmas stage.

"The accident occurred. Somebody had a car accident. They came to school. The individual was in a very dangerous emergency procedure.

"We could not get through. We couldn't get a telephone call out.

"During the last year I made a special trip to Citizens Utilities in order to try to get a

seven-digit number assigned to the school in order to do business. They were very receptive to that, but they said it was an impossibility at this time.

"What I wanted especially was any number, I didn't care if they made a fictitious number or whatever because every time we call a business that we do business with, to fit into their computer, two digits doesn't work, whether it is a company in Iowa or New York or New Jersey or wherever it happens to be.

"Therefore, we requested a seven-digit number. That wasn't possible.

"It is especially true that during the winter time up there that we have -- last winter we had 18 below zero for almost three weeks, and the school lines were frozen. We had to take all the kids home.

"If the parents weren't there when we started taking them, there was no way of making contact with those parents. They didn't have any telephone service. They had no way.

"Sometimes when parents drop their children off or the bus picks them up, they are going to town or they are going here or there. We are required [to] return the children to the school [or place them] under [the] guardianship or the care of someone else.

"We could not do that. We have actually had to take children back to our house and take them back to school because the parents were not at home and we could not contact them after driving 20 and 30 miles.

"We are pleased that this is at this point making a real opportunity for the Ravendale area to have telephone service.

"Everyone that I have spoken to is in favor of this. We have a major concern at school because of the health and safety of all of the children." (Tr. pp. 87-89.)

Citizens currently renders toll station telephone service to 24 customers in the proposed Ravendale exchange area. It estimates that about 120 customers would subscribe to exchange service in the Ravendale exchange within the first year after the service becomes available. This number of customers represents the current need for this service within the proposed 280 square-mile exchange and along approximately 30 miles of Highway 395 encompassed by that exchange.

It was clear from the testimony and exhibits that the telephone services needed in the proposed Ravendale exchange were to serve existing homes, farms, businesses, schools, and government agencies, rather than speculative real estate developments. The only possible significant exception to this statement, for the overall application, is for potential service to the California Pines subdivision located northwest of Turtle Mountain wherein approximately 30 existing dwellings and/or business premises would initially be served in the expansion of the Herlong exchange.

Proposed Rates for the Ravendale Exchange

In A.89-07-019, Citizens initially requested monthly rates of \$23.90 and \$46.67 for single-party residence and business services, respectively, in the Ravendale exchange. Citizens contended that these rates compared favorably with its existing \$28.00 per month rate for toll station service and that the new service would allow unlimited toll-free calling within the exchange.

Citizens' initially proposed rates were designed to avoid any subsidy requirement from either the settlement pools or the California High Cost Fund (HCF). Citizens also offered the alternative of lower exchange rates for its proposed Ravendale exchange, if the Commission preferred, with the proviso that the exchange participate in settlement pools and/or the HCF.

DRA witness Maurice F. Cronmie, in the staff report (Exhibit 6) recommended that the local exchange rates for the new

Ravendale exchange be set at the same levels as are being proposed for the expanded areas of the Janesville and Herlong exchanges, namely \$12.75 and \$24.90, respectively, for single-party residence and business services.

In addition, Crommie notes that Citizens presently participates in the respective settlement pools, the intrastate intraLATA message toll and private-line tariffs, and the extended area service (EAS) cost recovery arrangements with Pacific Bell and intends to continue participating in these arrangements. DRA does not object to the inclusion of Citizens' proposed Ravendale exchange in the necessary intrastate settlements and EAS cost recovery arrangements to allow the lower rates to be consistent with existing rates in Citizens' other exchanges.

Crommie's recommendations were not opposed by Citizens and were welcomed by members of the public attending the first day of the hearing in Susanville. McGrew, in particular, was pleased with the lower rates recommended by DRA, noting that there were a lot of low-income people in the area proposed for the Ravendale exchange. "Records at school indicate that we have a high content of low-income families. So we are pleased that the rates that are being proposed by DRA are more (in line) than what we actually expected to have to pay." (Tr. p. 90.)

In a further explanation to McGrew, DRA's counsel suggested that Universal Lifeline Telephone Service (ULTS) would also be available in the Ravendale exchange if this application is approved by the Commission. Thereafter, those low-income persons who clearly meet the eligibility requirements would be able to subscribe to ULTS at approximately half the cost of one-party residential service.

**Proposed Use of IMM BETRS
to Serve the Ravendale Exchange**

Citizens has studied various options of serving the new Ravendale exchange and has determined that, based on first cost,

IMM BETRS (Ultraphone) digital radio equipment is clearly favored. It can be installed at about one-half⁹ the cost of copper cable pairs to the widely scattered premises in the new Ravendale exchange.

Citizens prepared late-filed Exhibit 9 to show that use of IMM BETRS radio equipment for the Ravendale exchange would allow a first cost of service more comparable to that in Citizens' other exchanges. In that exhibit, Citizens determined that its average investment per access line in its more typical rural Alturas exchange (not including the central office or customer equipment) was \$4,689. The comparable investment using IMM equipment in the Ravendale exchange would be \$4,586 per access line. The equivalent investment for copper cable in the Ravendale exchange would be approximately \$11,000 per access line based on Van Wagner's data, although the cable would have a longer useful service life, 30 to 40 years, compared to about 15 years for the IMM radio equipment.

Citizens contends that the IMM radio option clearly presents an opportunity for Citizens to install an affordable system which can provide all the same customer service features that are available from copper cable pairs. The exception is that the customers will be required to provide electric power to maintain the radio equipment in standby-ready condition and for its operation during calls. Maslin testified that the IMM customer radio equipment uses about the same power as a 40-watt bulb during standby (75 watts when busy) and is equipped with batteries to maintain service for up to eight hours during power failures.

⁹ Michael S. Maslin, Citizens' Transmission Engineer, estimated that the cost to serve the new Ravendale exchange with IMM BETRS radio equipment would be \$683,907 based on his October 9, 1989 study (Attachment #1 to Exhibit 4). This is contrasted to Calvin E. Van Wagner's, Citizens' Engineering Planning and Administrative Manager, estimate of \$1,300,000 to serve that exchange with conventional wireline plant.

Maslin had traveled to Silver Lake, Oregon to see a telephone system of Pacific Telecom which used the IMM BETRS Ultraphone to serve a similar exchange with about 150 customers (Tr. p. 177). Pacific Telecom's representatives were pleased with the performance of the IMM equipment and the technical and maintenance support provided to them by IMM.

Maslin had also investigated other radio systems which could be used to serve the Ravendale exchange. The most promising one was from "a company called AWA" whose system could serve up to 250 customers.¹⁰ However, the AWA equipment uses analog technology and was rejected because of the limited customer service features and lack of privacy on that technology. Citizens wanted service features to be transparent (the same to the customer) whether served in Ravendale or any other exchange.

**Maintenance Costs of IMM
BETRS Equipment**

With the IMM Ultraphone BETRS digital radio system being recommended by Citizens as the system of choice for serving the new Ravendale exchange, the hearings then focused on the likely maintenance costs of that equipment over its 15-year useful life and whether IMM, the sole source for that equipment and technology, would remain in business throughout that useful life.

As to the IMM equipment in Citizens' central office, Maslin explained that Citizens had its own central office technicians and four licensed radio and carrier technicians, within an hour's drive of Ravendale, who could and would maintain the IMM equipment down to the card (module) level and would return the cards to IMM for repair and return.

¹⁰ The IMM equipment can be expanded to serve up to 570 subscribers without disrupting service (Exhibit 4, p. 9).

Unfortunately, the IMM customer unit was built as one complete package weighing 18 pounds and was not designed for field or utility shop maintenance since it has no replaceable cards or modules. Maslin explained that Citizens' personnel could easily maintain equipment down to the given card or module, but not to a component level. However, it was not unusual to return a box of that size to the manufacturer.¹¹

IMM had quoted Citizens a repair rate of \$65 per hour plus parts and a three-week turnaround of units shipped to the factory for repair, according to Maslin.

Because of Citizens' awareness¹² that ongoing maintenance of IMM equipment would be a concern, and possibly a significant issue in this application, Citizens arranged to have experts from IMM available to testify about their equipment at the hearings in Susanville.

11 Packaged for shipment the unit weighs about 20 pounds and, according to United Parcel Service (UPS), the one-way UPS charge for surface shipping that weight from Susanville, California to the IMM Philadelphia factory service center would be \$9.83. If one were to apply the shipping charges both ways and one hour of labor plus an assumption of \$30 of parts to repair a given customer unit, the overall cost would be $(\$9.83 \times 2) + \$65 + \$30 = \114.66 (\$115 rounded) for a routine repair.

12 Citizens' personnel had learned of the problems that Happy Valley Telephone Company had experienced with a similar analog subscriber radio system. More specifically, its design engineer for the radio system was killed in a vehicle accident, the manufacturer of the equipment went out-of-business, and a lightning strike rendered much of the equipment inoperable. The resulting maintenance costs in that instance, as referenced in Case 89-01-033 filed January 24, 1989 and as discussed in Decision (D.) 89-12-010 dated December 6, 1989, exceeded basic service revenues over the short useful life of the equipment. Happy Valley was faced with the cost of replacing the system in its entirety within about three years after it first installed it. (D.89-12-010, p. 10 mimeo).

Ted R. Clair, Regional Sales Manager for IMM, who had worked with telephone equipment and the telephone industry for 20 years explained the technical performance capabilities of the IMM equipment.

Clair noted that IMM's prime business was rural subscriber BETRS radio systems and that the IMM Ultraphone system has advantages over other systems in that it is totally transparent to normal wire line use. Clair asserted that, "You can put any type of telephone set on it and any other type of device, answering machines, hard-of-hearing handsets. We haven't encountered any station-type equipment that we are not compatible with at this date" (Tr. p. 105).

In response to questions by DRA's counsel regarding IMM's possible business failure or its termination for other reasons, Clair answered that the parts IMM uses in its equipment are not unique and even the chips are bought from other vendors. He deferred questions of the company's financial position or ability to stay in business for the 15-year¹³ period that the equipment would normally last to IMM's Vice President and Director of Regulatory Affairs Jack T. Taylor.

Clair opined that certain portions of the product are patented and are "propriety property." Therefore, the company has not provided the service manuals with diagrams nor the suggested test equipment necessary to allow telephone utilities, who wish to, to maintain the IMM subscriber units. He did agree to ask his management if they would make available to Citizens the necessary schematics, parts breakdown information, and handbooks of service,

¹³ Citizens had initially assigned a 13-year service life to the IMM equipment based on its experience with similar equipment. However, Clair and IMM's Vice President and Director of Regulatory Affairs, Jack T. Taylor, were both confident that the Ultraphone would easily last 15 years with proper maintenance.

maintenance, and operating instructions to allow it to maintain the IMM Ultraphone system in the event that IMM decided to go, or went, out of business.

In its transmittal of Late Filed Exhibit 10 IMM agreed that "...if future market conditions prevent IMM from supporting the Ultraphone equipment in a manner deemed appropriate, IMM will, at customers request, provide documentation to allow that customer to maintain the Ultraphone equipment."

Clair was asked about the Ultraphone customer unit that had been provided for inspection at Citizens' Susanville service center and at the hearings. It bore serial number 918 and represented a recently produced unit, and between one and two years of production of this unit.

Clair stated that there had been very few failures of the subscriber units produced to date, and he was pretty optimistic about the long-term performance of the unit.

Clair also stated that IMM had 33 operating systems in North America with companies such as "Bell South, Southwestern Bell, U.S. West, Contel, GTE, CP National, Alltel, Pacific Telephone, C & P Telephone Company of Maryland, the White House Communications administration, and Alberta government telephones." In addition, Citizens has just completed an installation of a system in Arizona.

Clair had no extended warranty arrangements beyond the one-year warranty normally provided but agreed to look into such an option as part of late-filed Exhibit 10. In response to a question from DRA's counsel, Clair agreed that concerns over maintenance were largely related to the subscribers box stating that:

"From just the nature of the application of this type of product, the subscriber box statistically will no doubt prove out to be the more frequent source of trouble because it's out in the elements. It's exposed to rain and snow and lightning and et cetera, power fluctuations, et cetera.

"Whereas the central office environment where the other end of the equipment is a very stable environment. The temperature is maintained and humidity is maintained.

"So just due to the nature of the application and whether it be this radio equipment or whether it be another vendor's digital loop carrier equipment or an analog subscriber carrier equipment, the nature is that piece that's out in the elements is one at highest risk." (Tr. p. 123.)

Clair had earlier opined that it was reasonable to expect one failure for each subscriber unit (on the average) over the 15 years service life and at that time it would be returned to the factory service center for proper repairs. He also agreed that if he were Citizens as a purchaser of the equipment he would certainly want and expect to see it maintained for 15 years.

Taylor then testified¹⁴ that IMM was essentially a research and development company and that it has raised nearly \$90 million in the equity markets. He explained, in response to concerns over the continued large losses of earnings experienced by IMM noted recently in BusinessWeek, that IMM is a leader in the BETRS market, and it has the best technology. It has recently had its IMM system approved by the Rural Electrification Administration (REA) for funding and it is the only REA-approved equipment for small-company borrowing.

He opined that interest in the IMM equipment by prominent telephone companies was becoming more serious. This was a real problem initially because the telephone industry had little incentive to change the way they have done business over the years. "They are very comfortable in putting copper in the ground or

14 Jack T. Taylor's testimony is briefly highlighted here but extends over 38 pages of transcript (pp. 130-168) and provides an interesting overview of IMM and its BETRS technology.

overhead and putting the cost of that into the base, into the base rate and folding it in." (Tr. p. 149.) Taylor also explained that IMM had done extensive work in the area of digital cellular and was in a strong position to further develop that technology as a industry leader when the standards for digital cellular communications are established.

Taylor was pleased to see the extensive inquiry into the IMM equipment at the hearings in this application, because with IMM at half the cost of copper wire, he felt his equipment would compete very well in this instance. He had great confidence that the equipment would easily last 15 years and that it could be maintained at half the cost of copper wire plant during that life cycle.

He had earlier explained that Hughes Network Services of San Diego, California manufactured the customer units and seven of the nine central office modules for the IMM system. The other two modules are built by another California subsidiary, and the complete system is assembled, integrated, and tested in Philadelphia by IMM.

He stated that Hughes Aircraft Company (HAC), a subsidiary of General Motors, took a \$10 million equity position in IMM in July 1989 and HAC has numerous marketing agreements overseas that will involve wireless local communications.

Taylor stated that he is very positive about IMM's viability and "we are going to be here 15 years from now when that system is out there. We are absolutely positive of that." (Tr. p. 140.)

In response to a suggestion by the ALJ that IMM consider modularizing the customer radio unit to potentially reduce maintenance costs, Taylor stated:

"I can assure you on those comments the modularization of our subscriber units that message was very loud and clear.

"I can also assure you that in our headquarters in Philadelphia right now they have received that message from you through me."

**IMM's Offer of an
Extended Warranty Agreement**

On November 30, 1989 Citizens submitted late-filed Exhibit 10 containing a copy of IMM's Extended Warranty Agreement (See Appendix B). Basically, IMM would, for a charge of 5% of the original purchase price for the system, commit itself to maintain the system equipment for an additional year, and the agreement can be further extended for additional years, as may be desired, for a similar 5% annual charge to be negotiated based on increases in the Consumer Price Index.

The Extended Warranty Agreement does not appear to cover free transportation of defective modules or customer units from the utility's premises to the IMM Philadelphia service center. It does, however, have specific additional charges for on-site repairs or replacement of its equipment.

The 5% annual charge would represent about \$134 per year for typical customer unit costing about \$2,684. Transportation charges (UPS) for shipment of the defective units from Citizens' Susansville service center to and from Philadelphia would be in addition to the \$134 per year extended warranty charge on each unit.

**Establishment of a Toll Rate Point
for the Ravendale Exchange**

Mark. T. Shine, Citizens' Rates and Regulatory Manager, testified that Citizens had not yet established a toll rate point for the Ravendale Exchange, but that it would likely do so in the usual manner by determining the vertical (V) and horizontal (H) coordinates of the post office located in that community. The procedure of choosing the post office in the community as the toll rate point for rating all message toll telephone service dates back

to World War I and Shine commented that "in this day of technological change, that happens to be one antiquated procedure that seems to remain in place." (Tr. p. 173.)

Temporary Waiver of Installation
Charges for Telephone Services

Shine had recommended a waiver of any line extension charges in the Ravendale Exchange because of Citizens' proposed use of BETRS radio rather than telephone lines to serve that exchange. There was no similar offer to waive any applicable line extension charges (beyond any free footage allowances) in the expanded Janesville or Herlong exchanges.

In response to questions from DRA's counsel and the ALJ, Shine further agreed to waive the usual installation or service order charges for potential customers who make timely applications for telephone services within the first 60 days after Citizens announces that it will take applications for services in the expanded areas of the Janesville and Herlong exchanges or the new Ravendale exchange. The waiver of these charges will enable Citizens to better coordinate its installations of services while its construction crews are in place completing their respective work activities, rather than to have other crews make individual premise visits on an unscheduled and less cost efficient basis. The charges subject to a one-time waiver total \$44 and \$59 for basic one-party residence and business services respectively.

Sharing of Risk of Unforeseen Failure
of the BETRS Radio System to Serve
the Ravendale Exchange

While the IMM BETRS radio system offers significant initial investment cost savings to Citizens, essentially allowing

service to be established for less than half the cost¹⁵ of conventional cable facilities for the Ravendale exchange, it does have a shorter service life and some maintenance risks. The BETRS system has a single source supplier for equipment or maintenance, and although there is every expectation that the system will last 15 years, only through the combined efforts of IMM and Citizens will such an expectation be realized.

Therefore, Shine was asked to assume the worst case: if there was a need to replace the entire IMM BETRS system three years after its initial installation, then how would he propose the investment should be treated for ratemaking purposes?

Shine felt that there would be some risk to Citizens shareholders for Citizens' management's decision to use the IMM BETRS system. However, he also felt that the Commission would need to determine the prudence of Citizens's management's decision to use the BETRS system before placing the burden on its stockholders. Shine later opined that Citizens' choice of equipment would have to be considered "seriously wrong" to warrant a treatment of imprudent disallowance. He believed that all concerned parties at the hearing "have a mutual understanding that it (BETRS) is the technology at this point that makes it viable to serve that area."

In a subsequent answer, Shine opined that if the worst case example come to pass, "it is our view that there would be some sharing of the responsibility" between Citizens ratepayers and stockholders (Tr. pp. 62-69).

Discussion

The expansion of the Janesville and Herlong exchanges to include modest amounts of unfilled territory and to provide exchange

¹⁵ \$4,586 versus \$11,000 or about 42% of the cost of conventional cable (Late-Filed Exhibit 9).

telephone services to potential subscribers in the expanded areas appears reasonable.

All parties are in agreement with the need for telephone service and the proposed uniform rates for that service in these expanded areas, including a temporary one-time waiver of the service establishment charges and premise visit charges associated with services applied for within a 60-day period following a notice by Citizens that applications for telephone services will be accepted from potential customers in the expanded area.

Citizens proposal to apply its existing tariff rates and charges for all services within the Janesville and Herlong exchanges, including its regularly filed line-extension charges for all construction beyond the aggregate free footage allowance is also reasonable.

The planned construction of underground cable facilities, as well as the use of subscriber carrier equipment and existing utility plant, to serve the expanded areas of these exchanges is not likely to have any significant impact on the environment.

Accordingly, Citizens' request for a CPCN to expand its Janesville exchange to include approximately 53 square miles of unfiled territory, and its Herlong exchange to include about 48 square miles of unfiled territory will be granted.

Citizens' request for a CPCN to establish a new Ravendale exchange to include about 280 square miles of unfiled territory encompassing the communities of Madeline, Ravendale, and Termo along 30 miles of Highway 395 in Lassen County to serve approximately 120 potential customers, is, based on public input, long overdue. Telephone service to this area is necessary for the safety and welfare of the area residents, and the traveling public on Highway 395. Telephone service is also needed to expedite business and agricultural transactions and to improve commerce generally in the area awaiting this exchange service. The proposed exchange service will also provide the convenience of free local

calling and a 911 Universal Emergency Reporting Service number within the exchange for the personal and public safety needs of area residents.

All parties are in agreement that exchange telephone service to the 280 square mile area of the proposed Ravendale exchange is vitally needed and that the uniform rates recommended by DRA are reasonable. Citizens' offer of a temporary one-time waiver of the service establishment and premise visit charges within 60 days of the time Citizens gives notice that it will take applications for exchange service in the area is also reasonable.

Citizens' Proponent's Environmental Assessment (PEA), submitted in accordance with Rule 17.1(d) of the Commission's Rules of Practice and Procedure, did not address the BETRS radio facilities it proposes to use to serve the Ravendale exchange, especially including any necessary base stations or antennas which it plans to locate on Likely Mountain. Therefore, we have made an independent assessment, based on the overall presentation as to the location and size of the needed facilities, and determined that the proposed use of radio and buried cable facilities to serve the new Ravendale exchange will not have a significant impact on the environment¹⁶ in this rural area.

This is the first application seeking approval of the BETRS technology for serving a new telephone exchange in a very rural area. Hereafter, we will require full compliance with Rule 17.1 of the Commission's Rules of Practice and Procedure by any and all applicants seeking similar authority.

¹⁶ Even the common fixed transmitter-receiver and antenna facilities on Likely Mountain will have a very minimum visual impact, due to the long sight distances involved from any points of view. Also there are already numerous larger radio and microwave facilities existing on Likely Mountain which can barely be seen from any premises in the proposed exchange.

In addition, Citizens should be placed on notice that our independent assessment was based on the proposed use of relatively small receiving and transmitting antennas for the BETRS radio system situated on Likely Mountain, together with any base station, switching, and signal processing equipment located in or on existing structures thereon and various central offices, as well as underground cable and radio facilities including unobtrusive antennas on the customers' premises. In the event that any other construction is necessary to serve the Ravendale exchange, Citizens should first be required to prepare a more comprehensive PEA in accordance with Rule 17.1.

The only significant issues remaining are:

1. Is the proposed use of an IMM BETRS digital radio system at less than one-half the cost of conventional buried cable a reasonable and proper method of serving the new Ravendale exchange for the next 15 years, and;
2. How should the risk for any unforeseen premature failure and replacement of significant amounts of this equipment be shared or otherwise treated for ratemaking purposes.

As to the first issue, the proposed use of the IMM BETRS digital radio system offers numerous cost avoidance advantages to Citizens in its quest to serve this sparsely settled exchange area. It also allows Citizens to avoid the need of obtaining right-of-way agreements for many long wireline extensions.

For Citizens' customers the BETRS radio system will allow prompt installation without the need for line extensions, and in most cases costly line extension charges, from the nearest state or county road to their premises. All of these benefits will keep first costs affordable for both Citizens and its customers and will allow the utility to delay construction of wireline facilities until customer growth takes place within the exchange and

sufficient customer demand develops to permit the installation of the cable at or about the cost it now experiences in its other more populated exchanges.¹⁷

The IMM BETRS digital radio system also permits the customers to choose any regularly offered telephone service available from Citizens and still expect the same quality of service that is available to Citizens' customers served by wireline.

With all these benefits there are two distinct drawbacks to the IMM BETRS digital radio system.

The first is that the customer must provide power to maintain the unit in standby ready condition, and to operate it during its use. However, the system power requirements are modest, and potential subscribers have not noted any significant concern for providing the required power.

The second drawback is that the IMM Ultraphone customer radio unit is not designed with low-cost maintenance in mind. Any failure in this unit requires its removal and replacement, and subsequent shipment to the IMM factory service center in Philadelphia for repair and return. IMM representatives have noted this deficiency in the present design of their equipment, and have communicated these concerns to their management.

¹⁷ Any IMM BETRS Ultraphone digital radio, removed from service when cable facilities become available, can and should be used to serve another customer in some other sparsely settled area. Accordingly, Citizens should take necessary steps to assure that removed Ultraphone units are handled with care upon removal, tested for serviceability after any needed repairs, and placed in clean and dry ready storage for reinstallation.

However, it is not likely that the IMM customer units can be redesigned¹⁸ in time for use by Citizens in the Ravendale exchange in the spring of 1990.

The cost-benefits for using the IMM BETRS digital radio system appear to clearly outweigh the two disadvantages noted above. Nonetheless, there is a possible risk that IMM will not remain in business throughout the planned 15-year useful life of its equipment. The importance of this concern is realized by noting the purchase price (approximately \$2,684) of a single IMM BETRS Ultraphone unit. When such a significant investment is made for each of 120 customers, it logically follows that every reasonable effort should be taken to assure that these units are kept operational for their full useful life.

This brings us to the second and most significant issue of risk-sharing. With only about 1,000 customer units in use, the IMM BETRS system has not had sufficient introduction into the marketplace to make IMM a viable and prosperous company. Citizens' use of its equipment in the Ravendale exchange would, with 120 customer units, constitute the second largest field installation of the system. Only Pacific Telecom, a local exchange telephone company in Silver Lake, Oregon, has more customer units (about 150) in service at one location. ✓

With IMM as a single source for equipment spares and maintenance, the risk of its failure as a business venture (even if remote) presents a serious concern. Nonetheless, Citizens very likely has within its own control the capacity, with IMM's

18 The customer unit would need an easy-to-open hinged access cover and numerous easily accessible circuit boards to permit low-cost field maintenance.

cooperation,¹⁹ to maintain the IMM equipment in the event that IMM chooses to discontinue its factory maintenance.

Citizens needs only to be cautious when it arranges the contract for purchase of the IMM system to also arrange for the "option" to buy any unit-peculiar spare parts in sufficient quantities to support the IMM Ultraphone for the remainder of its then useful life (total 15 years). Although this could present an inconvenience to Citizens, the required effort would be warranted to exhaust the useful life of the IMM BETRS system in case IMM no longer actively supports its systems. Because of the importance of such an "option" arrangement to protect Citizens' and its ratepayers' investment in Ultraphones, we will require Citizens to obtain that "option" as part of its purchase contract with IMM.

Conversely, because of the numerous benefits to Citizens' customers with the use of IMM BETRS as proposed for the Ravendale exchange, they should share any risks associated with the use of this state-of-the-art radio system. A 50%/50% split appears to be reasonable for such risk sharing and the risk should be based on the net investment in IMM BETRS amortized over a 15-year useful life assigned to that equipment. This would essentially place Citizens at a risk that it can likely control, involving a first year amount of approximately \$341,000. This risk would be fully avoided at the end of 15 years of continued service, and normal and routine reasonable maintenance costs will be allowed.

We applaud IMM's interest and cooperation in presenting testimony at the public hearings to explain its products, their applications, strengths and weaknesses, and its proposed long-term support for those products.

¹⁹ In Late-filed Exhibit 10, IMM's Director of Sales Support has agreed to provide documentation necessary to allow its customers to maintain the IMM Ultraphone should it discontinue its factory service.

However, IMM's extended warranty offer included as part of Late-Filed Exhibit 10 appears to cover IMM's cost for one factory service for each Ultraphone unit each year. As such, it is not likely to be an offer which Citizens will want to accept without further significant price concessions. We make this observation based on Clair's testimony that each Ultraphone customer unit will likely require one factory service over its 15-year useful life.

We will grant a CPCN to Citizens to establish a new Ravendale exchange in Lassen County based on its proposal as modified at the public hearings and subject to risk sharing²⁰ for the net investment it makes in IMM BETRS Ultraphone radio equipment amortized over a 15-year useful life.

Comments: ALJ's Proposed Decision

In accordance with PU Code § 311, the ALJ draft decision prepared by ALJ George Amaroli was issued on January 26, 1990. Timely comments on the proposed decision were filed by DRA.

DRA commented that it fully-supported the proposed decision, but urged that it be modified to add an additional finding of fact supporting and an ordering paragraph requiring Citizens to "adequately advertise" its new exchange services in the local newspaper for "8 consecutive weeks during the first 60 days after the effective date of this decision." DRA also suggested that the name reference to Northern Telecom, Inc. be corrected, which has been done.

Citizens, who had not filed comments, did file a reply to DRA's comments as permitted by Rule 77.5 of the Commission's Rules

20 By being cautioned in advance of this risk-sharing plan, Citizens can also take any appropriate steps it feels necessary to better protect the customer Ultraphone units from foul weather including proper grounding to protect against possible lightning strikes to antennas.

of Practice and Procedure. Although Citizens' reply was late and not received until February 26, 1990, it will be accepted, reviewed, and used due to the merits of its contents.

Citizens concurred with DRA's recommendation that the new exchange services for the Ravendale area and the expanded Herlong and Janesville areas should be adequately advertised. However, Citizens requests that the advertising be commenced 60 days prior to the acceptance of applications for new service rather than immediately after the effective date of the order. The delay is necessary to allow Citizens to obtain and install the plant needed to provide the new exchange services.

Citizens has also agreed to make a special mailing within 20 days after the effective date of this order to all residents in the new service areas advising them of the Commission's approval of its application to provide them with basic exchange telephone services.

We have carefully reviewed DRA's comments and Citizens' reply and determined that, in view of Citizens' agreement to mail the advance notice of our approval of the proposed exchange service to each resident (property owner), it is appropriate to also require Citizens to issue a press release and publish four notices in the local newspaper during the 60 days immediately prior to and during its taking applications for new services in the new service areas.

We are also making minor textual revisions and corrections to this order, the most substantive being to delete the term "experimental" regarding the "state-of-the-art" IMM radio system which will be used to serve the Ravendale exchange.

Apart from the additional advertising and noticing of the new services and the minor textual revisions noted above, we are of the opinion that the ALJ's proposed decision constitutes a fair, factual, and thorough resolution of the remaining issues in this

proceeding. Therefore, we will adopt the ALJ proposed decision without further changes to the results reached therein.

Findings of Fact

1. Citizens by A.89-07-019 filed July 13, 1989 requests a CPCN to expand its Janesville and Herlong exchanges by about 53 and 48 square miles, respectively, and to establish a new Ravendale exchange containing approximately 280 square miles of rural unfilled territory, all situated in Lassen County, California.

2. Approximately 12 and 30 potential customers need and are awaiting the availability of exchange telephone service in the areas proposed for expansion in the Janesville and Herlong exchanges, respectively.

3. Approximately 120 potential customers need and are awaiting the availability of exchange telephone service in the proposed Ravendale exchange.

4. Citizens proposes to provide individual line (one-party) exchange telephone services to all prospective business and residence customers within the expanded areas of the Janesville and Herlong exchanges and in the new Ravendale exchange. Citizens also proposes to make available all of the service features it customarily provides in its other exchanges to applicants for service in these new service areas.

5. The proposed expansion of Citizens' Janesville and Herlong exchanges are routine in nature and the authority for such expansion would normally have been requested by advice letter; however, on June 14, 1989, Rural Telephone Company, an Idaho corporation, filed A.89-06-040 seeking a CPCN to serve these areas, as well as the area proposed by Citizens for its new Ravendale exchange. Rural's application to serve these areas adjacent or contiguous to areas currently served by Citizens prompted Citizens' filing of A.89-07-019.

6. Rural's application also requested CPCN authority to serve an area encompassing Ball's ranch in eastern Sierra County in

competition with CN, which had earlier filed A.89-05-004 to serve that area.

7. A.89-05-004, A.89-06-040, and A.89-07-019 were consolidated because of competing requests to serve overlapping areas of unfiled territory.

8. On September 7, 1989, Rural withdrew its A.89-06-040, leaving both A.89-05-004 and A.89-07-019 uncontested.

9. On November 1, 1989, Citizens requested that its A.89-07-019 be separated from CN's A.89-05-004, with which there was no remaining overlapping competition, and then be decided exclusively on its own merits.

10. CN's A.89-05-004 is now being handled separately, following the first day of hearing on that application on November 3, 1989 in Downieville, California.

11. Citizens proposes to serve Janesville and Herlong exchange area expansions with buried cable and subscriber carrier systems from modern digital central offices.

12. All parties agreed that the proposed expansions of the Janesville and Herlong exchanges were necessary and Citizens' proposed methods to serve these expanded exchange areas were reasonable, and accordingly its request for CPCN authority should be granted.

13. The proposed rates and charges for telephone services in the Janesville and Herlong expanded exchange areas are uniform and consistent with those regularly offered in these exchanges as set forth in Appendix A to this order.

14. Historical estimated costs to provide exchange telephone service with traditional copper cable to the widely scattered rural premises in the area now proposed for the new Ravendale exchange were considered uneconomic by Citizens.

15. Current estimated costs of landlines to serve the potential customers in the new Ravendale exchange are more than

twice the cost per access line (\$11,000 versus \$4,689) that Citizens is currently experiencing in its Alturas exchange.

16. Exchange telephone service is vitally needed throughout the 280 square mile area proposed for the new Ravendale exchange.

17. The 24 toll station telephone services currently provided by Citizens in the proposed Ravendale exchange area are limited in number and do not adequately serve the safety and welfare needs of the area residents or those of the traveling public on 30 miles of Highway 395. Also, these 24 toll stations are woefully inadequate to expedite business and agricultural transactions in that area.

18. Approximately 120 potential customers will subscribe to exchange telephone service in the area proposed for the Ravendale exchange when it becomes available.

19. Because of the urgent and long-standing need for exchange telephone service in the area proposed for its Ravendale exchange, Citizens has examined cost-effective alternatives to the uneconomic use of traditional landwire services and now proposes to use IMM BETRS digital radio equipment based on affordable first costs.

20. The IMM BETRS digital radios will provide equal privacy of communications and the full array of service features normally available to customers on landwire systems.

21. Customers in the new Ravendale exchange would have to provide standby and operational electric power for the BETRS customer Ultraphone units.

22. The IMM BETRS system's expected service life is 15 years, about one-half or less than that for traditional copper landlines.

23. The IMM BETRS digital radio system including the customer Ultraphone units is available from a single source manufacturer/supplier, IMM.

24. The IMM BETRS digital radio system modules and circuit boards used in the utility's control office as well as the customer Ultraphone unit are not designed to be repaired in the field and must be returned to the factory for any required maintenance.

25. There is a risk that replacement units and modules may not be readily available to Citizens for the 15-year useful life of the IMM BETRS system if IMM should fail to, or decide not to, remain in that business for the next 15 years.

26. In the early years the net investment risk is large whereas the investment at risk declines to zero after the end of the 15-year life.

27. For equity reasons, the investment risk may be reasonably apportioned to Citizens' shareholders and its customers.

28. Risk sharing, considered at the outset, has the distinct advantage of encouraging Citizens to make well-reasoned purchase decisions and contractual agreements with IMM, which will permit it to maintain the IMM BETRS system, down to the failed components, in the event of IMM's termination of its factory service operations.

29. IMM, in its November 21, 1989 letter accompanying late-filed Exhibit 10, did offer to provide documentation necessary to allow Citizens to maintain the BETRS Ultraphone system should it discontinue its factory service.

30. In the interests of long-term system reliability, which will benefit both Citizens and its ratepayers, it is in Citizens' interests to arrange to buy peculiar spare parts for the IMM BETRS Ultraphone from IMM, when and if the latter chooses to discontinue its factory service; this will enable Citizens to continue maintaining the equipment rather than be forced to abandon it prematurely.

31. A 50%/50% sharing of risk between Citizens shareholders and ratepayers for its proposed net investment in IMM BETRS equipment, depreciated over a 15-year service life, appears reasonable and equitable under Citizens' current ratemaking methods.

32. The IMM BETRS digital Ultraphone system seems ideally suited for use in a large-scale application of state-of-the-art ✓

radio facilities to serve widely scattered subscribers in the proposed Ravendale 280-square mile exchange area. ✓

33. The uniform rates and charges proposed by DRA for telephone services in the Ravendale exchange, as agreed to by Citizens and set forth in Appendix A hereto, are reasonable.

34. A temporary one-time waiver of service establishment and premise visit charges associated with services, applied for within a 60-day period following notice that applications for new services will be taken, in the expanded areas of Citizens' Janesville and Herlong exchanges and its new Ravendale exchange is reasonable.

35. It can be seen with reasonable certainty that the use of existing utility plant facilities together with new subscriber carrier equipment and underground cable to serve the expanded areas of the Janesville and Herlong exchanges, and the IMM BETRS digital radio system including necessary antennas and fixed-base facilities on Likely Mountain is not likely to have any significant impact on the environment.

36. Citizens' proposal to waive line-extension charges to prospective customers which are to be served with IMM BETRS digital radio systems in its new Ravendale exchange is reasonable, since few, if any, line extensions will be needed with these radio systems.

37. Citizens has the technical ability and financial resources to undertake the expansion of its Janesville and Herlong exchanges and to establish a new Ravendale exchange, as proposed in A.89-07-019, without adverse effects on its current telephone subscribers in California.

38. There are no remaining protests to this application, accordingly Citizens has requested that it be decided on its own merits.

39. Citizens' plan to use the V and H coordinates of the location of the Ravendale post office to establish a new toll rate point for all incoming and outgoing message toll telecommunications

to and from its proposed Ravendale exchange is reasonable and consistent with the long-standing practice of the telephone industry.

40. Adequate notice of the new exchange services to be provided in the Ravendale exchange, and the expanded Herlong and Janesville exchanges, will benefit citizens by increasing the number of new customers making timely applications for these new services.

41. Reasonable and adequate notice will likely reduce or eliminate entirely any future complaints alleging a lost opportunity to receive the one-time waiver of service connection and premise visit charges associated with the initial offering of these new exchange services.

Conclusions of Law

1. Exchange telephone service is needed and uncontested in and for the areas proposed for expansion of Citizens' Janesville and Herlong exchanges, therefore, Citizens' request, as set forth in A.89-07-019, for a CPCN to expand these exchanges to include approximately 53 and 48 square miles of unfilled territory, respectively, should be granted.

2. Citizens should be authorized to undertake its proposed efficient use of buried cable and subscriber carrier systems extended from existing plant facilities and modern digital switch-equipped control offices to serve the expanded areas of the Janesville and Herlong.

3. Citizens' request for a CPCN to provide exchange telephone service to the new Ravendale exchange encompassing 280 square miles of unfilled territory, including the communities of Ravendale, Termo, and Madeline along Highway 395, in Lassen County, to help meet the long-standing public safety, commercial and public convenience needs for telecommunications services should be granted.

4. Citizens' proposed use of IMM BETRS Ultraphone digital radio systems new technology to permit it to cost-efficiently serve the widely separated customer premises in the new Ravendale exchange, could present risks of premature failure relative to the expected 15 year equipment service life, and therefore its use should be authorized on a risk-sharing conditional basis. ✓

5. Citizens by its contractual agreements with IMM can and should preserve necessary maintenance alternatives to eliminate or greatly reduce the potential risks of premature abandonment of the IMM equipment.

6. Citizens, because it has the capacity now to protect itself with contractual purchase commitments with IMM, should share the risk of any premature abandonment of the IMM BETRS equipment with its ratepayers.

7. Citizens' ratepayers are advantaged by the reduced investment in plant to serve the Ravendale exchange and for that advantage should share the risk of any premature abandonment of the IMM BETRS equipment with Citizens' shareholders.

8. A reasonable and equitable split of the risk for the IMM BETRS system net investment by Citizens on a 50%/50% basis with its ratepayers should be adopted and amortized over the 15 year useful life projected for that plant property.

9. DRA's proposed uniform rates and charges for exchange telephone services in the expanded areas of the Janesville and Herlong exchanges and for the new Ravendale exchange as concurred to by Citizens and as set forth in Appendix A hereto, should be adopted.

10. Citizens' proposal to waive line-extension changes to prospective customers which are to be served by IMM BETRS digital radio systems should be authorized.

11. A one-time waiver of Citizens' service establishment and premise visit charges associated with new services, applied for within 60 days following notice that applications for new services

will be taken in the expanded areas of its Janesville and Herlong exchanges and its new Ravendale exchange should be authorized.

12. It can be seen with reasonable certainty that approval of this application and granting the CPCN's sought therein should not have any significant impact on the environment.

13. Citizens' request that A.89-07-019 be separated from A.89-05-004 and be decided on its own merits should be granted, as there are no remaining protests and/or applications computing with A.89-07-019.

14. Citizens' plan to use the V and H coordinates of the location of the Ravendale Post Office to establish the toll rate point for that exchange should be adopted.

15. Because of the long-standing urgent need for exchange telephone service especially in the area proposed for the Ravendale exchange where 120 potential customers are awaiting that service, this order should be made effective today.

16. The application should be granted to the extent set forth in the following order.

O R D E R

IT IS ORDERED that:

1. A.89-07-019 which was previously consolidated for hearing with A.89-05-004 and A.89-06-040 is hereby separated from those proceedings, following the withdrawal of A.89-06-040 on September 7, 1989 and will be dealt with exclusively on its own merits.

2. A CPCN is granted to applicant, Citizens Utilities Company of California (Citizens) to:

- a. Expand its Janesville exchange in Lassen County, California to include about 53 square miles of unfiled territory to serve approximately 12 or more new customers with exchange telephone service;

- b. Expand its Herlong exchange in Lassen County, California to include about 48 square miles of unfiled territory to serve approximately 30 or more new customers with exchange telephone services; and
- c. Establish a new Ravendale exchange in Lassen County, California to include about 280 square miles of unfiled territory, encompassing the communities of Ravendale, Termo, and Madeline along 30 miles of Highway 395, to serve approximately 120 or more new customers with exchange telephone service.

3. Citizens is authorized to file an advice letter with associated tariff sheets containing the same rates and charges for exchange services to its expanded Janesville, Herlong, and new Ravendale exchanges as set forth in Appendix A to this order.

4. The advice letter and associated tariff sheets described in Ordering Paragraph 3 above shall also include revised service area maps for Citizens' expanded Janesville and Herlong exchanges and its new Ravendale exchange and shall be filed in compliance with the provisions of General Order (GO) 96-A after the effective date of this order. These tariff schedules shall apply only to service rendered after their effective date which shall be at least 5 days after filing.

5. Since Citizens plans to use IMM BETRS Ultraphone digital radio systems to serve the majority of its prospective customers in the new Ravendale exchange, it is hereby authorized to waive its usual line-extension charges to applicants for new services within that exchange.

6. Because of the significant investment in IMM BETRS digital radio equipment required to serve the Ravendale exchange and the need to assure that such equipment will remain used and useful over its entire 15-year projected life cycle, Citizens' shareholders shall be placed at risk along with its ratepayers on a

50%/50% basis for the net investment in that equipment amortized over a 15-year period after its placement in service.

7. As a means to reduce its risk for possible abandonment of the IMM BETRS equipment to be used to serve the Ravendale exchange, Citizens shall, in its equipment purchase contract with IMM, include a written agreed-upon-condition that, should IMM decide for any reason to discontinue its offering of factory service on the BETRS Ultraphone equipment and any related spares, Citizens will then be provided the necessary documentation, together with reasonable quantities of any peculiar spare parts and non-standard supplies including non-standard test equipment to allow Citizens to maintain the IMM BETRS equipment itself. Citizens shall also seek a condition which will, in that event, provide the necessary documentation without charge and the spare parts at the standard trade net quantity prices with Citizens paying the shipping charges from IMM's factory service center or warehouse location.

8. While we will not require any new reports from Citizens at this time, it is, however, hereby placed on notice that it should maintain proper accounting, including any necessary memorandum accounts, to permit it to file future reports as may be required on the investment, depreciation, or amortization expenses and all maintenance expenses associated with its large-scale application of state-of-the-art IMM BETRS Ultraphone digital radio systems in its Ravendale exchange.

9. Citizens is authorized to waive, on a one-time basis, its service establishment and premise visit charges to new applicants for exchange telephone services for a period not to exceed 60 days, following its notice that applications for new services will be taken in the expanded areas of its Janesville and Herlong exchanges and throughout its new Ravendale exchange. Citizens shall, however, first inform the Chief of the Telecommunications Branch of our Commission Advisory and Compliance Division (CACD) by letter of

the beginning and ending dates of this one-time waiver of charges for each of the applicable exchanges.

10. Within 30 days after this order is effective, Citizens shall file a written acceptance of the certificate granted in this proceeding; absent such filing, the authority granted by this certificate may be revoked.

11. Citizens is authorized to establish a new toll rate point using the V and H coordinate method at the location of the post office in Ravendale for its new Ravendale exchange. Citizens shall arrange with Pacific Bell to include the applicable V and H coordinates for the Ravendale exchange with other similar data in Pacific Bell's next tariff filing containing revision of V and H coordinates for measurement and billing of message toll telephone services in California.

12. If Citizens undertakes additional construction to serve the Ravendale exchange, beyond that contemplated in the narrative of this order, then it shall first prepare a more comprehensive Proponent's Environmental Assessment in accordance with Rule 17.1(d) of the Commission's Rules of Practice and Procedure prior to commencing construction to serve the exchange.

13. Citizens shall, when ready to take applications for the new services authorized herein:

- a. Prepare and issue a press release to the local newspaper(s) serving the Ravendale, Herlong, and Janesville service areas, describing the introduction and availability of new exchange telephone services for those areas, and stating therein the date(s) when applications will be taken for such services under terms including the provisions set forth in Ordering Paragraph 9.
- b. Place a minimum of four bi-weekly notices in those same newspapers, during the subsequent 60 days to inform the general public of its taking of applications for the new exchange telephone services, under the terms and conditions

set forth in this order, including the time limit associated with the waiver of service connection and premise visit charges set forth in Ordering Paragraph 9.

- c. Mail a timely notice to each known resident or property owner, in the Ravendale exchange and the expanded Herlong and Janesville exchange areas, containing general information similar to that described in Ordering Paragraph 13a and b relative to the prospective offering of exchange telephone services in these areas.

14. Citizens shall notify the CACD director in writing of the date service is first rendered to the public within five days after exchange telephone service begins in its new Ravendale exchange.

15. The certificate granted and the authority to render service under the rates, charges, and rules authorized herein will expire if not exercised within six months after the effective date of this order.

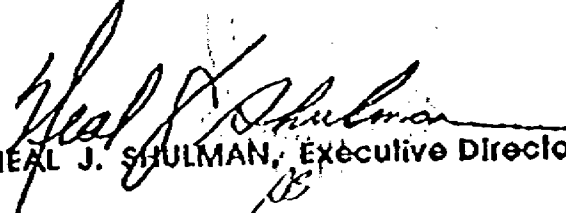
16. These proceedings are closed.

This order is effective today.

Dated MAR 14 1990, at San Francisco, California.

G. MITCHELL WALK
President
FREDERICK R. DUDA
STANLEY W. HULETT
JOHN B. OHANIAN
PATRICIA M. ECKERT
Commissioners

I CERTIFY THAT THIS DECISION
WAS APPROVED BY THE ABOVE
COMMISSIONERS TODAY


NEAL J. SHULMAN, Executive Director

APPENDIX A

Citizens Utilities Company of California
 Janesville Exchange Extension
 Proposed Rates and Services

Exhibit No. 8
 App. No. 89-07-019
 12/6/89
 Page 1 of 2

<u>Description</u>	<u>Business</u>			<u>Residence</u>
	<u>Individual</u> <u>Line</u>	<u>PBX</u>	<u>Semi</u> <u>Public</u>	<u>1 - Party</u>
Access Line Exchange Rates *	\$ 24.90	\$ 37.25	\$ 29.60	\$ 12.75
<u>Foreign Exchange Service **</u>			<u>Business</u> <u>Rates</u>	<u>Residence</u> <u>Rates</u>
Exchange Rate Applicable in Appropriate Schedule of Utility or Connecting Utility - Flat Rate Plus - Mileage Per 1/4 Mile			\$ 22.00	--
Local Exchange			3.25	--
Plus Foreign Exchange - Rate Applicable To Grade of Service				
<u>Universal Lifeline Service</u>				
Individual Line Flat Rate			--	\$ 6.38
Telephone Set Allowance			--	0.75
<u>Directory Listing</u>				
Primary Listing Other Exchange - Each			\$ 1.00	\$ 0.60
Additional Listing - Each			1.00	0.60
<u>Joint User Service</u>				
Applicable to Joint User Service In Connection with Business Flat Rate Service			\$ 3.75	--
<u>Service Connection Move & Change Charges</u>				
<u>Service Ordering</u>				
New or Additional Services			\$ 14.00	\$ 9.00
Move & Change			11.00	7.50
Record Purposes Only			8.50	6.00

* Basic local exchange service rates that currently exists in CUCC's CPUC
 Tariff Schedule No. A-1.

** Service not available in Herlong Exchange or proposed Ravendale Exchange.

APPENDIX A

Citizens Utilities Company of California
Janesville Exchange Extension
Proposed Rates and Services

Exhibit No. 8
App. No. 89-07-019
12/6/89
Page 2 of 2

<u>Centrex Services</u>	<u>Business Rates</u>	<u>Residence Rates</u>
Access Line - Business Rate	\$ 24.90	\$ --
Service Line	12.25	--
Basic Services Per Access Line	2.65	--

Custom Calling FeaturesIndividual Features

Call Forwarding	\$ 3.75	\$ 2.50
Call Waiting	6.25	3.75
3-Way Calling	6.25	3.75
Speed Calling 8-Code	4.40	2.50
Speed Calling 30-Code	6.25	4.40

Business & Residential

<u>Visit Charge</u>	<u>Straight Time</u>	<u>Overtime</u>
Each visit to a customers premise resulting from trouble caused in whole or in part by customer provided equipment	\$ 20.00	\$ 30.00

NOTE: The above listing reflects the most frequently ordered business and residential services offered in CUCC's currently effective CPUC Tariff schedules, as of 11-1-89. Service Rates, Terms and Conditions for these services and all other services offered by CUCC are set forth in CUCC CPUC Tariff schedules.

APPENDIX A

Citizens Utilities Company of California
 Herlong Exchange Extension
 Proposed Rates and Services

Exhibit No. 8
 App. No. 89-07-019
 12/6/89
 Page 1 of 2

<u>Description</u>	<u>Business</u>		<u>Residence</u>
	<u>Individual</u> <u>Line</u>	<u>PBX</u>	<u>1 - Party</u>
Access Line Exchange Rates*	\$ 24.90	\$ 37.25	\$ 29.60
			\$ 12.75
<u>Universal Lifeline Service</u>			
		<u>Business</u>	<u>Residence</u>
		<u>Rates</u>	<u>Rates</u>
Individual Line Flat Rate		--	\$ 6.38
Telephone Set Allowance		--	0.75
<u>Directory Listing</u>			
Primary Listing Other Exchange - Each		\$ 1.00	\$ 0.60
Additional Listing - Each		1.00	0.60
<u>Joint User Service</u>			
Applicable to Joint User Service In Connection With Business Flat Rate Service		\$ 3.75	--
<u>Service Connection Move & Change Charges</u>			
<u>Service Ordering</u>			
New or Additional Services		\$ 14.00	\$ 9.00
Move & Change		11.00	7.50
Record Purposes Only		8.50	6.00
<u>Centrex Services</u>			
Access Line - Business Rate		\$ 24.90	--
Service Line		12.25	--
Basic Services Per Access Line		2.65	--

* Basic local exchange service rates that currently exists in CUCC's CPUC Tariff Schedule No. A-1.

APPENDIX A

Citizens Utilities Company of California
 Herlong Exchange Extension
 Proposed Rates and Services

Exhibit No. 8
 App. No. 89-07-019
 12/6/89
 Page 2 of 2

<u>Custom Calling Features</u>	<u>Business Rates</u>	<u>Residence Rates</u>
Individual Features		
Call Forwarding	\$ 3.75	\$ 2.50
Call Waiting	6.25	3.75
3-Way Calling	6.25	3.75
Speed Calling 8-Code	4.40	2.50
Speed Calling 30-Code	6.25	4.40

Business & Residential

<u>Visit Charge</u>	<u>Straight Time</u>	<u>Overtime</u>
Each visit to a customers premise resulting from trouble caused in whole or in part by customer provided equipment	\$ 20.00	\$ 30.00

NOTE: The above listing reflects the most frequently ordered business and residential services offered in CUCC's currently effective CPUC Tariff schedules, as of 11-1-89. Service Rates, Terms and Conditions for these services and all other services offered by CUCC are set forth in CUCC CPUC Tariff schedules.

APPENDIX A

Citizens Utilities Company of California
Ravendale Exchange
Proposed Rates and Services

Exhibit No. 8
App. No. 89-07-019
12/6/89
Page 1 of 2

<u>Description</u>	<u>Business</u>			<u>Residence</u>
	<u>Individual Line</u>	<u>PBX</u>	<u>Semi Public</u>	<u>1 - Party</u>
Access Line Exchange Rates*	\$ 24.90	\$ 37.25	\$ 29.60	\$ 12.75
<u>Universal Lifeline Service</u>			<u>Business Rates</u>	<u>Residence Rates</u>
Individual Line Flat Rate			--	\$ 6.38
Telephone Set Allowance			--	0.75
<u>Directory Listing</u>				
Primary Listing Other Exchange - Each			\$ 1.00	\$ 0.60
Additional Listing - Each			1.00	0.60
<u>Joint User Service</u>				
Applicable to Joint User Service In Connection With Business Flat Rate Service			\$ 3.75	--
<u>Service Connection Move & Change Charges</u>				
Service Ordering				
New or Additional Services			\$ 14.00	\$ 9.00
Move & Change			11.00	7.50
Record Purposes Only			8.50	6.00
<u>Centrex Services</u>				
Access Line - Business Rate			\$ 24.90	--
Service Line			12.25	--
Basic Services Per Access Line			2.65	--

* Basic local exchange service rates recommended by the CPUC Division of Ratepayer Advocates (DRA). Citizens stipulates to the provision of the staff recommendation that these recommended rates be charged in the proposed service areas and that the difference between the rates originally proposed in CUCC's application and the rates proposed by staff be included in the California High Cost Fund.

APPENDIX A

Citizens Utilities Company of California
 Ravendale Exchange
 Proposed Rates and Services

Exhibit No. 8
 App. No. 89-07-019
 12/6/89
 Page 2 of 2

<u>Custom Calling Features</u>	<u>Business Rates</u>	<u>Residence Rates</u>
Individual Features		
Call Forwarding	\$ 3.75	\$ 2.50
Call Waiting	6.25	3.75
3-Way Calling	6.25	3.75
Speed Calling 8-Code	4.40	2.50
Speed Calling 30-Code	6.25	4.40

Business & Residential

<u>Visit Charge</u>	<u>Straight Time</u>	<u>Overtime</u>
Each visit to a customers premise resulting from trouble caused in whole or in part by customer provided equipment	\$ 20.00	\$ 30.00

NOTE: The above listing reflects the most frequently ordered business and residential services offered in CUCC's currently effective CPUC Tariff schedules, as of 11-1-89. Service Rates, Terms and Conditions for these services and all other services offered by CUCC are set forth in CUCC CPUC Tariff schedules.

(END OF APPENDIX A)

A.89-05-004

100 NORTH 20TH STREET
PHILADELPHIA, PA 19103
TELEPHONE (215) 665-7800
FACSIMILE (215) 735-9944
TELEX 710-670-1955 IMMCORP PHA

APPENDIX B

A.89-07-019
Exhibit No. 10

INTERNATIONAL
MOBILE
MACHINES
CORPORATION

November 21, 1989

Mr. E. Garth Black
COOPER, WHITE & COOPER
101 California Street
Sixteenth Floor
San Francisco, California 94111

Dear Mr. Black,

In response to your November 9th letter inquiring of INTERNATIONAL MOBILE MACHINES CORPORATION's intention to provide warranty coverage beyond the standard one year warranty, I have enclosed a copy of IMM's Extended Warranty Agreement.

This Agreement provides IMM's terms for Ultraphone System maintenance and service after the original twelve (12) month Warranty period expires. The Agreement is for a twelve (12) month period. IMM's current charges for the Extended Warranty is five percent (5%) of the original price of the system or equipment. The Agreement is renewable. Any escalation in the price of the service would be negotiated based on increases in the Consumer Price Index.

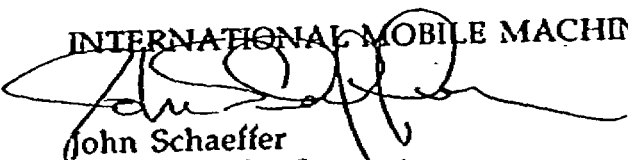
IMM is the leader in the creation and development of the Basic Exchange Telecommunications Radio market. IMM currently provides Ultraphone Systems and service to BellSouth, Southwestern Bell, US West, Bell Atlantic, Pacific Telecom, Contel, GTE and numerous other companies domestically, plus Canada and Mexico. The manufacturer of the Ultraphone System is Hughes Network Systems through an exclusive agreement between GM/Hughes and IMM. As a result of our position in the market and our strong relationship with GM/Hughes, IMM will remain committed to long term support of our product and customers. However, if future market conditions prevent IMM from supporting the Ultraphone equipment in a matter deemed appropriate, IMM will, at customers request, provide documentation to allow that customer to maintain the Ultraphone equipment.

APPENDIX B

Should you require additional information or have any questions I am available to help you anytime at (215) 665-7947.

Sincerely,

INTERNATIONAL MOBILE MACHINES CORPORATION



John Schaeffer
Director, Sales Support

cc: Jack Taylor (IMM)

EXTENDED WARRANTY AGREEMENT

THIS EXTENDED WARRANTY AGREEMENT, made this ____ day of _____, 1990, by and between INTERNATIONAL MOBILE MACHINES CORPORATION, a Pennsylvania corporation, with its principal place of business at 100 North 20th Street, Philadelphia, Pennsylvania 19103 (hereinafter "IMM") and _____, a _____ corporation, with its principal place of business at _____ (hereinafter the "Customer").

BACKGROUND

Customer has purchased IMM Ultraphone wireless digital telephone equipment from IMM under a certain purchase agreement dated _____, 1989 and now desires to have IMM maintain such Equipment. IMM desires to provide such maintenance services on the terms and conditions set forth below.

NOW, THEREFORE, in consideration of the mutual covenants, conditions and agreements hereinafter set forth, the parties intending to be legally bound, hereby agree as follows:

1. Purchase of Services. Customer agrees to purchase and IMM agrees to furnish maintenance services at the installation site and on the equipment more particularly described in Schedule 1 attached hereto (hereinafter called "Equipment"), subject to the terms and conditions of this Agreement.

2. IMM Obligations.

a. IMM shall, for the fee set forth in Schedule 2 attached hereto, bear all costs of labor and parts required to maintain the Equipment in good working order and make all necessary adjustments, replacements, and repairs caused by normal wear and tear.

b. Upon notification either verbal or written, of any equipment malfunction, IMM shall determine if the part is defective and, if so, supply replacement parts within a seventy-two (72) hour period. An inventory of on-site replacement parts shall be maintained by Customer at its own expense. This inventory level will be determined by IMM considering the system size and location. All inoperative parts shall be returned to IMM for repair.

c. If IMM determines that on-site service is necessary, IMM shall provide on-call remedial maintenance services to Customer during the maintenance period which is defined for purposes of this Agreement as any eight (8) consecutive hours between the hours of 9:00 a.m. and 5:00 p.m. Philadelphia time, Monday through Friday, excluding holidays observed by IMM locally (hereinafter the "Maintenance Period"). IMM shall render such remedial maintenance services to the Customer within seventy two (72) hours, Monday through Friday, excluding holidays, of receiving notice from Customer that the Equipment is inoperative except as provided under Section 8 of this Agreement.

d. IMM shall, for the additional charges referred to in Section 4(b) below, provide maintenance services and make required repairs to the Equipment when either is required due to causes not attributable to normal wear and tear including, but not limited to:

- (i) the failure of Customer to continually maintain the installation site in conformance with IMM's specifications;
- (ii) impairments in the performance of the Equipment resulting from changes in the design of the Equipment made by Customer or mechanical, electrical, or electronic interconnections made by Customer;
- (iii) damage caused by accidents or natural disasters, or the negligence of, or improper use or misuse of the Equipment by Customer;
- (iv) damage or necessity of repair resulting from unauthorized maintenance by Customer or any third party other than IMM or its authorized representative; or
- (v) damage or repair necessitated as a result of relocation of the Equipment.

f. IMM may, at its option, designate a third party contractor to provide maintenance services to Customer hereunder on behalf of IMM. The appointment by IMM of such an authorized representative shall not relieve IMM of its obligations hereunder nor be considered an "assignment" under Section 9 of this Agreement.

g. IMM shall attempt to be responsive to requests from Customer for maintenance services outside the Maintenance Period, subject to reasonable notice and manpower availability. Such services rendered outside the Maintenance Period shall be performed for the additional charges referred to in Section 4(b) hereof.

h. If Customer, with IMM's prior approval, causes modifications or interconnections to be made or accessories, features, attachments added to the Equipment, then maintenance services shall be furnished with respect thereto only on mutual agreement between IMM and Customer and the total monthly maintenance charge shall be adjusted accordingly.

i. Title to all maintenance tools and spare parts shall remain with IMM, except that upon installation of parts into Customer-owned equipment, title to such parts shall pass to Customer.

j. As part of providing maintenance services hereunder, IMM sponsored modifications may be made to the Equipment by IMM. Customer shall provide time, if required, and ready access for IMM's personnel to the Equipment upon notification from IMM that such modifications are ready to be made. The time required shall be mutually agreed upon by Customer and IMM, and shall be in addition to the normal preventive maintenance hours.

3. Customer Obligations.

a. Customer shall provide, free of charge and with ready access, storage space for maintenance tools and spare parts, working space, heat, light, ventilation, electric current, and outlets for the use of IMM's maintenance personnel. Such facilities shall be within a reasonable distance from the Equipment being maintained.

b. Customer shall notify IMM's maintenance personnel immediately upon equipment failure and shall allow IMM full and free access to the Equipment and the use of necessary data communications facilities and equipment at no charge to IMM, subject to Customer's security rules. Customer shall provide technical personnel necessary to assist IMM with system trouble shooting.

c. Customer shall maintain the installation site throughout the term of maintenance service identified herein in accordance with the specifications established by IMM.

d. Customer's personnel shall not perform maintenance or attempt repairs to Equipment while such Equipment is being maintained under this Agreement, except as specified and approved by IMM.

e. Customer shall not cause modifications or interconnections to be made, or accessories, attachments, or features to be added to the Equipment being maintained by IMM under this Agreement without IMM's prior written approval. Notwithstanding the above, Customer shall be entitled to make mechanical and electrical connections to the Equipment with IMM's prior approval; provided, that if such connections interface with the normal functioning of the Equipment in a manner which increases IMM's cost of maintaining the Equipment or creates a safety hazard, Customer agrees to remove such connections promptly upon notice from IMM.

4. Charges and Payments.

a. Customer shall commence the total maintenance charge for each item of Equipment:

- (i) for installed Equipment, on the date IMM notifies Customer that such Equipment is out of warranty coverage.
- (ii) for installed Equipment which has not previously been maintained by IMM, on the date on which IMM commences performing maintenance hereunder (hereinafter referred to as the "Commencement Date"). The maintenance charges as specified on Schedule 1 shall be invoiced annually in advance and paid by December 31 for the following calendar year. All other charges payable hereunder shall be invoiced during the month in which they have been incurred. All charges hereunder shall be due and payable upon receipt. Maintenance charges due for a fractional part of a calendar month shall be computed at the rate of one-thirtieth (1/30th) of the monthly rate for each day. The prime rate of interest per annum then charged by Mellon Bank of Philadelphia plus three percent (3%) shall

APPENDIX B

automatically be charged on all amounts, including additional charges, not paid by Customer when due hereunder.

b. In addition to the total maintenance charges set forth in Schedule 1 hereto, Customer agrees to pay for:

- (i) labor, parts, and expenses for maintenance or repair due to causes not attributable to normal wear and tear including, without limitation, those instances described in Section 2(c) above;
- (ii) labor and other expenses for maintenance or repairs required due to normal wear and tear performed outside of the Maintenance Period at the request of Customer;
- (iii) all reasonable travel expenses incurred providing maintenance services outside of the Maintenance Period;
- (iv) all reasonable travel expenses for any on-site maintenance services which in the opinion of IMM is not deemed necessary; and
- (v) labor, parts and other expenses for refurbishment and overhaul of Equipment performed by IMM at the request of Customer.

All the above additional charges for labor and parts shall be at IMM's published rate in effect at the time such labor and parts are furnished. Charges for labor shall include travel time to and from the installation site. Travel expenses shall be billed at the actual cost plus fifteen (15) percent to IMM of the transportation used. Lodging, food, parking and toll expenses shall be billed as actually incurred plus fifteen (15) percent.

c. IMM may adjust the maintenance charges in Schedule 1 upon the expiration of the initial term set forth in Section 6 hereof or by giving Customer at least thirty (30) days prior written notice.

d. Customer shall pay (or reimburse IMM), in addition to the charges for the maintenance services specified herein and as a separate item, all taxes (exclusive of IMM net income taxes), however designated, or amounts legally levied in lieu thereof, based on or measured by the charges set forth in this Agreement or on this Agreement, or on the services rendered hereunder, now or hereafter imposed under the authority of any federal, state or local taxing jurisdiction.

5. DISCLAIMER OF WARRANTY AND LIMITATION OF REMEDIES.

THE WARRANTIES SET FORTH HEREIN ARE IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, WHICH ARE HEREBY DISCLAIMED AND EXCLUDED BY IMM, INCLUDING WITHOUT LIMITATION ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR USE AND ALL OBLIGATIONS OR LIABILITIES ON THE PART OF IMM FOR DAMAGES ARISING OUT OF OR IN CONNECTION WITH THE USE, REPAIR, OR PERFORMANCE OF THE EQUIPMENT. IMM SHALL NOT BE LIABLE FOR ANY LOSS OR DAMAGE CAUSED BY DELAY IN FURNISHING EQUIPMENT AND SERVICES OR ANY OTHER PERFORMANCE UNDER OR PURSUANT TO THIS

AGREEMENT. THE SOLE AND EXCLUSIVE REMEDIES FOR BREACH OF ANY AND ALL WARRANTIES AND THE SALE REMEDIES FOR IMM'S LIABILITY OF ANY KIND (INCLUDING LIABILITY FOR NEGLIGENCE) WITH RESPECT TO THE EQUIPMENT AND SERVICES COVERED BY THIS AGREEMENT SHALL BE LIMITED TO THE REMEDIES PROVIDED IN SECTION 5 OF THIS AGREEMENT. IN NO EVENT SHALL IMM'S LIABILITY OF ANY KIND INCLUDE ANY SPECIAL, INDIRECT, INCIDENTAL, OR CONSEQUENTIAL LOSSES OR DAMAGES, EVEN IF IMM SHALL HAVE BEEN ADVISED OF THE POSSIBILITY OF SUCH POTENTIAL LOSS OR DAMAGE.

6. Term. This Agreement shall become effective as of the first day of January _____ and shall continue for an initial term of one (1) year, unless earlier terminated pursuant to Section 7 below, until December 31, _____ and shall remain in effect thereafter until termination by either party on ninety (90) days prior written notice.

7. Termination.

a. In the event Customer defaults on any payment due under this Agreement, IMM shall be entitled to immediately terminate this Agreement on written notice.

b. In the event either party commits a material breach of any of its obligations hereunder, except for a default in payment by Customer as provided for in this Section 7(a) above, the other party may terminate this Agreement on written notice to the defaulting party unless the defaulting party cures such breach within thirty (30) days of written notice thereof.

c. Either party may terminate this Agreement upon written notice in accordance with the provisions of Section 9(c) hereof.

d. This Agreement shall automatically terminate as to any Equipment covered by an Equipment Lease between Customer and IMM upon the termination of such Equipment Lease.

8. Force Majeure. If the performance of either party is made impossible by reason of any circumstances beyond such party's reasonable control, including without limitation, fire, explosion, power failure, acts of God, war, revolution, civil commotion, or acts of public enemies, any law, order, regulation, ordinance, or requirement of any government or legal body or any representative of any such government or legal body, labor unrest, including without limitation, strikes, slowdowns, picketing or boycotts, then the affected party shall be excused from such performance on a day-to-day basis to the extent of such interference, provided that it shall use reasonable efforts to remove such causes of non-performance. Under no circumstances shall economic considerations or economic impossibilities and inefficiencies delay performance or be considered a force majeure.

9. Assignment. Neither party shall have the right to assign or otherwise transfer its rights and obligations under this Agreement except with the written consent of the other party; provided, that a successor in interest by merger, operation of law, assignment or purchase, or otherwise of the entire business of either party shall acquire all interest of such party hereunder and provided further that IMM shall be entitled to

assign all or part of the payments from Customer under this Agreement to any person or organization in its own right or as agent for trustee and Customer agrees to comply with any instructions from IMM to make payments directly to such persons or organizations. Any prohibited assignment shall be null and void.

10. Entire Agreement. This Agreement, including Schedule 1 attached hereto and incorporated as an integral part of this Agreement, constitutes the entire Agreement of the parties with respect to the subject matter hereof, and supersedes all previous proposals, oral or written, and all negotiations, conversations or discussions heretofore had between the parties related to this Agreement.

In the event that any of the terms of this Agreement are in conflict with any rule of laws, regulations, provisions or otherwise unenforceable under the laws or regulations of any government or subdivision thereof, such terms shall be deemed stricken from this Agreement, but such invalidity or unenforceability shall not invalidate any of the other terms of this Agreement and this Agreement shall continue in force, unless the invalid or unenforceable provisions comprise an integral part of, or are otherwise inseparable from, the remainder of this Agreement.

11. Waiver. This Agreement shall not be deemed or construed to be modified, amended, rescinded, cancelled or waived, in whole or in part, except by written amendment signed by the parties hereto.

12. Notices. Notices permitted or required to be given hereunder shall be deemed sufficient if given by registered or certified air mail, postage prepaid, return receipt requested, addressed to the respective addresses at the addresses set forth below or at such other addresses as the respective parties may designate by like notice from time to time. Notices so given shall be effective as of the date stamped on the receipt.

If to IMM: IMM
 100 North 20th Street
 Suite 300
 Philadelphia, PA 19103
 Attn: Contracts Administrator

If to Customer:

c/o Customer
at the address first written above.

14. Governing Law. This Agreement shall be governed by and construed in accordance with the laws of the State of Pennsylvania, and the parties hereto irrevocably commit to the jurisdiction of the Commonwealth of Pennsylvania and the venue of Philadelphia County in any action brought by the parties hereto concerning this Agreement or the performance thereof.

IN WITNESS WHEREOF, the parties have executed this Agreement
under seal effective as the day and year first above written.

ATTEST:

INTERNATIONAL MOBILE
MACHINES CORPORATION

By: _____ (SEAL)

CUSTOMER

By: _____ (SEAL)

[11.21.89]

A.89-05-004, A.89-07-019

APPENDIX B

INTERNATIONAL MOBILE MACHINES CORPORATION
EXTENDED WARRANTY AGREEMENT

SCHEDULE 1

THE EQUIPMENT

APPENDIX B

INTERNATIONAL MOBILE MACHINES CORPORATION
EXTENDED WARRANTY AGREEMENT

SCHEDULE 2

PRICING

Extended Warranty Pricing shall be for purchased equipment only and shall be exclusive of any IMM Services quoted the Customer.

Pricing for this Agreement shall be five percent (5%) of the IMM Price paid by the Customer for the Equipment stated in SCHEDULE 1.

(END OF APPENDIX B)