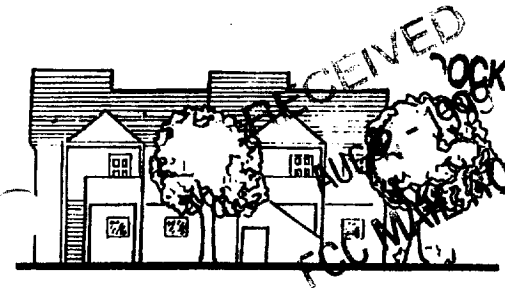

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MM 99-25

River Community Homes, Inc.
1061 HALLEN DRIVE • ARCATA, CALIFORNIA 95521 • (707) 822-7816

To whom it may concern, ~~EX PARTE OR LATE FILED~~

Please support efforts to legalize and promote microradio. with the ~~&~~ hostile takeover of KPFA ~~&~~ The cooptation of The Pacifica Network, free information, and consequently, Democracy, itself is threatend. Please do not allow the last remanants of free radio as opposed to The corporate/federally dominated & owned mass media to be extinguished. Are you for Democracy or corporate fascism? You know whats right for the people of this country. Don't allow this country to drift further into Totalitarianism run by corporate & government elites. Support Unfettered microradio please.

David Ross

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July 30, 1999

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Federal Communications Commission
Office of the Secretary
Ms. Magalie Roman Salas
445 Twelfth Street, SW
Washington, DC 20554

Comments on Creation of a Low Power Radio Service (FCC 99-006) Mass Media Docket 99-25

Dear Ms. Roman Salas:

The University of California (UC) wants to protect from harmful interference the six noncommercial educational (NCE) FM radio stations it operates and to license an NCE FM station for its tenth campus being built in Merced.

Therefore, UC submits the attached comments relative to NCE FM radio issues raised in the Commission's Notice of Proposed Rule Making (FCC 99-006) Mass Media Docket Number 99-25 on the creation of a low power FM (LPFM) radio service. UC recommends that the Commission create a microradio low power FM radio service that would operate at one to twenty watts, with new NCE applications accepted in two phases: the first phase would be on the current NCE band and the second phase would add ten new 86 and 87 MHz frequencies and the commercial FM band. In order to protect operations of existing NCE FM radio stations while addressing the demand for more community-oriented radio, new radio ownership and increased program diversity, UC believes the Commission should use essentially the same rules that covered the old ten watt Class D NCE FM stations for LPFM.

If you have questions about any of the recommendations contained in these comments, you may contact Ms. Willi Bokenkamp of this office for clarification at (510) 987-0373.

Sincerely,

Jim Dolgonas
Acting Associate Vice President
Information Resources and Communications

Attachment: UC Regents Comments on FCC 99-006; Mass Media Docket 99-25; RM 9208 & 9242

cc: FCC Commissioners
Assistant Vice President Sudduth
UC Broadcast Station Managers
UC Telecommunications Managers
Senior Communications Analyst Bokenkamp

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Comments by The Regents of the University of California
On Creation of a Low Power Radio Service
FCC 99-006; Mass Media Docket 99-25; Rulemaking RM-9208 and RM-9242
Submitted July 30, 1999

The University of California (UC) is a nine campus system which owns and operates noncommercial educational (NCE) broadcast stations throughout the state of California.

The Regents of the University of California is the licensee and operator of six FM radio stations which are located at the Berkeley, Davis, Irvine, Riverside, Santa Barbara and Santa Cruz campuses. Because the Los Angeles campus is in the second largest broadcasting market in the nation and the San Diego campus is near the Mexican border, neither of these campuses has been able to obtain a license for a noncommercial educational FM radio station. Instead, they have been operating carrier current radio stations on their campuses for a number of years. UC wants to be able to make major modifications to its existing broadcast stations and to apply for new broadcast station licenses as needed. UC is building a tenth campus at Merced, California over the next several years and wishes to operate a noncommercial educational radio station there also.

These comments are submitted to the Commission to assist it in developing reasonable rules for a Low Power Radio Service that both protects the existing noncommercial educational broadcast stations and provides for efficiently and cost-effectively adding new stations.

1000-Watt Primary and 100-Watt Secondary Service
UC believes that adding the proposed 1000-Watt Primary (LP1000) and 100-Watt Secondary (LP100) Low Power Radio Services would be onerous for existing FM radio operations and would not substantially increase the number of new FM radio stations. The Commission's own spectrum availability analyses of sixty communities throughout the United States indicates the proposed LP1000 and LP100 rules would generate very few additional FM radio station slots. Two cities where UC would like to obtain an FM station license, Los Angeles and San Diego, are among those the Commission analyzed. However, the FCC study shows that with either full interference protection or no third adjacent channel interference protection, there are no additional FM slots available in either city. With no second or third adjacent channel interference protection, only one additional station would be possible in LA and two in San Diego. Therefore, UC recommends that the Low Power Radio Service the Commission creates should only include an FM microradio service that would operate at one to twenty watts and it should not include the LP1000/LP100 services.

Microradio Service
The Commission states that the purpose of creating a new Low Power Radio Service is "to address unmet needs for community-oriented radio broadcasting, foster opportunities for new radio broadcast ownership and promote additional diversity in radio voices and program services." UC believes the Commission can meet these goals by simply implementing a new FM microradio service that would allow new stations at one to twenty watts, using the same rules and regulations for these microradio licensees that the Commission used for Class D noncommercial, educational FM radio stations before the Commission required the Class D stations to increase their power levels above ten watts. Using the old NCE Class D rules would reduce the Commission's workload in developing the microradio service's rules and regulations since they have already been tested by the scores of Class D NCE licensees that operated under them.

Interference Protection Criteria
UC agrees with the Commission that its proposal to use minimum distance separation tables is a simple way to more quickly allow microradio applications to be processed and control interference from and to low power radio stations. Exhibit I of these comments includes a table by licensed professional engineer Joel Saxberg of the minimuim distance separations needed for a twenty watt microradio station at 30 meters HAAT with a 3.7 kilometer 60 dBu protected contour, using the assumptions the Commission used in its Appendix B Minimum Distance Separation Tables. In Appendix B of the NPRM, the Commission shows a table (Exhibit II of these comments) with the minimum distance separations in kilometers required

to prevent receiving or causing contour overlap with other stations when a microradio is at one watt effective radiated power, 30 meters antenna height above average terrain with a 1.8 kilometer 60 dBu F(50,50) protected contour. Depending on the distance between a proposed microradio station and existing FM stations, UC believes the new microradio stations could operate at the highest power level from one to twenty watts that would protect all existing stations, locating no closer than two kilometers from any other one watt microstation or 5 kilometers from any other twenty watt microradio station. Thus, the new microradio stations would provide interference protection to existing full power stations and to translators filling in obstructed portions of a local full power station's protected service contour.

All new microradio applications should be required to prove in their applications that their operations would cause no harmful interference to existing FM radio stations. In order to minimize disruption and costs to existing licensees, no application for a new microradio station should be accepted for filing by the FCC unless it has an interference analysis conducted by a licensed professional engineer that shows that at the proposed power level it will not cause harmful interference to co-channel, first, second and third adjacent channel stations based on the distance separations as delineated by the class of existing stations using the Commission's distance separation table criteria in the NPRM Appendix B.

Ownership and Eligibility

The Commission's proposal to accept microradio applications only from nonbroadcasters which have no other media interests would unnecessarily exclude numerous educational institutions. Strict local and cross-ownership restrictions might be beneficial in the commercial FM band. However, UC believes such restrictions are not appropriate for noncommercial educational FM microradio applications from educational institutions which operate a school, college or university located in the proposed service area. There should be no restrictions on a local educational institution's involvement in other broadcast stations, newspapers, cable systems or other mass media. It would be unfair to prevent several high schools in a school district from being able to apply for a microradio license simply because another high school in that district was already licensed to operate an FM radio station or television station. Because UC licenses all its broadcast stations in the name of The Regents of the University of California, it would be unfair to UC and other similarly situated multi-campus state higher education institutions to be prevented from seeking an LPFM station license for a campus simply because other campuses within the system already have full power station licenses. Especially in areas like Los Angeles and San Diego where UC campuses have long been unable to license a radio station due to frequency congestion, it is important that educational institutions be able to apply for new full power or low power broadcast radio stations, regardless of the number of other full power or low power stations licensed in the institution's name at that or other locations. Also, since educational institutions that teach journalism frequently need to operate newspapers as well as mass media stations to meet their students' practical educational experience needs, limiting such microradio applicants' ownership of other media would be counter to the institution's educational mission. Likewise, it is unclear what useful purpose there would be in artificial national numerical ownership limits imposed on NCE FM microradio applicants which are accredited educational institutions.

Service Characteristics

UC believes the Commission should limit microradio licenses to applicants that will produce the majority of their programming locally. This would address unmet needs for community-oriented radio broadcasting, foster opportunities for new radio broadcast ownership and promote additional diversity in radio voices and program services. No microradio translator application should be accepted unless the translator is being used to fill in areas of its protected service contour that are blocked from reception of the main transmitter's signal by intervening terrain, high buildings or geographic features such as hills or mountains. No satellite fed microradio translators should be allowed.

The FCC rules for microradio construction, license term, sales, renewal, public interest programming, environmental protection, political advertising, recordkeeping and other service rules should be the same as those imposed on full power radio stations. A microradio station should have the same expectation of renewal as a full power radio station, or the applicant's investment of time and resources in seeking a station license and access to financing would be unnecessarily jeopardized. For applicants that cannot program a microradio station 24 hours a day, seven days a week, the Commission could accept applications that will program at least twelve hours a day and could assign two partial-day-programmer applicants to

share one frequency on a time-of-day basis. Microradio applicants should not be required to participate in the Emergency Alert System (EAS) because of the expense for such a limited coverage area. Microradio call signs should use the same protocol as full power radio station call signs: call signs should consist of a few letters beginning with W for eastern US and with K for western US stations.

Applications

UC believes that an efficient and equitable application system for new NCE FM microradio stations would use a one-week annual application window and would choose among multiple mutually exclusive applications via a point system. Annual windows open at the same time of year each year would give applicants regular opportunities to enter microradio. If an applicant is required to build its LPFM station within one year of its license grant date and not allowed to apply for new licenses until pending licensed stations are built, speculation in LPFM frequencies should be reduced. Modification applications should be accepted at any time. For NCE applications, it would be best for the annual window to open during the school year rather than during a regularly scheduled school holiday period.

NCE applications could be accepted in two phases. During the initial NCE microradio application windows, the Commission could accept applications for existing NCE FM channels. Once broadcast television analog stations cease operating on channel six, microradio NCE applications should also be accepted for operation on the ten adjacent 86 MHz and 87 MHz channels below the NCE FM band and on any commercial FM frequency. When FM radio migrates to in-band on-channel digital operations, it should be easy for new mass produced digital radio receivers to incorporate these ten new adjacent NCE frequencies—86.1, 86.3, 86.5, 86.7 86.9, 87.1, 87.3, 87.5, 87.7, 87.9 MHz.

NCE FM Microradio Point System

Auctions are less useful for choosing among NCE applicants than for commercial applicants because auctions could exclude all but deep pocket applicants. This would eliminate many community based public service organizations and educational institutions with limited funds, especially those most interested in low power FM radio. The Commission should choose among competing noncommercial educational broadcast FM microradio applicants on the basis of a point system that reflects the applicants' responsiveness to the educational, cultural, social and civic needs of the community of license. A point system would also create less work for both the Commission and the applicants because it could be quickly, easily and fairly evaluated by using a grid on the license application form where an applicant would fill in the blanks, identifying the positive and negative points that apply to the applicant's situation.

To reflect the inherent value to the community of broadcast stations which are operated by local universities or colleges or local school districts, UC believes these kinds of applicants should receive one point for being local educators. To encourage a local station's production of locally responsive, community oriented programming, UC believes that an applicant should receive at least one point for each 20% above 40% of locally produced programming that it airs (i.e., if an applicant airs 40 to 59% locally produced programming it would receive 1 point, 60 to 79% locally produced programming would be 2 points, 80 to 99% would be 3 points, and 100% would equal 4 points).

In order to avoid ties and to more accurately reflect the relative value of the NCE applicants proposed stations, UC recommends that up to one point be awarded an applicant to reflect the percentage of the applicant's responsiveness to a number of attributes that serve the public interest, convenience and necessity in operating an NCE broadcast station, such as the applicant's educational status, localism, ownership diversity, programming diversity, staff diversity and cooperation with other educational entities in the region and state.

Examples of these public interest attributes include:

- percentage of programming proposed that does not duplicate programming carried on another NCE station within the station service area,
- percentage of programming proposed that does not duplicate programming carried on any commercial station within the station service area,
- percentage of proposed programming aimed at minority audiences,
- percentage of proposed programming aimed at a female audience,

- percentage of proposed programming aimed at children 17 years old and younger,
- percentage of proposed programming produced by minorities,
- percentage of proposed programming produced by females,
- percentage of proposed instructional programming,
- percentage of management full time equivalent people (FTE) at applicant's other broadcast stations that are members of minorities,
- percentage of management FTE at applicant's other broadcast stations that are female,
- percentage of engineering and non-clerical staff FTE at applicant's other stations that are minorities,
- percentage of engineering and non-clerical staff FTE at applicant's other stations that are female,
- percentage of governing board members that are minorities, per year for up to five years previous to application submission date (i.e. if a three year old entity with ten board members had 30% minorities on its board the first year, 0% the second and 20% the third year, applicant would receive .5 point),
- percentage of governing board members that are female per year for up to five years previous to application submission date,
- percentage of decades applicant has been formally operating in community of license application (i.e., if applicant has been in business in the relevant community fifteen years, the applicant would receive 1.5 points),
- percentage of decades applicant has been an accredited educational institution in the state of license,
- percentage of decades applicant has operated a carrier current radio station on its campus,
- percentage of decades applicant has been part of a regional or statewide educational system, and
- percentage of decades applicant has operated and/or participated in a regional or statewide educational telecommunications network.

Negative points should also be assigned for activities or attributes which the Commission or Congress does not encourage, which could include an applicant's history of not continuing to operate a licensed station for the full license term, of not responding at its other stations to complaints from the community that its programs do not reflect that community's educational, cultural, social, or civic needs or a history at its other stations of reducing the diversity of programming, staffing or ownership.

These negative points could include:

- deduct one point for each year less than the license term that an applicant did not maintain any other broadcast station (i.e., if the license term is seven years and the applicant disposed of a station after operating it two years, applicant would receive minus 5 points),
- deduct one point if more than 75% of programming is produced and originated from a non-local site,
- deduct one point for each 25% above 50% of programming that duplicates programming broadcast on another station within the community of service,
- deduct the percentage reduction per year of minority or female board members at applicant's other stations (i.e., if applicant had 50% minority or female board members when application was submitted and the first year of station operation had 10%, the second year has 0%, and the third year has 0%, then applicant receives minus [.40 + .50 + .50] or minus 1.4 points) and
- deduct .1 point for each complaint by residents in applicant's other stations' communities about its aired programs not reflecting the educational, cultural, social or civic needs of the community that applicant receives but does not address.

Conclusion

UC believes that the new Low Power FM Radio Service should not include 100 watt or 1000 watt stations, but should be limited to FM microradio stations at one to twenty watts, at an antenna height above average terrain up to 30 meters. New noncommercial educational low power FM applications should be accepted in a two-phase annual one week window, beginning with existing FM frequencies during the first phase and adding the ten 86 and 87 MHz frequencies as well as the commercial FM spectrum in the second phase. It is imperative that the Commission create this new radio service in a manner that protects existing noncommercial educational FM radio operators, while addressing unmet needs for community-oriented radio broadcasting, fostering opportunities for new radio broadcast ownership and promoting increased diversity in radio voices and program services.

Exhibit I: Analysis of FCC LOW POWER FM Technical Proposal

The Federal Communications Commission proposed plan for low power FM (LPFM) incorporates selective discrimination; it incorporates one set of protection requirements for LPFM and another set for broadcast stations in other classes. Changing rules to accommodate LPFM does not alter the laws of physics. Interference will occur to other FM stations' regular off air signals if LPFM rules are adopted as proposed. Currently, translators which emulate some of the power levels the Commission is now considering are required to provide contour protection to co-channel, first, second, and third adjacent signals. Class A, B, B1, C, C1, C2, C3 FM stations are required to provide protection to co-channel, first, second, and third adjacent channel stations (with the exception of grandfathered facilities locked into short spacing). All FM stations, operating on the same band must come under the same set of protection rules. It is puzzling why the Commission would want to change existing protection levels. The laws of physics regarding interference do not change by changing the Commission's protection rules. Only by providing contour protection to co-channel, first, second and third adjacent channels can an orderly in-band on-channel (IBOC) digital transition be instituted.

A Nondisruptive Creation of LPFM Channels

Putting local low power FM channels adjacent to the existing FM radio band would make more sense than just squeezing new stations onto

spectrum that is already congested in most urban parts of the country. This spectrum allocation plan would consist of two phases. Phase one would permit the creation a new Class "D+" (operating at 1 to 20 watts at a maximum 30 meter height above average terrain (HAAT) to operate on any FM channel provided it can meet the existing requirements of the domestic, Mexican and Canadian separations. These "D+" stations would use the old class D NCE FM regulations, but would operate at up to 20 watts from a maximum HAAT of 30 meters with a maximum primary coverage area of 3.7 KIRA (kilometer radius).

Phase two would permit local low power FM channels to operate 87 or 86 MHz channels below the existing FM band. Licensing only Class "D+" (20 watts @ 30m HAAT) facilities with stringent protected contours to operate on any channel would enable many new stations to be licensed, especially on these newly created frequencies. Class "D+" would be the only class authorized on any newly created FM frequency. This type of Two-Phase licensing low power FM plan would enable many non-broadcasters and community organizations to have a voice in their community, without unreasonably increasing the congestion in the present FM band.

Expediting Channel 6 TV migration to digital television (DTV) frequencies would free a band of 87 and 86 MHz frequencies for possible use by low power FM licensees in the spectrum below the NCE FM band. A guard band would be required to protect present TV Channel 5. Accepting only LPFM license applications for Class "D+" on these new channels would insure that many new non-commercial non-broadcasters would be able to apply for local facilities. When in-band on-channel digital FM receivers are developed, they can be mass produced to quickly make possible public reception of these new frequencies.

DOMESTIC SPACING OF MICRORADIO CLASS D+ TABLE

Assuming 20 watts effective radiated power (ERP)

at 30 meters antenna height above average terrain (HAAT)

60 dBu F(50,50) protected contour extends 3.7 km

MINIMUM DISTANCE SEPARATION (KM) NECESSARY TO:

CAUSE NO OVERLAP/RECEIVE NO OVERLAP

CHANNEL CLASS	CO-	1ST	2ND	3RD	IF	2ND	3RD
			RESERVED BAND			COMMERCIAL BAND	
A	41/91	34/48	30/13	29/7	6	29/7	29/7
C3	51/118	45/64	41/17	40/8	8	40/8	40/8
B1	57/118	51/64	47/17	46/8	8	46/8	46/8
C2	65/142	58/82	54/23	53/10	11	53/10	53/10
B	83/142	73/82	67/23	66/10	11	66/10	66/10
C1	85/176	78/109	74/35	73/14	11	73/14	73/14
C	104/202	98/141	94/49	93/18	25	93/18	93/18
D	18/21	11/12	7/6	6/5	2	6/5	6/5
OTHER D+	16	8	5	5	2	5	5

Using the domestic spacing table for twenty watt operations shown above and the FCC one watt microradio chart appearing in Appendix B of the NPRM, few new Microradio Class D+ stations would be permitted in high density FM radio areas with over 100 km separations required for Class C co-channel stations and over 90 km for Class C third adjacent protection. However, even in cities like Los Angeles, Chicago, New York, Phoenix, and Denver, many additional Class "D+" stations could operate in a relatively small geographical area if new 86 and 87 MHz channels were made available. From the domestic spacing table where D+ would only protect other D+ stations, we see many stations could be located in a small area as close as 2 to 5 kilometers apart, depending on power levels. The key to meeting the needs of potential broadcasters is the allocation of new frequencies. Microradio Class "D+" stations (20 watts, 30 m HAAT) would provide 60 dBu coverage over a 3.7 kilometer radius (assuming flat terrain) which equates to 43 sq. kilometer primary coverage area.

Unlike the old Class "D", the new microradio Class "D+" stations could be recognized as secondary stations, but afforded some protection. "D+" licensees could be exempt from several technical rules applicable to other FM radio classes. Emergency Alert System (EAS) participation would not be required. A contract engineer would not be required, however, each installation would be initially inspected and "Certified for Proper Operation" by a professional engineer or technical consultant. Tamper proof seals would be placed on RF output connections, frequency and power adjustments by the certifying inspector upon initial inspection and each time a seal is broken for repair. No operation would be permitted until certification. Operation of a transmitter with broken equipment seals would carry severe penalties. "Certification for Proper Operation" inspections would be required once every three years.

In this way, new LPFM stations could be added first on existing FM channels and second on an adjacent set of ten new frequencies next to the existing FM radio band with the least amount of disruption to existing FM radio station operators and a minimal set of appropriate technical regulations.

(Exhibit I was prepared for the University of California by Joel Saxberg.)

APPENDIX B

This appendix sets forth the minimum distance separations between the proposed classes of low power FM stations and existing full service FM stations. The first number in each box indicates the minimum distance necessary to ensure that the low power station would not create interference. The second number corresponds to the distance necessary to ensure that the low power station would not receive interference. The tables also show what distances would be necessary for co- and first-adjacent channel low power stations to provide interference protection to each other.

Distance separations between domestic facilities were based on the sum of the protected F(50,50) contour radius and the appropriate F(50,10) interfering contour radius as calculated in accordance with 47 C.F.R. §§ 73.313 and 73.333. Full service domestic stations were assumed to operate at § 73.211 maximum facilities.[118] Low power stations were assumed to utilize the maximum defined for the proposed class. Class B stations were protected to the 54 dBu F(50,50) contour and Class B1 stations are protected to the 57 dBu F(50,50) contour. All other classes (including low power) were protected to the 60 dBu F(50,50) contour. The interfering contours were determined using the following desired-to-undesired (D/U) signal ratios: co-channel, +20 dBu; first-adjacent channel,+6 dBu; second-adjacent channel (reserved band), -20 dBu; second- and third-adjacent channel (commercial band), -40 dBu. IF (intermediate frequency) spacings were calculated to prevent overlap of the 91 dBu F(50,50) (36 mV/m) contours of both stations.

Finally, minimum distance separations were calculated for low power stations operating within 320 kilometers of the common borders with either Canada or Mexico. The spacings in the Canadian and Mexican border zones were based on the maximum protected/interfering contours of the foreign allocations vs. the interfering/protected contours of the domestic low power stations, as required by Section 5 of the Canada-United States FM Broadcasting Agreement and Section 3 of the Mexico-United States FM Broadcasting Agreement, respectively. Any low power station within 320 km of either border would require coordination with the appropriate government.

[118] Class D stations are assumed to operate with 85 watts ERP at 30 meters HAAT. This yields a 60 dBu that extends 5.4 km (just below the minimum required for a Class A station).

MICRORADIO CLASS

Assuming 1 watt effective radiated power (ERP)
at 30 meters antenna height above terrain (HAAT)
60 dBu F(50,50) protected contour extends 1.8 km
MINIMUM DISTANCE SEPARATION (KM) NECESSARY TO:
CAUSE NO OVERLAP/RECEIVE NO OVERLAP

Channel Class	co-	1st-	2nd- reserved band	2nd-/3rd- commercial band	IF
A	34/89	31/46	29/11	28/5	5
C3	45/115	42/62	40/15	39/6	7
B1	51/115	48/62	46/15	45/6	7
C2	58/140	55/80	53/22	52/8	10
B	73/140	69/80	67/22	65/8	10
C1	78/174	75/107	73/36	72/12	18
C	97/200	94/138	93/52	92/16	26
D	11/20	8/10	6/4	6/2	2
Other Microradio	7	4			