

FEDERAL COMMUNICATIONS COMMISSION
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February 19, 2004

Report to the Congress on the Low Power FM Interference Testing Program
Pub. L. No. 106-553

In accordance with Section 632 of the District of Columbia Appropriations Act, FY 2001 (the “Act”),¹ the Federal Communications Commission (“Commission”) submits this report to the U.S. Senate Committee on Commerce, Science and Transportation and the Committee on Energy and Commerce of the U.S. House of Representatives. This report includes the Commission’s recommendations to Congress regarding the modification or elimination of minimum distance separation requirements for low power FM (“LPFM”) stations operating on third-adjacent channels (+/- 600 kHz) to full power and other FM broadcast stations.

I. BACKGROUND

On January 20, 2000, the Commission authorized the licensing of LPFM stations, and imposed minimum distance separation requirements for LPFM stations consistent with current FM protection standards with respect to existing commercial and noncommercial educational (“NCE”) FM stations, and FM translator and booster stations operating on the same and on the two immediately adjacent channels. Based on studies done by the Commission and the public, the Commission determined that LPFM stations would not cause unacceptable levels of interference to FM stations operating on third-adjacent channels. Accordingly, the initial LPFM technical rules did not impose third-adjacent channel minimum distance separation requirements on LPFM stations. On September 20, 2000, the Commission, on reconsideration, adopted complaint and license modification procedures to ensure that significant third-adjacent channel interference problems would be resolved expeditiously.² On December 21, 2000, President Clinton signed the Act into law, requiring the Commission to impose third-adjacent channel minimum distance separation requirements on LPFM stations, and to conduct independent field tests and an experimental program to determine whether the elimination of third-adjacent channel protection requirements would result in LPFM stations causing harmful interference to existing FM stations operating on third-adjacent channels. On March 22, 2001, the Commission adopted an order imposing third-adjacent channel minimum distance separation requirements on LPFM stations consistent with the third-adjacent channel minimum distance separation requirements currently in effect for

¹ *D.C. Appropriations – FY 2001*, Pub. L. No. 106-553, § 632, 114 Stat. 2762, 2762A-111 (2000).

² *See Creation of Low Power Radio Service*, 15 FCC Rcd 19208 (2000).

full power commercial and NCE FM stations.³ In July 2001, the Commission selected The Mitre Corporation ("Mitre") to conduct the required LPFM field tests and experimental program, and to prepare a report containing the analyses required by the Act.

II. THE MITRE STUDY AND REPORT

The scope of work for the LPFM field tests and experimental program required by the Act and specified in the contract between the Commission and Mitre required Mitre to:

- Perform market research for the field tests and experimental program
- Establish and manage the acquisition program for the field tests and experimental program
- Design the test plans and obtain the information required by the Act
- Select and manage the field tests subcontractor
- Prepare a final report on the field tests and experimental program to be submitted to Congress

Due to budgetary constraints that became apparent at the conclusion of Mitre's market research, the required LPFM field tests and experimental program were divided into two phases. In Phase I, Mitre was required to take LPFM field strength measurements and make high quality digital recordings, and to analyze the effect of third-adjacent channel LPFM stations on the transition from analog to digital terrestrial radio. Phase II of the LPFM field tests and experimental program would consist of audience listener tests based on the Phase I digital recordings and an economic analysis of the effect of third-adjacent channel LPFM stations on existing broadcasters.

Mitre completed Phase I of the LPFM field tests and experimental program and delivered its final report to the Commission on June 2, 2003. The Commission accepted the Mitre Report and issued a *Public Notice* on July 11, 2003, requesting public comment on the Mitre report.⁴ Originally, comments were due on September 12, 2003. However, on August 8, 2003, two parties, National Public Radio ("NPR") and the International Association of Audio Information Services ("IAAIS"), jointly requested a 90-day extension of time in which to prepare and submit comments.⁵ On August 29, 2003, the Commission granted an extension of time until October 14, 2003, for filing comments on the Mitre report.⁶

³ See *Creation of Low Power Radio Service*, 16 FCC Rcd 8026 (2001).

⁴ *Public Notice, Comment Sought on The Mitre Corporation's Technical Report, "Experimental Measurements of the Third-Adjacent Channel Impacts of Low Power FM Stations,"* DA 03-2277 (rel. July 11, 2003).

⁵ NPR/IAAIS Motion for Further Extension of Time (filed Aug. 8, 2003).

⁶ *Order*, DA 03-2767 (rel. Aug. 29, 2003) (MM Docket No. 99-25).

The Mitre Report contains the following conclusions/recommendations concerning LPFM stations and existing third-adjacent channel FM stations:

1. Reduction or elimination of existing third-adjacent channel LPFM minimum distance separation requirements is possible without increasing the potential for third-adjacent channel LPFM interference to existing stations.
2. Adoption of a more stringent third-adjacent channel LPFM emissions mask would mitigate LPFM interference potential because most LPFM transmitters achieve spurious emission suppression in excess of the current mask value.
3. Third-adjacent channel LPFM stations will have little or no effect on the transition to terrestrial digital radio since third-adjacent channel LPFM interference to digital receivers is unlikely to occur beyond 130 meters from the LPFM transmitter.
4. Due to the lack of measurable interference produced by third-adjacent channel LPFM stations during testing, the listener tests and economic analysis scheduled for Phase II of the LPFM field tests and experimental program should not be done.

III. ANALYSIS OF PUBLIC COMMENTS RECEIVED

Appendix A is a list of the twenty-four parties (including one untimely filer) that submitted comments on the Mitre Report. Eighteen filers support elimination or modification of the existing third-adjacent channel minimum distance separation requirements for LPFM stations. Three support retention of the existing third-adjacent channel minimum distance separation requirements. Ten individuals who favor elimination of the current third-adjacent channel minimum distance separation requirements reported that their local LPFM station is suffering co-channel interference that could be eliminated if the station could change frequency to a third-adjacent channel. They state that they value highly this station's local community-oriented programming. One supporter of the current distance separation restrictions contends that the additional LPFM stations that could be authorized without third-adjacent channel protections could have a negative cumulative interference impact on the FM service. Three parties support retention of the existing third-adjacent channel minimum distance separation requirements with respect to existing full-power FM stations providing Reading Services for the Visually Impaired (RSVI) on FM sub-carriers. Four filers addressed the Mitre Report recommendation to modify the third-adjacent channel emissions mask limits for LPFM stations. Two of the four endorse and one opposes the Mitre proposal, and one maintains that further study is required before a decision on the mask modification can be made. No comments addressed the Mitre Report assessment of the effect of third-adjacent channel LPFM stations on the transition to terrestrial digital radio.

IV. RECOMMENDATIONS

1. Existing third-adjacent minimum distance separation requirements between LPFM stations and existing full-service FM stations and FM translator and booster stations should be eliminated.

The Mitre Report states that, even in the worst case, no third-adjacent channel interference between an LPFM station and an existing full-service FM station will exist beyond a radius of 1.1 kilometers around the LPFM transmitter site. The Commission's technical studies similarly showed that LPFM stations do not pose a significant risk of causing interference to existing full-service FM stations or FM translator and booster stations operating on third-adjacent channels. If such interference were to occur, the Commission would address it on a case-by-case basis using the third-adjacent channel LPFM interference complaint and license modification procedures adopted in September 2000.⁷ Based on the Phase I testing results, the complaint and license modification procedures should be sufficient to resolve any anomalous cases of third-adjacent channel interference. Further, the Commission specifically requires an LPFM station to meet the second-adjacent channel minimum distance separation requirement with respect to an FM station providing radio reading services via subcarrier that is operating on a third-adjacent channel. Based on these reasons, there appears to be no public interest reason to retain third-adjacent minimum distance separation requirement for LPFM stations.⁸ Congress should re-address this issue and modify the statute to eliminate the third-adjacent channel distant separation requirements for LPFM stations.

2. Congress should re-evaluate the necessity of completing Phase II testing.

The results of Phase I testing call into question the necessity of completing Phase II. In Phase I, the Mitre field tests found that no 100-watt LPFM station significantly degraded the reception of a full-service station at any distance greater than 126 meters from the LPFM transmitter. Also, with the exception of a single anomalous result, no significant LPFM-related degradation to the reception of a full-service station was identified at a distance greater than 333 meters from the LPFM transmitter, a test result based on over 1,400 measurements. Mitre concluded that the expenditure of public funds for listener tests and economic analysis would be unwarranted based on the de minimis potential for actual third-adjacent channel LPFM interference to commercial and NCE FM stations. We agree.

First, the Phase I testing showed a limited number of test points where interference was detected. Spending additional money on listening tests would not appear to add any substantive information because there was no significant interference

⁷ See 47 C.F.R. § 73.810 and § 73.827.

⁸ See 47 C.F.R. § 73.807(a)(2) and § 73.807(b)(2).

detected. Next, the Commission's experience with licensing LPFM stations shows there has not been a great demand for licenses in rural areas. Thus, an adverse economic impact on small market stations may not be realized. Additionally, even with modification of the third-adjacent channel separations, there will not be many new LPFM opportunities in most communities of any significant size. Further, nothing in the record demonstrates that a limit on local radio competition is necessary to protect incumbent broadcasters or that additional competition from noncommercial educational LPFM stations would cause significant economic harm to full-power broadcasters. Finally, the Commission estimates that an additional \$800,000 would be required to complete Phase II testing and analysis. In light of these reasons, we recommend that Congress re-assess the need for listening tests and economic analyses.

Attachments:

Appendix A: List of Commentors on Mitre Report
Mitre Technical Report, Experimental Measurements of the Third-Adjacent-Channel Impacts of Low-Power FM Stations (Volumes One and Two)

APPENDIX A

LIST OF COMMENTORS ON MITRE REPORT

1. Tim West
2. Gary W. Barnett
3. Fred E. and Ramona J. Morgan
4. Lois Crowe
5. Crystal McGarry
6. Fred Compton
7. David D. Petherbridge
8. John R. Smith
9. Will Satak
10. Richard Bennett
11. REC Networks
12. Stephen G. Toner
13. Richard M. Wolcott
14. Paul Pfnister
15. JT Communications
16. Kyle Magrill & Barry Magrill
17. National Public Radio, Inc.
18. National Association of Broadcasters
19. Livingston Radio Company
20. Cox Radio, Inc.
21. Prometheus Radio Project; Media Access Project, National Lawyers Guild
Committee on Democratic Communications; Office of Communication, Inc.,
United Church of Christ; National Federation of Community Broadcasters; Future
of Music Coalition; and Free Press
22. Midwest Christian Media, Inc. and Three Sisters Wireless, Inc.
23. The Amherst Alliance
24. International Association of Audio Information Services (Late filing)