

APPENDIX A

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1. Section 21.2 should be amended by adding the following definition:

Documented complaint. A complaint of interference that includes evidence of a good-faith effort to resolve the interference problem with the licensee of the allegedly interfering facility, and evidence that the interference is being caused by a facility of the licensee against whom the complaint is filed.

2. Section 21.27(d) should be amended as follows:

(d) Notwithstanding any other provisions of this Part, effective ~~as of September 17, 1998,~~ there shall be a one-week window, at such time as the Commission shall announce by public notice, for the filing of applications for all categories of MDS high power signal booster station, response station hub and I channels point-to-multipoint transmissions licenses, during which all applications shall be deemed to have been filed as of the same day

3. Section 21.42(c)(8) should be amended as follows:

(8) A change to a sectorized antenna system comprising an array of directional antennas, provided that such system does not change polarization or result in an increase in radiated power by more than one dB in any direction in the horizontal or vertical plane; provided, however, that notice of such change is provided to the Commission on FCC Form 331 within ten (10) days of installation.

4. Section 21.902(a) should be amended as follows:

(a) All applicants, conditional licensees, and licensees shall make exceptional efforts to avoid harmful interference to other users and to avoid blocking potential adjacent channel use in the same city and cochannel use in nearby cities. In areas where major cities are in close proximity, careful consideration should be given to minimum power requirements and to the location, height, and radiation pattern of the transmitting antenna. Licensees, conditional licensees, and applicants are expected to cooperate fully in attempting to resolve problems of potential interference before bringing the matter to the

attention of the Commission, including cooperating with reasonable requests for participating in "on/off" equipment tests.

5. Section 21.902(f)(1) should be amended as follows:

(1) Cochannel interference is defined as the ratio of the desired signal to the undesired signal present in the desired channel, at the output of a reference receiving antenna oriented to receive the maximum desired signal. Harmful interference will be considered present when a calculation based on a terrain-sensitive model ~~free space calculation for an unobstructed signal path~~ determines that this ratio is less than 45 dB (both stations utilizing 6 MHz bandwidths).

6. Section 21.902(f)(2) should be amended as follows:

(2) ...

(i) Harmful interference will be considered present when a calculation based on a terrain-sensitive model ~~free space calculation for an unobstructed signal path~~ determines that this ratio is less than 0 dB (both stations utilizing 6 MHz bandwidths).

(ii) In the alternative, harmful interference will be considered present for an ITFS station constructed before May 26, 1983, when a calculation based on a terrain-sensitive model ~~free space calculation~~ determines that this ratio is less than 10 dB (both stations utilizing 6 MHz bandwidths)

7. Section 21.904 should be amended as follows:

§ 21.904 Power Limitations ~~Transmitter Power~~

(a) ...

(b) ...

(c) An increase in station EIRP ~~transmitter power~~

8. Section 21.909(c) should be amended as follows:

(c) An applicant for a response station hub license shall:

(1) File FCC Form 331 with Mellon Bank, attach to that form the information, showings and certifications required by § 21.909(d), and certify on that form that it has complied with the requirements of § 21.909(c)(2) and (d) and that the interference data submitted under § 21.909(d) is complete and accurate. Failure to certify compliance and to comply completely with the requirements of § 21.909(c)(2) and (d) shall result in dismissal of the application or revocation of the response station hub license, and may result in imposition of a monetary forfeiture; and

(2) Submit to International Transcription Services, Inc. ("ITS"), 1231 20th Street, N.W., Washington, D.C. 20036, both in hard copy, and on a 3.5" computer diskette in ASCII, duplicates of all filings required by Section 21.909(c)(1), the following:

~~(i) Duplicates of the Form 331 filed with Mellon Bank; and~~

~~(ii) The data required by Appendix D to the Report and Order in MM Docket No. 97-217, FCC 98-231, "Methods for Predicting Interference from Response Station Transmitters and to Response Station Hubs and for Supplying Data on Response Station Systems"; and~~

~~(iii) The information, showings and certifications required by § 21.909(d); and~~

~~(3) Submit to the Commission, only upon Commission staff request, duplicates of the submissions required by § 21.909(e)(2).~~

9. Section 21.909(d) should be amended as follows:

(d) An Applicant for a response station hub license shall, pursuant to § 21.909(e)(2)(iii), submit to ITS the following with its Form 331 the data required by Appendix D to the Report and Order in MM Docket No. 97-217, FCC 98-231, "Methods for Predicting Interference from Response Station Transmitters and to Response Station Hubs and for Supplying Data on Response Station Systems", including the following:

10. Section 21.909(d)(3)(iv) should be amended as follows:

(iv) ...

(C) at any previously registered receive site of any authorized or previously-proposed cochannel ITFS station or booster station located within 160.94 km (100 miles) of the proposed response station hub

11. Section 21.909(d)(3)(v) should be amended as follows:

(v) ...

(C) at any previously registered receive site of any authorized or previously proposed adjacent channel ITFS station or booster station located within 160.94 km (100 miles) of the proposed response station hub

12. Section 21.909(g)(6) should be amended as follows:

(6)

(i) First notifies the Commission of the altered number of response stations of such class(es) to be operated simultaneously in such region, ~~and~~ certifies in that notification that it has complied with the requirements of § 21.909(g)(6)(iii) and (iv) § 21.909(g)(6)(ii) and (iii), and certifies in that notification that the interference data submitted under § 21.909(g)(6)(ii) is complete and accurate; and

(ii) Provides the Commission with ~~ITS with a copy of such notification and with~~ an analysis establishing that such alteration will not result in any increase in interference ... ; and

(iii) Provides ITS with a copy of such notification and analysis;
and

(iv) (iii) Serves a copy of such notification and analysis upon each party entitled to be served pursuant to § 21.909(d)(4); and

~~(iv) Submits to the Commission, only upon Commission staff request, duplicates of the submissions required by § 21.909(g)(6)(ii); and~~

13. Section 21.909(g)(7) should be amended as follows:

(7) Where an application is granted under this section, if a facility operated pursuant to that grant causes harmful, unauthorized interference to any cochannel or adjacent channel facility, it must promptly remedy the interference or immediately cease operations of the interfering facility regardless of whether any petitions to deny or for other relief were filed against the application during the application process. The burden of proving that a facility operated under this section is not causing harmful, unauthorized interference lies on the licensee of the alleged interfering facility, following the filing of a documented complaint of interference by an affected party. A facility must cease operations pursuant to this section:

(i) Upon receipt of an FCC date-stamped copy of a documented complaint of interference, within 2 hours if served by fax or hand delivery and within 24 hours if served by certified U.S. mail; or

(ii) Upon receipt of an FCC date-stamped copy of a "Notice of Complaint of Interference," provided that the licensee of the alleged interfering facility shall have three (3) business days following the date of receipt to submit proof that it is not causing the interference or else it must cease operations. If the alleged interfering facility files proof of non-interference, it automatically avoids shut-down and shifts the burden of proof back to the complaining party; and

(iii) If shutdown occurs pursuant to this section, the alleged interfering facility may not restart transmissions unless the restart is specifically authorized by the complainant's written agreement or an order of the Commission, and

14. Section 21.909(g)(9) should be added and should read as follows:

(9) Where a response station hub application is granted under this section, if a facility operated pursuant to that grant causes block downconverter overload interference to any MDS or ITFS receive site, it must promptly remedy the interference or immediately cease operations of the interfering facility regardless of whether any petitions to deny or for other relief were filed against the application during the application process. The burden of proving that a facility operated under such grant is not causing harmful interference lies on the licensee of the alleged interfering facility, following the filing of a

documented complaint of interference by an affected party. A facility must cease operations pursuant to this section:

(i) Upon receipt of an FCC date-stamped copy of a documented complaint of interference, within 2 hours if served by fax or hand delivery and within 24 hours if served by certified U.S. mail; or

(ii) Upon receipt of an FCC date-stamped copy of a "Notice of Complaint of Interference," provided that the licensee of the alleged interfering facility shall have three (3) business days following the date of receipt to submit proof that it is not causing the interference or else it must cease operations. If the alleged interfering facility files proof of non-interference, it automatically avoids shut-down and shifts the burden of proof back to the complaining party; and

(iii) If shutdown occurs under this section, the alleged interfering facility may not restart transmissions unless the restart is specifically authorized by the complainant's written agreement or an order of the Commission.

15. Section 21.909(n) should be amended as follows:

(n) At least 20 days prior to the activation of a response station transmitter located within a radius of 1960 feet of ~~a registered or previously applied for~~ an ITFS receive site that is registered or applied for at the time of the proposed activation, the response station hub licensee must notify, by certified mail, the licensee of the ITFS site of the intention to activate the response station.

16. Section 21.913(b) should be amended as follows:

(b) ... The applicant for a high-power MDS signal booster station additionally is required to attach to Form 331 the information, showings and certifications required by Section 21.913(b), and certify that the interference data is complete and accurate, including submit to International Transcription Services, Inc., 1231 20th Street, N.W., Washington, DC 20036, both in hard copy, and on a 3.5" computer diskette in ASCII, and likewise to submit to the Commission, only upon Commission staff request, duplicates of the Form 331 filed with Mellon Bank, and the following information:

....

(8) The applicant for a high-power MDS signal booster station additionally is required to submit to International Transcription Services, Inc., 1231 20th Street, N.W., Washington, DC 20036, both in hard copy, and on a 3.5" computer diskette in ASCII, duplicates of the Form 331 and attachments filed with Mellon Bank.

17. Section 21.913(e) should be amended as follows:

(e) ... An MDS licensee or conditional licensee seeking to install a low-power MDS signal booster station under this rule must, within 48 hours after installation, submit FCC Form 331 to the Commission in Washington, DC, attach to Form 331 the information, showings and certifications required by Section 21.913(e), and certify that the interference data is complete and accurate, and submit to International Transcription Services, Inc., 1231 20th Street, N.W., Washington, DC 20036, both in hard copy, and on a 3.5" computer diskette in ASCII, duplicates of the Form 331 filed with the Commission and the following (which also shall be submitted to the Commission, only upon Commission staff request at any time) including the following information:

....

(6) The applicant for a low-power MDS signal booster station additionally is required to submit to International Transcription Services, Inc., 1231 20th Street, N.W., Washington, DC 20036, both in hard copy, and on a 3.5" computer diskette in ASCII, duplicates of the Form 331 and attachments filed with the Commission.

18. Section 21.913(g) should be amended as follows:

(g) Where an application is granted under paragraph (d) of this section, if a facility operated pursuant to that grant causes harmful, unauthorized interference to any cochannel or adjacent channel facility, it must promptly remedy the interference or immediately cease operations of the interfering facility regardless of whether any petitions to deny or for other relief were filed against the application during the application process. The burden of proving that a high-power MDS signal booster station is not causing harmful, unauthorized interference lies on the licensee of the alleged interfering

facility, following the filing of a documented complaint of interference by an affected party. A facility must cease operations pursuant to this section:

(i) Upon receipt of an FCC date-stamped copy of a documented complaint of interference, within 2 hours if served by fax or hand delivery and within 24 hours if served by certified U.S. mail; or

(ii) Upon receipt of an FCC date-stamped copy of a "Notice of Complaint of Interference," provided that the licensee of the alleged interfering facility shall have three (3) business days following the date of receipt to submit proof that it is not causing the interference or else it must cease operations. If the alleged interfering facility files proof of non-interference, it automatically avoids shut-down and shifts the burden of proof back to the complaining party; and

(iii) If shutdown occurs under this section, the alleged interfering facility may not restart transmissions unless the restart is specifically authorized by the complainant's written agreement or an order of the Commission.

19. Section 21.913(i) should be added and should read as follows:

(i) Where a signal booster station application is granted under this section, if a facility operated pursuant to that grant causes block downconverter overload interference to any MDS or ITFS receive site, it must promptly remedy the interference or immediately cease operations of the interfering facility regardless of whether any petitions to deny or for other relief were filed against the application during the application process. The burden of proving that an MDS signal booster station is not causing harmful interference lies on the licensee of the alleged interfering facility, following the filing of a documented complaint of interference by an affected party. A facility must cease operations pursuant to this section:

(i) Upon receipt of an FCC date-stamped copy of a documented complaint of interference, within 2 hours if served by fax or hand delivery and within 24 hours if served by certified U.S. mail; or

(ii) Upon receipt of an FCC date-stamped copy of a "Notice of Complaint of Interference," provided that the licensee of the alleged interfering facility shall have three (3) business days following the date of receipt to submit proof that it is not causing the interference or else

it must cease operations. If the alleged interfering facility files proof of non-interference, it automatically avoids shut-down and shifts the burden of proof back to the complaining party; and

(iii) If shutdown occurs under this section, the alleged interfering facility may not restart transmissions unless the restart is specifically authorized by the complainant's written agreement or an order of the Commission.

20. Section 74.901 should be amended by adding the following definition:

Documented complaint. A complaint of interference that includes evidence of a good-faith effort to resolve the interference problem with the licensee of the allegedly interfering facility, and evidence that the interference is being caused by a facility of the licensee against whom the complaint is filed.

21. Section 74.903(a)(1) should be amended as follows:

(1) Cochannel interference is defined as the ratio of the desired signal to the undesired signal, at the output of a reference receiving antenna oriented to receive the maximum desired signal. Harmful interference will be considered present when a calculation based on a terrain-sensitive model ~~free space calculation~~ determines that this ratio is less than 45 dB (both stations utilizing 6 MHz bandwidths).

22. Section 74.903(a)(2) should be amended as follows:

(2) ...

(i) Harmful interference will be considered present when a calculation based on a terrain-sensitive model ~~free space calculation~~ determines that this ratio is less than 0 dB (both stations utilizing 6 MHz bandwidths).

(ii) In the alternative, harmful interference will be considered present for an ITFS station constructed before May 26, 1983, when a calculation based on a terrain-sensitive model ~~free space calculation~~ determines that this ratio is less than 10 dB (both stations utilizing 6 MHz bandwidths)

23. Section 74.903(b)(1) should be amended as follows:

(1) An analysis of the potential for harmful interference with the previously registered receive sites ~~registered as of September 17, 1998,~~ and with the protected service area, of any authorized or previously-proposed cochannel station

24. Section 74.903(b)(2) should be amended as follows:

(2) An analysis of the potential for harmful adjacent channel interference with the previously registered receive sites ~~registered as of September 17, 1998,~~ and with the protected service area, of any authorized or previously proposed station

25. Section 74.903(c) should be amended as follows:

(c) Existing licensees, conditional licensees and prospective applicants, including those who lease or propose to lease excess capacity pursuant to § 74.931(c) or (d), are expected to cooperate fully and in good faith in attempting to resolve problems of potential interference before bringing the matter to the attention of the Commission, including cooperating with reasonable requests for participating in "on/off" equipment tests.

26. Section 74.903(d) should be amended as follows:

(d) Each authorized or previously proposed applicant, conditional licensee, or licensee must be protected from harmful electrical interference at each of its previously registered receive sites ~~registered previously as of September 17, 1998,~~ and within a protected service area as defined at § 21.902(d)(1) of this chapter

27. Section 74.911(d) should be amended as follows:

(d) Notwithstanding any other provisions of this Part, ~~effective as of September 17, 1998,~~ there shall be a one-week window, at such time as the Commission shall announce by public notice, for the filing of applications for all categories of ITFS ~~high power signal booster station, response station hub and I channels point to multipoint~~

~~transmissions~~ licenses, during which all applications shall be deemed to have been filed as of the same day

28. Section 74.939(c) should be amended as follows:

(c) An applicant for a response station hub license shall:

(1) File FCC Form 331 with the Commission in Washington, DC, attach to that form the information, showings and certifications required by § 74.939(d), and certify on that form that it has complied with the requirements of § 74.939(c)(2) and (d) and that the interference data submitted under § 74.939(d) is complete and accurate. Failure to certify compliance and to comply completely with the requirements of § 74.939(c)(2) and (d) shall result in dismissal of the application or revocation of the response station hub license, and may result in imposition of a monetary forfeiture; and

(2) Submit to International Transcription Services, Inc. ("ITS"), 1231 20th Street, N.W., Washington, D.C. 20036, both in hard copy, and on a 3.5" computer diskette in ASCII, duplicates of all filings required by Section 74.939(c)(1), the following:

(i) ~~Duplicates of the Form 331 filed with Mellon Bank; and~~

(ii) ~~The data required by Appendix D to the Report and Order in MM Docket No. 97-217, FCC 98 ____, "Methods for Predicting Interference from Response Station Transmitters and to Response Station Hubs and for Supplying Data on Response Station Systems"; and~~

(iii) ~~The information, showings and certifications required by § 74.939(d); and~~

(3) ~~Submit to the Commission, only upon Commission staff request, duplicates of the submissions required by § 74.939(e)(2).~~

29. Section 74.939(d) should be amended as follows:

(d) An Applicant for a response station hub license shall, pursuant to § 74.939(e)(2)(iii), submit to ITS the following with its Form 331 the data required by Appendix D to the Report and Order in

MM Docket No. 97-217, FCC 98-231, "Methods for Predicting Interference from Response Station Transmitters and to Response Station Hubs and for Supplying Data on Response Station Systems", including the following:

30. Section 74.939(d)(3)(iv) should be amended as follows:

(iv) ...

(C) at any previously registered receive site of any authorized or previously proposed cochannel ITFS station or booster station located within 160.94 km (100 miles) of the proposed response station hub

31. Section 74.939(d)(3)(v) should be amended as follows:

(v) ...

(C) at any previously registered receive site of any authorized or previously proposed adjacent channel ITFS station or booster station located within 160.94 km (100 miles) of the proposed response station hub

32. Section 74.939(g)(6) should be amended as follows:

(6)

(i) First notifies the Commission of the altered number of response stations of such class(es) to be operated simultaneously in such region, ~~and~~ certifies in that notification that it has complied with the requirements of § 74.939(g)(6)(iii) and (iv) § 74.939(g)(6)(ii) and (iii), and certifies in that notification that the interference data submitted under § 74.939(g)(6)(ii) is complete and accurate; and

(ii) Provides the Commission with ~~ITS with a copy of such notification and with~~ an analysis establishing that such alteration will not result in any increase in interference ... ; and

(iii) Provides ITS with a copy of such notification and analysis;
and

~~(iv) (iii)~~ Serves a copy of such notification and analysis upon each party entitled to be served pursuant to § 74.939(d)(4); and

~~(iv) Submits to the Commission, only upon Commission staff request, duplicates of the submissions required by § 74.939(g)(6)(ii); and~~

33. Section 74.939(g)(7) should be amended as follows:

(7) Where an application is granted under this section, if a facility operated pursuant to that grant causes harmful, unauthorized interference to any cochannel or adjacent channel facility, it must promptly remedy the interference or immediately cease operations of the interfering facility regardless of whether any petitions to deny or for other relief were filed against the application during the application process. The burden of proving that a facility operated under this section is not causing harmful, unauthorized interference lies on the licensee of the alleged interfering facility, following the filing of a documented complaint of interference by an affected party. A facility must cease operations pursuant to this section:

(i) Upon receipt of an FCC date-stamped copy of a documented complaint of interference, within 2 hours if served by fax or hand delivery and within 24 hours if served by certified U.S. mail; or

(ii) Upon receipt of an FCC date-stamped copy of a "Notice of Complaint of Interference," provided that the licensee of the alleged interfering facility shall have three (3) business days following the date of receipt to submit proof that it is not causing the interference or else it must cease operations. If the alleged interfering facility files proof of non-interference, it automatically avoids shut-down and shifts the burden of proof back to the complaining party; and

(iii) If shutdown occurs under this section, the alleged interfering facility may not restart transmissions unless the restart is specifically authorized by the complainant's written agreement or an order of the Commission; and

34. Section 74.939(g)(9) should be added and should read as follows:

(9) Where a response hub station application is granted under this section, if a facility operated pursuant to that grant causes block

downconverter overload interference to any MDS or ITFS receive site, it must promptly remedy the interference or immediately cease operations of the interfering facility regardless of whether any petitions to deny or for other relief were filed against the response station hub application during the application process. The burden of proving that a facility operated under this section is not causing harmful interference lies on the licensee of the alleged interfering facility, following the filing of a documented complaint of interference by an affected party. A facility must cease operation pursuant to this section:

(i) Upon receipt of an FCC date-stamped copy of a documented complaint of interference, within 2 hours if served by fax or hand delivery and within 24 hours if served by certified U.S. mail; or

(ii) Upon receipt of an FCC date-stamped copy of a "Notice of Complaint of Interference," provided that the licensee of the alleged interfering facility shall have three (3) business days following the date of receipt to submit proof that it is not causing the interference or else it must cease operations. If the alleged interfering facility files proof of non-interference, it automatically avoids shut-down and shifts the burden of proof back to the complaining party; and

(iii) If shutdown occurs under this section, the alleged interfering facility may not restart transmissions unless the restart is specifically authorized by the complainant's written agreement or an order of the Commission.

35. Section 74.939(l)(2) should be amended as follows:

~~(2) Attach to FCC Form 331 the following: submit to International Transcription Services, Inc., 1231 20th Street, N.W., Washington, DC 20036, both in hard copy, and on a 3.5" computer diskette in ASCII, and likewise submit to the Commission, only upon Commission staff request:~~

~~(i) Duplicates of the Form 331 filed with Mellon Bank or with the Commission, as appropriate; and~~

~~(ii) (i) The interference analyses required to be performed~~

(ii) Submit to International Transcription Services, Inc., 1231 20th Street, N.W., Washington, DC 20036, both in hard copy and on a

3.5" computer diskette in ASCII, duplicates of the Form 331 and attachments filed with Mellon Bank or with the Commission as appropriate; and,

36. Section 74.939(l)(3) should be amended as follows:

(3) Except as provided in § 21.27(d) or § 74.911(e), as appropriate, be permitted to file applications to convert associated I channels to point-to-multipoint transmissions at any time, which shall be secondary to any I channel used for response (talk-back) transmissions. I channels used for point-to-multipoint transmissions shall be afforded interference protection in the same manner as other point-to-multipoint MDS and ITFS facilities, with appropriate adjustment of the interference protection values for bandwidth. Notwithstanding any other provision of Parts 21 and 74, applications to convert associated I channels to point-to-multipoint transmissions, meeting the requirements of § 74.939(l)(1) and (2), shall cut-off applications to convert other I channels to point-to-multipoint transmissions that are filed on a subsequent day if the facilities applied for ~~that are filed on a subsequent day for facilities that~~ would cause harmful electromagnetic interference to the proposed point-to-multipoint operations; and

37. Section 74.939(l)(5) should be amended as follows:

(5) Where an application is granted under this paragraph, and a facility operated pursuant to that grant causes harmful, unauthorized interference to any cochannel or adjacent channel facility, promptly remedy the interference or immediately cease operations of the interfering facility regardless of whether any petitions to deny or for other relief were filed against the application during the application process. The burden of proving that a facility operated under this section is not causing harmful, unauthorized interference lies on the licensee of the alleged interfering facility, following the filing of a documented complaint of interference by an affected party. A facility must cease operations pursuant to this section:

(i) Upon receipt of an FCC date-stamped copy of a documented complaint of interference, within 2 hours if served by fax or hand delivery and within 24 hours if served by certified U.S. mail; or

(ii) Upon receipt of an FCC date-stamped copy of a "Notice of Complaint of Interference," provided that the licensee of the alleged interfering facility shall have three (3) business days following the date of receipt to submit proof that it is not causing the interference or else it must cease operations. If the alleged interfering facility files proof of non-interference, it automatically avoids shut-down and shifts the burden of proof back to the complaining party; and

(iii) If shutdown occurs under this section, the alleged interfering facility may not restart transmissions unless the restart is specifically authorized by the complainant's written agreement or an order of the Commission.

38. Section 74.939(l)(6) should be added and should read as follows:

(6) Where an application is granted under this section, and a facility operated pursuant to that grant causes block downconverter overload interference to any MDS or ITFS receive site, promptly remedy the interference or immediately cease operations of the interfering facility regardless of whether any petitions to deny or for other relief were filed against the application during the application process. The burden of proving that a facility operated under this section is not causing harmful interference lies on the licensee of the alleged interfering facility, following the filing of a documented complaint of interference by an affected party. A facility must cease operation pursuant to this section:

(i) Upon receipt of an FCC date-stamped copy of a documented complaint of interference, within 2 hours if served by fax or hand delivery and within 24 hours if served by certified U.S. mail; or

(ii) Upon receipt of an FCC date-stamped copy of a "Notice of Complaint of Interference," provided that the licensee of the alleged interfering facility shall have three (3) business days following the date of receipt to submit proof that it is not causing the interference or else it must cease operations. If the alleged interfering facility files proof of non-interference, it automatically avoids shut-down and shifts the burden of proof back to the complaining party; and

(iii) If shutdown occurs under this section, the alleged interfering facility may not restart transmissions unless the restart is specifically authorized by the complainant's written agreement or an order of the Commission.

39. Section 74.939(p) should be amended as follows:

(p) At least 20 days prior to the activation of a response station transmitter located within a radius of 1960 feet of ~~a registered or previously applied for~~ an ITFS receive site that is registered or applied for at the time of the proposed activation, the response station hub licensee must notify, by certified mail, the licensee of the ITFS site of the intention to activate the response station

40. Section 74.985(b) should be amended as follows:

(b) ... The applicant for a high-power ITFS signal booster station additionally is required to attach to Form 331 the information, showings and certifications required by Section 74.985(b), and certify that the interference data is complete and accurate, including submit to International Transcription Services, Inc., 1231 20th Street, N.W., Washington, DC 20036, both in hard copy, and on a 3.5" computer diskette in ASCII, and likewise to submit to the Commission, only upon Commission staff request, duplicates of the Form 331 filed with Mellon Bank, and the following information:

....

(8) The applicant for a high-power ITFS signal booster station additionally is required to submit to International Transcription Services, Inc., 1231 20th Street, N.W., Washington, DC 20036, both in hard copy, and on a 3.5" computer diskette in ASCII, duplicates of the Form 331 and attachments filed with the Commission.

41. Section 74.985(e) should be amended as follows:

(e) ...An ITFS licensee or conditional licensee seeking to install a low-power ITFS signal booster station under this rule must, within 48 hours after installation, submit FCC Form 331 to the Commission in Washington, DC, attach to Form 331 the information, showings and certifications required by Section 74.985(e), and certify that the interference data is complete and accurate, and submit to International Transcription Services, Inc., 1231 20th Street, N.W., Washington, DC 20036, both in hard copy, and on a 3.5" computer diskette in ASCII, duplicates of the Form 331 filed with the Commission, and the following (which also shall be submitted to the

Commission, only upon Commission staff request at any time) including the following information:

....

(6) The applicant for a low-power ITFS signal booster station additionally is required to submit to International Transcription Services, Inc., 1231 20th Street, N.W., Washington, DC 20036, both in hard copy, and on a 3.5" computer diskette in ASCII, duplicates of the Form 331 and attachments filed with the Commission.

42. Section 74.985(g) should be amended as follows:

(g) Where an application is granted under paragraph (d) of this section, if a facility operated pursuant to that grant causes harmful, unauthorized interference to any cochannel or adjacent channel facility, it must promptly remedy the interference or immediately cease operations of the interfering facility regardless of whether any petitions to deny or for other relief were filed against the application during the application process. The burden of proving that a facility operated under this section is not causing harmful, unauthorized interference lies on the licensee of the alleged interfering facility, following the filing of a documented complaint of interference by an affected party. A facility must cease operation pursuant to this section:

(i) Upon receipt of an FCC date-stamped copy of a documented complaint of interference, within 2 hours if served by fax or hand delivery and within 24 hours if served by certified U.S. mail; or

(ii) Upon receipt of an FCC date-stamped copy of a "Notice of Complaint of Interference," provided that the licensee of the alleged interfering facility shall have three (3) business days following the date of receipt to submit proof that it is not causing the interference or else it must cease operations. If the alleged interfering facility files proof of non-interference, it automatically avoids shut-down and shifts the burden of proof back to the complaining party; and

(iii) If shutdown occurs under this section, the alleged interfering facility may not restart transmissions unless the restart is specifically authorized by the complainant's written agreement or an order of the Commission.

43. Section 74.985(i) should be added and should read as follows:

(i) Where a signal booster station application is granted under this section, if a facility operated pursuant to that grant causes block downconverter overload interference to any MDS or ITFS receive site, it must promptly remedy the interference or immediately cease operation of the interfering facility regardless of whether any petitions to deny or for other relief were filed against the signal booster station application during the application process. The burden of proving that a facility operated under this section is not causing harmful interference lies on the licensee of the alleged interfering facility, following the filing of a documented complaint of interference by an affected party. The facility must cease operation pursuant to this section:

(i) Upon receipt of an FCC date-stamped copy of a documented complaint of interference, within 2 hours if served by fax or hand delivery and within 24 hours if served certified U.S. mail; or

(ii) Upon receipt of an FCC date-stamped copy of a "Notice of Complaint of Interference," provided that the licensee of the alleged interfering facility shall have three (3) business days following the date of receipt to submit proof that it is not causing the interference or else it must cease operations. If the alleged interfering facility files proof of non-interference, it automatically avoids shut-down and shifts the burden of proof back to the complaining party; and

(iii) If shutdown occurs under this section, the alleged interfering facility may not restart transmissions unless the restart is specifically authorized by the complainant's written agreement or an order of the Commission.

**JOINT
ENGINEERING
STATEMENT**

Catholic Television Network

**Joint Engineering Exhibit
in Support of Petition for
Partial Reconsideration**

MM Docket 97-217

December 22, 1998

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Catholic Television Network

Joint Engineering Statement of

John F.X. Browne, P.E., Robert W. Denny, Jr., P.E., and Dane E. Ericksen, P.E.

The firms of John F.X. Browne and Associates, P.C., Denny & Associates, P.C., and Hammett & Edison, Inc., have been retained jointly on behalf of the Catholic Television Network ("CTN"), representing numerous Instructional Television Fixed Service ("ITFS") stations licensed to, and operated by, the Roman Catholic Archdioceses and Dioceses throughout the United States, to prepare an engineering exhibit in support of a Petition for Partial Reconsideration of the September 25, 1998, Report and Order ("R&O") to MM Docket 97-217 concerning two-way, "cellularized" ITFS and Multipoint Distribution Service ("MDS") stations.

Conflict Between the New Rules versus the R&O and Appendix D

1A. New Rule Sections 21.902(f)(1) and 21.902(f)(2)(i) mandate that interference calculations be based on free space for an "unobstructed" path, whereas Section 21.902(f)(2)(ii) requires free space calculations but is missing the "for unobstructed paths" caveat. Further, the language in new Rule Sections 74.903(a)(1) and 74.903(a)(2)(i) and (ii) mandates interference calculations on the basis of free space, but the "for unobstructed paths" caveat is missing from all three rule sections.

1B. Since there would be no point in selecting the highest ground elevation within a grid and assigning that ground elevation to the grid centroid, nor any point in Appendix D devoting 11 pages and 35 formulas to a new propagation model, if interference calculations (at least for ITFS stations) are to be done on the basis of free space without regard to path obstruction, it would appear that the wording adopted in these new rule sections is in conflict with the R&O and with Appendix D, and that the Code of Federal Regulations ("CFR") wording needs to be revised to include the "for unobstructed paths" caveat with each reference to free space calculations.

1C. Further, the term "unobstructed path" is not defined. Is a path that has line-of-sight based on $4/3$ -earth radius an "unobstructed path," or must there also be at least a 0.6 Fresnel zone radius clearance? A better approach would be for the above rule sections simply to require use of a terrain-sensitive model in all cases, and let the terrain-sensitive methodology default to free space whenever it believes that condition to exist.

1D. In the event the Commission clarifies that parties using the EDX Engineering, Inc. ("EDX") software Free Space + RMD™ must do so with the ground reflection key set to "yes," as more fully discussed in the following Item 2, then even where there is an unobstructed line of



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sight and adequate Fresnel Zone clearance, use of just free space propagation loss would fail to include the Reflection Coefficient.*

Clarification Whether Use of the Epstein-Peterson Model is Mandatory

2A. New Rule Sections 21.909(o) and 74.939(q) require that interference calculations be performed "in accordance with Appendix D to the Report and Order in MM Docket 97-217, Methods for Predicting Interference from Response Station Transmitters and To Response Station Hubs and for Supplying Data on Response Station Systems." However, Appendix D states, at Page D-10, that, "When analyzing interference from response stations to other systems and from other systems to response station hubs, a propagation model shall be used that takes into account the effects of terrain and certain other factors." Although Appendix D then goes on to offer the Epstein-Peterson method, nothing in Appendix D specifically states that only that particular method/model may be used, and the wording referring to "a propagation model," as opposed to simply and unambiguously stating that the Epstein-Peterson method must be used, makes it unclear whether parties wishing to use other propagation models, such as Longley-Rice or the more sophisticated Terrain Integrated Rough Earth Model ("TIREM"), are free to do so.

2B. The Commission needs to clarify whether parties electing to use the EDX Free Space + RMD™ software should make interference studies with the "ground reflection" key set to "yes" or "no," whether the "clutter environment" option should be applied, and, if so, which environment (urban, suburban, or dense foliage) should be specified, or whether these parameters are up to each applicant to select, in which case the Commission must require the application to clearly state the selected parameters, so that others can independently verify the study results if they wish to do so. Similarly, the Commission must require applicants electing to use a ground conductivity other than 0.008 Siemens/meter, or a relative dielectric constant of the reflecting surface other than 15, to clearly state what alternative values were used.

2C. Finally, clarification is needed whether the Docket 97-214 R&O now supersedes the Commission policy adopted in the February 7, 1995, Report and Order to MM Docket 93-24, which, at Paragraph 81, required parties wishing to use terrain-sensitive models for ITFS interference calculations to 1) identify and describe the model being used and 2) explicitly state the additional path loss being claimed. Even if the FCC clarifies that the Epstein-Peterson method must be used when making Response Station and Response Hub interference calculations, there is still a need to clarify whether other terrain-sensitive propagation models may continue to be used for interference

* Section A.2.2 to Appendix A ("Propagation Models") published by EDX, explaining the various propagation models offered, states "Reflection is used in the RMD model when the transmitter and receiver are line-of-sight."

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studies between wireless cable stations not involving a Response Station or a Response Hub, and whether interference exhibits based on the Epstein-Peterson method must explicitly state the additional predicted path loss.

Certain Other Technical Clarifications Necessary

3A. The file formats specified in Appendix D, at Pages D-21 and D-23, are missing two critical station parameters: namely, the amount of electrical beam tilt in the elevation plane for the proposed antenna, and the direction of any mechanical beam tilt. While perhaps only 10 to 20 percent of wireless cable antennas employ mechanical beam tilt, the majority of such antennas do employ electrical beam tilt. Yet, there is no field for the commonly-used electrical beam tilt, while there is a field for the less-often used mechanical beam tilt, but then there is no field for the direction of the mechanical beam tilt, which is an absolutely critical parameter when mechanical beam tilting is used. And although it is possible to include the electrical beam tilt in the elevation plane pattern tabulation, the Commission should not allow this practice because of the confusion it causes. The Commission should allow only normalized elevation patterns (*i.e.*, with the main beam always at 0°, towards the horizontal plane), and then let the computer program tilt the elevation pattern according to the electrical (if any) and mechanical (if any) beam tilts specified in an input file or by the user. In any case, the R&O needs to clarify which approach is to be taken, and a data field for the direction of any mechanical beam tilt must be added.

3B. Similar uncertainties for the azimuth pattern exist; while the input file format has a field for "Azimuth of Main Lobe," meaning that azimuth patterns must be "normalized" patterns, *i.e.*, with the main beam at a relative heading of 0°, clarification is needed for antennas with more than one main lobe: is the indicated azimuth then to be the azimuth of the axis of symmetry? If yes, the field name should be changed to "Azimuth of main lobe or azimuth of symmetry." If this is not done, there will be endless confusion when a symmetrical pattern with more than one main lobe, such as a "peanut" or "butterfly," is used.

3C. At Page D-27 of Appendix D, it states, "Both azimuth and elevation patterns shall be entered from 0 to 359 degrees." This is an impossibility, of course; while azimuth patterns range from zero to 359 degrees, elevation patterns only range from 90 degrees above the horizontal to 90 degrees below the horizontal, typically with angles below the horizontal taken as positive (*e.g.*, a "depression angle of 2°" is commonly understood to mean 2 degrees below the horizontal). Appendix D needs to be corrected to eliminate its impossible range of elevation angles and should define angles below the horizontal as positive.



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3D. New Rule Section 21.42(c)(8) allows changes to a sectorized antenna system comprising an array of directional antennas to be a permissive change, requiring only after-the-fact notification, if it does not result in an increase in radiated power “in any direction” of more than one decibel. In the past, ITFS Branch staff has indicated that they interpret the “in any direction” term, which currently also appears in Sections 21.23(c)(1)(vi) and 74.911(a)(1), to mean in any horizontal direction, and to ignore changes due to modification of an elevation pattern. This makes no sense technically and can allow much mischief to occur, either by changing electrical or mechanical beam tilts or the number of bays of an antenna. For example, going from a 16-bay antenna to an 8-bay antenna, and then increasing the transmitter power by 3 dB, would result in no increase in the equivalent isotropic radiated power (“EIRP”) based on the azimuth pattern, but could easily make 20 dB or greater changes in the field strength at ground level because the locations of the elevation pattern nulls and side lobes would have shifted. In one case potentially affecting the Archdiocese of Los Angeles, licensee of B-Group ITFS Station WHR-902, Santa Paula, California, just this scenario (*i.e.*, an increase of more than 1.5 dB in the vertical plane, but not the horizontal plane) occurred when California State University Fullerton filed to change its ITFS B-Group Station WHR-854 at Modjeska Peak (one of the Pacific Bell Video Services “master plan” sites) from a Bogner Type B16SS 16-bay antenna with 3° of electrical beam tilt to an Andrew Type HMD12VN 12-bay, still with 3° of electrical beam tilt; as shown by the attached Figure 1, at a depression angle of 10° there is more than a 20 dB difference in the EIRPs. Fortunately, that modification ended up not harming the Archdiocese, but that was just luck; there could have easily have been a fixed receive site, or a hypothetical receive site (*i.e.*, populated areas) at the 10° depression angle. This loophole should be closed, and the Commission should confirm that “in any direction” means just what it says, *i.e.*, that the restriction applies to increasing radiation in the vertical plane as well as the horizontal plane.

3E. The new methodologies spelled out in Appendix D are complex; indeed, the R&O found it necessary to allow potentially affected licensees a 60-day period rather than the more usual 30-day period for Petitions to Deny because of the complexity of the calculations.

3F. Since consulting engineers will now need to implement the Appendix D methodologies, the lack of sample calculations is a major problem. Such sample calculations are necessary to allow parties attempting to write computer programs that will implement the Appendix D protocols to confirm that they have properly implemented the methodology. For example, when the Commission adopted an entirely new and complex calculation methodology for digital television (“DTV”) interference studies, it provided detailed tables listing each NTSC station’s terrain-limited, interference-free area and population; this allowed parties implementing OET69-style

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computer programs to cross-check their programs with the FCC numbers. Indeed, the August 10, 1998, FCC Public Notice, "Additional Application Processing Guidelines for Digital Television," requires, at Page 2, parties submitting OET69-type interference studies to state the computer and software used and to confirm that "sufficient comparisons have been made to confirm that these facilities produce the same results as the Commission's implementation of OET Bulletin No. 69." A similar benchmark must be made available for the arguably even more complex Appendix D methodologies.

3G. The example cases need to include a case where the transmitting antenna has only electrical beam tilt and at least two cases where the transmitting antenna has both electrical and mechanical beam tilts, one with the mechanical beam tilt direction the same as the azimuth pattern direction, and the other where the mechanical beam tilt direction and the azimuth pattern direction are different.

Section 21.904 Is Mis-Titled

4A. New Rule Section 21.904 is titled "Transmitter Power" but in fact discusses equivalent isotropic radiated power ("EIRP"). Therefore, this new Rule Section needs to be re-titled simply "Power Limitations" (that is, the title used for the matching new ITFS rule, Section 74.935), or, better yet, be changed to "EIRP Limitations," in which case Section 74.935 should be similarly re-titled. Response station transmitter power limits are addressed at new Rule Sections 21.909(g)(2) and 74.939(g)(2), and, of course, for main or booster stations, there is no limit on transmitter power, only a limit on EIRP.

4B. Similarly, new Rule Section 21.904(c) refers to increases in station "transmitter power," when it appears that it really means increases in the station EIRP, since it then refers back to 21.904(a) and 21.904(b), which discuss EIRP, and not transmitter power.

Summary

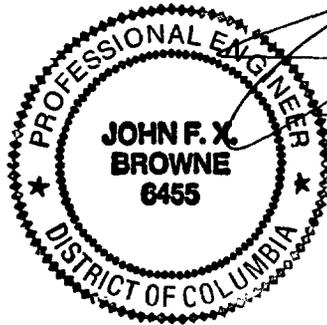
5. The Commission needs to clarify the engineering "housekeeping" issues identified in this exhibit in order to ensure that the new procedures adopted by the R&O can be expeditiously implemented and to minimize uncertainty and disputes between parties as to whether the new methodologies adopted in the R&O have been properly implemented.

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List of Figures

6. The following figures have been jointly prepared as part of these MM Docket 97-217 *ex parte* comments:

1. Comparison of elevation patterns for an antenna substitution meeting a 1 dB ERP increase criteria in the horizontal plane but not in the vertical plane.




John F.X. Browne, P.E.
John F.X. Browne & Associates, P.C.
Consulting Engineers

Robert W. Denny, Jr., P.E.
Denny & Associates, P.C.
Consulting Engineers

Dane E. Ericksen, P.E.
Hammett & Edison, Inc.
Consulting Engineer

December 22, 1998

Catholic Television Network

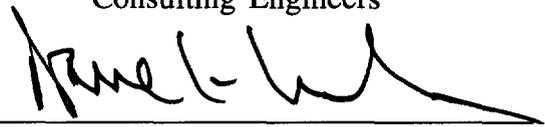
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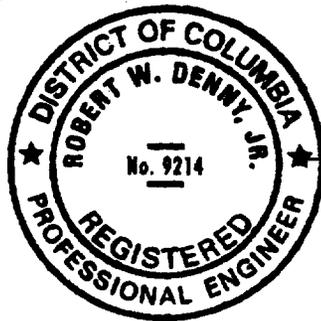
December 22, 1998

Catholic Television Network

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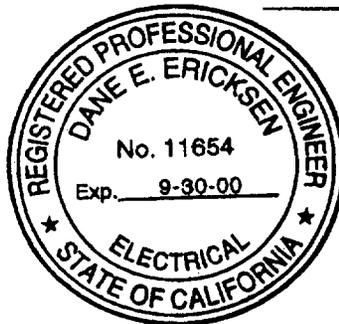


John F.X. Browne, P.E.
John F.X. Browne and Associates, P.C.
Consulting Engineers

A handwritten signature in black ink, appearing to read "John F.X. Browne", written over a horizontal line.

Robert W. Denny, Jr., P.E.
Denny & Associates, P.C.
Consulting Engineers

A handwritten signature in black ink, appearing to read "Robert W. Denny, Jr.", written over a horizontal line.



Dane E. Ericksen, P.E.
Hammett & Edison, Inc.
Consulting Engineers

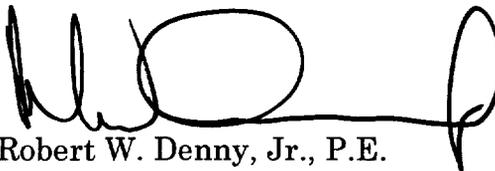
December 22, 1998

JOINT ENGINEERING EXHIBIT
PETITION FOR PARTIAL RECONSIDERATION
MASS MEDIA DOCKET NUMBER 97-217
CATHOLIC TELEVISION NETWORK

AFFIDAVIT

CITY OF WASHINGTON)
)
DISTRICT OF COLUMBIA) ss:

Robert W. Denny, Jr., being first duly sworn, says that he is president and treasurer of the firm of Denny & Associates, P.C., consulting engineers with offices in Washington, DC; that he is a professional engineer registered in the District of Columbia, the State of Maryland, and other jurisdictions; that his qualifications as an expert in radio engineering are a matter of record with the Federal Communications Commission; that the foregoing exhibit was prepared by him and under his direction; and that the statements contained therein are true of his own personal knowledge except those stated to be on information and belief and, as to those statements, he verily believes them to be true and correct.


Robert W. Denny, Jr., P.E.

Subscribed and sworn to before me this 23rd day of December, 1998.

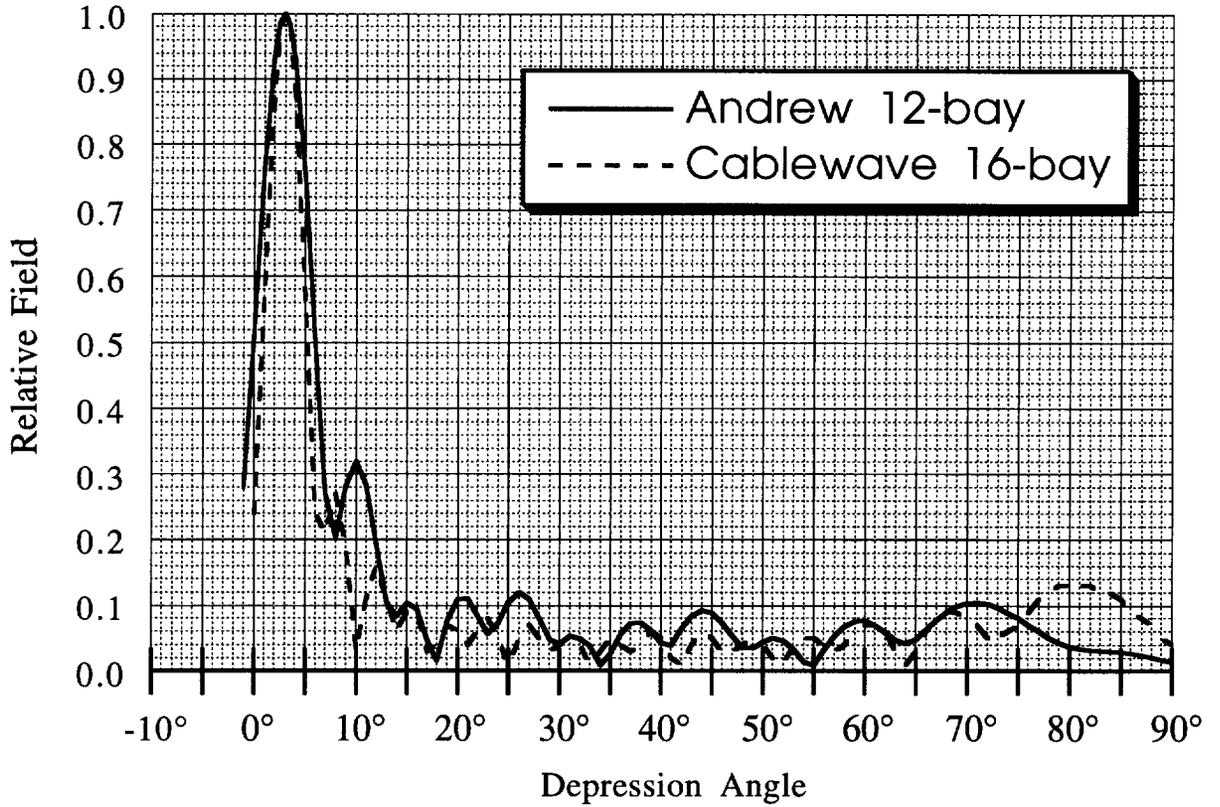

JoAnn C. Freeman
Notary Public, District of Columbia
My commission expires March 31, 2001

JoAnn C. Freeman
NOTARY PUBLIC, DISTRICT OF COLUMBIA
My Commission Expires March 31, 2001

Catholic Television Network

Comparison of Elevation Patterns for Authorized
vs. Proposed ITFS Station WHR-854
(B-Group, Modjeska Peak)

Andrew 12-bay vs Cablewave 16-bay
ITFS Elevation Patterns



CERTIFICATE OF SERVICE

I, William D. Wallace, hereby certify that I have on this 28th day of December, 1998, caused to be served true and correct copies of the foregoing "Petition for Reconsideration and Clarification" upon the following parties via hand delivery:

The Honorable William Kennard
Federal Communications Commission
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Washington, D.C. 20554

The Honorable Harold Furchtgott-Roth
Federal Communications Commission
1919 M Street, N.W., Room 802
Washington, D.C. 20554

The Honorable Susan Ness
Federal Communications Commission
1919 M Street, N.W., Room 832
Washington, D.C. 20554

The Honorable Michael Powell
Federal Communications Commission
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The Honorable Gloria Tristani
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William D. Wallace