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Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, D.C. 20554

In the Matter of	)	
	)	
Procedures for Reviewing Requests for	)	WT Docket No. 97-192
Relief From State and Local Regulations	)	
Pursuant to Section 332(c)(7)(B)(v) of the	)	
Communications Act of 1934	)	
	)	
Guidelines for Evaluating the Environmental	)	ET Docket No. 93-62
Effects of Radiofrequency Radiation	)	
	)	
Petition for Rulemaking of the Cellular	)	
Telecommunications Industry Association	)	RM-8577
Concerning Amendment of the Commission's	)	
Rules to Preempt State and Local Regulation	)	
of Commercial Mobile Radio Service	)	
Transmitting Facilities	)	

SECOND MEMORANDUM OPINION AND ORDER  
AND  
NOTICE OF PROPOSED RULEMAKING

Adopted: August 25, 1997

Released: August 25, 1997

Comment Date (WT Docket No. 97-197): October 9, 1997

Reply Comment Date (WT Docket No. 97-197): October 24, 1997

By the Commission:

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## I. INTRODUCTION

1. By this action, we are adopting a Second Memorandum Opinion and Order in ET Docket No. 93-62, responding to petitions and amending certain aspects of our guidelines for evaluating the environmental effects of radiofrequency (RF) emissions produced by FCC-regulated transmitters. We are also adopting a Notice of Proposed Rulemaking in WT Docket No. 97-197, opening a new proceeding to establish procedures for filing and reviewing requests for relief from state or local regulations based directly or indirectly on the environmental effects of RF emissions.

## II. SECOND MEMORANDUM OPINION AND ORDER

### A. Introduction and Executive Summary

2. In this Second Memorandum Opinion and Order, we are amending our rules to refine and clarify the decisions adopted in the Report and Order in ET Docket No. 93-62 regarding the use of new guidelines and methods in the evaluation of the environmental effects of RF electromagnetic fields or emissions produced by FCC-regulated transmitters. This Second Memorandum Opinion and Order responds to petitions for reconsideration and/or clarification filed in this proceeding. In reaching our decisions, we have considered carefully the petitions and comments that were received in this proceeding. We believe our decisions provide a proper balance between the need to protect the public and workers from exposure to potentially harmful RF electromagnetic fields and the requirement that industry be allowed to provide telecommunications services to the public in the most efficient and practical manner possible. Specifically, we are: 1) affirming the RF exposure limits that were previously adopted; 2) modifying in a few areas our policy that categorically excludes certain transmitters from routine environmental evaluation; 3) revising and clarifying our guidelines regarding RF emissions involving multiple transmitter operating at one site; and 4) modifying our rules to extend the initial transition period to October 15, 1997, and to require that all existing facilities be brought into compliance with our new guidelines within three years (by September 1, 2000). We are also adopting a number of minor changes and clarifications.

3. In the Report and Order, the Commission adopted limits for Maximum Permissible Exposure (MPE) and localized, partial-body exposure of humans based on criteria published by the National Council on Radiation Protection and Measurements (NCRP) and by the American National Standards Institute/Institute of Electrical and Electronics Engineers, Inc. (ANSI/IEEE). The Report and Order also modified the Commission's policy on categorical exclusions that exempts many radio services and transmitters from routine environmental evaluation for RF exposure. In accordance with Section 704 of the Telecommunications Act of 1996, the Report and Order followed Congressional direction with respect to completion of the docket in this proceeding. The new rules became effective immediately; however, a transition period (originally to January 1, 1997) was provided for implementation of the new requirements for transmitters other than portable and mobile devices.

4. Several technical and legal issues were raised in the petitions. A First Memorandum Opinion and Order, adopted on December 23, 1996, addressed comments in those petitions requesting extension of the transition provisions of the Report and Order and extended the transition period to September 1, 1997 (January 1, 1998 for the Amateur Radio Service, only). This Second Memorandum Opinion and Order addresses the other issues raised in the petitions, including whether we should: (1) reconsider the RF exposure limits originally adopted; (2) reconsider our policy on categorical exclusion of certain transmitters from routine evaluation for compliance with our guidelines; (3) modify our policy with respect to evaluation of RF exposure at multiple transmitter sites; (4) revise our policy with respect to routine evaluation for SMR transmitters; and (5) broaden our authority to preempt state and local regulations concerning RF exposure.

5. Some petitioners ask that we reconsider our previous decision not to adopt ANSI/IEEE C95.1-1992 in its entirety. Several other petitioners claim that the limits we adopted were not protective enough. The staff believes that no new and compelling justifications have been provided that would warrant a modification of the limits adopted in the Report and Order. Those limits were crafted to address concerns about ANSI/IEEE C95.1-1992 that had been raised by several agencies of the Federal Government with responsibility for health and safety. Furthermore, all of these agencies have written letters to the Commission supporting our new guidelines. We believe that the limits adopted in the Report and Order provide a proper balance between the need to protect the public and workers from exposure to excessive RF electromagnetic fields and the need to allow communications services to readily address growing marketplace demands.

6. The Commission's environmental rules identify particular categories of existing or proposed transmitters or facilities for which licensees and applicants are required to conduct routine environmental evaluations to determine whether these transmitters or facilities comply with our RF guidelines. Other transmitting facilities are categorically excluded from these rules because we have judged them to offer little potential for causing exposures in excess of the applicable guidelines. In the Report and Order, we revised our rules related to this policy of categorical exclusion based on our own calculations and analyses of the implications of the new limits, along with information and data acquired during the proceeding. Whereas previously we had categorically excluded entire service categories, such as paging and cellular transmitters, the Report and Order concluded that some transmitting facilities, regardless of service, may offer the potential for causing exposures in excess of MPE limits.

7. Several petitioners ask that we return to our earlier policy of categorical exclusion for entire services. However, these petitioners present no new evidence that would lead us to change our basic premise for categorical exclusion. We continue to believe that it is desirable and appropriate to categorically exclude from routine environmental evaluation only those transmitting facilities that offer little or no potential for exposure in excess of our limits. However, some transmitting facilities, regardless of service, offer the potential for causing exposures in excess of MPE limits because of such factors as their relatively high operating

power, location or relative accessibility, and these facilities should not be categorically excluded from routine evaluation.

8. Except in a few limited areas, we do not believe it is appropriate to modify the categorical exclusion policies adopted in the Report and Order. We are modifying our policy related to unlicensed millimeter-wave devices that do not meet the definition of a portable device and unlicensed and licensed PCS and other mobile devices operating above 1.5 GHz. Secondly, we are revising the 50-watt threshold for routine evaluation of amateur radio stations so that it reflects the manner in which the RF exposure limits change in the different amateur frequency bands. We are also revising categorical exclusions currently based on the height of the antenna radiation center above ground so that they are based on the height of the lowest portion of the antenna above ground. In addition to these areas, we are revising our policy on categorical exclusions for SMR transmitters so that all SMR operations are covered, and we are changing our definition of "rooftop" so that antennas that are mounted on the sides of buildings or otherwise don't fit the previous definition will be considered, if appropriate.

9. Several petitioners argue that our policy regarding evaluation at sites with multiple FCC-regulated transmitters is overly burdensome. Our rules state that when the RF exposure limits are exceeded in an accessible area due to the RF fields of multiple fixed transmitters, actions necessary to bring the area into compliance are the shared responsibility of all licensees whose transmitters produce power densities in excess of 1% of the exposure limit applicable to their transmitter. After considering the various arguments, we conclude that the 1% level should be changed. We concur that a 1% level is difficult to measure or calculate. We believe that a 5% threshold represents a more reasonable and supportable compromise, by offering relief to relatively low-powered site occupants who do not contribute significantly to areas of non-compliance and, at the same time, by providing for the appropriate allocation of responsibility among major site emitters.

10. Some petitioners request that the Commission broaden its preemptive authority beyond the category of "personal wireless services" authorized in the Telecommunications Act of 1996. Based upon the current record in this proceeding, we find that there is insufficient evidence at this time to warrant our preempting state and local actions that are based on concerns over RF emissions for services other than those defined by Congress as "personal wireless services." However, additional issues concerning preemption of state and local regulations involving advanced television facilities have been raised in a Petition for Further Rulemaking filed by the National Association of Broadcasters which will be considered in a separate proceeding.

11. Several additional petitions were received in response to our earlier First Memorandum Opinion and Order extending the transition period for fixed stations and transmitters. Some petitioners request that we end the transition period immediately because of the potential for large scale exposure of the public to harmful RF emissions. Others argue that additional time is needed to consider the Commission's response to earlier petitions

relating to OET Bulletin 65 on RF compliance. This bulletin will be released simultaneously with this Order. In order to provide applicants and licensees with sufficient time to review the final version of the bulletin, we will extend the initial transition period to October 15, 1997. The transition period for the Amateur Radio Service, only, will remain the same, and will end on January 1, 1998.

12. Finally, we are revising our rules to require that existing sites and transmitters come into compliance with the new guidelines as of a date certain. Accordingly, we will require all existing facilities, operations and devices to comply with the new FCC RF guidelines no later than September 1, 2000.

## B. Background

13. The National Environmental Policy Act of 1969 (NEPA) requires agencies of the Federal Government to evaluate the effects of their actions on the quality of the human environment.<sup>1</sup> To meet its responsibilities under NEPA, the Commission has adopted requirements for evaluating the environmental impact of its actions.<sup>2</sup> One of several environmental factors addressed by these requirements is human exposure to RF energy emitted by FCC-regulated transmitters and facilities.

14. The Commission's environmental processing rules, 47 C.F.R. §§ 1.1301-1.1319, generally require an applicant to perform the necessary analysis (e.g., calculations and/or measurements) to ascertain whether a particular transmitting facility or device complies with the Commission's adopted RF exposure guidelines set forth in section 1.1307(b), in effect at the time the applicant files for an initial construction permit, license, or renewal or modification of an existing license. If on the basis of the applicant's analysis the applicant determines that the facility complies (or will comply) with the Commission's adopted RF guidelines, the applicant certifies compliance as part of its application. If, on the other hand, the applicant determines that operation of the facility or device will not comply with the RF guidelines, the applicant is required to prepare an Environmental Assessment, and undergo environmental review by Commission staff unless the applicant amends its application so as to comply with the Commission's adopted RF guidelines. See 47 C.F.R. §§ 1.1311; see also 47 C.F.R. §§1.1308, 1.1309, 1.1314-1.1317.

15. If no pre-construction Commission authorization is required (as is the case for PCS and cellular licenses, for example, where the Commission authorizes blanket licenses that are not site-specific), Section 1.1312 of the Commission's environmental processing rules requires that the licensee conduct the appropriate calculations and determine whether the

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<sup>1</sup> National Environmental Policy Act of 1969, 42 U.S.C. Section 4321, et seq.

<sup>2</sup> See 47 CFR § 1.1301, et seq.

facility will comply with the Commission's adopted RF guidelines in effect at that time (i.e., at the pre-construction, not the initial application, stage) prior to the commencement of construction, rather than prior to licensing under the Commission's general environmental processing scheme. The processing requirements remain the same -- if the calculations indicate compliance with the RF guidelines, the licensee may proceed with construction; if the calculations indicate non-compliance, the licensee will either modify its proposal to ensure compliance or submit an Environmental Assessment and undergo Commission environmental review prior to construction. The only difference lies in the timing: environmental calculations must take place prior to construction rather than prior to the applicable licensing.

16. Finally, it should be noted that if the facility or device has been categorically excluded from environmental processing requirements with respect to the RF exposure guidelines based on the Commission's prior determination that the operation of such facility or device, individually or cumulatively, will not exceed the Commission's adopted RF exposure limits, the applicant or licensee is exempt from the requirement of performing any calculations and/or measurements to determine whether there is compliance; the Commission presumes that the operation of a categorically excluded facility or equipment is in compliance.

17. In 1985, the Commission adopted a 1982 American National Standards Institute (ANSI) standard for use in evaluating the effects of RF electromagnetic fields on the environment, noting that the ANSI standard was widely accepted and was technically and scientifically supportable.<sup>3</sup> In 1992, ANSI adopted a new standard for RF exposure, designated ANSI/IEEE C95.1-1992, to replace its 1982 standard.<sup>4</sup> This new standard contained a number of significant differences from the 1982 ANSI standard and, in some respects, was more restrictive in the amount of environmental RF exposure permitted. On April 8, 1993, the Commission issued the Notice of Proposed Rule Making (Notice) in this proceeding to consider amending and updating the guidelines and methods used by the Commission for evaluating the environmental effects of RF electromagnetic fields.<sup>5</sup> In the Notice, we proposed to base our regulations on the ANSI/IEEE C95.1-1992 standard instead of the 1982 ANSI standard. More than 100 parties, including telecommunications organizations, other Federal Government agencies, state and local authorities, and individuals, submitted comments in response to the Notice.

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<sup>3</sup> See Report and Order, GEN Docket No. 79-144, 100 FCC 2d 543 (1985); Memorandum Opinion and Order, 58 RR 2d 1128 (1985); see also ANSI C95.1-1982, "American National Standard Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 300 kHz to 100 GHz," ANSI, New York, NY.

<sup>4</sup> ANSI/IEEE C95.1-1992, "Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz." This standard had been developed by the Institute of Electrical and Electronics Engineers, Inc. (IEEE), in 1991.

<sup>5</sup> See Notice of Proposed Rule Making ET Docket No. 93-62, 8 FCC Rcd 2849 (1993); see also 8 FCC Rcd 5528 (1993), 9 FCC Rcd 985 (1993), 9 FCC Rcd 317 (1994), 9 FCC Rcd 989 (1994) extending the comment deadlines.

18. On August 1, 1996, we adopted the Report and Order in this proceeding amending our rules to provide for the use of new guidelines and methods in the evaluation of the environmental effects of RF electromagnetic fields produced by FCC-regulated transmitters.<sup>6</sup> Seventeen petitions for reconsideration and/or clarification were filed in response to the Report and Order. A list of those organizations and individuals filing petitions, as well as those filing oppositions and replies to the petitions, can be found in Appendix B. Several technical and legal issues have been raised in the petitions. In the First Memorandum Opinion and Order in this proceeding, we addressed those petitions, motions, and comments that requested extensions of the transition periods adopted in the Report and Order.<sup>7</sup> This Second Memorandum Opinion and Order addresses the other issues that were raised in the petitions and comments.

### C. Discussion

#### 1. RF Exposure Limits

19. In the Notice in this proceeding, we proposed to base our RF exposure guidelines on limits for RF exposure contained in the ANSI/IEEE C95.1-1992 standard. However, comments filed in this proceeding from federal health and safety agencies, notably the U.S. Environmental Protection Agency (EPA) and the U.S. Food and Drug Administration (FDA), raised questions about certain aspects of those limits and recommended against the adoption of the entire ANSI/IEEE C95.1-1992 standard. After careful consideration of those views as well as the views of those commenters who opposed the federal agencies' views, we decided to adopt guidelines and limits that are generally based on elements of the exposure criteria recommended by the National Council on Radiation Protection and Measurements (NCRP) as well as those contained in the ANSI/IEEE C95.1-1992 standard.<sup>8</sup>

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<sup>6</sup> See Report and Order, ET Docket 93-62, released August 1, 1996, FCC 96-326, 11 FCC Rcd 15123 (1997).

<sup>7</sup> See First Memorandum Opinion and Order, ET Docket 93-62, released December 24, 1996, FCC 96-487, 11 FCC Rcd 17512 (1997).

<sup>8</sup> See Report and Order, ET Docket No. 93-62, *supra.*, at paras. 12-34. We adopted Maximum Permissible Exposure (MPE) limits for electric and magnetic field strength and power density for transmitters operating at frequencies from 300 kHz to 100 GHz that are generally based on Sections 17.4.1 and 17.4.2, and the time-averaging provisions recommended in Sections 17.4.1.1 and 17.4.3, of "Biological Effects and Exposure Criteria for Radiofrequency Electromagnetic Fields," NCRP Report No. 86 (1986). With the exception of the limits on exposure to power density above 1500 MHz and the limits for exposure to lower frequency magnetic fields, these MPE limits are also generally based on the guidelines contained in Section 4.1 of ANSI/IEEE C95.1-1992. We also adopted limits for localized ("partial body") absorption for certain portable transmitting devices based on Sections 4.2.1 and 4.2.2 of ANSI/IEEE C95.1-1992 and Section 17.4.5 of NCRP Report No. 86.



20. The Electromagnetic Energy Association (EEA), U S WEST, Inc. and the Department of Defense (DOD) ask us to reconsider our decision not to adopt the ANSI/IEEE 1992 standard in its entirety.<sup>9</sup> The National Association of Broadcasters (NAB) also supports this position in its comments.<sup>10</sup> EEA and U S WEST state that our decision disregarded the preponderance of the technical and scientific evidence in the record. DOD questions our scientific rationale for not adopting the ANSI/IEEE C95.1-1992 standard, stating that ANSI/IEEE C95.1-1992 is a scientifically-based consensus standard that periodically undergoes review and update and that it includes a number of provisions and changes that address shortcomings or limitations in both the 1982 ANSI standard and the NCRP guidelines. DOD and EEA argue that our new guidelines fail to recognize differences between electric and magnetic fields at lower frequencies, do not address induced and contact currents in the body, and provide no guidance for frequencies between 100 GHz and 300 GHz.

21. EEA states that our adoption of a "hybrid" approach based on NCRP exposure guidelines, rather than ANSI/IEEE C95.1-1992, results in the loss of the rationale underlying the standard itself and requires the development of new measurement procedures rather than relying on the ANSI/IEEE recommendations. U S WEST adds that our decision to adopt "a sort of hybrid standard" based on the guidelines recommended by the NCRP and the ANSI/IEEE "was erroneous both as a matter of law and policy", since it ignored "highly credible evidence" provided by academic RF experts, "persuasive evidence" submitted by industry constituents, and "initial endorsement" of ANSI/IEEE C95.1-1992 by several governmental agencies.

22. The DOD and the Hewlett-Packard Company (HP) state that our decision to adopt RF exposure limits that differ significantly from those initially proposed in the Notice, without issuing a second Notice of Proposed Rule Making allowing comment, does not appear to conform to Section 553(b) of the Administrative Procedure Act (APA).<sup>11</sup> The American Radio Relay League, Inc. (ARRL) also claims that we violated provisions of the APA in adopting the Report and Order.<sup>12</sup> DOD says that our decision was made in "an unnecessarily closed and narrow-focused" process, and denied interested parties with safety and health responsibilities, such as DOD, an opportunity to evaluate a draft decision and present comments. DOD also alleges that our decision did not receive adequate coordination with all federal agencies or departments having responsibility for RF safety and health. The ARRL argues that our Notice in this proceeding was faulty in that it failed to identify the nature of

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<sup>9</sup> See EEA Petition at 11-14, U S WEST Petition at 1-3, and DOD Petition at 4-8.

<sup>10</sup> NAB Comments on Petitions for Reconsideration at 1.

<sup>11</sup> DOD Petition at 2-3, HP Petition at 3.

<sup>12</sup> ARRL Petition at 5-9.

the rules to be adopted and did not adequately apprise radio amateurs of the obligations that would be placed on them in the Report and Order.

23. DOD also claims that our decisions contained in the Report and Order jeopardize DOD compliance with the National Technology Transfer and Advancement Act of 1995 (NTTAA), which requires that "Federal agencies and departments shall use technical standards that are developed or adopted by voluntary consensus standards bodies ..." <sup>13</sup> DOD states that it is committed to following this law and supports open, voluntary, non-government consensus-based standards unless data are presented to show cause not to do so. DOD argues that the public interest is not served by "conflicting safety guidelines" and that consistency in standards produces confidence and credibility. DOD expresses concern that our decision not to adopt ANSI/IEEE C95.1-1992 will "foster lack of confidence" in the voluntary standards-setting process and reduce the beneficial impact of the NTTAA.

24. DOD also states that our ruling conflicts with new international standards. DOD points out that ANSI/IEEE 1992 standard has been used as the basis for several international safety guidelines, such as the North Atlantic Treaty Organization (NATO) Standardization Agreement (STANAG) 2345. It believes that international harmonization of standards is desirable to encourage the promotion of trade and commercial product development. Since the United States led the update of the ANSI 1992-based NATO standard, DOD claims that the "impact of loss of credibility in that standards setting process would be significant."

25. Several petitioners claim that the guidelines we adopted are not protective enough. The Ad-hoc Association of Parties Concerned About the Federal Communications Commission's Radiofrequency Health and Safety Rules (Ad-hoc Association) claims that there may be potentially adverse health effects at exposure conditions permitted by our rules and, therefore, it is in the public interest to modify the rules. <sup>14</sup> The Ad-hoc Association, David Fichtenberg and Alan Golden all propose that we adopt a policy of keeping exposures "as low as reasonably achievable," with the limits being viewed only as "maximally tolerable limits." <sup>15</sup> Further, the Ad-hoc Association and others oppose the petitions that advocate our endorsement of the ANSI/IEEE C95.1-1992 standard. <sup>16</sup> The Ad-hoc Association also maintains that we erred in not adopting a section of the NCRP report dealing with exposures when the carrier frequency is modulated between 5 and 100 Hz. Finally, the Ad-hoc

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<sup>13</sup> Pub. L. 104-113.

<sup>14</sup> Ad-hoc Association Petition at 3-18.

<sup>15</sup> Ad-hoc Association Petition at 3-18, David Fichtenberg Comments at 1-25, Alan Golden Reply at 5, Dawn Mason Reply at 2.

<sup>16</sup> Ad-hoc Association Reply at 1-2, David Fichtenberg Comments at 1-25, Holly Fournier and Mary Beth Freeman, Reply at 2-3, Alan Golden, Reply at 4-5, Dawn Mason Reply at 2.

Association advocates that we should ask the federal health and safety agencies to evaluate requested modifications in our guidelines.<sup>17</sup>

26. The Cellular Phone Taskforce (Cellular Taskforce) states that our guidelines should be modified to protect individuals who are "electrosensitive."<sup>18</sup> The Cellular Taskforce maintains that such individuals are "hypersensitive" to non-ionizing electromagnetic fields and that "perhaps 2%" of the population is susceptible to becoming electrosensitive. The Cellular Taskforce believes that the allowable limits for power density should be set at 10 microwatts-per-squared-centimeter ( $\mu\text{W}/\text{cm}^2$ ) for all frequencies above 100 MHz to protect against "non-thermal bioeffects." In a separate petition, Dr. Marjorie Lundquist suggests that the existence of non-thermal effects are controversial, but claims that "the scientific consensus is swinging in favor of their existence."<sup>19</sup> The Cellular Taskforce advocates a limit of 40 milliwatts-per-squared-centimeter ( $\text{mW}/\text{cm}^2$ ) for peak power density to protect against "microwave hearing" in the frequency range of 300 to 3000 MHz. Also, the Cellular Taskforce suggests that limits for specific absorption rate (SAR) should be revised to allow for different rates of absorption among members of the public.

27. Dr. Marjorie Lundquist maintains that ANSI/IEEE C95.1-1992 and our guidelines are not consistent with electromagnetic field theory, lack a sound scientific basis and may, therefore, be presumed "to be inadequately protective of public health." According to Dr. Lundquist, there is an "urgent" need for us to take regulatory action with respect to near-field exposure from RF emitters since, she claims, there is increasing evidence of cancer associated with human exposure to these fields. She also states that other health effects, such as hypersensitivity to electromagnetic fields, seem to be a growing problem, at least in certain environments. Dr. Lundquist recommends that we hold a public hearing on the issue of RF exposure standards, since, she maintains, our guidelines fall "so far short of what is needed to provide genuine protection" that the shortcomings need to be made public.

28. In comments filed in opposition, Ameritech Mobile Communications, Inc. and EEA express their disagreement with the views expressed by the Ad-hoc Association, Dr. Marjorie Lundquist, and others regarding the need for more stringent RF exposure limits.<sup>20</sup> Ameritech maintains that standards for RF exposure must be based on scientific data which is thoroughly tested and focused. Ameritech states that there is room for disagreement among experts in the field, but the telecommunications industry "will not be able to function under the approach suggested by the Ad-hoc Association that the Commission assume the worst in the face of any uncertainty." Ameritech notes that billions of dollars are being invested in

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<sup>17</sup> Ad-hoc Association Petition at 4.

<sup>18</sup> Taskforce Petition at 1-8.

<sup>19</sup> Dr. Marjorie Lundquist Petition at 7.

<sup>20</sup> Ameritech Comments at 1-3, EEA Reply at 6-7.

telecommunications infrastructure, and it is no simple matter to modify a telecommunications system as a result of each new study. The EEA notes that the issue of "non-thermal" effects was explicitly addressed in the 1992 ANSI/IEEE standard, which concluded that no reliable scientific data exist to indicate such effects may be "meaningfully related to human health."

29. Decision. We reaffirm our decision to adopt exposure limits for field strength and power density based on recommendations contained in NCRP Report No. 86 and ANSI/IEEE C95.1-1992. We continue to believe that these RF exposure limits provide a proper balance between the need to protect the public and workers from exposure to excessive RF electromagnetic fields and the need to allow communications services to readily address growing marketplace demands.

30. We appreciate the views of some petitioners that we should have adopted all provisions of the ANSI/IEEE C95.1-1992 standard. However, as discussed in our Report and Order, although most commenting parties generally supported our proposal to adopt the ANSI/IEEE C95.1-1992 standard, certain agencies of the Federal Government with oversight responsibilities for safety and health objected to the use of certain aspects of this standard.<sup>21</sup> In the past, the Commission has stressed repeatedly that it is not a health and safety agency and would give great weight to the judgment of these expert agencies with respect to determining appropriate levels of safe exposure to RF electromagnetic fields.<sup>22</sup> The guidelines and rules we adopted in the Report and Order addressed the concerns raised by the health and safety agencies and, at the same time, contained limits that over a wide frequency range are based on those recommended in the ANSI/IEEE C95.1-1992 standard.

31. As for claims that our guidelines are not protective enough, we reiterate that these guidelines are based on recommendations of expert organizations and federal agencies with responsibilities for health and safety. It would be impracticable for us to independently evaluate the significance of studies purporting to show biological effects, determine if such effects constitute a safety hazard, and then adopt stricter standards than those advocated by federal health and safety agencies. This is especially true for such controversial issues as non-thermal effects and whether certain individuals might be "hypersensitive" or "electrosensitive."

32. Concerning objections that our guidelines are not scientifically-based or technically sound, we note that our guidelines are based on recommendations of both the ANSI/IEEE C95.1-1992 standard and the NCRP exposure criteria. Both of these organizations are

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<sup>21</sup> See Report and Order at paras. 15-20.

<sup>22</sup> See, e.g., Report and Order, GEN Docket 79-144, 100 FCC 2d 543 (1985), at para. 26 note 6 and Report and Order, ET Docket 93-62, *supra.*, at para. 28. See also, letter from Mark S. Fowler, Chairman, FCC, to Anne M. Burford, Administrator, EPA, February 22, 1983; letter from Dennis R. Patrick, Chairman, FCC, to Lee M. Thomas, Administrator, EPA, November 29, 1988; and letter from Thomas P. Stanley, Chief Engineer, FCC, to Ken Sexton, Director, Office of Health Research, Office of Research and Development, EPA, October 24, 1990.

internationally recognized for their expertise in this area, and there is little evidence to support a claim that these guidelines are not based on science. In fact, both the ANSI/IEEE and NCRP guidelines are based on the same threshold for potentially hazardous whole-body exposure.<sup>23</sup> We recognize that ongoing research in a number of areas may ultimately result in changes in the fundamental understandings upon which ANSI/IEEE C95.1-1992 and the NCRP Report No. 86 are based. Both the IEEE and the NCRP have committees that are working on revisions of their respective exposure guidelines. As indicated in the Report and Order, we encourage these organizations and other similar groups developing exposure criteria to work together, along with the relevant federal agencies, to develop consistent, harmonized guidelines that will address the concerns and issues raised in this proceeding. We will, of course, consider amending our rules at any appropriate time if these groups conclude that such action is desirable.

33. Regarding the criticism from the Ad-hoc Association over our failure to adopt the NCRP's clause related to carrier modulation, we reiterate our previous conclusion that there is insufficient evidence to give special consideration to modulation effects.<sup>24</sup> Since we have no specific indication of exposure hazards related to modulation caused by FCC-regulated transmitters, and since at this time no new proof of such hazards has been presented by petitioners, we continue to believe that it would be premature to adopt the NCRP modulation criteria. However, we will evaluate and consider any new evidence relating to modulation effects this is submitted to us in the future.

34. As for the suggestion made by Dr. Marjorie Lundquist that we convene a public hearing or further consult with federal health and safety agencies, we note that we have considered carefully well over 150 sets of comments filed in this proceeding and have already consulted extensively with all of the relevant health and safety agencies. The RF guidelines we adopted were based on the recommendations of these agencies.

35. As noted previously, DOD, HP and the ARRL allege that we did not comply with provisions of the APA in adopting guidelines different than those originally proposed. However, we point out that our Notice incorporated a prominent discussion and request for comment on whether we should adopt alternative guidelines from those that were the principal focus of our proposal.<sup>25</sup> This discussion specifically mentioned the MPE limits recommended by the NCRP which, along with ANSI/IEEE C95.1-1992, formed the basis for the limits we adopted in the Report and Order. Similarly, we indicated in the Notice that our categorical exclusions, such as previously applied to all amateur radio stations, would be reviewed in

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<sup>23</sup> See Report and Order at Note 16.

<sup>24</sup> See Report and Order at para. 32.

<sup>25</sup> See Notice of Proposed Rule Making at paras. 23-25.

light of the new guidelines.<sup>26</sup> We believe that the final rules that were adopted were a "logical outgrowth" of that proposed in the Notice. See *American Water Works Ass'n. v. EPA*, 40 F. 3d 1266, 1274 (D.C. Cir. 1994). The Courts have generally ruled that "[A] final rule may properly differ from a proposed rule ... when the record evidence warrants the change." See *United Steelworkers of America v. Marshall*, 647 F.2d 1189, 1221 (D.C. Cir.), cert. denied, 453 U.S. 913 (1980). A final rule is not a logical outgrowth of a proposed rule generally "when the changes are so major that the original notice did not adequately frame the subject for discussion." *Connecticut Light and Power Co. v. Nuclear Regulatory Commission*, 673 F.2d 525, 533 (D.C. Cir.), cert. denied, 459 U.S. 835 (1982). Given that the Notice raised the issues of whether an alternative guideline such as that recommended by NCRP should be adopted and whether the categorical exclusions should be changed, as well as the substantial discussion of the issues in the comments in this proceeding, we conclude that the notice and comment provisions of the APA were followed and that a further Notice on these issues is unnecessary.

36. Regarding the DOD's assertion that our rules will hinder its ability to comply with provisions of the NTTAA, we believe that the process we followed in this proceeding is consistent with the requirements of the NTTAA. Section 12(d)(1) requires that all federal agencies and departments "shall use technical standards that are developed or adopted by voluntary consensus standards bodies ... as a means to carry out policy objectives or activities ... ." Section 12 (d)(3) indicates, however, that federal agencies may elect to use technical standards that are not developed or adopted by voluntary consensus standards bodies if: 1) it would be "inconsistent with applicable law or otherwise impractical"; and 2) the head of the agency transmits to the Office of Management and Budget (OMB) an explanation of the reasons for adopting a different standard. In this case, we proposed to adopt ANSI/IEEE C95.1-1992, which is quite clearly a voluntary consensus standard. However, as explained previously, comments were filed by federal health and safety agencies in this proceeding indicating that they were concerned about the safety ramifications of adopting certain aspects of the ANSI/IEEE C95.1-1992 standard. Therefore, based on these comments, we have concluded that adoption of ANSI/IEEE C95.1-1992 in its entirety would be problematic, and, therefore, would constitute an "impractical" action under the above-noted provision of the NTTAA, since it would not satisfy public safety concerns raised by these expert federal safety and health agencies. We have filed our decision in this proceeding with OMB based on existing guidance, as is done for all relevant rule making decisions. We understand that OMB is revising its Circular A-119 on "Federal Participation in the Development and Use of Voluntary Standards" in order to reflect the new NTTAA requirements. Once that revised Circular is issued, we will take whatever additional actions may be required to report our decision to OMB.

37. With regard to DOD's claim that our proposal was not properly coordinated with other agencies, we note that our proposal was coordinated with the federal agencies with

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<sup>26</sup> See Notice of Proposed Rule Making at 19.

health and safety responsibilities. These agencies include the EPA, the FDA, the National Institute for Occupational Safety and Health (NIOSH) and the Occupational Safety and Health Administration (OSHA). Each of these agencies sent letters to the FCC supporting our action.<sup>27</sup> While this action was not coordinated separately with DOD, it was coordinated with the Interdepartment Radio Advisory Committee (IRAC) and, based on that coordination, DOD filed further comments in the proceeding. These comments, along with the others we received, were considered in making our decision.

38. The DOD suggests that we should adopt ANSI/IEEE C95.1-1992 because it is "an internationally accepted consensus standard." We recognize that NATO has adopted a standard based on ANSI/IEEE C95.1-1992. However, we also note that all international standards are not identical to ANSI/IEEE C95.1-1992. For example, the recently drafted standard of the International Commission on Non-Ionizing Radiation Protection (ICNIRP) incorporates limits for exposure in terms of specific absorption rate (applicable to hand-held devices such as cellular telephones) that are different than those contained in the ANSI/IEEE standard.<sup>28</sup> While we support the goal for having an internationally-accepted standard dealing with the environmental effects of RF electromagnetic fields, we believe that such a standard must adequately address the concerns raised by the relevant U.S. health and safety agencies.

39. In summary, in considering the arguments raised with respect to the RF exposure limits adopted in the Report and Order, we place special emphasis on the recommendations and comments of federal health and safety agencies because of their expertise and responsibilities with regard to health and safety matters. In the Report and Order, we adopted RF exposure limits that addressed specific safety concerns raised by these agencies about the limits we had originally proposed to adopt. We do not believe that the petitioners and commenters have provided reasonable alternatives that similarly would adequately address these safety concerns. Accordingly, we conclude that the RF exposure limits adopted in the Report and Order are appropriate because they address those concerns and, at the same time, allow applicants and licensees to meet the growing marketplace demand for communications services.

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<sup>27</sup> See letters to Reed E. Hundt, Chairman, FCC, from Carol M. Browner, Administrator, U.S. Environmental Protection Agency (EPA), dated July 25, 1996, and from Mary D. Nichols, Assistant Administrator for Air and Radiation, EPA, dated January 17, 1997. See also, letters to Richard M. Smith, Chief, FCC Office of Engineering and Technology, from Elizabeth D. Jacobson, Ph.D., Deputy Director for Science, Center for Devices and Radiological Health, Food and Drug Administration (FDA), dated July 17, 1996, from Paul A. Schulte, Ph.D., Director, Education and Information Division, National Institute for Occupational Safety and Health (NIOSH), dated July 25, 1996, and from Gregory J. Baxter, Acting Director, Directorate of Technical Support, Occupational Safety and Health Administration (OSHA), U.S. Department of Labor, dated August 2, 1996.

<sup>28</sup> ICNIRP Statement: "Health Issues Related to the Use of Hand-Held Radiotelephones and Base Transmitters." published in *Health Physics*, vol. 70, p. 587 (April 1996).

## 2. Categorical Exclusions

40. Our rules identify particular categories of existing and proposed transmitting facilities for which licensees and applicants are required to conduct an initial, routine environmental evaluation to determine whether these transmitting facilities comply with our RF guidelines.<sup>29</sup> See 47 CFR § 1.1307(b)(1). Our rules also identify certain types of mobile and portable transmitting devices that are subject to routine environmental evaluation prior to equipment authorization. See 47 CFR §§ 2.1091(c) and 2.1093(c). As for transmitting facilities and devices not specifically identified under 47 CFR §§ 1.1307(b)(1), 2.1091(c) or 2.1093(c), we have determined, based on calculations, measurement data, and other information, that such transmitting facilities offer little potential for causing exposure in excess of the applicable guidelines, and thus have "categorically excluded" those transmitters from the initial, routine environmental evaluation requirement.<sup>30</sup>

41. In the Report and Order, we revised our RF exposure rules to require routine evaluation of certain transmitting facilities that were previously categorically excluded from performing routine evaluation. These revisions were based on our own calculations and analyses of the implications of the new limits, along with information and data acquired in the record of this proceeding and from other sources. We attempted to bring consistency to the categorical exclusions, by adopting power, antenna height, and transmitter site criteria that would apply across similar services.

42. In their petitions and comments, AirTouch Communications, Paging Network, Inc. (PageNet), Arch Communications Group, Inc. (Arch) and PageMart II, Inc. (PageMart) urge us to reconsider our revised policy on categorical exclusion and reinstate the previous

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<sup>29</sup> If a routine evaluation is required, and if it is subsequently determined that the transmitting facility cannot be brought into compliance, the applicant or licensee is then required to submit to us a narrative statement known as an Environmental Assessment (EA). An EA describes why the transmitter or facility will not comply with the guidelines, and includes other pertinent information as is specified in our environmental rules. See 47 CFR § 1.1311. An EA would be considered in determining whether an application should be approved in view of the environmental impact or whether Environmental Impact Statements (EISs) should be prepared as specified in 47 CFR § 1.1314. However, EAs are rarely filed since most applicants and licensees who are not categorically excluded undertake measures to ensure compliance before submitting an application.

<sup>30</sup> Categorical exclusions from routine environmental evaluation are allowed under NEPA when actions are judged individually and cumulatively to have no significant potential for effect on the human environment. See 47 CFR § 1.1306(a); see also, Notice at para. 5, ET Docket No. 93-62, 8 FCC Rcd 2849 (1993). However, we retain, under § 1.1307(c) and (d), the authority to request that a licensee or an applicant conduct an environmental evaluation and, if appropriate, file environmental information pertaining to an otherwise categorically excluded application if it is determined that in that particular case there is a possibility for significant environmental impact.



exclusions for paging and cellular transmitters.<sup>31</sup> U S WEST also urges us to reinstate the previous exclusion for low-powered mobile and portable transmitting devices operating at or under 7 watts of transmit power.<sup>32</sup> AirTouch states that our decision ignores evidence in the record demonstrating that existing facilities in these services are unlikely to exceed the new MPE limits. AirTouch maintains that removal of the categorical exclusion for paging transmitters is not necessary and will subject the paging industry, "which operates on a very low revenue-per-unit basis," to substantial additional costs as well as burdensome reporting requirements. Ameritech argues that the Report and Order does not make it clear why industry studies supporting a continued exclusion were not persuasive. Because of the potential burden imposed on industry by removing the categorical exclusions for certain transmitting facilities, Ameritech proposes that an industry task force be allowed to further study relevant data and determine whether the exclusion policy can be "narrowed rather than eliminated altogether."<sup>33</sup> U S WEST maintains that removal of the categorical exclusion for low-powered devices has no scientific basis.

43. HP asks that we reconsider our decision not to provide a categorical exclusion for certain unlicensed millimeter-wave devices.<sup>34</sup> HP notes that 47 CFR § 2.1091(c) requires routine evaluation for all unlicensed mobile millimeter-wave technologies without regard to power yet at the same time generally excludes mobile devices in other services from routine environmental evaluation if they operate with less than 1.5 watts ERP, even though these devices are subject to more stringent MPE limits than millimeter-wave technologies. HP states that low-power categorical exclusions should be applied consistently to all transmitters and services, and suggests that this would lead to a categorical exclusion for mobile millimeter-wave devices having an ERP below 3 watts. HP suggests that, rather than specify the categorical exclusions based on ERP, we should categorically exclude low-power mobile devices, as well as unlicensed PCS and millimeter wave devices that don't meet the definition

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<sup>31</sup> AirTouch Petition at 3-4, PageNet Petition at 1-3, Arch Comments at 1, PageMart Reply at 3. PageNet and the Personal Communications Industry Association (PCIA) raised concerns that our Report and Order underestimated the number of paging transmitters that will require a determination of compliance and the burden on communications carriers. These concerns were addressed in the Final Regulatory Flexibility Analysis associated with the First Memorandum Opinion and Order.

<sup>32</sup> U S WEST Petition at 8. Under the 1982 ANSI guidelines, which were previously referenced in our rules, low power devices with 7 watts or less power were excluded from compliance with MPE limits. In the Report and Order, we required routine environmental evaluation of: 1) mobile transmitting devices (designed to be used with a separation distance of at least 20 centimeters between the radiating antennas and the body of the user or nearby persons) which operate with 1.5 watts effective radiated power (ERP) or more in the cellular, PCS, satellite, maritime and SMR services; 2) unlicensed PCS and unlicensed millimeter wave devices regardless of power; and 3) portable transmitting devices (designed to be used within 20 centimeters of the body of the user) operating in the cellular, PCS, satellite, maritime and SMR service regardless of power. See 47 CFR §§ 2.1091(c) and 2.1093(c).

<sup>33</sup> Ameritech Petition at 9.

<sup>34</sup> HP Petition at 1-6.

of portable devices, based on whether their RF electromagnetic fields exceed the MPE limits at a distance of 20 centimeters from the radiating antenna.<sup>35</sup> HP also requests that unlicensed millimeter-wave technologies be removed from Table 1 of 47 CFR § 1.1307(b) because Table 1 applies principally to fixed devices operating at power levels far in excess of those used by unlicensed millimeter-wave devices.

44. The Cellular Taskforce and the Ad-hoc Association oppose reinstating categorical exclusions for rooftop paging facilities.<sup>36</sup> The Ad-hoc Association maintains that, in some cases, even though a transmitting antenna is more than 10 meters above ground, there may be nearby buildings where exposure may be in excess of the FCC limits. In addition, the Ad-hoc Association proposes modifications to our rules on categorical exclusion, maintaining that we should use the "height of lowest transmitter" instead of height to center of radiation to determine whether evaluation is needed.<sup>37</sup> The Ad-hoc Association also proposes that a new rule be adopted requiring that an applicant demonstrate compliance, and provide informational material to residents, schools and hospitals, in each area within 1000 meters of their transmitting facility. Similarly, the Cellular Taskforce urges that the rules be modified to require routine environmental evaluation of all transmitters, facilities and operations that are less than 2000 feet from any residence.<sup>38</sup> The proposals from the Cellular Taskforce and the Ad-hoc Association are opposed as unnecessary and overly burdensome in comments filed by Ameritech and AirTouch.<sup>39</sup>

45. Decision. After considering the arguments raised by the petitioners, we generally are maintaining the categorical exclusions adopted in the Report and Order, except with respect to modifying Table 1 of Section 1.1310 regarding unlicensed PCS and millimeter wave devices, and categorical exclusions based on the height of the antenna "radiation center" above ground level, as discussed below (and with respect to amateur radio stations, as discussed later). We continue to believe that it is desirable and appropriate to categorically

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<sup>35</sup> Mobile devices are defined in our RF exposure rules as transmitters designed to be used in other than fixed locations and to generally be used in such a way that a separation distance of at least 20 centimeters is normally maintained between radiating antennas and the body of the user or nearby persons. See 47 CFR § 2.1091(b). Portable devices are defined as transmitters designed to be used within 20 centimeters of the body of the user. See 47 CFR § 2.1093(b).

<sup>36</sup> Cellular Taskforce Opposition at 2, Ad-hoc Association Ex Parte Comments at 1.

<sup>37</sup> Ad-hoc Association Petition at 5-7. In the Report and Order, we required routine evaluation of non-rooftop antennas used for Part 21 Multipoint Distribution Service (MDS), Part 22 Paging and Radiotelephone Service, Part 22 Cellular Radiotelephone Service, Part 24 Personal Communications Services (PCS), Part 74 Instructional Television Fixed Service (ITFS), Part 90 paging, and Part 90 "covered" Specialized Mobile Radio (SMR) stations when the radiation center was less than 10 meters above ground and the power was greater than 1000 watts ERP. See 47 CFR § 1.1307(b)(1).

<sup>38</sup> Cellular Taskforce Petition at 2.

<sup>39</sup> Ameritech Comments at 4-5, AirTouch Reply at 2.

exclude from routine evaluation only those transmitting facilities that we have reason to believe offer little or no potential for exposure in excess of our limits. We believe that our revised categorical exclusions meet this objective.

46. As stated previously, the categorical exclusions we adopted in the Report and Order for paging, cellular, and other high-powered transmitting facilities were based on our own calculations and analyses of the implications of the new limits, along with information and data acquired in the record of this proceeding and from other sources. Similarly, the low-power device exclusions were based on calculations and analyses that were discussed in detail in the Report and Order.<sup>40</sup> These calculations and analyses indicate that some transmitting facilities offer the potential for causing exposures in excess of our MPE and SAR limits because of such factors as their operating power, antenna location or relative accessibility. Nothing in the petitions provides new information to indicate that these calculations or analyses are incorrect, or that our categorical exclusions are not based on the best information currently available. As discussed in the Report and Order, based on technical evidence coming to light since we adopted the 1982 ANSI guidelines, it is clear that there can be situations involving paging, cellular and other higher powered transmitting facilities where the potential exists for significant environmental impact due to RF electromagnetic fields. Accordingly, NEPA requires that we consider the impact on the environment before we grant an application involving these stations. Based on this information and analysis, we cannot continue the blanket categorical exclusion for paging and other services, as advocated by some petitioners.

47. In general, we find no merit in the proposals of the Ad-hoc Association and the Cellular Taskforce to narrow our categorical exclusion rules, so that more transmitting facilities are subject to routine environmental evaluation, and to require applicants to provide informational material to nearby residents, schools, and hospitals. Our calculations and analyses indicate that those transmitting facilities that are categorically excluded from routine evaluation should offer little or no potential for exposure in excess of our limits. Furthermore, 47 CFR §§ 1.1307(c) and 1.1307(d) provide us with the ability to address any questions that might arise about specific, unique situations involving categorically excluded transmitting facilities.<sup>41</sup> However, we recognize the legitimate concerns raised by the Ad-hoc Association regarding our existing categorical exclusions that are based on the height of the

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<sup>40</sup> See Report and Order at paras. 62-74.

<sup>41</sup> 47 CFR § 1.1307(c) indicates that an interested person who believes that a particular action, otherwise categorically excluded, will have a significant environmental effect may submit a petition setting forth the reasons justifying, or circumstances necessitating, environmental evaluation. The Commission's Bureau responsible for processing the action will review the petition, consider the environmental concerns that were raised, and, if appropriate, require the applicant to prepare an EA. 47 CFR § 1.1307(d) indicates that the Commission's Bureau responsible for processing a particular action, otherwise categorically excluded, may, on its own motion, require an applicant to submit an EA if the Bureau determines that the proposal may have a significant environmental impact.

antenna "radiation center" above ground level.<sup>42</sup> As pointed out by the Ad-hoc Association, in some circumstances multiple antennas may be used on the same tower by the same transmitting facility and, even though the radiation center might be more than 10 meters above ground, the lowest antenna could be near enough to ground to cause excessive RF electromagnetic fields. While we do not think such situations are very common today in the services for which we based our categorical exclusion on height to the antenna radiation center, this may not always be the case in the future. Accordingly, we are amending the categorical exclusions that are currently based on the height of the antenna radiation center above ground so that they will be based, instead, on the height of the lowest point of the antenna above ground. We believe that this should pose little additional burden on our applicants and licensees while avoiding the potential for exposure to excessive RF electromagnetic fields.

48. As Ameritech points out, it may be possible to refine these categorical exclusions, based on additional relevant data that may be gathered over time, in order to better delineate between situations that should be subject to routine evaluation and those that should not. Along this line, we encourage interested parties to develop data and submit proposals, in the form of petitions for rule making, as they gain experience in doing routine environmental evaluations.

49. We do not agree with HP's specific proposal to base the categorical exclusion for low-power mobile devices, as well as unlicensed PCS and unlicensed millimeter-wave devices that do not meet the definition of a portable device, on whether the electromagnetic field produced by the transmitter exceeds the MPE limit at a distance of 20 centimeters. Rather, we believe that we should continue to base these categorical exclusions on ERP, which generally can be determined more easily and more reliably. Furthermore, HP's proposal would essentially eliminate the categorical exclusion for these devices, since a determination of compliance at 20 cm is essentially what is required for a routine evaluation, and thus could impose an additional unnecessary burden for certain applicants. Even though we will continue to base our categorical exclusions in this case on ERP, HP and other parties can, of course, demonstrate compliance by showing that persons will not be exposed to RF electromagnetic fields in excess of our guidelines.<sup>43</sup>

50. We do agree, however, with HP's argument that we should apply our categorical exclusions consistently to low-power devices. Our original power exclusion threshold of

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<sup>42</sup> As indicated in 47 CFR § 1.1307(b)(1), the antenna height provision applies to certain non-rooftop antennas used in the Multipoint Distribution, Paging and Radiotelephone, Cellular Radiotelephone, Personal Communications, Instructional Television Fixed, Private Land Mobile Paging, and Private Land Mobile Services.

<sup>43</sup> If a mobile device is found to comply with our MPE limits at a distance of 20 cm from the radiating antennas, then there generally would be no need to control access around the mobile device provided the applicant can justify that the device would be used in such a way that a separation distance of at least 20 cm is normally maintained between the radiating antennas and the body of the user or nearby persons.

1.5 watts ERP was based on calculations of the approximate power level at which a device, such as a mobile cellular phone operating on frequencies around 800-900 MHz, would be expected to exceed the applicable MPE power density limit of about 0.5 mW/cm<sup>2</sup> at a distance of 20 cm from the radiating antenna. For higher frequencies, above 1.5 GHz, the MPE limit for power density is less restrictive (1.0 mW/cm<sup>2</sup>), and, therefore, a less restrictive power exclusion threshold can be justified. Using similar calculations, a power exclusion threshold of 3 watts ERP is appropriate for mobile devices operating above 1.5 GHz.

51. In response to HP's suggestion, we will require routine evaluation of unlicensed millimeter-wave mobile devices (that don't meet the definition of a portable device) only if the ERP is 3 watts or more.<sup>44</sup> Based on this same argument, we will require routine evaluation of all other mobile devices operating above 1.5 GHz (that don't meet the definition of a portable device), only if the ERP is 3 watts or more. For mobile devices operating at 1.5 GHz or below, the exclusion threshold will remain at 1.5 watts. We are also amending Table 1 of 47 CFR § 1.1307(b), as suggested by HP, to delete the provision for unlicensed PCS and millimeter wave devices recognizing that this might cause confusion, since Table 1 applies generally to fixed transmitters.

52. We appreciate the concerns raised by AirTouch and others that our new rules will pose new burdens for carriers. We have included several provisions in our RF guidelines that are intended to minimize this burden. For example, our categorical exclusion rules were designed to minimize the burden on carriers by instituting thresholds in terms of power and accessibility (e.g., rooftop vs. non-rooftop) that will result in routine evaluation only in situations where the potential for exposure in excess of our limits is significant. In addition, in many cases applicants are required by our operating bureaus only to file a statement demonstrating compliance.<sup>45</sup> Our rules allow, and we encourage, licensees at sites that have multiple transmitters to pool their resources and do a single environmental evaluation covering the entire location (when such an evaluation is required under our rules), thereby reducing the burden that would be incurred if each transmitter had to undertake similar evaluations. Finally, it should be recognized that, even if a transmitting source or facility is not categorically excluded from routine evaluation, no further environmental evaluation or processing is required once an applicant or licensee has determined that RF exposures in accessible areas near their transmitting facilities will be within our guidelines.

### 3. Amateur Radio Service (ARS)

53. Historically, all licensees and applicants in the ARS have been categorically excluded from performing routine environmental evaluations for compliance with our RF

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<sup>44</sup> At these frequencies, some parties may find it more convenient to determine the equivalent isotropically radiated power (EIRP) than the ERP (ERP is referenced to a half-wave dipole).

<sup>45</sup> However, technical information showing the basis for the statement must be submitted upon request.

exposure guidelines. In the Report and Order, however, we concluded that there was a potential for amateur stations to cause RF exposure that would exceed our new limits. Accordingly, we decided to require amateur station licensees to: 1) conduct a routine environmental evaluation if they transmit using more than 50 watts; 2) take action to prevent human exposure to excessive RF electromagnetic fields if the routine environmental evaluation indicates that our limits could be exceeded; 3) demonstrate their knowledge of our guidelines through examinations; and 4) indicate in their applications for new licenses and renewals that they have read and understand our rules for limiting RF exposure.<sup>46</sup>

54. In its petition, the ARRL claims that the 50-watt threshold we adopted in the Report and Order, above which amateur radio operators must evaluate their stations, is arbitrary and inappropriate.<sup>47</sup> The ARRL points out that this threshold does not consider important factors, such as frequency, antenna height, antenna gain, emission mode, or duty cycle. The ARRL also notes that many other radio services, including some with higher duty cycles, are categorically excluded from performing routine evaluations even though they may operate with similar or higher power. The ARRL requests that the 50-watt threshold be modified to incorporate power levels contained in its petition, which vary by frequency, or else be increased to at least 150 watts transmitter power output if all parts of the antenna are located at least 10 meters from any area of uncontrolled exposure.

55. Alan Dixon, an amateur radio operator, maintains that it is burdensome and unnecessary for amateur radio operators to perform routine environmental evaluations and, when necessary, EAs.<sup>48</sup> Mr. Dixon states that the amateur radio community utilizes long-established customs of limiting duration of transmissions, using minimal power levels and establishing antenna installations which maximize propagation while inherently limiting unintended exposures. He believes that amateur operators should continue their traditional self-policing, free of "rigid overly-specific RF radiation parameters," given the "utter lack of evidence of detrimental effects thereby."

56. Decision. In the Report and Order, we noted that amateur stations can transmit with up to 1,500 watts peak envelope power on a wide range of frequency bands from 1,800 kHz to over 300 GHz. We also noted that amateur stations are not subject generally to restrictions on antenna gain, antenna placement, duty cycles, and other relevant exposure variables and, as a result, the possibility of human exposure to RF electromagnetic fields in excess of the guidelines could not be completely disregarded. Therefore, we came to the

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<sup>46</sup> See Report and Order at para. 160-163. As discussed previously, we also amended our rules to require the amateur radio operator license examination question pools to include questions concerning RF safety at amateur stations, requiring an additional five questions on RF safety within each of three written examination elements.

<sup>47</sup> ARRL Petition at 9-13.

<sup>48</sup> Alan Dixon Petition at 2-4.

conclusion that a categorical exclusion for all amateur stations is not justified. We continue to believe that is the case. However, we now conclude that a uniform 50-watt categorical exclusion threshold, as adopted in the Report and Order, would cause many amateur station licensees to perform unnecessary routine environmental evaluations.

57. The ARRL is correct that our MPE limits are frequency dependent. Because amateur stations are permitted to transmit in frequency bands covering a wide range of frequencies, the MPE limits that might apply to any particular amateur station operation can vary dramatically.<sup>49</sup> The ARRL argues, quite correctly, that by applying a single power threshold above which a routine environmental evaluation must be performed, the variations that occur in the RF exposure limit as the station transmitter frequency changes are disregarded. The ARRL proposes, in its petition, that we scale the power threshold to match the RF exposure limit. We believe that this proposal makes sense for frequency bands above 10 MHz. However, on frequency bands below 10 MHz, persons are more likely to be located in the "near-field" of the amateur station antenna, where the field strength can vary dramatically in a very short distance.<sup>50</sup> In addition, a simple scaling of the power threshold to match the RF exposure limit below 10 MHz would result in extremely high-powered operations being permitted without any routine environmental evaluation. We believe that a flat 500-watt power threshold below 10 MHz is necessary to ensure that these high-powered amateur stations do not cause human exposure to excessive RF electromagnetic fields. Accordingly, we are adopting the ARRL's proposal by specifying a transmitter power threshold for each individual ARS frequency band. As indicated in the table shown in 47 CFR § 97.13(c) of the revised rules, the power threshold for transmissions in the frequency bands below 10 MHz is 500 watts. We have also established this threshold for amateur repeater stations, which are normally located high above ground level and often at commercial sites, and we will base exclusions for these antennas on factors similar to those for paging and cellular antennas, as shown in the revised table, since their operation is similar. For frequency bands above 10 MHz, the power threshold varies from 50 watts to 450 watts. We believe the revised power thresholds for the ARS will eliminate burdensome and unnecessary requirements for most radio amateurs, and thus address the overall concerns raised by the ARRL and Mr. Dixon. These new thresholds, as well as some clarifying language we have added to 47 CFR § 97.13(c), also help protect the public from excessive exposure to RF electromagnetic fields produced by ARS stations by requiring that their licensees perform

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<sup>49</sup> For example, at 1,897 kHz (in the 160 meter amateur band) the MPE limit for general population/uncontrolled exposure is 50 mW/cm<sup>2</sup>. At 29 MHz (in the 10 meter amateur band) the MPE limit for general population/uncontrolled exposure is about 0.2 mW/cm<sup>2</sup>. The authorized frequency bands are contained in 47 CFR § 97.301.

<sup>50</sup> The near-field of an antenna generally extends out to a distance of  $2L^2/\lambda$  from the antenna, where L is the effective length of the antenna and  $\lambda$  is the wavelength of the signal. For a typical amateur station using a half-wave dipole and operating on 10.125 MHz, the near-field would extend out to points approximately 15 meters from the antenna. As frequency decreases below 10 MHz, the size of the near-field increases (provided the effective length of the antenna is maintained). As frequency increases above 10 MHz, the size of the near-field decreases.

routine environmental evaluations and take appropriate actions if they operate their station in a manner that could cause human exposure to RF electromagnetic fields above that permitted under our guidelines.

#### 4. Compliance at Multiple Transmitter Sites

58. In our Report and Order, we generally retained our policies regarding the environmental evaluation of RF electromagnetic fields at sites with multiple FCC-regulated transmitters.<sup>51</sup> Our existing rules state that, when the RF exposure limits are exceeded in an accessible area due to the RF electromagnetic fields produced by multiple fixed transmitters, actions necessary to bring the area into compliance are the shared responsibility of all licensees whose transmitters produce fields at the non-complying area in excess of 1% of the exposure limits applicable to their transmitter.<sup>52</sup> The rules also state that applicants for proposed (not otherwise excluded) transmitters, facilities, or modifications that would cause non-compliance with our limits at an accessible area previously in compliance are responsible for submitting an EA if the emissions from the applicant's transmitter or facility would result in a field strength or power density at the non-complying area in excess of 1% of the exposure limit applicable to that transmitter or facility.<sup>53</sup> In the case of renewal applicants, a similar requirement applies -- renewal applicants whose (not otherwise excluded) transmitters or facilities contribute field levels in excess of 1% of the applicable exposure limit at an accessible area must submit an EA if the area in question is not in compliance with the applicable RF guidelines.<sup>54</sup>

59. Several petitioners and commenters believe that the 1% level used as our threshold for determining responsibility at a non-complying area is too low. Arch, AT&T Wireless Services (AT&T), BellSouth Corporation (BellSouth), PageNet and PCIA all support raising this threshold from 1% to 10%.<sup>55</sup> However, this proposal is opposed by the Cellular

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<sup>51</sup> Prior to the effective date of the Report and Order, these policies were contained in Note 2 to 47 CFR § 1.1307(b). The Report and Order recodified these policies, essentially unchanged, into 47 CFR § 1.1307(b)(3), as amended.

<sup>52</sup> See 47 CFR § 1.1307(b)(3).

<sup>53</sup> See 47 CFR § 1.1307(b)(3)(i).

<sup>54</sup> See 47 CFR § 1.1307(b)(3)(ii).

<sup>55</sup> Arch Comments at 3, AT&T Petition at 6-8, AT&T Comments at 5, BellSouth Petition at 2, PageNet Petition at 5, PCIA Petition at 14-16.



Taskforce and others, who advocate increased regulation and scrutiny at multiple emitter sites.<sup>56</sup>

60. AT&T supports a higher threshold based on its view that a licensee's obligation to share responsibility for compliance at multiple-emitter sites should not be so easily triggered because of the time and expense involved in determining site-wide compliance. PageNet claims that a threshold of 10% or higher would meet our regulatory objectives while significantly minimizing unnecessary and burdensome obligations on licensees. PCIA says that a 1% threshold is too low given the "negligible" likelihood that a contributor of 1% of the limit would be responsible for non-compliance at a site. AT&T, BellSouth and U S WEST maintain that a 1% threshold could discourage co-location, while at the same time local governments are coming to recognize a valid public interest in requiring co-location of transmitters on common facilities or areas whenever feasible.<sup>57</sup> BellSouth also argues that the 1% threshold is impractical due to the lack of equipment capable of measuring power density levels with a margin of error of less than 1% and the likelihood that human error or environmental conditions could easily account for a 1% increase in power density on any given day. The Cellular Taskforce argues that a 10% trigger would potentially leave a great many areas effectively excluded from regulation -- if no facility in an area passed the 10% threshold, then that area could not be brought into compliance. The Cellular Taskforce submits that this is unlikely ever to happen with the existing 1% threshold.

61. Ameritech and AirTouch urge us to establish specific procedures for multiple transmitter situations.<sup>58</sup> For example, Ameritech wants clear direction on the following points: How is the impact from multiple-transmitter locations to be addressed? Will facilities which are categorically excluded still count toward an evaluation of cumulative exposure? How is responsibility for compliance to be "shared", as required by our rules? What procedures apply if one or more licensees refuse to cooperate? Do "in-building" transmitters require environmental evaluation, and should rooftop transmitters be considered in evaluating compliance of such transmitters?

62. AirTouch, BellSouth and PageMart maintain that a site owner, not a licensee, should be responsible for determining compliance with the RF guidelines at multiple-transmitter sites.<sup>59</sup> AirTouch maintains that a site owner is the only party with direct knowledge of all site occupants and their operational characteristics, and is, therefore, in the best position to calculate field levels and determine whether a site is in compliance.

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<sup>56</sup> Cellular Taskforce Reply at 6, Holly Fournier and Mary Beth Freeman Reply at 3, Alan Golden Reply at 2, Dawn Mason Reply at 2.

<sup>57</sup> AT&T Petition at 7-8, BellSouth Petition at 4, U S WEST Petition at 5-8.

<sup>58</sup> Ameritech Petition at 3-4, AirTouch Reply at 6-10.

<sup>59</sup> AirTouch Petition at 4-6 and Reply at 3, BellSouth Petition at 3, PageMart Reply at 2.

Furthermore, AirTouch continues, a site owner could allocate costs associated with compliance responsibilities across all tenants and control tenant access for maintenance purposes. According to AirTouch, imposing responsibilities on site owners is consistent with Commission precedent with respect to other environmental obligations, such as antenna tower marking and lighting. Holly Fournier and Mary Beth Freeman oppose these arguments, suggesting that each operator should be responsible for making sure that its site is in compliance.<sup>60</sup> They argue that many site owners may be unsuspecting landowners who do not have the capability to make sure the transmitter facilities on their property are in compliance.

63. With respect to evaluation at multiple-transmitter sites, AT&T and PCIA propose that we should establish a fixed distance at which compliance should be evaluated.<sup>61</sup> AT&T also suggests we similarly define a "site" as a limited radius around an antenna or group of antennas. PCIA suggests that we should consider defining applicants' or licensees' obligations through the use of a power- and frequency-dependent area delineation, which would provide predictability for carriers while meeting our goals and minimizing unnecessary burdens. AirTouch suggests defining "site" as "a location that houses the antenna(s) of all licensees on the same altitudinal plane and that is under the control of a single site owner."<sup>62</sup>

64. PCIA seeks clarification regarding the phrase in 47 CFR § 1.1307(b)(1) just prior to Table 1, which indicates that the phrase "total power of all channels" refers to the sum of the power of all co-located, simultaneously operating transmitters of the facility.<sup>63</sup> PCIA and carriers have interpreted this note to require adding together the transmit power of each individual channel for multi-channel base stations but not requiring aggregating the power of all transmitters operating at a site. PCIA seeks clarification that "facility," as used in the note, is intended to refer to the co-located transmitters owned and operated by a single carrier and not intended to include all other transmitters at an antenna farm or on a rooftop for exclusion purposes. Similarly, AirTouch offers a definition of the term "facility" as "a licensee's unique assembly of antennas, transmitters, support structures, screens, wiring, etc.," with a licensee having "total control and responsibility over content, construction, and management of the facility."<sup>64</sup>

65. PCIA also urges that we clarify our policies with regard to liability for non-compliant multiple transmitter sites.<sup>65</sup> PCIA notes that, since a carrier may have no control

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<sup>60</sup> Holly Fournier and Mary Beth Freeman Reply at 4.

<sup>61</sup> AT&T Petition at 2 and 6, PCIA Petition at 7.

<sup>62</sup> AirTouch Reply at 9.

<sup>63</sup> PCIA Petition at 8.

<sup>64</sup> AirTouch Reply at 10.

<sup>65</sup> PCIA Petition at 16-17.

over a site, the carrier may not be notified or consulted at the time a subsequent transmitter is added or an existing transmitter is modified. PCIA proposes that we determine that carriers have no obligations with respect to facilities added or modified after they have conducted their own routine assessments of the area, unless the carrier is notified of the change. Similarly, U S WEST argues that liability for non-compliance at multiple-transmitter sites should be borne only by those causing the non-compliance, and that our rules should be revised to assure a "grandfathered" status for existing stations if other stations become co-located.<sup>66</sup>

66. Decision. For the reasons set forth below, we are amending our rules to raise the responsibility threshold, above which licensees at multiple transmitter locations must share responsibility for addressing RF exposure non-compliance problems, from 1% to 5%. We believe that a 5% responsibility threshold will offer relief to relatively low-powered site occupants who do not contribute significantly to the non-compliance and, at the same time, provide for the appropriate allocation of responsibility among major site emitters. Similarly, we are raising the filing threshold that determines whether an applicant must file an EA if the applicant contributes to field levels at an area of non-compliance. We are raising the present threshold of 1% to 5%. Therefore, if an applicant's contribution to the area of non-compliance exceeds 5%, the applicant must file an EA. We are also modifying the language used in our rules somewhat to better explain what is required at multiple-user sites.

67. Our policy with respect to multiple transmitter sites was adopted several years ago and has essentially remained unchanged. The 1% responsibility and filing thresholds have not been seriously questioned until now. These new questions undoubtedly reflect the fact that we have now removed the categorical exclusions for a number of different transmitting facilities, and this has resulted in the necessity for evaluating many more multiple-transmitter situations than was the case previously. Many petitioners give valid reasons for modifying the 1% thresholds. First and foremost, we believe, is the issue of accuracy of determination of field contributions, either through measurements or calculations. BellSouth makes a good point when it notes the difficulties of making accurate determinations to the 1% level. We also see merit in the arguments that a threshold of 1% is too encompassing, particularly in light of the potential that an applicant or licensee could be required to undergo an unnecessary and expensive evaluation and that such a requirement could actually discourage co-location. However, we believe that changing the threshold to 10% goes too far in the other direction, and could lead to the creation of areas of non-compliance. It could also result in some transmitter operators escaping their responsibilities for compliance at multiple transmitter sites.

68. For example, consider the case of a multiple-transmitter site where most of the antennas are paging antennas operating at ERPs of 1000 W or greater. Often such sites involve numerous, densely packed antennas, especially in urban areas. At some points during the day, due to high traffic, most of the antennas may be transmitting almost simultaneously.

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<sup>66</sup> U S WEST Petition at 5-8.

If there is a compliance problem at such a site, many or most of the antennas may be contributing to the area of non-compliance but not necessarily at the 10% level. Calculations can be used to demonstrate that non-complying areas are more likely to be the result of the contributions of several of these antennas, rather than just one or two. For this reason, it is important not to establish an exclusion threshold that is too high. On the other hand, as noted before, upon reconsideration, we agree that a level of 1% is unreasonable considering the problems of measurement and prediction accuracy and also the potential for unnecessary impact on small contributors. We believe that a 5% threshold represents a reasonable and supportable compromise, and are amending 47 CFR § 1.1307(b)(3) accordingly .

69. We agree with Ameritech and AirTouch, and others, that further guidance is needed on how to address multiple transmitter situations. In general, we intend that our rules, along with the guidance given in a revised FCC bulletin on evaluating compliance, OET Bulletin 65, will be sufficiently clear and complete so that licensees can readily determine their compliance with our RF exposure requirements.<sup>67</sup> In adopting this Second Memorandum Opinion and Order, we are attempting to address those areas where parties have indicated that confusion may exist. We recognize, however, that additional questions are likely to arise over time, especially with regard to particular multiple-transmitter situations. We direct staff to work with the industry to address such questions that may arise, both through the revision of Bulletin 65 and in response to inquiries regarding specific situations.

70. The key trigger with respect to our RF exposure rules is the existence of an accessible area where RF field levels will exceed our MPE limits. As delineated in 47 CFR § 1.1307(b)(3) as amended by this Second Memorandum Opinion and Order, responsibility is to be shared among those transmitter facilities contributing above the 5% threshold at a non-complying area. Since such situations can arise according to a variety of criteria, including transmitter power, antenna height, frequency and associated RF exposure limit, location of fencing to restrict access, etc., we can see no easy way to define a "site" or to specify some arbitrary radius around antennas at which compliance must be evaluated. However, we believe that it will not be difficult for most applicants to determine areas which are accessible. Applicants should be able to calculate, based on frequency, power, and antenna configuration, the distance from their transmitting antenna where their signal produces field levels equal to, or greater than, 5% of the relevant RF exposure limit. Applicants are then responsible for evaluating compliance in any accessible areas within this distance from their transmitting antenna.

71. In evaluating compliance in accessible areas, applicants are expected to make a good-faith effort to consider RF emissions from other nearby transmitters. However, we do not believe it is realistic, practical, or necessary for applicants to consider extremely weak

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<sup>67</sup> See later discussion in this Order of issues related to the OST Bulletin 65, "Evaluating Compliance with FCC-Specified Guidelines for Human Exposure to Radiofrequency Radiation", which was published in October, 1985. This bulletin is being revised to reflect the Commission's newly adopted RF guidelines and procedures. We expect it to be issued shortly after adoption and release of this Order.

signals that are not likely to present a significant risk for exposure in excess of our limits. Accordingly, applicants need only consider those RF emissions produced by nearby transmitting facilities that exceed 5% of their relevant RF exposure limit.<sup>68</sup> The percentages of the relevant RF exposure limits produced by each station are added, to determine whether the limits are (or would be) exceeded as a result of the RF emissions from the multiple transmitter facilities.<sup>69</sup> If the limits are exceeded, then the applicant and the other responsible parties must address the problem (or the applicant can file an EA).

72. With respect to in-building transmitters, Ameritech interprets our rules adopted in the Report and Order as indicating that these transmitters would be categorically excluded from routine evaluation. In general, this is a correct interpretation. In-building transmitters are normally low-powered devices intended only to provide service within the building, or a portion of the building. As such, most in-building transmitters do not represent a significant risk for causing exposures in excess of our guidelines, and, except for unlicensed PCS and millimeter-wave devices, they are categorically excluded from requirements for routine evaluation because of their low power. However, we emphasize that all FCC-regulated transmitters are expected to comply with our applicable guidelines, regardless of whether they are categorically excluded or not. We see no reason to alter our policy on in-building transmitters at the present time, and no specific proposals were made in the petitions to do so. However, we may revisit this issue at a later date if there is new evidence that certain categories of in-building transmitters could present an exposure problem.<sup>70</sup>

73. We appreciate the arguments raised by the petitioners who advocate that site owners (rather than individual licensees) be responsible for determining and ensuring compliance with our RF exposure requirements. However, in an earlier decision regarding the streamlining of our antenna structure clearance procedure, we determined that responsibilities pertaining to RF electromagnetic fields properly belonged with our licensees and applicants, rather than with site owners. We agree with the concerns raised by Holly Fournier and Mary Beth Freeman that many site owners may not have the capability or understanding to make sure that transmitter facilities on their property are in compliance. Finally, since the area in which a licensee is responsible for addressing non-compliance problems (i.e., the contour within which the station's power density exceeds 5% of the relevant RF exposure limit) can

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<sup>68</sup> We note that, if an area of non-compliance is found, it would be these other stations that would share in the responsibility for correcting the problem.

<sup>69</sup> For example, if a TV station produces a power density 50% of its limit, an FM station produces a power density 25% of its limit, and a second FM station produces a power density of 30% of its limit at a particular accessible area, then the RF emissions would cumulatively equal 105% of the composite limit, and the RF exposure limits would be exceeded.

<sup>70</sup> Our current rules provide somewhat different categorical exclusions in certain services for "rooftop" and "non-rooftop" antennas. See 47 CFR § 1.1307(b)(1). As discussed later under Miscellaneous Clarifications and Corrections, we are amending our categorical exclusion rules to replace the current "rooftop/non-rooftop" designation with one based on whether a transmitter is mounted on a building.

extend for several meters from the transmitting antenna itself, it is conceivable that the accessible areas where our RF exposure limits are exceeded may involve multiple site owners or transmitting antennas located at other sites, making it difficult for a single site owner to ensure compliance.<sup>71</sup>

74. Nevertheless, we recognize that a site owner has significant control over applicants' and licensees' abilities to comply with our RF exposure requirements. For example, a site owner can determine whether a licensee will be permitted to erect a fence to limit public access in areas where the uncontrolled RF exposure limits may be exceeded. For sites where there are multiple licensees, the site owner also may be able to encourage the licensees to cooperate to find a common solution to problems caused by multiple transmitters. In addition, site owners may be able to take steps that would allow co-location of transmitting facilities. We believe that such co-location is highly desirable -- it can reduce the number of locations at which the potential for RF exposure must be evaluated, and it can facilitate the ability of applicants to get through the state and local zoning approval processes. Accordingly, we urge site owners to allow applicants and licensees to take reasonable steps to comply with our RF exposure requirements and, where feasible, encourage co-location of transmitters and common solutions for controlling access to areas where our RF exposure limits might be exceeded.

75. In response to the questions posed by Ameritech, PCIA, and U S WEST regarding how the responsibility for compliance is to be shared at multiple transmitter sites, we do not intend to specify detailed instructions on how to allocate responsibility. One logical suggestion would be to assign compliance costs according to the percentage contributions at the non-complying area(s) for situations involving no change in transmitter facilities.<sup>72</sup> An alternative would be, as suggested by PCIA, to require an applicant for a new facility to resolve the problem. Section 1.1307(b)(3)(i) of our new rules states that it is the

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<sup>71</sup> Consider the example of a high-powered broadcast station on the rooftop of a building. On an apartment building across the street there is a rooftop sundeck with several high-powered, high duty-factor, transmitting antennas used for paging that are located on the same rooftop within a few meters of the sundeck. Assume that at several locations on the sundeck the MPE limits for the general population are exceeded due to emissions of both the paging and broadcast transmitters and that all emission levels exceed the 5% threshold for the respective emitters at the accessible non-complying locations on the sundeck. In such a case the responsibility for compliance should belong to not only the paging transmitters, but also to the broadcast station, which is located several meters away from the sundeck. In such a situation a requirement for responsibility that only included the paging transmitters on the same building as the sundeck would not include a major contributor, the broadcast station. Therefore, if our RF exposure rules were applied only to site owners, a primary contributor might totally escape responsibility for necessary corrective action to ensure compliance, leaving the burden for compliance with the paging licensees. A similar situation could occur on the rooftop of a building located nearby to a high-powered broadcast station, regardless of whether any additional transmitters were located on the building.

<sup>72</sup> For example, when an applicant files for renewal of license at a location that was previously subject to our old RF exposure guidelines.

responsibility of a new applicant to submit an EA if their transmitter will create a non-complying situation at a location previously in compliance. However, we recognize that some particular circumstances may dictate different solutions. Accordingly, we encourage our licensees and applicants to work in a cooperative manner to address these problems. We note that, at most broadcast antenna farms, cooperative agreements have been developed to ensure compliance with applicable RF exposure guidelines. We see no reason why such agreements also cannot be used at other antenna sites. In response to the concern raised by Ameritech, we encourage any applicant or licensee to notify the appropriate Commission licensing bureau if the operator of a co-located transmitter will not cooperate in addressing a non-compliance problem. This has occurred in the past with respect to broadcast sites, and our staff, as needed, has encouraged the non-cooperating licensee to assist in correcting the problem when appropriate. Similarly, we encourage applicants to notify our licensing bureaus if they believe that existing licensees are not allowing them reasonable access to a site, or are attempting to place unreasonable financial burdens on them. In this regard, we emphasize that if a transmitter at a multiple-transmitter site is approved under one set of guidelines but, later, another transmitter locates at the site and, as is required, operates under new exposure criteria, then the new criteria must be used to evaluate the entire site.

76. We are amending 47 CFR § 1.1307(b)(1), as requested by PCIA, to clarify the meaning of the phrase "total power of all channels" in Table 1. PCIA is correct that the term "facility" used in this context refers to the co-located transmitters owned and operated by a single carrier and is not intended to apply to all other transmitters that may be co-located at an antenna farm or on a rooftop for purposes of exclusion from routine evaluation.

77. Finally, in reviewing the issues raised in the various petitions, we have found that the rules adopted in the Report and Order are imprecise with respect to how to calculate the 5% threshold of responsibility for addressing non-compliance situations. Our rules specify RF exposure limits in terms of electric field strength, magnetic field strength, and power density.<sup>73</sup> It is the square of the field strength or power density that is most relevant in determining the potential effect of RF emissions on the human body.<sup>74</sup> Therefore, we are modifying our rules to make it clear that the 5% threshold applies to the power density limit or to the square of electric or magnetic field strength limit.

## 5. Preemption of State and Local RF Regulations

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<sup>73</sup> See 47 CFR § 1.1310.

<sup>74</sup> Power density is equal to the square of the electric field strength divided by the characteristic impedance of free space (377 ohms). Similarly, power density is equal to the square of the magnetic field strength times the characteristic impedance of free space.

78. Section 704 of the Telecommunications Act of 1996<sup>75</sup> amends the Communications Act to provide a means for seeking relief of state and local regulations concerning the construction, placement or modification of "personal wireless service" facilities on the basis of the environmental effects of RF emissions.<sup>76</sup> Section 332(c)(7)(C)(i) of the Communications Act defines "personal wireless services" as "commercial mobile services, unlicensed wireless services, and common carrier wireless exchange access services."<sup>77</sup> Section 332(c)(7)(B)(v) provides that parties adversely affected by a state or local action concerning the construction, placement or modification of a personal wireless service facility that is based on concerns over RF emissions may seek relief from the courts or by petition to the Commission.<sup>78</sup>

79. We have previously considered the question of whether we should consider requests for relief filed under Section 332(c)(7)(B)(v) for licenses in communications services other than those defined by Congress as "personal wireless services."<sup>79</sup> In the Report and Order, we chose not to consider requests for relief filed under 332(c)(7)(B)(v) for communications services not specifically defined as "personal wireless services" in Section 332(c)(7)(C)(i).<sup>80</sup> We indicated that we expected that many states and localities would agree that no further regulation is warranted once they had an opportunity to review and analyze the guidelines we were adopting. We also indicated that, should our expectations prove to be misplaced and should FCC licensees in other services encounter a pattern of state or local activities which constitute an obstacle to the scheme of federal control of radio facilities set forth in the Communications Act, they should present us with such evidence as well as their view of the legal basis which could justify FCC preemption of state and local ordinances that concern other communication services.

80. In its petition for reconsideration, the EEA maintains that we were presented in the record of this proceeding substantial evidence to support adopting a preemption rule that

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<sup>75</sup> Telecommunications Act of 1996, Pub. L. No 104-104, 110 Stat. 56 (1996).

<sup>76</sup> Telecommunications Act of 1996, Section 704. Facilities Siting: Radio Frequency Emission Standards. 47 U.S.C. § 332(c)(7). This section states that: "No State or local government or instrumentality thereof may regulate the placement, construction, and modification of personal wireless service facilities on the basis of the environmental effects of radio frequency emissions to the extent that such facilities comply with the Commission's regulations concerning such emissions." 47 U.S.C. § 332(c)(7)(C) defines "personal wireless services" to mean "commercial mobile services, unlicensed wireless services, and common carrier wireless exchange access services."

<sup>77</sup> 47 U.S.C. § 332(c)(7)(C)(i).

<sup>78</sup> 47 U.S.C. § 332(c)(7)(B)(v).

<sup>79</sup> See Report and Order at paras. 164-165.

<sup>80</sup> See Report and Order at paras. 166-168.



would be applicable to all RF transmitters.<sup>81</sup> EEA notes that it filed, in 1994, a petition for rulemaking requesting such broad preemption, but its petition was only partially addressed in the Report and Order. EEA indicates that its petition presented specific evidence of restrictive state and local regulations that affected different types of FCC-authorized facilities, including both broadcast stations and "personal wireless service" facilities. EEA also indicates that it spelled out in its 1994 petition the legal basis for a broad preemption policy.

81. EEA argues that there is no rational basis for differentiating between personal wireless service facilities and other RF transmitters in preempting state and local regulation of RF emissions. From the perspective of health and safety, EEA states that there should be no distinction in the RF exposure regulations applying to various RF emitters (other than technically-justified differences in RF limits according to frequency). EEA claims that the fact that Section 704 of the Telecommunications Act only addressed the personal wireless services does not preclude broader preemption. EEA points out that we have already determined that we may implement new requirements under the Telecommunications Act by applying them to broader classes of carriers than were specifically mandated by the Act, especially when such action will facilitate the promotion of nationwide communications policy objectives.<sup>82</sup> By not applying consistent preemption, EEA argues that we could be creating situations where some transmitters are subject only to FCC regulation, while others are subject to both federal and state or local regulation for RF exposure. EEA notes that this could result in different requirements being placed on transmitters operating at the same location or even within the same frequency range, which they argue would be unfair, unjustified, and unnecessary.

82. EEA complains that, if we were to allow a "checkerboard" of state and local RF regulation that was not consistent with our guidelines, the implementation of new services such as digital broadcasting, and the transition to the digital environment, could be severely impaired. The NAB and the Wireless Cable Association International, Inc., (WCAI) expressed their support for EEA's position on broadening preemptive authority.<sup>83</sup> Also, the ARRL notes that there is "no possible justification" for preempting state and local RF regulation for one radio service and not for others, particularly for amateur stations.<sup>84</sup> The ARRL maintains that there is no indication in the Telecommunications Act or elsewhere that Congress intended that we could selectively preempt state and local RF regulation based only on the category of radio service affected.

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<sup>81</sup> EEA Petition at 3-11.

<sup>82</sup> See EEA Petition at 8 citing Telephone Number Portability, 11 FCC Rcd 8352, 8431-32 (1996).

<sup>83</sup> NAB Comments at 1, WCAI Comments at 2-3.

<sup>84</sup> ARRL Petition at 3 and 14.

83. Ameritech suggests that we further exercise our powers under Section 704 of the Act by preempting state and local regulation of the operation of personal wireless service facilities.<sup>85</sup> Ameritech contends that allowing state and local governments to govern how a station operates would be tantamount to saying "you can build your station but you cannot turn it on."<sup>86</sup> Ameritech also suggests that we establish a federal "rule of liability" for torts related to the environmental effects of RF emissions, so that licensees can avoid "unnecessary and conflicting" lawsuits by ensuring that they comply with our guidelines.

84. EEA supports Ameritech's proposal for the preemption of the operation of personal wireless facilities and maintains that it provides additional reasons why the Commission's "partial" preemption rule will have the effect of "unduly impeding" the construction and operation of facilities, since its rationale "applies with equal force" to all FCC-licensed transmitters.<sup>87</sup> David Fichtenberg (Fichtenberg) opposes Ameritech's proposal noting that the word "operation" found in the original version of H.R. 1555 brought to the Conference Committee, "was explicitly removed" from the final Conference Report.<sup>88</sup> Fichtenberg claims that this shows that Congress did not intend for the Commission to preempt the operation of transmitting facilities. Fichtenberg's position was supported by Alan Golden, Holly Fournier and Mary Beth Freeman.<sup>89</sup> Ameritech disagrees. Ameritech states that rather than deleting the word "operation" from the preemption language in the Act, Congress stated in the Conference Report:

The limitations on the role and powers of the Commission under this subparagraph relate to local land use regulations are not intended to limit or affect the Commission's general authority over radio telecommunications, including authority to regulate the construction, modification and operation of radio facilities.<sup>90</sup>

85. Ameritech argues that this language clearly indicates that Congress recognizes the Commission's plenary authority over the operation of radio facilities and intends that the FCC continue to exercise this authority without limitation. Ameritech contends that this language suggests that the word "operation" was merely deleted because it was superfluous.<sup>91</sup> EEA

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<sup>85</sup> Ameritech Petition at 9-10.

<sup>86</sup> Id. at 3.

<sup>87</sup> EEA Comments at 9-11.

<sup>88</sup> David Fichtenberg Comments at 13-15.

<sup>89</sup> Alan Golden, Reply at 9; Holly Fournier and Mary Beth Freeman, Reply at 4.

<sup>90</sup> Ameritech Reply at 2 citing Conference Report at 209 (emphasis added).

<sup>91</sup> Id.

agrees that, under the opposing commenters' interpretation, a locality could not prevent the siting and construction of an FCC-licensed facility but could, nonetheless, prevent its operation.<sup>92</sup> According to EEA, this would be a complete evasion of Congresses mandate for preemption of the regulation of RF emissions.<sup>93</sup>

86. David Fichtenberg and others oppose the requests to broaden our preemption of state and local regulation of RF emissions.<sup>94</sup> Mr. Fichtenberg describes various studies that, he believes, support this opposition and discusses at length why he believes that the intent of Congress was only to preempt "personal wireless services." Dr. Marjorie Lundquist maintains that we possess no expertise with respect to public health and, therefore, we are a "questionable" choice as the agency to establish preemptive health guidelines for RF emissions.<sup>95</sup> The Ad-hoc Association says that we should only preempt the regulation of the placement, construction and modification of personal wireless facilities on the basis of environmental effects of RF emissions, and not for any other reasons.<sup>96</sup> The Ad-hoc Association suggests that we should also acknowledge that local jurisdictions have the authority to require further measurements of RF emissions for health and safety reasons, in particular, so that local jurisdictions can notify persons, hospitals or businesses of the potential for electrical interference. Holly Fournier and Mary Beth Freeman oppose requests for expanded preemption, pointing out that in light of government cutbacks and the rapid deployment of telecommunications facilities it is important that state and local jurisdictions oversee the proper operation of these facilities.<sup>97</sup>

87. Ameritech opposes the suggestions of David Fichtenberg, Dr. Marjorie Lundquist and the Ad-hoc Association.<sup>98</sup> According to Ameritech, duplicate regulation at the federal and state/local level would prove "disastrous" for industry, which could be required to comply with potentially conflicting standards. Furthermore, Ameritech notes, the various studies referred to by Mr. Fichtenberg "only point to the need for a uniform approach to RF regulation, which can only be carried out at the federal level."<sup>99</sup> Mr. Fichtenberg's comments

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<sup>92</sup> EEA Reply to Opposition at 5.

<sup>93</sup> Id.

<sup>94</sup> David Fichtenberg Comments at 1-25, Alan Golden Reply at 9, Dawn Mason Reply at 2.

<sup>95</sup> Dr. Marjorie Lundquist Comments at 4.

<sup>96</sup> Ad-hoc Association Petition at 8-13.

<sup>97</sup> Holly Fournier and Mary Beth Freeman, Reply at 4.

<sup>98</sup> Ameritech Comments at 5, Reply at 1-9.

<sup>99</sup> Ameritech Reply at 1.

are also opposed by the EEA, which declares that Mr. Fichtenberg is wrong in his interpretations of the Telecommunications Act with regard to broad-based preemption.<sup>100</sup>

88. Decision. Based upon the current record in this proceeding, we find that there is insufficient evidence at this time to warrant our preempting state and local actions that are based on concerns over RF emissions for services other than those defined by Congress as "personal wireless services."<sup>101</sup> We note that on May 30, 1997, the National Association of Broadcasters (NAB) and the Association of Maximum Service Television (MSTV) (jointly NAB/MSTV) filed a Petition for Further Notice of Proposed Rulemaking, urging preemption of certain state and local government restrictions on the siting of broadcast transmission facilities, based on petitioner's claims that unreasonable state and local regulations have frustrated the siting of broadcast facilities and could impede the Commission's scheduled conversion to the new digital television service. The NAB/MSTV petition, which raises additional preemption issues for broadcasting, will be addressed in a subsequent Commission action.

89. Concerning Ameritech's proposal that the Commission preempt state and local regulations concerning the operation of facilities based on RF-emission considerations, we agree with Ameritech that Congress did not intend to prevent the Commission from preempting state and local regulations concerning the operations of facilities simply by deleting the term "operation" from the final version of Section 332(c)(7). On the contrary, Congress made it clear, in the Conference Report, that enactment of Section 332(c)(7) of the Communications Act was not meant to affect the Commission's general authority to regulate the operation of radio facilities.<sup>102</sup> We find that the alternative reading is illogical and would render the statute useless and produce absurd results which Congress could not have intended. Therefore, we will continue to consider requests for relief of state and local government actions that prescribe or restrict the operation of personal wireless facilities pursuant to the authority granted to the Commission by Congress in Section 332(c)(7).

90. Regarding Ameritech's argument that the Commission should specify a federal rule of liability for torts related to RF emissions, we believe that such action is beyond the scope of this proceeding and we question whether such an action, which would preempt too broad a scope of legal actions, would otherwise be appropriate. Therefore, we cannot grant Ameritech's request.

## 6. Definition of "Covered SMR" Service

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<sup>100</sup> EEA Reply at 1.

<sup>101</sup> See 47 CFR 1.1307(e), as amended.

<sup>102</sup> Ameritech Reply at 2 citing H. Rep. No. 104-458, 94th Cong. 2nd Sess. 208-09 (1996) Conference Report.

91. In the Report and Order, we required the routine evaluation of RF electromagnetic fields produced from certain "covered" Specialized Mobile Radio (SMR) operations. See Table 1 of 47 CFR § 1.1307(b)(1). We also required the routine evaluation of certain portable and mobile transmitters used for covered SMR service as a condition for equipment authorization or use. See 47 CFR §§ 2.1091(c) and 2.1093(c). Covered SMR was defined as including geographic area SMR licensees in the 800-MHz and 900-MHz bands that offer real-time, two-way switched voice service that is interconnected with the public switched network and Incumbent Wide Area SMR licensees, as defined in Section 20.3 of our rules.<sup>103</sup> This definition was consistent with that used in a variety of recent proceedings relating to wireless issues.<sup>104</sup> Non-covered SMR operations were categorically excluded from performing routine environmental evaluations under our rules. In adopting different requirements for covered and non-covered SMRs, we were trying to ensure that those SMR operations that had the potential for causing excessive RF electromagnetic fields were subject to routine evaluations, and those that had little potential, were not.

92. The American Mobile Telecommunications Association, Inc., (AMTA) argues that the definition for covered SMR adopted in the Report and Order should be narrowed.<sup>105</sup> AMTA claims that the current covered SMR definition encompasses a large number of operators that provide primarily a dispatch service. It would also include, AMTA argues, systems that typically employ "push to talk" technology but allow interconnection capability as an ancillary feature. AMTA believes that it was our intent to cover only SMRs capable of serving the general consumer marketplace similar to cellular telephone or Personal Communications Service (PCS) stations.

93. AMTA has researched what factors distinguish traditional SMR systems from those that would operate in the consumer-oriented market. AMTA has identified one feature that, to the best of its knowledge, is present in all cellular and cellular-like systems, as well as in SMR systems seeking to compete with them. According to AMTA, unlike traditional, local SMR facilities, systems in each of these categories have an "in-network switching facility." This facility, AMTA explains, enables the system to reuse frequencies dynamically and thereby develop sufficient capacity to accommodate a mass market subscriber base, and to handoff communications between sites without manual subscriber intervention.

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<sup>103</sup> See Note following Table 1 in 47 CFR § 1.1307(b)(1). See also Report and Order, ET Dkt 93-62 at para. 65.

<sup>104</sup> See, for example, First Report and Order, CC Docket No. 55-116, 11 FCC Rcd 8352 (released July 2, 1996); First Report and Order, CC Docket No. 94-54, 11 FCC Rcd 18455 (released July 12, 1996); Report and Order, CC Docket No. 94-102, FCC 96-264 (released July 26, 1996); and Report and Order, CC Docket No. 94-54, 11 FCC Rcd 9462 (released August 15, 1996).

<sup>105</sup> AMTA Petition at 2-8.

94. As a result of its analysis, AMTA proposes to add the following new definition paragraph to Section 20.3 of the rules.

"Mobile Telephone Switching Facility. An electronic switching system that is used to terminate mobile stations for purposes of interconnection to each other and to trunks interfacing with the public switched network.

AMTA also proposes to modify the definitions in Sections 20.3 and 20.12 of the rules as follows:

"Incumbent Wide Area SMR Licensees. Licensees who have obtained extended implementation authorizations in the 800 MHz or 900 MHz service, either by waiver or under Section 90.629 of these rules, and who offer two-way interconnected voice service using a mobile telephone switching facility." [emphasis in original]

Section 20.12(a)

"This Section is applicable only to providers of Broadband Personal Communications Services (Part 24, Subpart E of this chapter), providers of Cellular Radio Telephone Service (Part 22, Subpart H of this chapter), providers of Specialized Mobile Radio Services in the 800 MHz and 900 MHz bands that hold geographic licenses (included in Part 90, Subpart S of this chapter) and who offer two-way interconnected voice service using a mobile telephone switching facility, and Incumbent Wide Area SMR Licensees."

If we decide not to accept the above proposals, AMTA suggests modifying the covered SMR definition to apply only to systems serving more than 20,000 subscribers nationwide.

95. AT&T supports the AMTA request to narrow the definition of covered SMR and thereby expand the categorical exclusion for SMRs in general.<sup>106</sup> AT&T asks that we also categorically exclude similar facilities used by AT&T to provide only data under other radio services. AT&T's position is supported by AirTouch.<sup>107</sup> However, it is opposed by the Cellular Taskforce, which is concerned that such systems will proliferate rapidly in the near future.<sup>108</sup> PCIA supports modifying the definition of covered SMR consistent with other proceedings, and notes that it has petitioned for reconsideration of this definition in several proceedings where this term has been used.<sup>109</sup>

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<sup>106</sup> AT&T Comments at 4.

<sup>107</sup> AirTouch Reply at 3.

<sup>108</sup> Cellular Taskforce Reply at 6.

<sup>109</sup> PCIA Petition at 17-18.

96. RAM Mobile Data USA Limited Partnership (RMD) comments that it operates SMR systems that provide "interconnected" mobile data services that do not offer real-time, two-way switched voice service.<sup>110</sup> As such, RMD notes that its systems are currently excluded from our definition of "covered SMR" for purposes of environmental evaluation for RF exposure. RMD agrees that this exclusion is reasonable, since RMD's systems, unlike cellular and broadband PCS voice systems, typically involve relatively short duty-cycle transmissions and do not expose users to RF electromagnetic fields for extended periods of time. In commenting on the AMTA and PCIA petitions, RMD claims that the definition of "covered SMR" proposed by AMTA could, inadvertently, bring RMD's mobile data systems within the scope of the definition, and RMD advises us to reject AMTA's suggestions.

97. RMD maintains that AMTA's suggested alternative definition, based on the number of subscribers, would lead to inappropriate inclusions and exclusions from coverage. RMD points out that the number of subscribers served by a system is not relevant in determining whether a system would expose its users to excessive RF electromagnetic fields. Nonetheless, RMD does recognize that "hardship considerations" might favor an exclusion from "covered" status for small SMR systems. RMD urges us to retain the functional approach used in our definition of covered SMR services and to continue to exclude from that definition data-only SMR systems.

98. Decision. The petitions and comments filed regarding our definition of covered SMR raise a number of legitimate questions. For example, should our RF exposure requirements cover only certain SMRs, such as those that offer services comparable to cellular telephone and PCS stations? Is there a rationale based on RF exposure and health considerations for applying different requirements to different types of SMR operators? After considering the petitions and comments, and revisiting the basis for the decisions we made in the Report and Order, we now believe that our RF exposure rules should not differentiate between different types of SMR operations. Accordingly, we are modifying our rules to replace the term "covered SMR" with "SMR." As a result, all of the existing requirements for routine environmental evaluations will apply to all SMR operations.<sup>111</sup>

99. There are several reasons why we now think that the RF exposure rules should be applied to all SMRs. First, all SMR operations are authorized to use the same power levels, regardless of whether they are providing "covered" services or not. Second, certain SMR operations that would not meet the covered SMR definition, such as those providing dispatch services, can operate with a very high duty cycle during peak periods of the day. These SMR operations are also looking to increase the utilization of their spectrum by providing other capabilities in off-peak periods. Third, some of the SMRs targeted towards limited business use (as opposed to general public use) still provide interconnection capability, again

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<sup>110</sup> RMD Comments at 1-3.

<sup>111</sup> This decision is based on technical factors specific to the issue of RF exposure. It does not address other proceedings for which the covered SMR definition is at issue.

potentially increasing the duty cycle. Fourth, the power levels of SMR stations are generally similar to those for paging, cellular and other stations which are covered by the RF exposure requirements. They generally exceed the typical power levels of other land mobile stations that we have categorically excluded. The possibilities for high power level and high duty cycle means that many SMRs would have a similar potential for causing exposure to excessive RF electromagnetic fields as paging, cellular, and PCS stations. Based on these considerations, we now believe that there is a potential for our RF exposure limits being exceeded by SMR operations, regardless of whether they meet the definition of a covered SMR or not, and conclude that all SMRs should be covered by our RF exposure rules. We are retaining the categorical exclusions for SMR based on height of the antenna and power, as indicated in Appendix A.

## 7. Development of a Revised Version of OST Bulletin 65

100. Since 1985, the Commission has made available a technical publication designed for use by Commission licensees and applicants as an aid in evaluating compliance with our RF exposure guidelines. As mentioned previously, we are now updating this publication, OST Bulletin 65, to reflect our adoption of new guidelines.

101. Some of the petitioners and commenters express opinions and offer suggestions about our procedures for developing this document and for allowing review of the revised draft. Ameritech maintains that we should ensure that "all affected parties" are given an opportunity to participate in the formulation of the bulletin.<sup>112</sup> Ameritech points out that we will likely receive the most useful comments from those industry representatives who are faced with concrete compliance responsibilities and who may have a greater incentive to focus on the practical impact of the new guidelines. The EEA urges us to establish an "open consultative" process for revising and issuing any bulletins that are aimed at implementation of the new guidelines.<sup>113</sup> PageNet notes that the forthcoming bulletin is needed to clarify the new RF rules as issued in the Report and Order.<sup>114</sup> PCIA proposes that the revised Bulletin 65 be subject to public notice and comment procedures, arguing that this could highlight areas where guidance is needed by industry.<sup>115</sup>

102. Decision. It should be emphasized that the guidance provided in Bulletin 65 is not binding and cannot be construed as a substantive rule; rather the Bulletin merely provides information and interpretations that may be used in complying with our RF exposure

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<sup>112</sup> Ameritech Petition at 7.

<sup>113</sup> EEA Petition at 14.

<sup>114</sup> PageNet Petition at 3.

<sup>115</sup> PCIA Petition at 8-9.



guidelines. Other methods of determining compliance are acceptable so long as they are based on generally accepted scientific methods. In the introduction of the existing bulletin, we indicate that: 1) the bulletin is not designed to establish mandatory procedures; 2) the bulletin is meant to provide guidance and assistance in evaluating compliance; and 3) other methods and procedures for evaluating compliance may be acceptable if based on sound engineering practice.

103. In September, 1996, a draft of a revised Bulletin 65 was sent to approximately fifty outside reviewers for comment and suggestions. The reviewers included a broad spectrum of technical experts and representatives from government, industry and academia, and many of these individuals are affiliated with telecommunications entities regulated by the Commission. Many comments were received by late October. Our staff has reviewed these comments and incorporated many of them into the final bulletin. Any additional review would needlessly delay the release of this important document. Therefore, we will not grant requests made by PCIA and others for a more extensive period of public comment. We will, however, take under consideration the comments of PageNet and others regarding areas that need to be addressed in the bulletin. In addition, Bulletin 65 may be revised periodically based upon feedback and questions from industry and the public.

#### 8. Miscellaneous Clarifications and Corrections

104. Since issuing our Report and Order in this proceeding, we have identified a few corrections and clarifications that need to be made to rule sections that were amended. We are hereby making these changes (see Appendix A) to our rules as follows:

(1) Paragraph (b)(1) of 47 CFR § 1.1307 is modified to make it clear that both our MPE limits contained in 47 CFR § 1.1310 and our SAR limits contained in 47 CFR § 2.1093 generally apply, as appropriate, to all facilities, operations, and transmitters regulated by the Commission. The rule adopted in the Report and Order only made this specific statement with respect to MPE limits. This was an oversight, and a modification is being made here to prevent possible confusion.

(2) Table 1 in paragraph (b)(1) of 47 CFR § 1.1307 is modified to insert the words "ERP" that were inadvertently omitted from column 2 in the section of the table referencing evaluation criteria for Personal Communications Services in Part 24.

(3) We are amending our rules to make it clear that our categorical exclusions apply to transmitters mounted on the sides of buildings as well as those mounted on building roofs. Therefore, we are replacing the term "rooftop" with the term "building-mounted" in our rules for purposes of defining categorical exclusion. We believe that this change will remove possible confusion in the existing rules and will avoid potential situations where persons could be exposed to RF emissions in excess of our guidelines.

(4) Minor language changes have been made to the entry in Table 1 of Appendix A for Local Multipoint Distribution Service (LMDS) requirements (subpart L of part 101) to clearly reference the FCC adopted RF exposure limits in 47 CFR § 1.1310.

(5) Paragraph (b)(4) of 47 CFR § 1.1307 is modified to correct a typographical error.

(6) Paragraph (b) of 47 CFR § 2.1091, which applies to mobile devices, excluded devices intended to be used in "fixed locations." However, the term "fixed locations" was not defined. There was a possibility that some parties might incorrectly assume that certain consumer devices, such as wireless transmitters attached to a computer, are not covered by this paragraph. Accordingly, a definition for "fixed location" has now been added. Language has also been added to this paragraph, and to paragraph (b) of 47 CFR § 2.1093, to clarify our definitions of these devices and to make it clear that radiating "antenna" is intended to mean the "radiating structure" or structures of a mobile, unlicensed or portable device. We have also deleted the words "unlicensed devices" from the caption for Section 2.1091 to avoid confusion, since unlicensed devices can also be evaluated under 47 CFR § 2.1093, if they are classified as a "portable" device.

(7) A new paragraph (d)(4) is added to 47 CFR § 2.1091 to cover special cases where devices may not be easily classified as either mobile or portable. Examples would be modular or desktop transmitters. The wording in paragraph (d)(3) has also been modified to make it clear that warning labels and instructional materials may be used to attain compliance, if appropriate, for all devices covered by this rule part.

(8) Paragraph (d) of 47 CFR § 2.1093 is modified to reflect the fact that evaluation for RF exposure due to portable devices in terms of specific absorption rate (SAR) is only valid in the frequency range of 100 kHz to 6 GHz and that evaluation of portable devices above 6 GHz should be in terms of compliance with MPE limits for power density. It is further stipulated that measurements or calculations for compliance can be made at a minimum distance of 5 cm from the transmitting source.

(9) The Report and Order failed to amend 47 CFR § 26.51(d) and 47 CFR § 26.52 that deal with RF hazards in the General Wireless Communications Service (GWCS). These sections have been changed to conform to the new guidelines, and a category for GWCS transmitters has been added to Table 1 in Appendix A. In addition, 47 CFR § 2.1091 and 47 CFR § 2.1093 have been amended to require evaluation of GWCS portable devices and mobile devices operating above 3 watts EIRP. Exclusion levels for non-mobile and non-portable GWCS transmitters have been established as 1640 watts EIRP, in conformance with the exclusion threshold established for the Wireless Communications Service authorized under Part 27 of the Commission's rules. This threshold is based on calculations of reasonable distances from antennas where individuals might be expected to approach an antenna and where exposures would likely exceed the MPE limits.

Since all of the above changes to the rules involve minor or merely technical clarifying amendments, additional public notice and comment on these changes, beyond that given in the original Notice are unnecessary pursuant to Section 553(b)(3)(B) of the Administrative Procedure Act.<sup>116</sup>

#### 9. Petitions for Reconsideration of Transition Period Extension

105. The First Memorandum Opinion and Order (First MO&O) in this proceeding extended the transition period for implementing the FCC's policies and guidelines for RF compliance.<sup>117</sup> Additional petitions for reconsideration were submitted to the Commission in response to the First MO&O, in accordance with Section 1.429 of the Commission's rules [47 CFR § 1.429(i)].<sup>118</sup> For various reasons, these petitioners request that we reconsider our decision on extending the transition period.

106. The Ad-hoc Association opposes the extension and urges the Commission to implement the guidelines without further delay. The Ad-hoc Association claims that in extending the transition period the Commission: (1) did not consult with federal health and safety agencies to determine the public health consequences of such action; (2) did not consider the adverse health effects of its action on people who live, work or attend school in the vicinity of FCC-regulated transmitters; (3) did not adequately explain the reason why it did not concur with the Ad-hoc Association's earlier objections to extension; (4) did not consider new information now available on the health consequences of human exposure to low-level RF fields; (5) has effectively established a transition period with two sets of limits (since the Commission applied new guidelines to PCS facilities in 1994).<sup>119</sup> The Ad-hoc Association also maintains that other petitioners seeking an extension of the transition period have not established proof that implementation by the original date would be unreasonably burdensome, nor have they justified the necessity for awaiting publication of the Revised OET Bulletin 65 before implementing new guidelines.<sup>120</sup>

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<sup>116</sup> See 5 U.S.C. 553(b).

<sup>117</sup> First Memorandum Opinion and Order, ET Docket 93-62, adopted December 23, 1996, 11 FCC Rcd 17,512 (1997).

<sup>118</sup> Petitions for Partial Reconsideration were filed by Ameritech Mobile Communications, Inc. (Ameritech) and Northeast Louisiana Telephone Company, Inc. (Northeast). Petitions for Reconsideration were filed by the Ad-hoc Association of Parties Concerned About the Federal Communications Commission's Radiofrequency Health and Safety Rules (Ad-hoc Association) and the Cellular Phone Taskforce.

<sup>119</sup> Ad-hoc Association Petition at 2-15.

<sup>120</sup> Ad-hoc Association Petition at 18-21.

107. The Cellular Phone Taskforce also opposes our extension of the transition period, claiming that the extension will allow the proliferation of facilities that will harm and discriminate against individuals who are "electrosensitive."<sup>121</sup> The Cellular Phone Taskforce states that recent evidence and studies support its position, including evidence that "thousands of people" in New York City are suffering from "radiation sickness" as a result of PCS technology.

108. In their comments, Ameritech and AT& T Wireless disagree with the statements made by the Ad-hoc Association and the Cellular Phone Taskforce.<sup>122</sup> Ameritech and AT&T Wireless say that the Ad-hoc Association has underestimated the resources and effort needed to achieve compliance with the FCC's new RF guidelines and policies. AT&T Wireless argues further that nothing in the petitions of the Ad-hoc Association and the Cellular Phone Taskforce justifies a reversal of the Commission's decision and that rather than demonstrating that delaying the transition date would be harmful to public health the petitioners have simply repeated claims made in their previous petitions.<sup>123</sup> The Cellular Telephone Taskforce responds that this view is premature pending resolution of the issues raised in the original petitions.<sup>124</sup> The Taskforce also maintains that in opposing its petition, Ameritech has not addressed any of the concerns raised by the Taskforce regarding compliance with the new guidelines.<sup>125</sup>

109. Ameritech and Northeast request that the transition period be extended even further beyond the September 1, 1997, date specified in the First MO&O. Ameritech and Northeast urge the Commission to link the effective date of new guidelines to the release of the Commission's revised Bulletin 65, which will provide guidance on compliance for applicants and licensees. Specifically, they maintain that the new date should be one year after release of Bulletin 65 to give applicants and licensees ample time to accurately evaluate their compliance with the new policies and guidelines.<sup>126</sup> Ameritech and Northeast argue that given the many complex issues raised by the new guidelines and the petitions for reconsideration it may be several months before the revised Bulletin can be issued and, consequently, industry will not have adequate time to comply with the new rules. As an alternative, Ameritech and Northeast request that the Commission announce its intention to take a "flexible approach" in further extending the September 1, 1997, deadline or in granting requests for waivers of this deadline. Comments filed by AirTouch Communications, Inc.,

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<sup>121</sup> Cellular Phone Taskforce Petition at 1-3.

<sup>122</sup> Ameritech Comments at 1-4. AT& T Wireless Comments at 1-5.

<sup>123</sup> AT&T Wireless Comments at 3-4.

<sup>124</sup> Cellular Phone Taskforce Reply to AT&T Wireless at 1.

<sup>125</sup> Cellular Phone Taskforce Reply to comments of Ameritech at 1-2.

<sup>126</sup> Ameritech Petition at 1-4, Northeast Petition at 1-4.

and AT&T Wireless support the petitions of Ameritech and Northeast.<sup>127</sup> However, AirTouch suggests that if a one-year extension beyond release of Bulletin 65 is not possible, an eight-month extension would be reasonable.

110. Decision. In our First MO&O in this proceeding we stated that we have no evidence that extending the transition period would have a significant adverse effect on public health.<sup>128</sup> We re-state that conclusion. The new RF exposure guidelines are in certain respects more restrictive than those they replace, particularly with respect to exposure of the general public. However, with regard to most of the personal wireless facilities that are the subject of the petitions of the Ad-hoc Association and the Cellular Phone Taskforce, there is ample evidence that most of these facilities will result in levels of exposure of the general public that are many times lower than our new guidelines.

111. As previously discussed in this Order and in the original Report and Order in this proceeding, we have relied on the advice and comments of the federal health and safety agencies as to what levels of RF exposure are protective of the public health. The Commission does not have the expertise to make independent judgements on such alleged health effects as "electrosensitivity" or other reported effects on human health. This is the responsibility of the federal health and safety agencies and other qualified public health organizations. Therefore, we continue to consider our new guidelines appropriately protective of public health. There is no evidence to suggest that transmitters or facilities that comply with our guidelines will cause adverse health effects. Our guidelines adopt the most conservative aspects of the ANSI/IEEE and the NCRP recommended exposure criteria and have been recommended by all of the relevant health and safety agencies. Moreover, we do not agree with the Ad-hoc Association and the Cellular Phone Taskforce that even a minimal extension of the initial transition period should be denied. We agree with Ameritech, Northeast, Airtouch and AT&T Wireless that a further extension is necessary to allow applicants and licensees sufficient time to analyze the newly revised version of OET Bulletin 65.

112. For these reasons we will agree to a limited further extension of the transition period to October 15, 1997. Since this Order and the revised Bulletin 65 will be issued at the same time, this will allow sufficient time for applicants and licensees to review these documents. Copies of this Order and the revised Bulletin 65 will be immediately available on the Commission's World Wide Web page ([www.fcc.gov](http://www.fcc.gov)). We do not agree that there is a need for a period as long as eight months to one year beyond issuance of the final version of Bulletin 65. Ample time has already been given to applicants and licensees to begin considering compliance issues, and, as noted, a preliminary draft of Bulletin 65 was made

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<sup>127</sup> AirTouch Comments at 1-3. AT&T Wireless Comments at 1-5.

<sup>128</sup> See First MO&O at paragraph 8.

available to many outside reviewers several months ago. Therefore, the petitions of Ameritech and Northeast are partially granted.<sup>129</sup>

#### 10. Treatment of Existing Facilities, Operations and Devices

113. Under the rules adopted in the Report and Order in this proceeding, as modified by the First MO&O, all applications to the FCC for construction permits, license renewals and requests for station modifications filed after September 1, 1997 are subject to analysis under our new RF exposure guidelines, whereas existing sites are required to come into compliance only at the time of renewal or modification. In our Order today, we extend the initial transition period under Section 1.1307(b)(4) for implementing the new RF exposure guidelines to October 15, 1997, and clarify that all new facilities constructed after that date must comply with the new guidelines, regardless of whether an application is filed with the Commission. Licensees filing applications for new facilities, renewals or modifications are also required to bring their operations into compliance with the new guidelines. We also revise our rules to require existing sites to come into compliance as of a date certain.

114. We are revising our rules because we believe that the health and safety concerns that underlie the adoption of our new guidelines warrant reconsideration of the ways we have applied these requirements in the past. Previously, our rules have been triggered by applications for new facilities, modifications to existing facilities, or renewals of existing licenses. Although this approach is appropriate for most of the broad range of environmental issues our rules were designed to address, we believe that a different approach is warranted in matters of RF exposure. Because of potential public health and safety concerns, we adopted more conservative RF exposure guidelines based on the recommendations of the relevant federal health and safety agencies, and we will require all new facilities constructed after the effective date of this Order to comply with the new guidelines by a date certain.<sup>130</sup> We also believe this approach is consistent with Congressional intent underlying Section 704 of the Telecommunications Act of 1996, that the Commission's rules in this proceeding "contain adequate, appropriate and necessary levels of protection to the public."<sup>131</sup> We recognize that licensees require a reasonable amount of time to bring existing facilities into compliance due

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<sup>129</sup> Since we are taking this action the late petitions recently filed by Ameritech and PCIA requesting immediate deferral of the September 1, 1997, implementation date are moot and are denied. See "Emergency Request for Immediate Deferral of Transition Date," filed August 8, 1997, by the Personal Communications Industry Association, and "Request for Extension of Compliance Deadline," filed August 15, 1997, by Ameritech Mobile Communications, Inc.

<sup>130</sup> In the Notice of Proposed Rule Making in this docket we specifically asked for comment on "how best to treat equipment and facilities that are in use but do not comply with the new guidelines." See Notice of Proposed Rule Making, ET Docket 93-62, at para. 26.

<sup>131</sup> H. R. Rep. No. 204, 104th Cong., 1st Sess. 95 (1995).

to the variety of different site configurations and settings. Accordingly, we will require all existing facilities to be brought into compliance with the new rules no later than September 1, 2000. If a licensee believes that its facility cannot be brought into compliance, the licensee must file an Environmental Assessment by this date.<sup>132</sup>

### III. NOTICE OF PROPOSED RULEMAKING

#### A. Introduction

115. This proceeding was originally initiated by Commission staff to consider issues concerning Sections 332(c)(7)(B)(iv) - (v) of the Communications Act. However, while these issues were being studied, on March 19, 1997, the Personal Communications Industry Association (PCIA) sent a letter to the Wireless Telecommunications Bureau (WTB) requesting that the WTB initiate a proceeding to develop policy guidelines that clearly set forth under what circumstances state and local "testing and documentation requirements related to the environmental effects of radio frequency emissions become so onerous as to effectively constitute state regulation of these emissions."<sup>133</sup> PCIA asks that, inter alia, we: (1) clearly define what testing and reporting procedures states and localities may adopt in order to ensure compliance with federal RF regulations; (2) prohibit adducing evidence regarding the health effects of RF emissions at zoning board hearings absent an affirmative showing that the zoning applicant has failed to comply with federal standards; and (3) promulgate streamlined procedures for processing petitions that request preemption of state and local rules that attempt to regulate RF emissions in a manner inconsistent with federal standards.<sup>134</sup> On July 15, 1997, the Commission's Local and State Government Advisory Committee (LSGAC) submitted its Recommendation Number 5 concerning PCIA's letter.<sup>135</sup> LSGAC recommends that the Commission work with state and local governments and industry to recommend a mutually acceptable RF testing and documentation protocol that may be adopted by state and local governments. Because we are considering the issues raised by PCIA in this Notice, we will incorporate PCIA's letter and the LSGAC Letter into the record and consider both as comments in this proceeding.

116. CTIA first raised the issue of the preemption of state and local government regulations that bar or impede Commercial Mobile Radio Service (CMRS) providers from

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<sup>132</sup> See 47 CFR Section 1.1308(a).

<sup>133</sup> See Letter to Michele F. Farquhar, Chief and Rosalind Allen, Deputy Chief of Wireless Telecommunications Bureau from Jay Kitchen, President, Personal Communications Industry Association (March 19, 1997) (PCIA Letter).

<sup>134</sup> PCIA Letter at 2.

<sup>135</sup> See LSGAC's letter and attached Recommendation Number 5, filed July 15, 1997 (LSGAC Letter).

locating or constructing new towers in a petition filed in 1994 (CTIA '94 Petition).<sup>136</sup> However, the Conference Report accompanying the passage of the Telecommunications Act, stated that the Commission should terminate "[A]ny pending Commission rulemaking concerning the preemption of local zoning authority over the placement, construction or modification of CMS facilities . . . ."<sup>137</sup> In addition, now that a national wireless facilities siting policy has been incorporated into Section 332 of the Communications Act, many of the issues raised by CTIA are now moot. As such, we are dismissing the CTIA '94 Petition.

117. In this proceeding, we seek comment on proposed procedures for filing and reviewing requests filed pursuant to Section 332(c)(7)(B)(iv)-(v) of the Communications Act for relief from state or local regulations on the placement, construction or modification of personal wireless service facilities based either directly or indirectly on the environmental effects of RF emissions. As the siting of personal wireless facilities expands and numerous new personal wireless service providers seek to construct their facilities, we anticipate being called upon more frequently to review petitions alleging that a state or local government has acted or failed to act in a manner that is inconsistent with Section 332(c)(7)(B)(iv)-(v). Therefore, we believe it is appropriate to initiate a rulemaking proceeding to seek comment on the procedures we should adopt for reviewing Section 332(c)(7)(B)(iv)-(v) petitions.

118. In the Telecommunications Act of 1996 ("Telecommunications Act"),<sup>138</sup> Congress gave the Commission authority to grant relief from state or local regulations of personal wireless service facilities based on the environmental effects of RF emissions to the extent that the facilities in question comply with the Commission's rules regarding such emissions. While we have considered, in the Report and Order and Memorandum Opinion and Order in this proceeding, the more general questions of how to define the term "personal wireless services," with respect to consideration of requests for relief filed under Section 332(c)(7)(B)(iv) of the Communications Act,<sup>139</sup> and whether we have the authority to consider actions that are taken with respect to operating facilities, we have not previously considered whether to adopt formal procedures for reviewing such requests.<sup>140</sup> In order to most

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<sup>136</sup> See Cellular Telecommunications Industry Association's (CTIA) "Petition for Amendment of the Commission's Rules to Preempt State and Local Regulation of Commercial Mobile Radio Service (CMRS) Transmitting Facilities," RM-8577, filed December 22, 1994 (CTIA '94 Petition); see also Amendment of the Commission's Rules to Preempt State and Local Regulation of Tower Siting for Commercial Mobile Radio Service Providers, Cellular Telecommunications Industry Association's Petition for Rulemaking, RM-8577, Public Notice, Report No. 2052 (January 18, 1995).

<sup>137</sup> See 47 U.S.C. § 332(c)(7)(A); see also H. Rep. No. 104-458, 94th Cong. 2nd Sess. 207-208 (1996) (Conference Report).

<sup>138</sup> Pub. L. No. 104-104, 110 Stat. 56 (1996).

<sup>139</sup> 47 U.S.C. § 332(c)(7)(B)(iv).

<sup>140</sup> See Report and Order at ¶¶ 164-168; Memorandum Opinion and Order at ¶ 84.



effectively and efficiently implement the provisions of the Telecommunications Act regarding RF emissions and personal wireless service facilities siting, we believe that clear procedures must be developed that allow parties adversely affected by actions or regulations based on RF emissions to petition for relief and that also allow interested parties to participate in proceedings addressing such petitions. This Notice seeks comment on procedures to permit the rapid resolution of such requests, and proposes definitions for various terms relevant to such proceedings. With these proposals, we seek to balance the legitimate role of state and local authorities in zoning and land use matters with the statutory goal of promoting fair competition in the provision of personal wireless services without compromising public health or safety. We believe these proposals will allow personal wireless services to be deployed and delivered to consumers as rapidly as possible, while preserving the authority of state and local jurisdictions in land use matters and protecting the public health.

119. We stress that the procedures we propose herein shall be limited to those circumstances where a request for relief is filed concerning a specific state or local regulation, action or failure to act pursuant to Sections 332(c)(7)(B)(iv) - (v) of the Communications Act. These procedures will not apply to parties that file complaints with the Commission about the alleged effects of RF emissions from existing or modified wireless facilities for which no adverse state or local action has occurred or is pending or to parties that complain that an existing or modified wireless facility does not comply with our recently revised RF guidelines. Those parties, including state and local governments, must follow the established complaint procedures set forth in our rules.

## B. Background

### 1. Sections 332(c)(7)(B)(iv) - (v) of the Communications Act

120. Prior to passage of the Telecommunications Act, there was no specific statutory authority providing that the Commission had jurisdiction over issues concerning environmental effects of RF emissions. Issues concerning RF emissions were reviewed by the Commission on a case-by-case basis.<sup>141</sup> Without the specific statutory authority, the Commission declined to preempt such state and local regulations.<sup>142</sup> Prior to passage of the Telecommunications Act, some state and local governments expressed concerns about the environmental effects of RF emissions and appeared to be adopting ordinances that restricted

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<sup>141</sup> See Guidelines for Evaluating the Environmental Effects of Radio Frequency Radiation, ET Docket No. 93-62, Report and Order, 11 FCC Rcd 15123, ¶ 164 (1996) (citing National Association of Broadcasters 5 FCC Rcd 486 (1990)) (Report and Order); see also Responsibility of FCC to Consider Effects of RF, 100 FCC 2d 543, 557-558 (1985).

<sup>142</sup> See National Association of Broadcasters 5 FCC Rcd 486 (1990); see also Responsibility of FCC to Consider Effects of RF, 100 FCC 2d 543, 557-558 (1985).

the siting of wireless facilities based on such concerns.<sup>143</sup> For example, certain ordinances were adopted that expressly forbade the construction of all CMRS towers, imposed lengthy moratoria on the construction of facilities or restricted the construction of facilities in certain zones.<sup>144</sup>

121. With the passage of the Telecommunications Act, Congress amended the Communications Act of 1934 to add a new Section 332(c)(7),<sup>145</sup> which preserves the authority of state and local governments over zoning and land use matters regarding the placement, construction and modification of personal wireless service facilities.<sup>146</sup> This authority is limited, however, by Sections 332(c)(7)(B)(i), (ii) & (iii), which provide: (1) that state and local regulations concerning the siting of personal wireless facilities shall not unreasonably discriminate among providers of functionally equivalent services; (2) that such regulations shall not prohibit or have the effect of prohibiting the provision of personal wireless services; (3) that local decisions concerning the siting of personal wireless facilities be issued within a reasonable period of time; and (4) that such decisions be in writing and supported by substantial evidence contained in a written record.<sup>147</sup> Parties adversely affected by state or local regulations that do not comply with these provisions may seek relief in a court of competent jurisdiction.<sup>148</sup>

122. Section 332(c)(7)(B)(iv) of the Communications Act provides the Commission with the specific authority to provide relief from state and local regulations that are based on environmental effects of RF emissions to the extent that personal wireless service facilities comply with the Commission's RF emissions guidelines. This Section provides that:

No State or local government or instrumentality thereof may regulate the placement, construction, and modification of personal wireless service facilities on the basis of the environmental effects of radio frequency emissions to the

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<sup>143</sup> See the following comments filed in response to the CTIA '94 Petition: United States Cellular Corporation Comments at 5; Southwestern Bell Mobile Systems, Inc. Comments at 10-11; American Personal Communications Comments at 4; NYNEX Mobile Communications Company Comments, Attachment 2; McCaw Cellular Communications, Inc. Comments at 11-12, 13, 15; Century Cellnet, Inc. Reply Comments at 6-7; Bay Area Cellular Telephone Company Reply Comments at 2-3.

<sup>144</sup> Id.

<sup>145</sup> 47 U.S.C. § 332(c)(7).

<sup>146</sup> See Conference Report at 207-208. Section 332(c)(7)(C)(ii) of the Communications Act defines "personal wireless service facilities" as those "facilities for the provision of personal wireless services." 47 U.S.C. § 332(c)(7)(C)(ii). Personal wireless services are defined as "commercial mobile services, unlicensed wireless services, and common carrier wireless exchange access services." 47 U.S.C. § 332(c)(7)(C)(i).

<sup>147</sup> See 47 U.S.C. § 332(c)(7)(B)(i) - (iii).

<sup>148</sup> See 47 U.S.C. § 332(c)(7)(B)(v).

extent that such facilities comply with the Commission's regulations concerning such emissions.<sup>149</sup>

123. As stated in the Conference Report, Section 332(c)(7)(B)(iv) was adopted to prevent a state or local government or its instrumentalities from basing the regulation of the placement, construction, or modification of personal wireless service facilities directly or indirectly on the environmental effects of RF emissions if those facilities comply with the Commission's RF guidelines.<sup>150</sup> Pursuant to Section 332(c)(7)(B)(v) of the Communications Act, any person adversely affected by any such actions or failure to act may seek relief from a court of competent jurisdiction or from the Commission.<sup>151</sup>

## 2. Other Relevant Provisions

124. In addition to Sections 332(c)(7)(B)(iv) - (v) of the Communications Act, Congress has given the Commission the express preemption authority pursuant to other sections of the Communications Act. Following the enactment of these provisions, we have received several requests for preemption under these sections, including requests relating to wireless telecommunications deployment and competition. Some of these requests are currently pending before us.<sup>152</sup> The following paragraphs describe the various sections of the Communications Act concerning telecommunications preemption authority and our actions to resolve these important matters.<sup>153</sup>

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<sup>149</sup> 47 U.S.C. § 332(c)(7)(B)(iv).

<sup>150</sup> Conference Report at 208-209 (emphasis added).

<sup>151</sup> See 47 U.S.C. § 332(c)(7)(B)(v); see also Conference Report at 208.

<sup>152</sup> See, e.g., Pleading Cycle Established For Comments on Petitions for Preemption and Declaratory Ruling Regarding the Puerto Rico Telecommunications Act of 1996, Public Notice, DA 96-1960 (October 17, 1996); Commission Seeks Comment on Petition for Preemption and Motion for Declaratory Ruling Filed by Western PCS I Corporation, Public Notice, DA 96-1211 (released July 30, 1996), Supplemental Public Notice, DA 96-1862 (November 8, 1996); Commission Seeks Comment on Petition for Declaratory Ruling Filed by Pittencrief Communications, Inc., Public Notice, File No. WTB/POL 96-2 (July 18, 1996); Commission Seeks Comment on Alaska-3 Cellular LLC's Motion For Declaratory Ruling, Public Notice, File No. WTB/POL 95-2 (November 1, 1995); US West Files a Petition for Declaratory Ruling, Public Notice (September 21, 1995), Supplemental Public Notice, DA 96-1641 (September 30, 1996); Commission Seeks Comment on Petition for Declaratory Ruling of the Cellular Telecommunications Industry Association, Public Notice, DA 96-2140 (December 18, 1996).

<sup>153</sup> We note that Section 207 of the Telecommunications Act also mandated that the Commission adopt regulations to prohibit restrictions that impair a viewer's ability to receive video programming services through devices designed for over-the-air reception of television broadcast signals, multichannel multipoint distribution service, or direct broadcast satellite service. See Preemption of Local Zoning Regulation of Satellite Earth Stations, IB Docket No. 95-59, Report and Order and Notice of Proposed Rulemaking 11 FCC Rcd 5809 (1996).

125. Section 332(c)(3)(A). As part of the Omnibus Budget Reconciliation Act of 1993,<sup>154</sup> Congress created new Section 332(c)(3)(A) of the Communications Act, which provides:

no State or local government shall have any authority to regulate the entry of or the rates charged by any commercial mobile service or any private mobile service, except that this paragraph shall not prohibit a State from regulating the other terms and conditions of commercial mobile services.<sup>155</sup>

126. Following the enactment of Section 332(c)(3) of the Communications Act, several states petitioned the Commission seeking to be allowed to continue to regulate CMRS providers' rates and these petitions were denied.<sup>156</sup>

127. Section 253. Section 253(a) of the Communications Act provides that:

No State or local statute or regulation, or other State or local legal requirement, may prohibit or have the effect of prohibiting the ability of any entity to provide any interstate or intrastate telecommunications service.<sup>157</sup>

Section 253(d) further provides that if, after notice and opportunity for public comment, the Commission determines that a state or local government has permitted or imposed any such statute or regulation, it shall preempt the enforcement of such statute or regulation to the extent necessary to correct such violation or inconsistency.<sup>158</sup> However, pursuant to Sections 253(b) and (c), state and local governments are free to continue to impose requirements necessary to preserve and advance universal service, protect the public safety and welfare, ensure the continued quality of telecommunications services, and safeguard the rights of consumers. In addition, under Section 253(c), state and local governments may continue to manage the public rights-of-way or require fair and reasonable compensation from telecommunications providers -- on a competitively neutral and nondiscriminatory basis -- for use of public rights-of-way, if the compensation required is publicly disclosed by such

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<sup>154</sup> Pub. L. No. 103-66, 107 Stat. 312 (1993).

<sup>155</sup> 47 U.S.C. § 332(c)(3)(A)(emphasis added).

<sup>156</sup> See, e.g., Connecticut Department of Public Utility Control to Retain Regulatory Control of the Rates of Wholesale Cellular Service Providers in the State of Connecticut 10 FCC Rcd 7025 (1995); affirmed, Connecticut Department of Public Utility Control v FCC, 78 F. 3d 842 (2nd Cir. 1996); In re Petition of New York State Public Service Commission to Extend Rate Regulation 10 FCC Rcd 8187 (1995).

<sup>157</sup> 47 U.S.C. § 253(a).

<sup>158</sup> See 47 U.S.C. § 253(d).

government.<sup>159</sup> A number of requests for preemption pursuant to Section 253 of the Communications Act are pending before the Commission,<sup>160</sup> and the Commission has acted on two cases involving wireline telephone providers.<sup>161</sup>

128. Section 332(c)(7)(B). As noted above, Section 332(c)(7)(B)(i) of the Communications Act provides a method for adversely affected parties to seek relief from a court of competent jurisdiction if a state or local regulation concerning the siting of personal wireless facilities unreasonably discriminates among providers of functionally equivalent services; or has the effect of prohibiting the provision of personal wireless services.<sup>162</sup> In addition, state and local governments are required to "act on any request for authorization to place, construct, or modify personal wireless service facilities within a reasonable period of time after the request is duly filed . . . taking into account the nature and scope of such request."<sup>163</sup> Decisions issued by state and local governments that "deny a request to place, construct, or modify personal wireless service facilities, shall be in writing and supported by substantial evidence contained in a written record."<sup>164</sup>

129. Several parties have availed themselves of this remedy. In *BellSouth Mobility, Inc., v. Gwinnett County*,<sup>165</sup> a federal district court found that a local board of commissioners' decision denying an "application for tall structure" to construct a cellular communications monopole was not supported by substantial evidence as required by Section 332(c)(7)(B)(ii) of the Communications Act. The Court stated that it "could not conscientiously find that the evidence supporting the board's decision to deny plaintiffs a tall structure permit is substantial. On the contrary, the court finds that the record evidence supports plaintiff's application."<sup>166</sup>

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<sup>159</sup> See 47 U.S.C. § 253(b) & (c).

<sup>160</sup> See *supra*, footnote 152.

<sup>161</sup> See *Classic Telephone, Inc.*, Memorandum Opinion and Order, FCC 96-397 (released October 1, 1996), review pending in *City of Bogue et al. v. FCC*, Case No. 96-1498, D.C. Cir., filed Nov. 25, 1996; see also *Classic Telephone, Inc. Petition for Preemption, Declaratory Ruling and Injunctive Relief*, CCBPol 96-10 (filed Dec. 13, 1996); *New England Public Communications Council Petition for Preemption Pursuant to Section 253*, Memorandum Opinion and Order, FCC 96-470 (released December 10, 1996); *AB Fillins*, Memorandum Opinion and Order, FCC 97-238 (released August 1, 1997).

<sup>162</sup> 47 U.S.C. § 332(c)(7)(B)(i).

<sup>163</sup> 47 U.S.C. § 332(c)(7)(B)(ii).

<sup>164</sup> 47 U.S.C. § 332(c)(7)(B)(iii).

<sup>165</sup> *BellSouth Mobility, Inc., v. Gwinnett County* 944 F. Supp. 923 (N.D. Ga. 1996).

<sup>166</sup> *Id.* at 928.

Accordingly, the Court found in favor of the cellular providers and ordered the local board to grant the application for tall structure.<sup>167</sup>

130. In *Sprint Spectrum, L.P. v. City of Medina*,<sup>168</sup> a federal district court found that a city's six month moratorium on the issuance of new special use permits for wireless communications facilities did not violate the Telecommunications Act. The plaintiff argued that the moratorium violated Section 332(c)(7)(B)(i)(II), which prohibits regulations that prohibit or have the effect of prohibiting the provision of personal wireless services.<sup>169</sup> The Court disagreed, finding that the moratorium was not a prohibition on wireless facilities, nor did it have a prohibitory effect. Rather, it is a short-term suspension of permitting while the City gathered information and processed applications.<sup>170</sup> The plaintiffs also argued that the moratorium violated Section 332(c)(7)(B)(ii) which requires that applications be processed within a reasonable period of time.<sup>171</sup> However, the Court found that there was nothing in the legislative history of the Telecommunications Act to suggest that "Congress, by requiring action 'within a reasonable period of time,' intended to force local government procedures onto a rigid timetable where the circumstances call for study, deliberation, and decision-making among competing applicants."<sup>172</sup> The Court also disagreed with the plaintiff's contention that the moratorium violated Section 332(c)(7)(B)(i)(I) in that it discriminated among providers of functionally equivalent services.<sup>173</sup> The Court found that no discrimination was shown and that the plaintiff was seeking to enter the locality more than ten years after other wireless providers began business there.<sup>174</sup>

131. Letter Rulings. Since the enactment of 332(c)(7)(B) of the Telecommunications Act, the Chairman and the Wireless Telecommunications Bureau have issued letter rulings interpreting these new provisions. On March 15, 1996, Chairman Hundt released a letter responding to a letter inquiry from the Mayor of the City of San Diego, California, requesting the Commission's opinion on: (1) whether the emissions of a certain PCS provider using GSM technology comply with the Commission's regulations concerning RF emissions; (2) whether the provisions of Section 332(c)(7)(B)(iv) apply to modulation interference as well as

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<sup>167</sup> Id. at 929.

<sup>168</sup> *Sprint Spectrum, L.P. v. City of Medina*, 924 F. Supp. 1036 (W.D. Wa. 1996).

<sup>169</sup> Id. at 1039-40.

<sup>170</sup> Id. at 1040.

<sup>171</sup> Id.

<sup>172</sup> Id.

<sup>173</sup> Id.

<sup>174</sup> Id.

radio interference; (3) to what extent has Congress preempted the City of San Diego from regulating the siting of wireless facilities on the basis of alleged interference to hearing aids, electric wheelchairs, pacemakers, automobile brakes and airbags and other devices; and (4) whether federal agencies have sole jurisdiction to regulate wireless technologies with respect to RF interference, modulation interference and low frequency electromagnetic field interference resulting from type-accepted equipment.<sup>175</sup> In his letter, the Chairman advised that: (1) the Commission does consider "modulation" part of the "emission" over which it has authority; (2) Section 332(c)(7)(B)(iv) of the Communications Act expressly preempts local government actions concerning the siting of wireless facilities that are based on the environmental effects of RF emissions if such facilities are in compliance with the Commission's RF guidelines; and (3) the Communications Act<sup>176</sup> provides the Commission with exclusive jurisdiction over RF interference but that, without the development of a formal record, it could not be decided definitively whether the Commission would distinguish between the terms "modulation interference" and/or "low frequency electromagnetic field interference."<sup>177</sup>

132. On June 14, 1996, the Wireless Telecommunications Bureau (WTB) released a letter concerning a resolution passed by the City Council of the City of Bedford, Texas, establishing a moratorium of approximately three months on the issuance of building permits for wireless facility siting.<sup>178</sup> The resolution clearly stated that the sole basis for enacting the moratoria was the city's concerns about the possible health risks associated with wireless facility siting.<sup>179</sup> In its letter, the WTB stated that such a moratorium is inconsistent with Section 332(c)(7)(B)(iv) of the Communications Act, since it is based solely on the environmental effects of RF, and would ban facilities that comply with the Commission's RF regulations.<sup>180</sup>

133. On January 17, 1997, the WTB released a letter responding to a letter inquiry from CTIA requesting the WTB's opinion as to whether certain factual scenarios would be consistent with the provisions of Sections 253 and 332(c)(7)(B)(iv) of the Communications

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<sup>175</sup> See Letter of Reed E. Hundt, Chairman of the FCC, to Honorable Susan Golding, Mayor of the City of San Diego, California, March 15, 1996 (Hundt Letter).

<sup>176</sup> 47 U.S.C. §§ 152(a), 301, 302(a), 303(f).

<sup>177</sup> See Hundt Letter at pp. 5-6.

<sup>178</sup> See Letter of Michele C. Farquhar, Chief, Wireless Telecommunications Bureau, to the Honorable Richard Hurt, Mayor of Bedford, Texas, released June 14, 1996.

<sup>179</sup> *Id.*

<sup>180</sup> *Id.*

Act.<sup>181</sup> In its letter, the WTB found, inter alia, that state governments are not prevented from studying the effects of RF emissions but that siting decisions that are based upon the effects of RF emissions may be inconsistent with Section 332(c)(7)(B)(iv).<sup>182</sup> In addition, the WTB found that a hypothetical local zoning decision that appeared from the record to be based upon concerns over RF emissions may be inconsistent with Section 332(c)(7)(B)(iv) even if the local zoning board did not specifically say so in its decision.<sup>183</sup>

134. Chairman's Letters Concerning Moratoria. In addition, on February 20, 1997, the Chairman sent letters to 33 localities to confirm whether the localities had adopted moratoria on the siting of wireless facilities and seeking additional information about the moratoria. To date, at least 26 localities that have responded. Several of the localities to which these letters were sent have since enacted facilities siting ordinances and terminated their moratoria. A few of the localities stated that they never had moratoria in place. Some of the localities still have moratoria in effect, but state that they are working hard to complete appropriate ordinances, and in many instances state that they hope to finish the task before the scheduled termination of the moratorium. A few of the respondents objected to the Commission's interference in their local affairs.

## C. Discussion

### 1. Definitional Issues

135. On August 1, 1996, we issued our Report and Order in ET Docket No. 93-62, wherein we revised our RF emissions guidelines in response to Congress' mandate in Section 704(b) of the Telecommunications Act. In the Report and Order, we first considered the implementation of Section 332(c)(7)(B)(iv) when we sought to determine the definition of the term "personal wireless service facilities."<sup>184</sup> Congress specifically defined this term in Section 332(c)(7)(C)(i) of the Communications Act to mean: "commercial mobile services, unlicensed wireless services, and common carrier wireless exchange access services."<sup>185</sup> This Section does not provide specific authority for the Commission to preempt state or local regulations relating to RF emissions of communications services other than those specifically

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<sup>181</sup> See Letter to Thomas E. Wheeler, President and CEO, Cellular Telecommunications Industry Association, from Michele C. Farquhar, Chief, Wireless Telecommunications Bureau, released January 17, 1997 (CTIA Letter).

<sup>182</sup> Id. at 2.

<sup>183</sup> Id. at 4.

<sup>184</sup> See Report and Order at ¶¶ 164-168.

<sup>185</sup> 47 U.S.C. § 332(c)(7)(C)(i).



defined in the statute.<sup>186</sup> Therefore, we declined to consider the preemption of state and local regulations relating to RF emissions involving broadcast or other communications facilities.<sup>187</sup>

136. The Electromagnetic Energy Association filed a petition for reconsideration of our Report and Order requesting that a broader RF preemption policy be adopted for all services. The preceding MO&O declined to take that approach or to consider granting relief from state and local regulations relating to RF emissions for facilities other than those of "personal wireless services" as set forth in Section 332(c)(7)(B)(iv) of the Communications Act.<sup>188</sup> Congress provided a clear definition of this term in Section 332(c)(7)(C)(i) of the Communications Act, and we find that definition is appropriate when determining whether to consider a request for relief filed under Section 332(c)(7)(B)(v) of the Communications Act.

137. As a preliminary matter, before considering procedures to review requests for relief under Section 332(c)(7)(B)(v) of the Communications Act, we seek comment concerning the definition of certain terms contained in this Section. For example, Congress did not define the terms "final action" or "failure to act" as they appear in Section 332(c)(7)(B)(v) of the Communications Act. In the Conference Report, however, "final action" is defined as final administrative action at the state or local government level so that a party can commence action under Section 332(c)(7)(B)(v) rather than waiting for the exhaustion of any independent remedy otherwise required.<sup>189</sup> We understand this to mean that, for example, a wireless provider could seek relief from the Commission from an adverse action of a local zoning board or commission while its independent appeal of that denial is pending before a local zoning board of appeals. We propose to adopt this definition of "final action" for the purpose of determining whether a state or local regulation is ripe for review under Section 332(c)(7)(B)(v) and we seek comment on this definition.

138. In addition, while Congress provided no specific definition of the term "failure to act," under Section 332(c)(7)(B)(ii) of the Communications Act, decisions regarding personal wireless service facilities siting are to be rendered in a reasonable period of time, taking into account the nature and scope of each request.<sup>190</sup> If a request for placement of a personal wireless service facility involves a zoning variance or a public hearing or comment process, the Conference Report states that the time period for rendering a decision will be the

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<sup>186</sup> Id. at ¶ 167.

<sup>187</sup> See Report and Order at ¶ 168.

<sup>188</sup> See *supra* at ¶ 88.

<sup>189</sup> See Conference Report at 209.

<sup>190</sup> See 47 U.S.C. § 332(c)(7)(B)(ii).

usual period under such circumstances.<sup>191</sup> Congress also stated that it did not intend to confer preferential treatment upon the personal wireless service industry in the processing of requests, or to subject that industry's requests to anything but the generally applicable time frames for zoning decisions.<sup>192</sup> Therefore, we propose to determine whether a state or local government has "failed to act" on a case-by-case basis taking into account various factors including how state and local governments typically process other facility siting requests and other RF-related actions by these governments. We seek comment on the average length of time it takes to issue various types of siting permits, such as building permits, special or conditional use permits, and zoning variances and whether additional time is needed when such permits are subject to a formal hearing.

139. Furthermore, we seek comment on whether the Commission should grant relief from a final action or failure to act based only partially on the environmental effects of RF emissions. We believe that state and local regulations do not have to be based entirely on the environmental effects of RF emissions in order for decisions to be reviewed by the Commission. The Conference Report stated that, in order to be reviewed pursuant to Section 337(c)(7)(B)(v) of the Communications Act, such regulations may be based either directly or indirectly on the environmental effects of RF emissions.<sup>193</sup> However, the Conference Report did not define the term "indirectly." We seek comment as to how we should define this term. We propose to examine such determinations on a case-by-case basis and to preempt, where applicable, only that portion of an action or failure to act that is based on RF emissions and to permit the adversely-affected party to seek relief from the remainder of the state or local regulation for which the Commission does not have authority to grant relief from the appropriate federal or state court. We may act in an advisory capacity in those areas where the Commission does not have specific preemption authority and provide the court with our expert opinion, as requested by the court or parties.

140. We tentatively conclude that we have the authority to review state and local regulations that appear to be based upon RF concerns but for which no formal justification is provided. For example, in response to the CTIA Letter, the WTB considered a hypothetical case where a county denied a wireless provider's application for a conditional use permit.<sup>194</sup> A significant portion of the record in the hypothetical local proceeding centered on the environmental effects of RF emissions.<sup>195</sup> Although the local government entity did not refer to these concerns in its decision denying the permit, it did reference community opposition

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<sup>191</sup> Conference Report at 208.

<sup>192</sup> Id.

<sup>193</sup> Id. at 208 (emphasis added).

<sup>194</sup> See CTIA Letter at 3.

<sup>195</sup> Id.

which was largely based upon these concerns.<sup>196</sup> The WTB advised that, under the circumstances, the decision's citation to community opposition as a ground for denial suggested that the decision may, in fact, have been based on environmental concerns.<sup>197</sup> To the extent that the evidence in such a hypothetical case established that the decision was based either directly or indirectly on such impermissible considerations and the evidence did not establish non-compliance with the Commission's regulations, the WTB believed that the decision would apparently be inconsistent with Section 332(c)(7)(B)(iv).<sup>198</sup> In addition, we note that, pursuant to Section 332(c)(7)(B)(iii) of the Communications Act, state and local decisions concerning the siting of personal wireless facilities are to be in writing and supported by substantial evidence contained in a written record.<sup>199</sup> Therefore, we seek comment on our tentative conclusion to grant relief to licensees or personal wireless service facilities from state and local regulations of personal wireless facilities based upon concerns of the environmental effects of RF emissions even if there is no formal justification provided for the decision if there is evidence to support the conclusion that concerns over RF emissions constituted the basis for the regulation.

141. Finally, we seek comment on whether our authority under Section 332(c)(7)(B)(v) to preempt state and local actions that are based on concerns over RF emissions extends to private entities' efforts to limit the placement, construction, and modification of personal wireless service facilities. We recognize that wireless providers, especially new services such as the "wireless local loop," may encounter restrictions by non-governmental entities, such as homeowner associations and private land covenants, that could prove to be an impediment to their ability to deploy their services. We seek to determine whether such entities would fall under the definition of "state or local government or any instrumentality thereof" as that term is used in Section 332(c)(7)(B)(v) of the Communications Act and whether decisions by private entities should be subject to Commission review.

## 2. Demonstration of RF Compliance

142. Section 332(c)(7)(B)(iv) of the Communications Act states that "[n]o state or local government or instrumentality thereof may regulate the placement, construction, and modification of personal wireless service facilities on the basis of the environmental effects of radio frequency emissions to the extent that such facilities comply with the Commission's regulations concerning such emissions."<sup>200</sup> Neither the text of the Act nor the legislative

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<sup>196</sup> Id.

<sup>197</sup> Id.

<sup>198</sup> Id at 3-4.

<sup>199</sup> See 47 U.S.C. § 332(c)(7)(B)(iii).

<sup>200</sup> 47 U.S.C. § 332(c)(7)(B)(iv) (emphasis added).

history indicates to what extent localities are permitted to request that personal wireless service providers demonstrate compliance with our RF guidelines. LSGAC argues that Act preserves the authority of state and local governments to ensure that personal wireless service facilities comply with the Commission's RF emission regulations.<sup>201</sup> We recognize that it is reasonable for state and local governments to inquire as to whether a specific personal wireless service facility will comply with our RF emissions guidelines. LSGAC contends that local officials must be able to assure their constituents that compliance with the Commission's RF regulations will be monitored.<sup>202</sup> LSGAC recommends that the Commission adopt a mutually acceptable RF testing and documentation mechanism that providers and local authorities may use to demonstrate compliance with RF radiation limits.<sup>203</sup> We tentatively agree with LSGAC's recommendation, however, we believe that there should be some limit as to the type of information that a state or local authority may seek from a personal wireless service provider. The type of information may vary depending upon how the personal wireless service facility is classified under our environmental rules. Under the procedural guidelines adopted in the Report and Order and modified in the MO&O in this proceeding, proposed wireless facilities may be considered either: (1) environmental actions requiring the submission of an Environmental Assessment (EA); (2) actions that do not require such an assessment but nevertheless require routine RF emissions evaluation by the Commission; or (3) actions that are categorically excluded from routine RF emissions evaluation based upon their height above ground level or their low operating power. Facilities that are categorically excluded must comply with the substantive RF emissions guidelines; however, because they are extremely unlikely to cause routine exposure that exceeds the guidelines, applicants for such facilities are not required to perform any emissions evaluation as a condition of license, unless specifically ordered to do so by the Commission. Given these environmental classifications, we seek comment on two alternative showings that would be permissible for local and state governments to request personal wireless providers submit as part of the local approval process.

143. Under the first alternative, we propose a more limited showing. For personal wireless service facilities that were categorically excluded from routine Commission evaluation, state and local authorities would only be allowed to request that the personal wireless provider certify in writing that its proposed facility will comply with the Commission's RF emissions guidelines. In the case of facilities that were not categorically excluded, state or local authorities would be limited to requesting copies of any and all documents related to RF emissions submitted to the Commission as part of the licensing process. We seek comment on this limited showing and how a state or local authority would be able to seek relief from a licensee that falsely certifies its facility complies or will comply with our RF emissions guidelines.

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<sup>201</sup> See LSGAC Letter at 1.

<sup>202</sup> Id.

<sup>203</sup> Id. at 2.

144. Alternatively, we ask for comment on whether to adopt a more detailed showing. We believe, however, that this alternative can be workable only if we adopt uniform standards for such a demonstration that would be regarded as sufficient by all state and local governments for demonstrating compliance with the RF guidelines. We propose, once again, for facilities that were not categorically excluded, that state or local authorities would be limited to requesting copies of any and all documents related to RF emissions submitted to the Commission as part of the licensing process. For facilities that were categorically excluded, we propose that the state and local governments be permitted to request that the personal wireless service provider submit a demonstration of compliance. We ask for comments on the criteria for such a demonstration of compliance. We seek to develop a showing that would impose a minimal burden on service providers, while satisfying legitimate state and local government interests. In addition, we seek to determine which party should be required to pay for the preparation of the demonstration of compliance. LSGAC contends that local taxpayers should not bear the costs of investigations taken by state and local governments to determine compliance with the Commission's RF regulations.<sup>204</sup>

145. While this proceeding is pending, we believe that it would be beneficial to personal wireless service providers and state and local governments for us to provide some policy guidance as to what information we believe a carrier should be obligated to provide to demonstrate to localities that its "facilities comply with the Commission's regulations concerning such (RF) emissions" as stated in Section 332(c)(7)(B)(iv) of the Communications Act. We therefore are providing a non-binding policy statement as to the circumstances in which we would be less likely to find such information requests to be inconsistent with Section 332(c)(7)(B)(iv). We believe that such a statement will provide much needed guidance to state and local governments on the issue of RF compliance and would greatly expedite the siting of personal wireless service facilities pending our adoption of final rules herein. We are concerned that state and local governments may delay the siting of facilities based upon concerns about the effects of RF emissions and a carrier's compliance with our RF guidelines. As the record in the RF emissions proceeding indicated, several states have been adopting their own RF regulations in an effort to resolve these concerns.<sup>205</sup> As a result of such actions, wireless facilities that otherwise comply with federal RF emissions guidelines are experiencing delays as state and local officials search for methods to assess such compliance. Conversely, personal wireless service providers cite to our RF rules and conclude that they should not be required to submit any information about RF compliance as part of the local approval process. Therefore, we believe that providing guidance as to the types of RF information a state or local government may request will provide both sides a much-needed measure of certainty because state and local governments would know certain types of RF information they could request in this interim period without concern that their actions would be subsequently preempted by the Commission. Similarly, personal wireless

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<sup>204</sup> See LSGAC Letter at 2.

<sup>205</sup> See Ameritech Mobile Communications, Inc.'s Reply in ET Docket No. 93-62, October 23, 1996, as well as David Fichtenberg's Opposition, October 8, 1996.

service providers would understand what we believe is reasonable for state and local governments to request.

146. We believe that, pending adoption of final rules, we would not preempt state and local government requests that personal wireless service providers submit, as part of their application to place, construct, or modify a personal wireless service facility, the more detailed demonstration of RF compliance set forth in our second alternative above. However, at the present time, we believe that this level of information should be the most that a state or local government should be permitted to request and we would be likely to find that information requests that exceed this level are inconsistent with Section 332(c)(7)(B)(iv) of the Communications Act. The type of demonstration that could be requested by the state or local government would depend on how the facility was classified under the Commission's environmental categories. For those facilities that are not categorically excluded from routine environmental processing, as set forth in Section 1.1306 of the rules, we would be less likely to preempt state or local authorities that simply request copies of all environmental documents, such as the Environmental Assessment or evaluation, that were submitted to the Commission as part of the licensing process. For those facilities that were categorically excluded, we would be less likely to preempt state and local authorities that simply request that the personal wireless service provider submit a uniform demonstration of compliance with the Commission's RF guidelines. We believe that a uniform demonstration of compliance should consist of a written statement signed by the personal wireless service provider or its representative and should conform to our rules on truthfulness of written statements, subscription and verification.<sup>206</sup> We believe that the following information should also be contained in the uniform demonstration of RF compliance to be filed for facilities that were categorically excluded:

(1) A statement that the proposed or existing transmitting facility does or will comply with FCC radio frequency emission guidelines for both general population/uncontrolled exposures and occupational/controlled exposures as defined in the rules.

(2) A statement or explanation as to how the personal wireless service provider determined that the transmitting facility will comply, e.g., by calculational methods, by computer simulations, by actual field measurements, etc. Actual values for predicted exposure should be provided to further support the statement. An exhaustive record of all possible exposure locations is not necessary, but, for example, the "worst case" exposure value in an accessible area could be mentioned as showing that no exposures would ever be greater than that level. Reference should be given to the actual FCC exposure limit or limits relevant for the particular transmitting site.

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<sup>206</sup> See 47 C.F.R. §§ 1.17 and 1.52.

(3) An explanation as to what, if any, restrictions on access to certain areas will be maintained to ensure compliance with the public or occupational exposure limits. This includes control procedures that are established for workers who may be exposed as a result of maintenance or other tasks related to their jobs.

(4) A statement as to whether other significant transmitting sources are located at or near the transmitting site, and, if required by the rules, whether their RF emissions were considered in determining compliance at the transmitting site.

147. We stress that the above-outlined policies concerning the demonstration of RF compliance are non-binding and are merely provided as guidance pending the final outcome of this proceeding. Should a state or local government request that a personal wireless service provider submit RF information that is consistent with our above-outlined policies, we would be less likely to find its action to be inconsistent with Section 332(c)(7)(B)(iv) of the Communications Act. However, we stress that we will continue to evaluate each request for relief that is filed concerning state and local RF regulations and we will determine, on a case-by-case basis, whether such regulations are consistent with Section 332(c)(7)(B)(iv).

148. In addition, we seek comment as to whether the more detailed showing that we proposed as one of the two alternatives above should include the above outlined criteria. We believe that the criteria set forth above should provide sufficient information to constitute the more detailed showing of RF compliance while imposing a minimum burden on personal wireless service providers. We seek to determine whether additional information, not currently included above, is necessary to demonstrate compliance or whether any of the above-outlined elements are too broad or unnecessary.

### 3. General Procedures for Reviewing Requests for Relief

149. We seek comment on the following proposed procedures for reviewing requests for relief filed under Section 332(c)(7)(B)(v) of the Communications Act. We propose that parties seeking relief file a request for declaratory ruling pursuant to Section 1.2 of the Commission's Rules, asking that the Commission review the state or local regulation and grant appropriate relief.<sup>207</sup> Sections 1.45 through 1.49 of the Commission's Rules, concerning the filing of pleadings and responsive pleadings, shall be applicable with respect to such

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<sup>207</sup> See 47 C.F.R. § 1.2.

requests.<sup>208</sup> We propose that a copy of the request be served on the state or local authority that took the action or failed to take the action against which relief is sought.<sup>209</sup>

150. We also seek comment on the following method for providing comment on such requests. We seek comment on whether we should limit participation in the proceeding to only those interested parties able to demonstrate standing to participate in the proceeding. Section 332(c)(7)(B)(v) of the Communications Act states that requests for relief may be filed by any "person adversely affected."<sup>210</sup> We seek comment on the definition of "person adversely affected." and how we should determine whether an entity has standing to participate in the preemption proceeding. We find that limiting the number of parties participating in the proceeding to only those that are "adversely affected" will reduce the possibility of frivolous filings, and expedite the processing of preemption requests. We seek comment on this proposed procedure.

#### 4. Rebuttable Presumption of Compliance

151. We tentatively conclude that we should adopt a rebuttable presumption that would operate when reviewing requests for relief from state and local actions under Section 332(c)(7)(B)(v). Under such a procedure, we would presume that personal wireless facilities will comply with our RF emissions guidelines. The state or local government would have the burden of overcoming this presumption by demonstrating that the facility in question does not or will not, in fact, comply with our RF guidelines.<sup>211</sup> We believe that such a presumption would be consistent with Commission practice. Generally, we presume that licensees are in compliance with our rules unless presented with evidence to the contrary.<sup>212</sup> In addition,

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<sup>208</sup> See 47 C.F.R. §§ 1.45 - 1.49.

<sup>209</sup> See Section 1.47 of the Commission's Rules concerning service of documents and proof of service. 47 C.F.R. § 1.47.

<sup>210</sup> 47 U.S.C. § 332(c)(7)(B)(v).

<sup>211</sup> The Commission's RF guidelines and procedures are set forth in Sections 1.1307 of the rules. 47 C.F.R. § 1.1307.

<sup>212</sup> See Improvement of the Quality of AM Broadcast Service, MM Docket No. 88-376, First Report and Order, 4 FCC Rcd 3835 (1989) (AM Improvement First Report and Order) (AM licensees are presumed to be in compliance with emission limits); Fairness Doctrine Obligations of Broadcast Licensees, Gen. Docket No. 84-292, Report, 102 FCC 2d 142 (1985) (broadcast licensees are presumed to be in compliance with requirements of the Fairness Doctrine); Instructional Television Fixed Service, MM Docket No. 83-253, Second Report and Order, 101 FCC 2d 49 (1985) (ITFS licensees presumed to be held responsible for compliance with all Commission rules); Revision of Programming and Commercial Policies for Commercial Television Service, MM Docket No. 83-670, Report and Order, 98 FCC 2d 1075 (1984) (broadcast licensees are presumed at the time of an uncontested license renewal to have complied with the requirement that they address community issues and provide responsive programming).



applicants for personal wireless services must certify in their applications that they will comply with all of the Commission's rules, including the RF guidelines. With respect to providers of "unlicensed wireless services," we tentatively conclude that it would be consistent with Commission practice to presume that they are in compliance with our RF guidelines because such providers must employ type-accepted equipment that complies with our RF guidelines.<sup>213</sup> Therefore, we seek comment on whether we should presume that personal wireless facilities are in compliance with our RF guidelines, and whether we should grant relief from state or local actions that prevent the construction of such facilities when such actions are based on RF concerns. We remain sensitive, of course, to the concerns of state and local governments and we encourage state and local governments to submit comments explaining how such a presumption might affect them. We encourage state and local governments, including LSGAC, to file comments on the NPRM. We specifically request comment in the interest of minimizing any potential adverse affect the establishment of a rebuttable presumption may have on state and local authorities' ability to ensure the health and safety of their citizens.

152. We have utilized a rebuttable presumption in other contexts similar to this one. In our proceeding concerning preemption of local zoning regulation of satellite earth stations, we adopted a rebuttal presumption that state and local regulation of small antennas is presumed unreasonable.<sup>214</sup> If the state or local government objects to a request to preempt its action, then it is permitted to rebut the presumption by demonstrating the necessity of the regulation for health and safety reasons.<sup>215</sup> In the rulemaking we conducted concerning access to telecommunications equipment and services by persons with disabilities, we adopted a rebuttable presumption that, by a date certain, all workplace non-common area telephones would be hearing aid compatible.<sup>216</sup> We found that the rebuttable presumption approach would relieve employers of the need to field-test and identify whether their telephones are hearing aid compatible.<sup>217</sup> This presumption can be rebutted, on a telephone-by-telephone basis, by any person legitimately on the premises who identifies a particular telephone as

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<sup>213</sup> The Commission's equipment authorization and type acceptance rules for transmitting equipment are generally contained in Sections 2.801 through 2.1065 of the rules. 47 C.F.R. §§ 2.801- 2.1065. Separate type acceptance rules for transmitting equipment are also contained in each part of the Commission's rules applicable to the type of service being authorized. See, e.g., 47 C.F.R. §§ 22.120 and 24.51.

<sup>214</sup> See 47 C.F.R. § 25.104(b); Preemption of Local Zoning Regulations of Satellite Earth Stations, IB Docket No. 95-59, Report and Order and Notice of Proposed Rulemaking 11 FCC Rcd 5809, ¶ 31 (1996) (Earth Station Preemption Report and Order and NPRM); recon. pending.

<sup>215</sup> Id.

<sup>216</sup> See Access to Telecommunications Equipment and Services by Persons with Disabilities, CC Docket No. 87-124, Report and Order, 11 FCC Rcd 8249 (1996).

<sup>217</sup> Id. at ¶ 37.

non-hearing aid compatible.<sup>218</sup> Finally, in our proceeding concerning the improvement of the quality of the AM broadcast service, we adopted a rebuttable presumption of compliance with our newly-adopted emission limits and we did not require that AM station licensees conduct periodic emission measurements.<sup>219</sup> However, this presumption could be rebutted by technical evidence (e.g., spectrum analyzer measurement results) of non-compliance.<sup>220</sup> In each of these cases, we adopted a presumption and then permitted the presumption to be rebutted when presented with contrary evidence. We seek comment as to whether we should adopt a similar rebuttable presumption for consideration of preemption requests filed pursuant to Section 332(c)(7)(B)(v) of the Communications Act.

## 5. Operation of Presumption

153. We recognize that some wireless services are licensed on a geographic area basis only and that our wireless rules do not provide for the licensing of individual tower or antenna facilities.<sup>221</sup> There may be a concern that individual facilities do not, in fact, comply with our RF guidelines. Moreover, certain personal wireless services may be provided via low-power, unlicensed devices. Therefore, we believe that it is appropriate to permit interested parties to rebut the presumption of compliance. We seek comment on the procedures we should adopt to permit the presentation of such a rebuttal showing. We propose limiting the consideration of such presentations to only those parties that are able to demonstrate that they are "interested parties" or that otherwise demonstrate that they have standing to participate in the proceeding. We propose that, in order to rebut the presumption, interested parties would bear the initial burden of proof and would be required to demonstrate that a particular facility does not in fact comply with our RF limits. Such a demonstration of noncompliance could include, but would not be limited to: (1) the interested party demonstrating that the personal wireless service provider is or would be operating without a valid Commission authorization; (2) the interested party submitting an Environmental Assessment with detailed RF measurements or calculations that demonstrates that the Commission's RF exposure guidelines for controlled or uncontrolled environments is or would be exceeded in the disputed area, or (3) the interested party demonstrating that the licensee's operation otherwise may not comply with the Commission's RF exposure guidelines. The Commission shall examine this showing and determine whether the interested party has made a *prima facie* case for noncompliance. If the interested party fails to make a *prima facie* case for noncompliance, then we would preempt the state or local regulation. If a *prima facie* case for noncompliance is made, then the burden of proof would shift to the personal wireless provider to demonstrate that its facility would comply with the RF limits. Should we find

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<sup>218</sup> Id. at ¶ 35.

<sup>219</sup> See AM Improvement First Report and Order, at ¶ 37.

<sup>220</sup> Id.

<sup>221</sup> See, e.g., Parts 22 and 24 of the rules. 47 C.F.R. Parts 22 and 24.

that the facility in question does not comply with our RF limits or should the personal wireless service provider fail to respond, we would not grant relief from the state or local regulation and we would initiate an enforcement proceeding to ensure compliance with our RF guidelines. If, after examination of the personal wireless service provider's response, we find that the facility does comply with our RF limits, then we would preempt the state or local regulation. Should the personal wireless provider modify its facility to comply with the RF emissions guidelines, we propose allowing the provider to file subsequent requests for relief. In addition, we tentatively propose that both the wireless provider and the interested parties be permitted to seek review of final Commission and delegated authority actions taken pursuant to Section 332(c)(7)(B)(v) of the Communications Act via the review procedures set forth in our rules and the Communications Act.<sup>222</sup> We seek comment on these procedures.

154. We believe that allowing interested parties to rebut the presumption of compliance will provide a balanced method for resolving Section 332(c)(7)(B)(v) proceedings. We seek comment as to whether such a procedure is appropriate and whether there are other methods an interested party might employ to demonstrate its contention that a personal wireless facility does not or will not comply with the RF emissions guidelines.

#### D. Conclusion

155. We believe that the procedures we propose herein provide a fair and balanced approach to reviewing requests for relief from state and local regulations based on the effects of RF emissions filed pursuant to Section 332(c)(7)(B)(v) of the Communications Act. These procedures, if adopted, would provide interested parties with the opportunity to present their views to the Commission and for the Commission to carefully review requests for relief in an expedited fashion. We view this proceeding as another important step in our ongoing efforts to assist in the resolution of state and local disputes concerning the siting of personal wireless service facilities and to provide expert guidance and input on these important matters.

### IV. PROCEDURAL MATTERS

#### A. Regulatory Flexibility Act

156. Appendix C contains a Revised Final Regulatory Flexibility Analysis with respect to the Second Memorandum Opinion and Order in ET Docket No. 93-62. An Initial Regulatory Flexibility Analysis for the Notice of Proposed Rulemaking in WT Docket No. 97-197 is contained in Appendix D. As required by Section 603 of the Regulatory Flexibility Act, 5 U.S.C. § 603, the Commission has prepared the Initial Regulatory Flexibility Analysis of the expected impact on small entities of the proposals suggested in this document. Written public comments are requested on the Initial Regulatory Flexibility Analysis. In order to

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<sup>222</sup> See, e.g., 47 C.F.R. § 1.106 § 1.115 and 47 U.S.C. § 402.

fulfill the mandate of the Contract with America Advancement Act of 1996 regarding the Final Regulatory Flexibility Analysis we ask a number of questions in our Initial Regulatory Flexibility Analysis regarding the prevalence of small businesses that may be impacted by the proposed procedures. Comments on the Initial Regulatory Flexibility Analysis must be filed in accordance with the same filing deadlines as comments on the Notice of Proposed Rulemaking, but they must have a separate and distinct heading designating them as responses to the Initial Regulatory Flexibility Analysis. The Secretary shall send a copy of this Notice of Proposed Rulemaking, including the Initial Regulatory Flexibility Analysis, to the Chief Counsel for Advocacy of the Small Business Administration in accordance with Section 603(a) of the Regulatory Flexibility Act, 5 U.S.C. § 603(a).

#### B. Ex Parte Rules -- Non-Restricted Proceedings

157. This is a non-restricted notice and comment rule making proceeding. Ex parte presentations are permitted except during the Sunshine Agenda period, provided they are disclosed as provided in the Commission's rules. See generally 47 C.F.R. §§ 1.1201, 1203, and 1.1206(a).

#### C. Comment Dates

158. Pursuant to applicable procedures set forth in Sections 1.415 and 1.419 of the Commission's rules, 47 C.F.R. §§ 1.415 and 1.419, interested parties may file comments to the Notice of Proposed Rule Making on or before October 9, 1997, and reply comments on or before October 24, 1997. To file formally in this proceeding, you must file an original and four copies of all comments, reply comments, and supporting comments. If you want each Commissioner to receive a personal copy of your comments, you must file an original plus nine copies. You should send comments and reply comments to Office of the Secretary, Federal Communications Commission, Washington, D.C. 20554. Comments and reply comments will be available for public inspection during regular business hours in the FCC Reference Center of the Federal Communications Commission, Room 239, 1919 M Street, N.W., Washington, D.C. 20554.

159. Parties are encouraged to submit comments and reply comments on diskette for possible inclusion on the Commission's Internet site so that copies of these documents may be obtained electronically. Such diskette submissions would be in addition to and not a substitute for the formal filing requirements presented above. Parties submitting diskettes should submit them to Shaun A. Maher, Esq., Policy & Rules Branch, Commercial Wireless Division, Wireless Telecommunications Bureau, 2100 M Street, N.W., 7th Floor - Room 93, Washington, D.C. 20554. Such a submission should be on a 3.5 inch diskette formatted in an IBM compatible form using Word Perfect 5.1 for Windows software. The diskette should be submitted in "read only" mode, and should be clearly labelled with the party's name, proceeding, type of pleading (comment or reply comment) and date of submission.

#### D. Initial Paperwork Reduction Act of 1995 Analysis

160. The Notice of Proposed Rule Making contains either a proposed or modified information collection. As part of its continuing effort to reduce paperwork burdens, we invite the general public and the Office of Management and Budget to take this opportunity to comment on the information collections contained in this Notice of Proposed Rule Making, as required by the Paperwork Reduction Act of 1995, Pub. L. No. 104-13. Public and agency comments are due at the same time as other comments on this Notice of Proposed Rule Making; OMB comments are due on or before 60 days after the publication in the Federal Register. Comments should address: (a) whether the proposed collection of information is necessary for the proper performance of the functions of the Commission, including whether the information shall have practical utility; (b) the accuracy of the Commission's burden estimates; (c) ways to enhance the quality, utility, and clarity of the information collected; and (d) ways to minimize the burden of the collection of information on the respondents, including the use of automated collection techniques or other forms of information technology.

161. Written comments by the public on the proposed and/or modified information collections are due (30 days after publication in the Federal Register). Written comments must be submitted by the Office of Management and Budget (OMB) on the proposed and/or modified information collections on or before 60 days after the publication in the Federal Register. In addition to filing comments with the Secretary, a copy of any comments on the information collections contained herein should be submitted to both of the following: Judy Boley, Federal Communications Commission, Room 234, 1919 M Street, N.W., Washington, DC 20554, or via the Internet to [jboley@fcc.gov](mailto:jboley@fcc.gov) and to Timothy Fain, OMB Desk Officer, 10236 NEOB, 725 - 17th Street, N.W., Washington, DC 20503 or via the Internet at [fain\\_t@al.eop.gov](mailto:fain_t@al.eop.gov). For additional information regarding the information collections contained herein, contact Judy Boley above.

#### E. Ordering Clauses

162. Pursuant to the authority contained in Sections 4(i), 7(a), 303(c), 303(f), 303(g), 303(r) and 332(c)(7) of the Communications Act of 1934, as amended, 47 U.S.C. Sections 154(i), 157(a), 303(c), 303(f), 303(g), 303(r) and 332(c)(7), and Section 704 of the Telecommunications Act of 1996, IT IS ORDERED THAT, effective 30 days after publication in the Federal Register, Parts 1, 2, 26 and 97 of the Commission's Rules and Regulations, 47 CFR Parts 1, 2, 26, and 97, ARE AMENDED as specified in Appendix A.

163. IT IS FURTHER ORDERED THAT, to the extent discussed above and as reflected in the new rules contained in Appendix A, certain aspects of the various petitions and motions filed in ET Docket No. 93-62 ARE GRANTED. In all other aspects except those previously addressed in the First Memorandum Opinion and Order in this proceeding,

IT IS ORDERED THAT the petitions and motions filed in ET Docket No. 93-62 ARE DENIED.

164. IT IS ORDERED that, pursuant to the authority of Sections 4(i), 303(g), 303(r), and 332(c)(7) of the Communications Act of 1934, as amended, 47 U.S.C. §§ 154(i), 303(g), 303(r), and 332(c)(7), a NOTICE OF PROPOSED RULEMAKING is hereby ADOPTED.

165. IT IS FURTHER ORDERED that the petition for rulemaking of the Cellular Telecommunications Industry Association, filed December 22, 1994 (RM-8577), is hereby DISMISSED.

F. Further Information

166. For further information concerning the Second Memorandum Opinion and Order, contact Robert Cleveland or the Commission's RF safety program at (202) 418-2464. Address: Office of Engineering and Technology, Federal Communications Commission, Washington, D.C. 20554. Internet e-mail address: [rfsafety@fcc.gov](mailto:rfsafety@fcc.gov).

167. For further information concerning the Notice of Proposed Rulemaking, contact Shaun A. Maher, Esq. at (202) 418-7240, internet: [smaher@fcc.gov](mailto:smaher@fcc.gov), Policy & Rules Branch, Commercial Wireless Division, Wireless Telecommunications Bureau, Federal Communications Commission, Washington, D.C. 20554.

FEDERAL COMMUNICATIONS COMMISSION

William F. Caton  
Acting Secretary

## APPENDIX A: RULE CHANGES

Title 47 of the Code of Federal Regulations, parts 1, 2, and 97, are amended as follows:

## Part 1 - PRACTICE AND PROCEDURE

1. The authority citation for part 1 continues to read as follows:

AUTHORITY: 47 U.S.C. 151, 154, 303 and 309(j), unless otherwise noted, and Section 704 of the Telecommunications Act of 1996.

2. Section 1.1307 is amended by revising paragraphs (b)(1), (b)(2), (b)(3) and (b)(4) and by adding paragraph (b)(5) to read as follows:

§ 1.1307 Actions which may have a significant environmental effect, for which Environmental Assessments (EAs) must be prepared.

\* \* \* \* \*

(b) \* \* \*

(1) The appropriate exposure limits in § 1.1310 and § 2.1093 are generally applicable to all facilities, operations and transmitters regulated by the Commission. However, a determination of compliance with the exposure limits in § 1.1310 or § 2.1093 (routine environmental evaluation), and preparation of an EA if the limits are exceeded, is necessary only for facilities, operations and transmitters that fall into the categories listed in Table 1, or those specified in paragraph (b)(2) of this section. All other facilities, operations and transmitters are categorically excluded from making such studies or preparing an EA, except as indicated in paragraphs (c) and (d) of this section. For purposes of Table 1, "building-mounted antennas" means antennas mounted in or on a building structure that is occupied as a workplace or residence. The term "power" in column 2 of Table 1 refers to total operating power of the transmitting operation in question in terms of effective radiated power (ERP), equivalent isotropically radiated power (EIRP), or peak envelope power (PEP), as defined in § 2.1 of this chapter. For the case of the Cellular Radiotelephone Service, subpart H of part 22 of this chapter; the Personal Communications Service, part 24 of this chapter and the Specialized Mobile Radio Service, part 90 of this chapter, the phrase "total power of all channels" in column 2 of Table 1 means the sum of the ERP or EIRP of all co-located simultaneously operating transmitters owned and operated by a single licensee. When applying the criteria of Table 1, radiation in all directions should be considered. For the case of transmitting facilities using sectorized transmitting antennas, applicants and licensees should apply the criteria to all transmitting channels in a given sector, noting that for a highly directional antenna there is relatively little contribution to ERP or EIRP summation for other directions.





**TABLE 1: TRANSMITTERS, FACILITIES AND OPERATIONS SUBJECT TO ROUTINE ENVIRONMENTAL EVALUATION**

SERVICE (TITLE 47 CFR RULE PART)	EVALUATION REQUIRED IF:
Experimental Radio Services (part 5)	power > 100 W ERP (164 W EIRP)
Multipoint Distribution Service (subpart K of part 21)	<u>non-building-mounted antennas</u> : height above ground level to lowest point of antenna < 10 m <u>and</u> power > 1640 W EIRP <u>building-mounted antennas</u> : power > 1640 W EIRP
Paging and Radiotelephone Service (subpart E of part 22)	<u>non-building-mounted antennas</u> : height above ground level to lowest point of antenna < 10 m <u>and</u> power > 1000 W ERP (1640 W EIRP) <u>building-mounted antennas</u> : power > 1000 W ERP (1640 W EIRP)
Cellular Radiotelephone Service (subpart H of part 22)	<u>non-building-mounted antennas</u> : height above ground level to lowest point of antenna < 10 m <u>and</u> total power of all channels > 1000 W ERP (1640 W EIRP) <u>building-mounted antennas</u> : total power of all channels > 1000 W ERP (1640 W EIRP)

TABLE 1 (cont.)

SERVICE (TITLE 47 CFR RULE PART)	EVALUATION REQUIRED IF:
Personal Communications Services (part 24)	<p>(1) Narrowband PCS (subpart D):  <u>non-building-mounted antennas</u>: height above ground level to lowest point of antenna &lt; 10 m <u>and</u> total power of all channels &gt; 1000 W ERP (1640 W EIRP)  <u>building-mounted antennas</u>: total power of all channels &gt; 1000 W ERP (1640 W EIRP)</p> <p>(2) Broadband PCS (subpart E):  <u>non-building-mounted antennas</u>: height above ground level to lowest point of antenna &lt; 10 m <u>and</u> total power of all channels &gt; 2000 W ERP (3280 W EIRP)  <u>building-mounted antennas</u>: total power of all channels &gt; 2000 W ERP (3280 W EIRP)</p>
Satellite Communications (part 25)	all included
General Wireless Communications Service (part 26)	total power of all channels > 1640 W EIRP
Wireless Communications Service (part 27)	total power of all channels > 1640 W EIRP
Radio Broadcast Services (part 73)	all included

TABLE 1 (cont.)

SERVICE (TITLE 47 CFR RULE PART)	EVALUATION REQUIRED IF:
Experimental, auxiliary, and special broadcast and other program distributional services (part 74)	subparts A, G, L: power > 100 W ERP  subpart I: <u>non-building-mounted antennas</u> : height above ground level to lowest point of antenna < 10 m <u>and</u> power > 1640 W EIRP <u>building-mounted antennas</u> : power > 1640 W EIRP
Stations in the Maritime Services (part 80)	ship earth stations only
Private Land Mobile Radio Services Paging Operations (part 90)	<u>non-building-mounted antennas</u> : height above ground level to lowest point of antenna < 10 m <u>and</u> power > 1000 W ERP (1640 W EIRP) <u>building-mounted antennas</u> : power > 1000 W ERP (1640 W EIRP)
Private Land Mobile Radio Services Specialized Mobile Radio (part 90)	<u>non-building-mounted antennas</u> : height above ground level to lowest point of antenna < 10 m <u>and</u> total power of all channels > 1000 W ERP (1640 W EIRP) <u>building-mounted antennas</u> : total power of all channels > 1000 W ERP (1640 W EIRP)

TABLE 1 (cont.)

SERVICE (TITLE 47 CFR RULE PART)	EVALUATION REQUIRED IF:
Amateur Radio Service (part 97)	transmitter output power > levels specified in § 97.13(c)(1) of this chapter
Local Multipoint Distribution Service (subpart L of part 101)	<p><u>non-building-mounted antennas</u>: height above ground level to lowest point of antenna &lt; 10 m <u>and</u> power &gt; 1640 W EIRP</p> <p><u>building-mounted antennas</u>: power &gt; 1640 W EIRP</p> <p>LMDS licensees are required to attach a label to subscriber transceiver antennas that: (1) provides adequate notice regarding potential radiofrequency safety hazards, e.g., information regarding the safe minimum separation distance required between users and transceiver antennas; and (2) references the applicable FCC-adopted limits for radiofrequency exposure specified in § 1.1310 of this chapter.</p>

(2) Mobile and portable transmitting devices that operate in the Cellular Radiotelephone Service, the Personal Communications Services (PCS), the Satellite Communications Services, the General Wireless Communications Service, the Wireless Communications Service, the Maritime Services (ship earth stations only) and the Specialized Mobile Radio Service authorized under subpart H of part 22, part 24, part 25, part 26, part 27, part 80, and part 90 of this chapter are subject to routine environmental evaluation for RF exposure prior to equipment authorization or use, as specified in §§ 2.1091 and 2.1093 of this chapter. Unlicensed PCS, unlicensed NII and millimeter wave devices are also subject to routine environmental evaluation for RF exposure prior to equipment authorization or use, as specified in §§ 15.253(f), 15.255(g), and 15.319(i) and 15.407(f) of this chapter. All other mobile, portable, and unlicensed transmitting devices are categorically excluded from routine environmental evaluation for RF exposure under §§ 2.1091 and 2.1093 of this chapter except as specified in paragraphs (c) and (d) of this section.

(3) In general, when the guidelines specified in § 1.1310 are exceeded in an accessible area due to the emissions from multiple fixed transmitters, actions necessary to bring the area into compliance are the shared responsibility of all licensees whose transmitters

produce, at the area in question, power density levels that exceed 5% of the power density exposure limit applicable to their particular transmitter or field strength levels that, when squared, exceed 5% of the square of the electric or magnetic field strength limit applicable to their particular transmitter. Owners of transmitter sites are expected to allow applicants and licensees to take reasonable steps to comply with the requirements contained in § 1.1307(b) and, where feasible, should encourage co-location of transmitters and common solutions for controlling access to areas where the RF exposure limits contained in § 1.1310 might be exceeded.

(i) Applicants for proposed (not otherwise excluded) transmitters, facilities or modifications that would cause non-compliance with the limits specified in § 1.1310 at an accessible area previously in compliance must submit an EA if emissions from the applicant's transmitter or facility would result, at the area in question, in a power density that exceeds 5% of the power density exposure limit applicable to that transmitter or facility or in a field strength that, when squared, exceeds 5% of the square of the electric or magnetic field strength limit applicable to that transmitter or facility.

(ii) Renewal applicants whose (not otherwise excluded) transmitters or facilities contribute to the field strength or power density at an accessible area not in compliance with the limits specified in § 1.1310 must submit an EA if emissions from the applicant's transmitter or facility results, at the area in question, in a power density that exceeds 5% of the power density exposure limit applicable to that transmitter or facility or in a field strength that, when squared, exceeds 5% of the square of the electric or magnetic field strength limit applicable to that transmitter of facility.

(4) Transition Provisions. For applications filed with the Commission prior to October 15, 1997, (or January 1, 1998, for the Amateur Radio Service only), Commission actions granting construction permits, licenses to transmit or renewals thereof, equipment authorizations, or modifications in existing facilities require the preparation of an Environmental Assessment if the particular facility, operation or transmitter would cause human exposure to levels of radiofrequency radiation that are in excess of the requirements contained in paragraphs (4)(i) - (4)(iii) of this section. These transition provisions do not apply to applications for equipment authorization or use of mobile, portable and unlicensed devices specified in paragraph (2) of this section.

(5) Existing transmitting facilities, devices and operations: All existing transmitting facilities, operations and devices regulated by the Commission must be in compliance with the requirements of paragraphs (1) - (3) of this section by September 1, 2000, or, if not in compliance, file an Environmental Assessment as specified in 47 CFR § 1.1311.

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Part 2 - FREQUENCY ALLOCATIONS AND RADIO TREATY MATTERS;  
GENERAL RULES AND REGULATIONS

1. The authority citation for part 2 continues to read as follows:

AUTHORITY: Sec. 4, 302, 303 and 307 of the Communications Act of 1934, as amended, 47 U.S.C. Sections 154, 302, 303 and 307, unless otherwise noted.

2. Section 2.1091 is amended by revising the section caption, by revising paragraphs (b), (c) and (d)(3) and by adding a new paragraph (d)(4) to read as follows:

§ 2.1091 Radiofrequency radiation exposure evaluation: mobile devices.

\* \* \* \* \*

(b) For purposes of this section, a mobile device is defined as a transmitting device designed to be used in other than fixed locations and to generally be used in such a way that a separation distance of at least 20 centimeters is normally maintained between the transmitter's radiating structure(s) and the body of the user or nearby persons. In this context, the term "fixed location" means that the device is physically secured at one location and is not able to be easily moved to another location. Transmitting devices designed to be used by consumers or workers that can be easily re-located, such as wireless devices associated with a personal computer, are considered to be mobile devices if they meet the 20 centimeter separation requirement.

(c) Mobile devices that operate in the Cellular Radiotelephone Service, the Personal Communications Services, the Satellite Communications Services, the General Wireless Communications Service, the Wireless Communications Service, the Maritime Services and the Specialized Mobile Radio Service authorized under subpart H of part 22 of this chapter, part 24 of this chapter, part 25 of this chapter, part 26 of this chapter, part 27 of this chapter, part 80 of this chapter (ship earth stations devices only) and part 90 of this chapter are subject to routine environmental evaluation for RF exposure prior to equipment authorization or use if they operate at frequencies of 1.5 GHz or below and their effective radiated power (ERP) is 1.5 watts or more, or if they operate at frequencies above 1.5 GHz and their ERP is 3 watts or more. Unlicensed personal communications service devices, unlicensed millimeter wave devices and unlicensed NII devices authorized under § 15.253, § 15.255, and subparts D and E of part 15 of this chapter are also subject to routine environmental evaluation for RF exposure prior to equipment authorization or use if their ERP is 3 watts or more or if they meet the definition of a portable device as specified in § 2.1093 (b) requiring evaluation under the provisions of that section. All other mobile and unlicensed transmitting devices are categorically excluded from routine environmental evaluation for RF exposure prior to equipment authorization or use, except as specified in §§ 1.1307(c) and 1.1307(d) of this chapter. Applications for equipment authorization of mobile and unlicensed transmitting devices subject to routine environmental evaluation must contain a statement confirming

compliance with the limits specified in paragraph (d) of this section as part of their application. Technical information showing the basis for this statement must be submitted to the Commission upon request.

(d) \* \* \*

\* \* \* \*

(3) If appropriate, compliance with exposure guidelines for devices in this section can be accomplished by the use of warning labels and by providing users with information concerning minimum separation distances from transmitting structures and proper installation of antennas.

(4) In some cases, e.g., modular or desktop transmitters, the potential conditions of use of a device may not allow easy classification of that device as either mobile or portable (also see 47 CFR 2.1093). In such cases, applicants are responsible for determining minimum distances for compliance for the intended use and installation of the device based on evaluation of either specific absorption rate (SAR), field strength or power density, whichever is most appropriate.

\* \* \* \*

3. Section 2.1093 is amended by revising paragraphs (b), (c) and (d) to read as follows:

§ 2.1093 Radiofrequency radiation exposure evaluation: portable devices.

\* \* \* \*

(b) For purposes of this section, a portable device is defined as a transmitting device designed to be used so that the radiating structure(s) of the device is/are within 20 centimeters of the body of the user.

(c) Portable devices that operate in the Cellular Radiotelephone Service, the Personal Communications Services, the Satellite Communications services, the General Wireless Communications Service, the Wireless Communications Service, the Maritime Services and the Specialized Mobile Radio Service authorized under subpart H of part 22 of this chapter, part 24 of this chapter, part 25 of this chapter, part 26 of this chapter, part 27 of this chapter, part 80 of this chapter (ship earth station devices only), part 90 of this chapter, and portable unlicensed personal communication service, unlicensed NII devices and millimeter wave devices authorized under § 15.253, § 15.255 or subparts D and E of part 15 of this chapter are subject to routine environmental evaluation for RF exposure prior to equipment authorization or use. All other portable transmitting devices are categorically excluded from routine environmental evaluation for RF exposure prior to equipment authorization or use,

except as specified in §§ 1.1307(c) and 1.1307(d) of this chapter. Applications for equipment authorization of portable transmitting devices subject to routine environmental evaluation must contain a statement confirming compliance with the limits specified in paragraph (d) of this section as part of their application. Technical information showing the basis for this statement must be submitted to the Commission upon request.

(d) The limits to be used for evaluation are based generally on criteria published by the American National Standards Institute (ANSI) for localized specific absorption rate ("SAR") in Section 4.2 of "IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz," ANSI/IEEE C95.1-1992, Copyright 1992 by the Institute of Electrical and Electronics Engineers, Inc., New York, New York 10017. These criteria for SAR evaluation are similar to those recommended by the National Council on Radiation Protection and Measurements (NCRP) in "Biological Effects and Exposure Criteria for Radiofrequency Electromagnetic Fields," NCRP Report No. 86, Section 17.4.5. Copyright NCRP, 1986, Bethesda, Maryland 20814. SAR is a measure of the rate of energy absorption due to exposure to an RF transmitting source. SAR values have been related to threshold levels for potential biological hazards. The criteria to be used are specified in paragraphs (d)(1) and (d)(2) of this section and shall apply for portable devices transmitting in the frequency range from 100 kHz to 6 GHz. Portable devices that transmit at frequencies above 6 GHz are to be evaluated in terms of the MPE limits specified in § 1.1310 of this chapter. Measurements and calculations to demonstrate compliance with MPE field strength or power density limits for devices operating above 6 GHz should be made at a minimum distance of 5 cm from the radiating source.

\* \* \* \* \*

## Part 26 - GENERAL WIRELESS COMMUNICATIONS SERVICE

1. The authority citation for part 26 continues to read as follows:

AUTHORITY: 48 Stat. 1066, 1082, as amended; 47 U.S.C. §§ 154, 303. Interpret or apply 48 Stat. 1064-1068, 1081-1105, as amended; 47 U.S.C. §§ 151-155, 301-609, unless otherwise noted.

2. Section 26.51 is amended by removing paragraph (d).

3. Section 26.52 is amended by removing paragraphs (a), (b) and (c) and by revising the section to read as follows:

§ 26.52 RF safety.

Licensees and manufacturers are subject to the radiofrequency radiation exposure requirements specified in § 1.1307(b), § 2.1091 and § 2.1093 of this chapter, as appropriate. Applications for equipment authorization of mobile or portable devices operating under this section must



contain a statement confirming compliance with these requirements for both fundamental emissions and unwanted emissions. Technical information showing the basis for this statement must be submitted to the Commission upon request.

## Part 97 - AMATEUR RADIO SERVICE

1. The authority citation for part 97 continues to read as follows:

AUTHORITY: 48 Stat. 1066, 1082, as amended; 47 U.S.C. §§ 154, 303. Interpret or apply 48 Stat. 1064-1068, 1081-1105, as amended; 47 U.S.C. §§ 151-155, 301-609, unless otherwise noted.

2. Section 97.13 is amended by revising paragraph (c) and adding paragraphs (c)(1) and (c)(2) to read as follows:

§ 97.13 Restrictions on station location.

\* \* \* \* \*

(c) Before causing or allowing an amateur station to transmit from any place where the operation of the station could cause human exposure to RF electromagnetic field levels in excess of those allowed under § 1.1310 of this chapter, the licensee is required to take certain actions.

(1) The licensee must perform the routine RF environmental evaluation prescribed by § 1.1307(b) of this chapter, if the transmitter PEP exceeds the following limits:

Wavelength Band	Transmitter Power (watts)
MF	
160 m	500
HF	
80 m	500
75 m	500
40 m	500
30 m	425
20 m	225
17 m	125
15 m	100
12 m	75
10 m	50
VHF (all bands)	50
UHF	
70 cm	70
33 cm	150
23 cm	200
13 cm	250
SHF (all bands)	250
EHF (all bands)	250

(2) If the routine environmental evaluation indicates that the RF electromagnetic fields could exceed the limits contained in § 1.1310 of this chapter in accessible areas, the licensee must take action to prevent human exposure to such RF electromagnetic fields. Further information on evaluating compliance with these limits can be found in the FCC's OET Bulletin 65, "Evaluating Compliance with FCC-Specified Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields."

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APPENDIX B: MOTIONS, PETITIONS, OPPOSITIONS AND REPLIES  
(ET Docket 93-62)

(1) Petitions for Reconsideration and/or Clarification of Report and Order

Ad-hoc Association of Parties Concerned About the Federal Communications Commission's  
Radiofrequency Health and Safety Rules (Ad-hoc Association)

AirTouch Communications, Inc.

American Mobile Telecommunications Association, Inc.

American Radio Relay League, Inc.

Ameritech Mobile Communications, Inc.

AT&T Wireless Services, Inc.

BellSouth Corporation

Cellular Phone Taskforce

Department of Defense

Alan Dixon

Electromagnetic Energy Association

Ergotec Association, Inc. (considered as a Petition)

Hewlett-Packard Company

Marjorie Lundquist, Ph.D., C.I.H.

Paging Network, Inc.

Personal Communications Industry Association

U S WEST, Inc.

Other Motions (addressed in First Memorandum Opinion and Order in this proceeding)

Ad-hoc Association (motion to accept a late-filed petition for reconsideration)

Ad-hoc Association (motion to accept a late filed reply to an opposition to a petition for  
reconsideration)

American Radio Relay League, Inc. ("Emergency Motion for Extension of Effective Date of  
Rules")

American Radio Relay League ("Motion for Extension of Effective Date of Rules")

Cellular Phone Taskforce (motion to accept a late-filed opposition to petition for  
reconsideration and clarification)

Oppositions/Comments

Ameritech Mobile Communications, Inc.

Arch Communications Group, Inc.

AT&T Wireless Services, Inc.

Cellular Phone Taskforce

Cellular Telecommunications Industry Association, Inc.

Electromagnetic Energy Association  
David Fichtenberg (2 filings)  
Marjorie Lundquist, Ph.D., C.I.H.  
National Association of Broadcasters  
Sobig Neher (Ex Parte submission)  
RAM Mobile Data USA Limited Partnership  
Wireless Cable Association International, Inc.

#### Replies to Opposition/Comments

Ad-hoc Association  
AirTouch Communications, Inc.  
Ameritech Mobile Communications, Inc.  
Brooklyn Green Party  
Cellular Phone Taskforce  
Electromagnetic Energy Association  
Holly Fournier and Mary Beth Freeman  
Alan Golden  
Dawn Mason, Representative, State of Washington  
PageMart II, Inc.

#### Late-filed (Supplementary) Comments

Marjorie Lundquist, Ph.D., C.I.H.

#### (2) Petitions for Reconsideration or Partial Reconsideration of First Memorandum Opinion and Order

Ad-hoc Association of Parties Concerned About the Federal Communications Commission's  
Radiofrequency Health and Safety Rules (Ad-hoc Association)  
Ameritech Mobile Communications, Inc.  
Cellular Phone Taskforce  
Northeast Louisiana Telephone Company, Inc.

#### Oppositions/Comments

AirTouch Communications, Inc.  
Ameritech Mobile Communications, Inc.  
AT&T Wireless Services, Inc.

## Replies to Opposition/Comments

Cellular Phone Taskforce Reply to Comments of AT&T Wireless Services, Inc.

Cellular Phone Taskforce Reply to Comments of Ameritech Mobile Communications, Inc.

## Late-filed (Ex Parte) Comments and Petitions

Ad-hoc Association of Parties Concerned About the Federal Communications Commission's  
Radiofrequency Health and Safety Rules (Ad-hoc Association)

Ameritech Mobile Communications, Inc.

Personal Communications Industry Association

## APPENDIX C

Revised Final Regulatory Flexibility Analysis  
Second Memorandum Opinion and Order

As required by Section 603 of the Regulatory Flexibility Act, 5 U.S.C. § 603 (RFA), an Initial Regulatory Flexibility Analysis (IRFA) was incorporated in the Notice of Proposed Rule Making (Notice) in ET Docket 93-62.<sup>223</sup> The Commission sought written public comments on the proposals in the Notice, including on the IRFA. In the Report and Order in this proceeding, the Commission adopted a Final Regulatory Flexibility Analysis (FRFA).<sup>224</sup> Petitions for reconsideration were filed in response to the Report and Order by seventeen parties. Several technical and legal issues have been raised in the petitions and subsequent comments. In addition, several petitions have raised questions about the original FRFA. The First Memorandum Opinion and Order in this proceeding, and the associated FRFA, addressed those petitions and comments requesting extension of the transition period specified in the Report and Order as well as the comments that were made on the original FRFA contained in the Report and Order.<sup>225</sup> This Second Memorandum Opinion and Order, including this FRFA, addresses the other issues raised in the petitions. The FRFA conforms to the RFA, as amended by the Contract With America Advancement Act of 1996 (CWAAA), Pub. L. No. 104-121, 110 Stat. 847 (1996).<sup>226</sup>

## I. Need for and Purpose of this Action:

The National Environmental Policy Act (NEPA) of 1969 requires agencies of the Federal Government to evaluate the effects of their actions on the quality of the human environment. To meet its responsibilities under NEPA, the Commission has adopted revised radiofrequency (RF) exposure guidelines for purposes of evaluating potential environmental effects of RF electromagnetic fields produced by FCC-regulated facilities. The new guidelines reflect more recent scientific studies of the biological effects of RF electromagnetic fields. Use of these new guidelines will ensure that the public and workers receive adequate protection from exposure to potentially harmful RF electromagnetic fields. This Second Memorandum Opinion and Order addresses a number of concerns that were raised in petitions and comments received in response to the Report and Order.

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<sup>223</sup> See Notice of Proposed Rule Making ET Docket No. 93-62, 8 FCC Rcd 2849 (1993).

<sup>224</sup> See Appendix A to Report and Order, ET Docket 93-62, released August 1, 1996, FCC 96-326.

<sup>225</sup> See First Memorandum Opinion and Order, ET Docket No. 93-62, released December 24, 1996, FCC 96-487, 11 FCC Rcd 17512 (1997).

<sup>226</sup> Subtitle II of the CWAAA is "The Small Business Regulatory Enforcement Fairness Act of 1996" (SBREFA), codified at 5 U.S.C. § 601 et seq.

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II. Summary of Issues Raised by the Public Comments in Response to the Initial Regulatory Flexibility Analysis (IRFA):

No comments were filed in direct response to the IRFA. In general comments on the Notice, however, some commenters raised issues that might affect small entities. These issues were discussed in the FRFA contained in the Report and Order in this proceeding.

III. Summary of Issues Raised regarding the Final Regulatory Flexibility Analysis (FRFA) by the Petitions, Motions, and Comments in Response to the Report and Order:

The American Radio Relay League, Inc., Paging Network, Inc., and the Personal Communications Industry Association raised concerns in their petitions, motions and comments regarding the FRFA that was associated with the Report and Order. Those concerns were addressed in the revised FRFA contained in the First Memorandum Opinion and Order in this proceeding.

IV. Description and estimate of the Small Entities Subject to the Rules:

The rules being adopted in this Second Memorandum Opinion and Order apply to twelve industry categories and services. All but one of these industry categories and services was described in the FRFA accompanying the First Memorandum Opinion and Order in this proceeding.<sup>227</sup> The RFA generally defines the term "small business" as having the same meaning as the term "small business concern" under the Small Business Act, 15 U.S.C. § 632. Based on that statutory provision, we will consider a small business concern one which (1) is independently owned and operated; (2) is not dominant in its field of operation; and (3) satisfies any additional criteria established by the Small Business Administration (SBA). The RFA SBREFA provisions also apply to nonprofit organizations and to governmental organizations. Since the Regulatory Flexibility Act amendments were not in effect until the record in this proceeding was closed, the Commission was unable to request information regarding the number of small business within each of these services or the number of small business that would be affected by this action. We have, however, made estimates based on our knowledge about applications that have been submitted in the past. To the extent that a government entity may be a licensee or an applicant, the impact on those entities is included in the estimates for small businesses below.

Under the new rules adopted in the Report and Order and in this Second Memorandum Opinion and Order, many radio services are categorically excluded from having to determine compliance with the new RF exposure limits. This exclusion is based on a determination that there is little potential for these services causing exposures in excess of the limits. Within the following services that are not categorically excluded in their entirety, many transmitting facilities are categorically excluded based on antenna location and power.

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<sup>227</sup> See Note 198, at Appendix C.



These categorical exclusions significantly reduce the burden associated with these rules, and may reduce the impact of these rules on small businesses. Furthermore, the extension of the transition periods contained in the First Memorandum Opinion and Order will reduce the impact on applicants, particularly small businesses, by allowing them adequate time to understand the new requirements and ensure that their facilities are in compliance with them in a orderly and reasonable manner.

As noted above, descriptions and estimates of all of the categories and services for small entities subject to our rules, except one, were previously given in the FRFA that accompanied the First Memorandum Opinion and Order. Therefore, that document should be consulted for this information. Information on the one additional category not included in the earlier FRFA, radiofrequency devices, is given below. Minor edits were also made in the section of the previous FRFA for satellite communications services, and the revised section is also given below.

#### A. Satellite Communications Services

The Commission has not developed a definition of small entities applicable to satellite communications licensees. Therefore, the applicable definition of small entity is the definition under the Small Business Administration (SBA) rules applicable to Communications Services, Not Elsewhere Classified. This definition provides that a small entity is expressed as one with \$11.0 million or less in annual receipts.<sup>228</sup>

Because the Regulatory Flexibility Act amendments were not in effect until the comment period for this proceeding was closed, the Commission was unable to request information regarding the number of licensees in the international services discussed below that meet this definition of a small business. Thus, we are providing an estimate of licensees that constitute a small business.

**Fixed Satellite Earth Stations.** Fixed satellite earth stations include international and domestic earth stations operating in the 4/6 GHz, 11/12/14 GHz and 20/30 GHz bands. There are approximately 4200 earth station authorizations, a portion of which are Fixed Satellite Earth Stations. Although we were unable to request the revenue information, we estimate that some of the licensees of these earth stations would constitute a small business under the SBA definition.

**Fixed Satellite Small Earth Stations.** Small transmit/receive earth stations operate in the 4/6 GHz frequency bands with antennas that are two meters or less in diameter. There are 4200 earth station authorizations, a portion of which are Fixed Satellite Small Earth Stations. Although we were unable to request the revenue information, we estimate that some

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<sup>228</sup> 13 CFR § 121.201, Standard Industrial Classification (SIC) Code 4899.

of the fixed satellite small earth stations would constitute a small business under the SBA definition.

**Fixed Satellite Very Small Aperture Terminal (VSAT) Systems.** VSAT systems operate in the 12/14 GHz frequency bands. Although various size small aperture antenna earth-stations may be used, all stations of a particular size must be technically identical. Because these stations operate on a primary basis, frequency coordination with terrestrial microwave systems is not required. Thus, a single "blanket" application may be filed for a specified number of small antennas and one or more hub stations. The Commission has processed 377 applications for fixed satellite VSAT systems. At this time, we are unable to make a precise estimate of the number of small businesses that are VSAT system licensees and could be impacted by this action.

**Mobile Satellite Earth Stations.** Mobile satellite earth stations are intended to be used while in motion or during halts at unspecified points. These stations operate as part of a network that includes a fixed hub station or stations. The network may provide a variety of land, maritime and aeronautical voice and data services. There are 8 mobile satellite licensees. At this time, we are unable to make a precise estimate of the number of small businesses that are mobile satellite earth station licensees and could be impacted by this action.

**Radio Determination Satellite Earth Stations.** A radio determination satellite earth station is used in conjunction with a radio determination satellite service (rdss) system for the purpose of providing position location information. These stations operate as part of a network that includes a fixed hub station or stations and operate in the frequency bands (1610 - 1626.5 MHz and 2483.5 - 2500 MHz) allocated to rdss. At this time, we are unable to make a precise estimate of the number of small businesses that are radio determination satellite earth station licensees and could be impacted by the forfeiture guidelines.

It should be noted that in most of the satellite areas discussed above, the Commission issues one license to an entity but generally issues blanket license authority for thousands or even hundreds of thousands of earth stations or hand held transceivers. Overall, the Commission receives about 600 applications for satellite facilities per year. All applicants for satellite earth stations (except for receive-only stations) must make a determination of compliance with the RF exposure limits, based on calculations or measurements.

## B. Radiofrequency Devices

The radiofrequency devices affected by this rulemaking are low power, unlicensed transmitters that will be used to provide, on millimeter wave frequencies, a variety of services, including vehicle collision avoidance and high data rate/short range wireless data communications. Unlicensed personal communications service (PCS) transmitters are also radiofrequency devices. Radiofrequency devices are subject to compliance with the new RF

radiation requirements at the time of equipment authorization. Therefore, it will be the equipment manufacturers and importers who will be affected by this action.

We expect most of the firms that would be interested in producing millimeter wave and unlicensed PCS devices will be large businesses. We note that Ford Motor and Hewlett Packard have expressed interest in millimeter wave devices and filed comments in this proceeding. In addition, Motorola and Ericsson, both large equipment manufacturers, have expressed interest in manufacturing unlicensed PCS devices. Nevertheless, it is conceivable that small businesses will also want to manufacture these devices.

The Commission has not developed a definition of small entities applicable to radiofrequency devices. Therefore, the applicable definition of small entity is the definition under the SBA applicable to the "Communications Services, Not Elsewhere" category. A small millimeter wave device or unlicensed PCS entity under this definition is one with less than \$11.0 million in annual receipts.<sup>229</sup>

The Commission has not yet authorized any millimeter wave devices, and has authorized fewer than fifteen unlicensed PCS devices. Both these services are new, so we really don't know how many applications for equipment authorization we may receive, nor how many small manufacturers may be interested in producing these products. Since the Regulatory Flexibility Act amendments were not in effect until the record in this proceeding was closed, the Commission was unable to request information regarding the number of small businesses in this category. The Census Bureau estimates indicate that of the 848 firms in the "Communications Services, Not Elsewhere" category, 775 are small businesses. Based on this information, as well as our past experience in granting equipment authorization for other types of radiofrequency devices, we estimate that 50 percent of the applications for millimeter wave and unlicensed PCS devices will be from small businesses.

The Commission anticipates that approximately 30 applications will be filed annually for devices that operate in the millimeter band and unlicensed PCS spectrum. An initial determination of compliance with our new RF guidelines will be required for: 1) applications for unlicensed PCS devices that do not meet our definition for a portable device contained in 47 CFR § 2.1093(b) and that operate with 1.5 watts effective radiated power (ERP) or more; 2) applications for portable unlicensed PCS devices; 3) applications for unlicensed millimeter wave devices that do not meet our definition for a portable device and that operate with 3 watts ERP or more; and 4) applications for portable unlicensed millimeter wave devices. We anticipate that 20 of the 30 applications filed will meet these requirements and need to undergo an initial determination of compliance. Of these devices, ten will require specific absorption rate (SAR) modeling or measurement, which adds cost to the authorization process.

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<sup>229</sup> 13 CFR § 121.201, Standard Industrial Classification (SIC) Code 4899.

V. Summary of Projected Reporting, Recordkeeping and Other Compliance Requirements:

No new reporting, recordkeeping, or other compliance requirements are contained in this Second Memorandum Opinion and Order.

VI. Steps Taken to Minimize the Economic Impact on Small Entities:

We have made every effort to devise ways to minimize the impact of the new RF exposure requirements on small entities, while protecting the health and safety of the public. We have incorporated substantial flexibility in the procedures to make compliance as minimally burdensome as possible.

In particular, we took the following steps in the Report and Order to ease the impact on small businesses:

1. We created categorical exclusions that require only those transmitters that appear to have the highest potential to create a significant environmental effect to perform an environmental evaluation.

2. We indicated that we would revise OST Bulletin No. 65 in the near future to provide guidance for determining compliance with FCC-specified RF limits. This should be of particular assistance to small businesses since it will provide straightforward information that should allow a quick understanding of the requirements and a quick assessment of the potential for compliance problems without the need for an expensive consultant or measurement.

3. We allowed various methods for ensuring compliance with RF limits such as fencing, warning signs, labels, and markings, locked doors in roof-top areas, and the use of personal monitors and RF protective clothing in an occupational environment.

4. We rejected our initial proposal to adopt induced and contact currents limits due to the lack of reliable equipment available.

5. We specified a variety of acceptable testing methods and procedures that may be used to determine compliance. This will allow each small business to choose a procedure that best meets its needs in the manner that is least burdensome to it.

6. We have always allowed multiple transmitter sites, i.e., antenna farms, to pool their resources and have only one study done for the entire site. This is very common at sites that have multiple entities such as TV, FM, paging, cellular, etc. In most circumstances, rather than each licensee hiring a separate consultant and submitting a study showing their compliance with the guidelines, one consulting radio technician or radio engineer can be hired

by the group of licensees. The consultant surveys the entire site for compliance and gives his recommendations and findings to each of the licensees at the site. The licensees can then use the findings to show their compliance with the guidelines. In this way the cost of compliance is minimized as no one licensee has to pay the entire consulting fee, rather just a portion of it.

In this First Memorandum Opinion and Order, we took the following additional steps to reduce the burden on small businesses and organizations:

1. We extended the transition period for station applicants to come into compliance with the new requirements. This will give licensees, and applicants for new stations many of which may be small businesses, more time to learn the nature of the new requirements, make studies to determine whether they comply, and take steps to come into compliance if necessary.

2. We decided to permit the required changes in the ARS examinations to be made as the examinations are being routinely revised. This ensures that a minimal burden is put on the small organizations acting as VECs.

In this Second Memorandum Opinion and Order, we have taken these additional steps to reduce the burden on small businesses and organizations:

1. We categorically excluded from routine environmental evaluation certain non-portable, unlicensed millimeter wave and PCS devices. This eliminates the need for these devices to undergo detailed evaluation before the devices undergo equipment authorization.

2. We increased the responsibility threshold, above which licensees at multiple transmitter locations must share responsibility for addressing RF exposure non-compliance problems, from 1% to 5%. We believe that a 5% responsibility threshold will offer relief to relatively low-powered site occupants who do not contribute significantly to the non-compliance and, at the same time, provide for the appropriate allocation of responsibility among major site emitters. Similarly, we are raising the filing thresholds, above which applicants must file an EA if emissions from the applicant's transmitter or facility would result in a field strength or power density in excess of our limits, from 1% to 5%.

Report to Congress: The Commission shall send a copy of this Final Regulatory Flexibility Analysis, along with this Report and Order, in a report to Congress pursuant to the Small Business Regulatory Enforcement Fairness Act of 1996, 5 U.S.C. § 801(a)(1)(A). A copy of this FRFA will also be published in the Federal Register.

## APPENDIX D

INITIAL REGULATORY FLEXIBILITY ANALYSIS  
Notice of Proposed Rulemaking

As required by Section 603 of the Regulatory Flexibility Act, 5 U.S.C. § 603, the Commission has prepared an Initial Regulatory Flexibility Analysis (IRFA) of the expected impact on small entities of the policies and rules proposed in this Notice of Proposed Rulemaking (NPRM). Written public comments are requested on the IRFA. Comments must be identified as responses to the IRFA and must be filed by the deadlines for comments on the NPRM as provided in section IV(D)(3).

**Reason for Action:** This rulemaking proceeding was initiated to secure comment on procedures for reviewing requests for relief of State and local regulations concerning the siting of personal wireless service facilities that are based on the environmental effects of RF emissions pursuant to Section 332(c)(7)(B)(v) of the Communications Act.<sup>230</sup> This Section of the Communications Act was created with the passage of Section 704 the Telecommunications Act of 1996.<sup>231</sup>

**Objectives:** The procedures set forth in the NPRM are designed to provide a balanced method for reviewing requests for relief and to ensure that personal wireless service providers are permitted to seek the full relief afforded them under the Communications Act. At the same time, the Commission seeks to provide an opportunity for interested parties to argue that a specific wireless facility will not comply with the Commission's RF guidelines. In addition, the Commission believes that the procedures adopted as a result of this proceeding will allow for expedited review of requests for relief, as well as, much-needed guidance on this important issue.

**Legal Basis:** The proposed action is authorized under Sections 4(i), 303(g), 303(r) and 332(c)(7) of the Communications Act of 1934, as amended.<sup>232</sup>

**Reporting, Recordkeeping, and Other Compliance Requirements:** The proposals under consideration in the NPRM include the possibility of imposing a new filing requirement for parties seeking relief pursuant to Section 332(c)(7)(B)(v) of the Communications Act. The filing requirement would be used to determine whether to grant relief from the State or local regulation in question. This filing will be in the form of a request for declaratory ruling filed

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<sup>230</sup> 47 U.S.C. § 332(c)(7)(B)(v).

<sup>231</sup> Pub. L. No. 104-104, 110 Stat. 56 (1996).

<sup>232</sup> 47 U.S.C. §§ 154(i), 303(g), 303(r) and 332(c)(7), as amended.

pursuant to Section 1.2 of the Commission's Rules.<sup>233</sup> Only interested parties or those parties demonstrating the requisite standing will be permitted to participate in the proceeding. The NPRM also seeks comment on whether to adopt either a simple certification of compliance or more detailed demonstration of compliance that personal wireless service providers will be required to submit to State and local governments as evidence of RF emissions compliance.

We estimate that the average burden on the party seeking relief will be approximately two hours to prepare the request for relief and file it with the Commission. We estimate an equal amount of time for the State or local authority or other interested party (referred to jointly herein as the "respondents") to prepare and file their comments on and/or oppositions to the preemption request. We estimate that 75 percent of both the requesting parties and the respondents (which may include small businesses) will contract out the burden of preparing their filings. We estimate that it will take approximately 1 hour to coordinate information with those contractors. The remaining 25 percent of parties filing requests and respondents (which may include small businesses) are estimated to employ in-house staff to provide the information. We estimate that parties requesting relief and respondents that contract out the task of preparing their filings will use an attorney or engineer (average \$200 per hour) to prepare the information.

We estimate that the average burden on the party required to prepare a simple certification of RF compliance to be less than one hour. We estimate that the average burden on the party required to prepare a more detailed demonstration of RF compliance to be approximately 5 hours. We estimate that 75 percent of these parties (which may include small businesses) will contract out the burden of prepare their filings. We estimate that it will take approximately 1 hour to coordinate information with those contractors. The remaining 25 percent of parties (which may include small businesses) are estimated to employ in-house staff to provide the information. We estimate that parties that contract out the task of preparing their filings will use an engineer (average \$200 per hour) to prepare the information.

Federal Rules Which Overlap, Duplicate or Conflict With These Rules: Section 332(c)(7)(B)(iv)-(v) provides the authority for the Commission to consider requests for relief of state and local actions.<sup>234</sup>

#### Description, Potential Impact, and Number of Small Entities Involved:

The proposed rules in this NPRM will apply to all small businesses which avail themselves of these new procedures, including small businesses defined as providers of "personal wireless services" that seek relief from State and local regulations based upon the

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<sup>233</sup> 47 C.F.R. § 1.2.

<sup>234</sup> 47 U.S.C. § 332(c)(7)(B)(iv)-(v).

environmental effects of RF emissions. The Commission is required to estimate in its Final Regulatory Flexibility Analysis the number of small entities to which these new procedures will apply, provide a description of these entities, and assess the impact of the rule on such entities. To assist the Commission in this analysis, commenters are requested to provide information regarding how many total providers of "personal wireless services," existing and potential, will be considered small businesses. "Small business" is defined as having the same meaning as the term "small business concern" under the Small Business Act.<sup>235</sup> Based on that statutory provision, we will consider a small business concern one which (1) is independently owned and operated; (2) is not dominant in its field of operation; and (3) satisfies any additional criteria established by the Small Business Administration (SBA). We seek comment as to whether this definition is appropriate in this context. Additionally, we request each commenter to identify whether it is a small business under this definition. If the commenter is a subsidiary of another entity, this information should be provided for both the subsidiary and the parent corporation or entity.

The Commission has not yet developed a definition of small entities which respect to reviewing requests for relief pursuant to Section 332(c)(7)(B)(v) of the Communications Act. Therefore, the applicable definition of small entity is the definition under the SBA applicable to the "Communications Services, Not Elsewhere" category. The Census Bureau estimates indicate that of the 848 firms in the "Communications Services, Not Elsewhere" category, 775 are small businesses. While the Commission anticipates receiving requests for relief filed pursuant to Section 332(c)(7)(B)(v) of the Communications Act, it is not possible to predict how many will be filed or what percentage of these will be filed by small entities.

#### Cellular Radio Telephone Service

The Commission has not developed a definition of small entities applicable to cellular licensees. Therefore, the applicable definition of small entity is the definition under the Small Business Administration (SBA) rules applicable to radiotelephone companies. This definition provides that a small entity is a radiotelephone company employing fewer than 1,500 persons.<sup>236</sup> The size data provided by the SBA does not enable us to make a meaningful estimate of the number of cellular providers which are small entities because it combines all radiotelephone companies with 500 or more employees.<sup>237</sup> We therefore used the 1992 Census of Transportation, Communications, and Utilities, conducted by the Bureau of the Census, which is the most recent information available. That census shows that only 12 radiotelephone firms out of a total of 1,178 such firms which operated during 1992 had 1,000

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<sup>235</sup> 15 U.S.C. § 632.

<sup>236</sup> 13 C.F.R. § 121.201, Standard Industrial Classification (SIC) Code 4812.

<sup>237</sup> U. S. Small Business Administration 1992 Economic Census Employment Report, Bureau of the Census, U.S. Department of Commerce, SIC Code 4812 (radiotelephone communications industry data adopted by the SBA Office of Advocacy).



or more employees.<sup>238</sup> Therefore, even if all 12 of these large firms were cellular telephone companies, all of the remainder were small businesses under the SBA's definition. We assume that, for purposes of our evaluations and conclusions in this IRFA, all of the current cellular licensees are small entities, as that term is defined by the SBA. Although there are 1,758 cellular licenses, we do not know the number of cellular licensees, since a cellular licensee may own several licenses.

The rules we are proposing would permit a cellular licensee to seek relief from the Commission for an adverse State or local regulation that is based upon environmental effects of RF emissions. Since most cellular licensees have constructed their facilities, we anticipate receiving only a small number of such requests from cellular licensees and that all of these would be small entities.

#### Personal Communications Service

The broadband PCS spectrum is divided into six frequency blocks designated A through F. Pursuant to 47 C.F.R. § 24.720(b), the Commission has defined "small entity" for Blocks C and F licensees as firms that had average gross revenues of less than \$40 million in the three previous calendar years. This regulation defining "small entity" in the context of broadband PCS auctions has been approved by the SBA.<sup>239</sup>

The Commission has auctioned broadband PCS licenses in all of its spectrum blocks A through F. We do not have sufficient data to determine how many small businesses under the Commission's definition bid successfully for licenses in Blocks A and B. As of now, there are 90 non-defaulting winning bidders that qualify as small entities in the Block C auction and 93 non-defaulting winning bidders that qualify as small entities in the D, E, and F Block auctions. Based on this information, we conclude that the number of broadband PCS licensees that would be affected by the proposals in this NPRM includes the 183 non-defaulting winning bidders that qualify as small entities in the C, D, E and F Block broadband PCS auctions.

The Commission expects to receive a significant number of requests for relief filed pursuant to Section 332(c)(7)(B)(v) involving broadband PCS licensee, many of whom may be small entities. However, it is not possible to estimate the exact number that will be filed.

#### Paging and Radiotelephone Service, and Paging Operations

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<sup>238</sup> U.S. Bureau of the Census, U.S. Department of Commerce, 1992 Census of Transportation, Communications, and Utilities, UC92-S-1, Subject Series, Establishment and Firm Size, Table 5, Employment Size of Firms: 1992, SIC Code 4812 (issued May 1995).

<sup>239</sup> See Implementation of Section 309(j) of the Communications Act -- Competitive Bidding, PP Docket No. 93-253, Fifth Report and Order, 9 FCC Rcd 5532, 5581-84 (1994).

Since the Commission has not yet approved a definition for paging services, we will utilize the SBA's definition applicable to radiotelephone companies, i.e., an entity employing less than 1,500 persons.

The Commission anticipates that a total of 15,531 non-nationwide geographic area licenses will be granted or auctioned. The geographic area licenses will consist of 3,050 MTA licenses and 12,481 EA licenses. In addition to the 47 Rand McNally MTAs, the Commission is licensing Alaska as a separate MTA and adding three MTAs for the U.S. territories, for a total of 51 MTAs. No auctions of paging licenses has been held yet, and there is no basis to determine the number of licenses that will be awarded to small entities. Given the fact that nearly all radiotelephone companies have fewer than 1,000 employees, and that no reliable estimate of the number of prospective paging licensees can be made, we assume, for purposes of this IRFA, that all the 15,531 geographic area paging licenses will be awarded to small entities, as that term is defined by the SBA.

We estimate that a significant number of paging licensees may file requests for relief pursuant to Section 332(c)(7)(B)(v) and that all of these will be small entities.

#### Specialized Mobile Radio

Pursuant to 47 C.F.R. § 90.814(b)(1), the Commission has defined "small entity" for geographic area 800 MHz and 900 MHz SMR licenses as firms that had average gross revenues of less than \$15 million in the three previous calendar years. This regulation defining "small entity" in the context of 800 MHz and 900 MHz SMR has been approved by the SBA.<sup>240</sup>

The proposals set forth in the NPRM apply to SMR providers in the 800 MHz and 900 MHz bands. We do not know how many firms provide 800 MHz or 900 MHz geographic area SMR service, nor how many of these providers have annual revenues of less than \$15 million. Furthermore, we are not able to estimate how many SMR providers will seek preemption pursuant to Section 332(c)(7)(B)(v) of the Communications Act.

The Commission recently held auctions for geographic area licenses in the 900 MHz SMR band. There were 60 winning bidders who qualified as small entities under the Commission's definition in the 900 MHz auction. Based on this information, we conclude

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<sup>240</sup> See Amendment of Parts 2 and 90 of the Commission's Rules to Provide for the Use of 200 Channels Outside the Designated Filing Areas in the 896-901 MHz and the 935-940 MHz Bands Allotted to the Specialized Mobile Radio Pool, PR Docket No. 89-553, Second Order on Reconsideration and Seventh Report and Order, 11 FCC Rcd 2639, 2693-702 (1995); Amendment of Part 90 of the Commission's Rules to Facilitate Future Development of SMR Systems in the 800 MHz Frequency Band, PR Docket No. 93-144, First Report and Order, Eighth Report and Order, and Second Further Notice of Proposed Rulemaking 11 FCC Rcd 1463 (1995).

that the number of geographic area SMR licensees affected by the proposals set forth in this NPRM includes these 60 small entities.

No auctions have been held for 800 MHz geographic area SMR licenses. Therefore, no small entities currently hold these licenses. A total of 525 licenses will be awarded for the upper 200 channels in the 800 MHz geographic area SMR auction. However, the Commission has not yet determined how many licenses will be awarded for the lower 230 channels in the 800 MHz geographic area SMR auction. There is no basis to estimate, moreover, how many small entities within the SBA's definition will win these licenses. Given the facts that nearly all radiotelephone companies have fewer than 1,000 employees and that no reliable estimate of the number of prospective 800 MHz licensees can be made, we assume, for purposes of our evaluations and conclusions in this IRFA, that all of the licenses will be awarded to small entities, as that term is defined by the SBA.

#### Unlicensed Personal Communications Services and Wireless Exchange Access Carriers

Section 332(c)(7)(C)(i) of the Communications Act includes "unlicensed wireless services" and "common carrier wireless exchange access services" in the definition of "personal wireless services" for which relief may be sought under Section 332(c)(7)(B)(v). We presently have no data on the number of providers of unlicensed wireless services or common carrier wireless exchange access services.

Significant Alternatives Minimizing the Impact on Small Entities Consistent with the Stated Objectives: The proposals advanced in the NPRM are designed to permit personal wireless service providers with the opportunity to seek relief pursuant to Section 332(c)(7)(B)(v) of the Communications Act. The impact on small entities in the proposals in the NPRM is the opportunity to seek such relief. These procedures were designed to have a minimal impact on all personal wireless providers, including small entities, and to provide for an balanced and expedited method for reviewing such requests. The Commission believes that such procedures shall help to attain the Congressional objective of ensuring that small businesses have an opportunity to participate in the provision of wireless services by enabling small businesses to overcome entry barriers in the provision of such services.

This NPRM solicits comments on a variety of proposals discussed herein. Any significant alternatives presented in the comments will be considered.