56. *Petitions.* Motorola and SEA seek reconsideration of the measurement requirements.[130] Motorola contends that using a resolution bandwidth of 100 Hz, rather than the 300 Hz recommended by TIA, adds 5 dB of energy to the adjacent channel.[131] As a result, Motorola argues that spectrum efficiency will be reduced by requiring greater separation distances between systems operating on adjacent channels.[132] SEA agrees with Motorola, but recommends that the resolution bandwidth be left at 100 Hz, and that the attenuation of the emission masks be adjusted 5 dB.[133]

57. *Discussion.* We decline to adjust the measurement technique adopted in the *R&O*. The current industry trend for measuring digital emissions just outside the channel, *i.e.*, the adjacent channel, is to use measuring instrumentation having a resolution capability of 1% of the bandwidth of the carrier emission. This is evidenced by measurement procedures and interpretations that have been developed in our rules for the licensed Personal Communications Services (PCS) and unlicensed PCS devices.[134] A resolution bandwidth of 1% of the carrier emission bandwidth provides a reasonable compromise where the emission's interference potential can be measured and the instrumentation will not detrimentally affect the measurement. Using a 100 Hz resolution bandwidth for equipment in the Refarming bands approximates the 1% standard that has been accepted by the affected industries in other rule makings.[135] Finally, we believe the claim of a 5 dB increase in energy to the adjacent channel to be overstated because it assumes a uniform level of energy across the measurement window without taking into account the roll-off of energy at the band edges that results from the emission mask. Therefore, we conclude that any effects on the adjacent channel will be less than 5 dB.

H. FM Modulation Requirements

58. In order to promote flexibility for manufacturers to introduce new and innovative modulation techniques in the PLMR bands below 512 MHz, we revised Section 90.211 of our rules to eliminate those requirements that were primarily applicable to radios that use frequency modulation (FM).[136]

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[130] Motorola Petition for Reconsideration at 5-6; SEA Comments on Petitions for Reconsideration at 3-4.

[131] Motorola Petition for Reconsideration at 5-6.

[132] Motorola Petition for Reconsideration at 5-6.

[133] SEA Petition for Reconsideration at 3-4.

[134] *See* 47 C.F.R. §§ 15.321(d) and 15.323(d).

[135] *See, e.g.*, Amendment of the Commission's Rules to Establish New Personal Communicating Services, GEN Docket No. 90-314, *Third Memorandum Opinion and Order*, 9 FCC Rcd 6908 (1994).

[136] *See R&O* at para. 105.

59. *Petitions.* While TIA supports our objective, it disagrees with our decision to remove specified deviation limits for FM.[137] It states that compatibility among different FM technologies is ensured by maintaining FM modulation deviation limits and filter characteristics.[138] Therefore, TIA recommends that the modulation limits for F3E[139] emissions be reinserted into the rules with their respective low pass post limiter transmitter filter characteristics.[140]

60. *Discussion.* We disagree with TIA's contention. In the *R&O*, we revised Section 90.211 of the Commission's rules to remove specifications for filter characteristics and to require that equipment meet the emission masks specified in Section 90.210. Additionally, we eliminated FM deviation requirements from Section 90.209 of our rules. Our rationale for each of these decisions was to provide manufacturers flexibility in designing and implementing radio specifications. In this connection, we believe that setting specifications for FM would be inconsistent with such rationale. In response to TIA's desire for compatibility, we believe that if users place a high value on compatibility, then the marketplace will dictate that manufacturers include it in their product specifications. Further, we believe that it is more appropriate for compatibility to be achieved as a result of marketplace forces rather than regulatory requirements.

I. Former Low Power Offset Channels

61. With the adoption of a new channel plan, many frequency allocations and assignments were altered, particularly those of the former low power offset channels. Our method for assigning new narrowband frequency assignments in the 421-512 MHz band consisted of creating three new narrowband channels at frequencies above each existing wideband assignment. These narrowband channels were given the same limitation restrictions as the channel immediately below them in frequency.[141] One result of the new channel plan is that channels formally available as low power offset channels under Section 90.267 of our rules are now available as regularly assignable channels for high power operations. Additionally, the new channel plan resulted in a reallocation of some of these channels from one radio service to another by allocating channels that were between allocations for two different radio services to the radio service or services where the lower of the channels was allocated. For example, since 452.100 MHz is allocated to the Forest Products and Taxicab Radio Services, the channel at 452.1125 MHz, previously available as a low power offset channel in the Special Industrial and Taxicab Radio Services, was reallocated by the new channel plan to the Forest Products and

[137] TIA Petition for Reconsideration at 3-4.

[138] TIA Petition for Reconsideration at 4.

[139] F3E is the emission designator used for analog telephony using frequency modulation.

[140] TIA Petition for Reconsideration at 4.

[141] *See R&O* at para. 60.

Taxicab Radio Services. In this connection, we grandfathered licensees on their existing channel if, due to this reallocation, the channel for which they were licensed was no longer available in the radio service for which they were eligible. These grandfathered channels were identified in the frequency listing of each radio service with a limitation that prevents future licensing, but allows renewal and modification of existing systems.

(1) **New Limitations**

62. *Petitions.* The Hewlett-Packard Company (HP) states that several new high power channels in the Business Radio Service which were previously available as low power offset channels under former Section 90.267 of our rules have new restrictions that appear to have been added to protect operations on adjacent channels.[142] Specifically, HP asks that we reexamine permissible uses for former offset channels that, under the new channel plan, are now subject to Limitation 25.[143] Limitation 25 specifies certain frequencies for use on a primary basis only in and around specific airports, and allows on a secondary basis, low power, *i.e.*, 2 watt, use at least 16 km removed from each airport. HP also requests that we reconsider permissible uses of former low power offset channels that, under the new channel plan, are now subject to Limitation 46, which freezes licensing until August 18, 1996, and limits the authorized bandwidth to 6 kHz.[144] Finally, HP questions whether 466.0125 MHz, which was previously available as a low power offset to all eligibles in the Business Radio Service, should now be subject to Limitation 28.[145] Limitation 28 restricts licensees to central station commercial protection systems.[146] HP believes that these new restrictions are neither necessary, nor intended to restrict uses, such as low power medical telemetry, which were authorized under former Section 90.267 of our rules.[147]

63. Several other petitioners express concern regarding the allocation and use of certain former low power offset frequencies. APCO requests clarification as to why certain "mobile only" channels in the 450-470 MHz band have a limitation which prohibits licensing new stations

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[142] HP Petition for Reconsideration at 6.

[143] *See* HP Petition for Reconsideration at 6, Footnote 7. The former low power offset channels that are now subject to Limitation 25 are: 460.6625 MHz, 460.6875 MHz, 460.7125 MHz, 460.7375 MHz, 460.7625 MHz, 460.7875 MHz, 460.8125 MHz, 460.8375 MHz, 460.8625 MHz, 460.8875 MHz, 465.6625 MHz, 465.6875 MHz, 465.7125 MHz, 465.7375 MHz, 465.7625 MHz, 465.7875 MHz, 465.8125 MHz, 465.8375 MHz, 465.8625 MHz, and 465.8875 MHz.

[144] *See* HP Petition for Reconsideration at 6, Footnote 7. The former low power offset channels that are now subject to limitation 46 are: 464.4875 MHz, 464.5125 MHz, 464.5375 MHz, 464.5625 MHz, 469.4875 MHz, 469.5125 MHz, 469.5375 MHz, and 469.5625 MHz.

[145] *See* HP Petition for Reconsideration at 6, Footnote 8.

[146] *See* 47 C.F.R. § 90.75(c)(28).

[147] *See* HP Petition for Reconsideration at 6.

after August 18, 1995.[148] PCIA contends that the former Business Radio Service offset frequencies 462.0125 MHz through 462.1875 MHz, which are now allocated to the Special Emergency Radio Service (SERS), should be allocated to the Business Radio Service.[149] The Commonwealth of Virginia Department of Health (Virginia) states that the Special Emergency Radio Service frequency table in Section 90.53(a) of our rules lists 467.9625 MHz and 467.9875 MHz, but fails to include their associated 462 MHz frequencies.[150] Finally, Virginia expresses concern that the elimination of Section 90.555 of our rules, which contained a comprehensive list of frequencies assignable under Part 90, has obscured the reallocation of existing and new frequencies.[151]

64. *Discussion.* In the *R&O*, we imposed restrictions on some former low power offset channels in order to protect primary users on the same and adjacent channels from harmful interference. Because communications on the grounds of an airport could affect the safety of aircraft, crew members, passengers, and ground personnel, and the specified separation distances of Limitation 25 protect against harmful interference, we will not alter such restrictions. However, we do agree with HP regarding the use of medical telemetry devices on certain frequencies. Due to the low operating power of medical telemetry devices, we believe that their interference potential to airport operations is minimal. Therefore, we will allow their use on a secondary, non-interference basis on former low power offset channels now subject to Limitation 25, provided that their output powers do not exceed 20 milliwatts. Additionally, we will allow low power medical telemetry on a secondary, non-interference basis on 466.0125 MHz, which under the new channel plan is reserved for central station commercial protection systems. We are revising the frequency table in Section 90.75(b) of our rules to reflect these changes.

65. In the Business Radio Service, channels adjacent to the "color dot"[152] channels were restricted to 6.25 kHz channels by Limitation 46 in order to minimize adjacent channel interference from new high power users. Upon reexamination of the channel plan, we find this restriction to be unnecessary. If emissions on these adjacent channels are permitted to occupy a 12.5 kHz channel, users will avoid adjacent channel interference because emissions within the authorized bandwidth of the "color dot" channel and its adjacent channel will not overlap. Thus, adequate protection exists between the "color dot" channel and an adjacent 12.5 kHz channel.

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[148] APCO Petition for Reconsideration at 8.

[149] PCIA Petition for Reconsideration at 6.

[150] Virginia Petition for Reconsideration at 4.

[151] Virginia Petition for Reconsideration at 5.

[152] Certain low power and itinerant frequencies in the Business Radio Service that are used for very low tier, low cost, entry level communications are commonly referred to as color dot frequencies because their operating frequencies are designated by a colored dot or star attached to the radio. These channels were not narrowed beyond 12.5 kHz. *See R&O* at para. 101.

Accordingly, these channels, similar to the bandwidth restrictions imposed on most other former low power offset channels, will be subject to limitation 24,[153] rather than Limitation 46.

66. In response to requests for clarification regarding specific channels, we reexamined all channels that were reallocated from one radio service to another and made several changes to the frequency tables to correct errors. Additionally, in the Police Radio Service, eligibility for use of 460.0125 MHz, which is currently restricted to current licensees only,[154] has been modified to allow use by new low power licensees.[155] New high power stations on 460.0125 MHz will continue to be prohibited in order to protect adjacent Domestic Public Radio users who operate under Part 22 of our rules. Finally, we have added 467.9375 MHz to the Business Radio Service but restricted it to low power use in order to protect an adjacent 12.5 kHz color dot channel.[156] Appendix B is a table of the reallocated channels in each radio service.

(2) Operation and Licensing Requirements

67. The *R&O* provided several operational alternatives for licensees authorized on the former low power offset channels. One option is to remain on their current channels and achieve primary status by providing sufficient justification to raise power. A second option is to migrate to designated low power channels and achieve primary status on those channels. A third option is to remain on their current channel at low power and continue to have secondary status.[157]

68. *Petitions.* AICC contends that licensees should be able to attain primary status without raising power because "[m]aking licensees increase power for the sole purpose of achieving primary status on the channel runs counter to the Commission's desire to obtain maximum use of the channels ...".[158] Additionally, AICC asks whether stations wishing to increase power need to file a letter notification or an application to provide coordinates.[159] Finally, AICC suggests that the Commission continue to allow the current practice for alarm transmitters of providing coordinates for the center of an operating area and the radius around

[153] Limitation 24 specifies a maximum authorized bandwidth of 11.25 kHz.

[154] *See* 47 C.F.R. § 90.19.

[155] This channel was a low power offset channel under the former 47 C.F.R. § 90.267.

[156] This channel was a low power offset channel under the former 47 C.F.R. § 90.267.

[157] *See R&O* at paras. 62-65.

[158] AICC Petition for Reconsideration at 5.

[159] AICC Petition for Reconsideration at 3.

these coordinates in which transmitters will operate rather than requiring each fixed transmitter to be individually licensed.[160]

69. *Decision.* As an initial matter, recognizing that any decision regarding changes in power requirements on former low power offset channels will be affected by our resolution of the exclusivity issues raised in the *FNPRM* in this proceeding, we defer decisions on this matter to a future *Order*. Regarding the requirement to furnish coordinates, we note that situations exist where it is neither feasible nor desirable for a licensee to furnish coordinates of all transmitters in their system. For example, central station alarm systems have a very large subscriber base which is continually changing. Moreover, because the Commission's records are open to public inspection, disclosure of coordinates for alarm system subscribers could provide burglars with a list of attractive properties.[161] Therefore, we will allow licensees to supply only coordinates of the center of an operating area and a radius when all stations are fixed, low power, *i.e.*, not to exceed 2 watts, stations.

J. New Low Power Offset Channels

70. When we eliminated the low power offset channels in the *R&O*, we established new low power offset channels because low power operations have been beneficial to private land mobile radio operations.[162] These new low power offset channels are 3.125 kHz removed from regularly assignable channels and are authorized only on a secondary, non-interference basis.[163]

71. *Petitions.* PCIA opposes our creation of these channels.[164] First, PCIA contends that low power users will be accommodated through coordinator designated exclusive low power channels and the color dot channels. Second, PCIA argues that these new low power offset channels will recreate difficulties which existed with the former low power offset channels due to the lack of a requirement for licensees to furnish the geographic coordinates of their systems. And third, PCIA states that these new low power offset channels may have the unintended effect of preventing the use of primary channels by wideband, spectrally efficient systems. There were no oppositions to PCIA's petition.

72. *Discussion.* We agree with PCIA that these low power offset channels could potentially have a detrimental effect on the operations on primary channels. Therefore, we will remove the new low power offset channels from Section 90.267(b) of our rules. However, in

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[160] AICC Petition for Reconsideration at 3.

[161] AICC Petition for Reconsideration at 3-4.

[162] *See, e.g.*, Comments of HP to *Refarming Notice* 2.

[163] *See R&O* at para. 66.

[164] PCIA Petition for Reconsideration at 2.

light of technological advances and usage patterns in these bands, we reserve the right to revisit this issue in the future.

K. Emergency Medical Radio Service/Special Emergency Radio Service

73. In the *Report and Order* in PR Docket 91-72, where we established the Emergency Medical Radio Service (EMRS),[165] we assigned the 453 MHz and 458 MHz frequencies used for medical paging systems in the SERS to the Emergency Medical Radio Service. SERS users were permitted to continue operating on these channels as primary users for a period of five years.[166] In the *R&O*, the SERS frequencies reassigned to the EMRS were rechannelized at the new narrowband spacings.

(1) Paging Channels

74. *Petitions.* The International Municipal Signal Association and International Association of Fire Chiefs, Inc. (IMSA/IAFC) and Virginia request removal of the new channels that arose from splitting the 453 MHz and 458 MHz channels from the SERS.[167] IMSA/IAFC contends that "there is no reason to expand SERS use of these frequencies by designating split channels in the SERS."[168]

75. *Discussion.* We agree with IAFC/IMSA and Virginia and will remove the 453 MHz narrowband channels from the SERS frequency table in Section 90.53(a) of our rules. The 453 MHz channels, by rule, are not available for new licensees in the SERS.[169] Similar action is not necessary on the 458 MHz channels because they were removed from Section 90.53 of our rules when the EMRS was created.

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[165] Amendment of Part 90 of the Commission's Rules to Create the Emergency Medical Radio Service, *Report and Order*, PR Docket No. 91-72, 8 FCC Rcd 1454 (1993).

[166] The five-year period ends January 14, 1998.

[167] IMSA/IAFC Petition for Reconsideration at 3; Virginia Petition for Reconsideration at 4.

[168] IMSA/IAFC Petition for Reconsideration at 3.

[169] *See* paragraph 61, *supra*.

(2) MED Channels

76. In the EMRS, MED channels are used for emergency medical communications.[170] Prior to adoption of the *R&O*, there were 10 MED channels, designated as MED-1 through MED-10. The new channel plan created 3 new MED channels higher in frequency than each existing MED channel. These new channels, designated as MED-A through MED-X, were assigned as follows: MED-A, MED-B, and MED-C were assigned between MED-1 and MED-2, MED-D, MED-E, and MED-F were assigned between MED-2 and MED-3. The new MED channels higher in frequency than MED-9 and MED-10 were not labeled.

77. *Petitions.* Virginia and The State of Florida Division of Communications (Florida) propose changing our approach to labeling the MED channels to one that is entirely numeric. Under Virginia's proposal, the channel 12.5 kHz above MED-1 would be denoted as MED-11, the channel 6.25 kHz above MED-1 as MED-21, and the channel 18.75 kHz above MED-1 as MED-31.[171] Virginia states that their plan "would show solid relationships between new assignments and existing users, allow an orderly assignment of the channels, and allow similarly numbered channels to be aggregated for 'equivalent efficiencies.'"[172] Virginia further states that since alphabetic characters are already used to denote sites, regions, and subaudible tones, its plan would minimize confusion.[173] Florida's plan would denote the channels 6.25 kHz, 12.5 kHz, and 18.75 kHz above MED-1 as MED-11, MED-21, and MED-31, respectively.[174]

78. *Discussion.* We agree with Virginia and Florida that a different labeling approach is needed for the new MED channels because any confusion regarding their designation could potentially interfere with the communication of messages necessary to ensure public safety. We believe, however, that both the plans proposed by Virginia and Florida also have the potential to create confusion if implemented. For example, the channel 12.5 kHz above MED-3 would be denoted as MED-13 under Virginia's plan and as MED-23 under Florida's plan. We believe that these channel designations could easily be interpreted as the third new channel, *i.e.*, 18.75 kHz, above MED-1 or the third new channel above MED-2, respectively. We believe a more logical labeling approach would be to use a trailing 1, 2, or 3 to designate the position of the new MED channels in relation to the existing MED channels. For example, the channel 6.25 kHz above MED-3 will be designated as MED-31, the channel 12.5 kHz above MED-3 as MED-32,

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[170] MED channels 1-8 are assigned in a block to all new EMRS radio systems for shared operation among persons or entities engaged in the provision of basic or advanced life support services on an ongoing basis. *See* 47 C.F.R. § 90.27(c)(13). MED channels 9 - 10 are primarily authorized for the dispatch of medical care vehicles and personnel for the rendition or delivery of medical services. *See* 47 C.F.R. § 90.27(c)(11).

[171] Virginia Petition for Reconsideration at Attachment A.

[172] Virginia Petition for Reconsideration at 3.

[173] Virginia Petition for Reconsideration at 3.

[174] Florida Petition for Reconsideration at Attachment A.

and the channel 18.25 kHz above MED-3 as MED-33. Thus, we will adopt this labeling approach for designating the channel positions accorded to each of the 10 MED channels. We are revising Sections 90.27(c)(11) and 90.27(c)(13) of our rules consistent with this new labeling approach.

L. Exemption From Technical Standards

79. Currently, Section 90.217 of our rules exempts transmitters used in the Business Radio Service that have an output power not exceeding 120 milliwatts from the technical requirements imposed by our rules, provided that they meet minimum emission limitations.[175]

80. *Petitions.* HP, AMRT, and Schlumberger, supported by UTC, request that the current exemption be expanded to include all private land mobile radio services.[176] Schlumberger states that this rule "ceases to have relevance in view of the Commission's decision to consolidate the separate radio services."[177] AMRT asserts that an expansion of the current exemption to include all transmitters operating under 120 milliwatts would "provide manufacturers with additional design flexibility without increasing potential interference."[178]

81. *Discussion.* We agree that limiting this technical exemption to one class of users no longer seems reasonable nor practical. Accordingly, we are expanding the current exemption to include all private land mobile radio services.

M. Transient Frequency Response

82. In order to assure that transient frequencies[179] do not cause excessive interference to land mobile licensees and television receivers in adjacent bands, the Commission adopted standards for transient frequency behavior. These standards are based on EIA/TIA standard 603, which sets allowable transient response for radios that operate in three frequency bands: 30-300 MHz, 300-500 MHz, and 500-1000 MHz.[180]

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[175] *See* 47 C.F.R. § 90.217.

[176] HP Petition for Reconsideration at 4; AMRT Petition for Reconsideration at 3; Schlumberger Petition for Reconsideration at 6; UTC Comments on Petitions for Reconsideration at 6.

[177] Schlumberger Petition for Reconsideration at 6.

[178] AMRT Petition for Reconsideration at 3.

[179] "Transient frequencies" are abrupt off-frequency emissions of short duration caused by the operation of a switch, such as the keying on or off of a radio transmitter.

[180] *See R&O* at para. 107.

83. *Petitions.* TIA and Motorola request that we clarify the new rules by declaring that they are only applicable to equipment type accepted after a specific date.[181] TIA states that "[t]his will help insure that existing and operational radios are grandfathered under the rules in which they were authorized."[182]

84. Also, Motorola notes that our rules for radios operating with a 25 kHz channel bandwidth are inconsistent with EIA/TIA standard 603 because the rules provide one standard for base and portable radios and a different standard for mobile radios.[183] Additionally, TIA states that we inadvertently omitted standards for transmitters designed to operate in the 421-430 MHz band.[184]

85. Finally, Motorola recommends that the three frequency band columns[185] listed in section 90.214 of our rules be replaced by two frequency band columns, one for 150-174 MHz and one for 421-512 MHz. In this connection, Motorola argues that "[t]here is no need to distinguish between radios operating at 470-500 MHz and 500-512 MHz as the Commission's adopted rules provide."[186]

86. *Discussion.* We decline to modify the implementation date of Section 90.214 of our rules. Since the new rules took effect on August 18, 1995, the Commission's Equipment Authorization Division has been granting type acceptance based on transmitters meeting all of the new technical requirements. Therefore, because there have been no objections to the transient frequency requirements of Section 90.214, we see no reason to grant type acceptance to transmitters that do not meet the new requirements. Further, given that we are not rescinding any type acceptance grants, radios type accepted prior to August 18, 1995 are grandfathered for use in the refarming bands. Additionally, granting type acceptance to radios that do not meet the new requirements would be administratively burdensome because it would create two categories of transmitters which would be difficult to track and identify in the future. We are, however, modifying the rules by rectifying the error noted by Motorola and by correcting the omission of standards for radios that operate in the 421-430 MHz band.

87. In addition, we adopt Motorola's recommendation to apply the standards for radios that operate in the 421-500 MHz band to radios that operate in the 500-512 MHz band. Given

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[181] TIA Petition for Reconsideration at 3; Motorola Petition for Reconsideration at 7.

[182] TIA Petition for Reconsideration at 3.

[183] Motorola Petition for Reconsideration at 7, Note 12.

[184] TIA Petition for Reconsideration at 3, note 7.

[185] Section 90.214 of our rules, consistent with EIA/TIA Standard 603, provides separate standards for radios operating in the 150-174 MHz, 450-500 MHz, and 500-512 MHz bands.

[186] Motorola Petition for Reconsideration at 7, note 12.

that the standard for the 421-500 MHz band is the more stringent one and radios are not type accepted for operation in just the 500-512 MHz band, we conclude that separate standards for the 500-512 MHz band are not necessary.

N. Section 90.271 Narrowband Operations

88. In accordance with our proposal in the *Refarming Notice*, we eliminated Section 90.271 of our rules.[187] This rule section provided for 5 kHz narrowband channels that were offset either 2.5 kHz or 7.5 kHz from regularly assignable channels in the 150-170 MHz band. Additionally, the *R&O* provides that licensees on these channels will be permitted to remain on their currently authorized frequency until August 1, 2001 if interference is not experienced. After such date, licensees will be required to move to one of the new VHF channels.

89. *Petitions.* Securicor asserts that users of these 5 kHz channels, who operate the most spectrally-efficient equipment in the PLMR bands, are being treated unfairly because they must modify their systems to comply with the new channel plan even if they do not experience or cause interference.[188]

90. *Discussion.* We share Securicor's concern about unnecessarily causing disruption to existing operations. Therefore, to accommodate the needs of our licensees and to prevent the premature obsolescence of narrowband systems that are already operating in the 150-174 MHz band, we will extend by two years, until August 1, 2003, the date by which these licensees must migrate to one of the new VHF channels.[189] Additionally, licensees may remain on their currently assigned channels after August 1, 2003, on a secondary, non-interference basis. Because the number of licensees operating these narrowband systems is small and many of them are already compatible with the new channel plan, only a limited number of licensees will be impacted by these changes. We believe that this course of action will minimize disruption to existing systems in the 150-174 MHz band during migration to narrowband channels.

O. Shared Use of Industrial/Land Transportation and Maritime Public Correspondence Frequencies

91. We recently adopted rules in PR Docket No. 92-257 to allow industrial and land transportation entities to use nine VHF maritime public correspondence channel pairs for standard

[187] *See R&O* at para. 59.

[188] Securicor Petition for Reconsideration at 12.

[189] Licensees who chose to offset their operating frequency 7.5 kHz from a regularly assignable channel under Section 90.271 are already in compliance with the new channelization plan.

two-way base/mobile operations.[190] Section 90.283 of our rules provides that eligible industrial and land transportation entities can only be assigned VHF maritime public correspondence frequencies when VHF frequencies available under Part 90 are unavailable due to congestion. Section 90.283 also imposes power/antenna height restrictions on these frequencies and requires minimum separation distances from the following protected entities: co-channel public coast stations licensed under Part 80; the coastline of any navigable waterway; and grandfathered public safety licensees operating on 157.35 MHz or 161.85 MHz frequencies.

(1) Integration with Refarming

92. *Petitions.* LMCC requests that the 25 kHz wide channels listed in Section 90.283 of our rules be integrated into the new 6.25 kHz narrowband channel plan.[191]

93. *Discussion.* As an initial matter, we note that new 25 kHz Part 90 radios will no longer be type accepted in the 150-174 MHz band after the effective date of the rule amendments of this *MO&O*;[192] thus, we find it unreasonable to require their use. Additionally, we believe that the current restrictions are sufficient to ensure that PLMR licensees operating on narrowband channels will not cause harmful interference to the protected entities. Therefore, we modify Section 90.283 of our rules to provide narrowband channel spacings for PLMR users on the shared maritime public correspondence frequencies similar to those adopted in the *R&O* for the UHF bands, *i.e.*, 6.25 kHz channels spaced 6.25 kHz apart.[193] As a result, these narrowband channels will be subject to the following restrictions: (1) only equipment designed to operate with a channel bandwidth of 6.25 kHz or less may be used on channels 6.25 kHz removed from a maritime public correspondence frequency; and (2) only equipment designed to operate with a channel bandwidth of 12.5 kHz or less may be used on channels 12.5 kHz removed from a maritime public correspondence frequency. Additionally, for the purpose of resolving interference to a protected entity, channels separated 12.5 kHz or less from a maritime public correspondence frequency will be considered co-channel to that maritime public correspondence frequency.[194] Finally, in order to protect users in adjacent bands, such as the Government

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[190] *See* Amendment of the Commission's Rules Concerning Maritime Communications, *First Report and Order*, PR Docket No. 92-257, FCC 95-178, 10 FCC Rcd 8419 (1995).

[191] LMCC Petition for Reconsideration at 13-14.

[192] *See* para. 15, *supra*.

[193] Under Part 80 of our rules, the maritime public correspondence frequencies, similar to PLMR UHF band prior to the *R&O*, have channel spacings of 25 kHz.

[194] This clarifies Footnote 33 of the *First Report and Order* in PR Docket No. 92-257, FCC 95-178, 10 FCC Rcd 8419 (1995).

maritime mobile service,[195] we will only provide narrowband channel spacings between currently listed frequencies in Section 90.283.

(2) Power/Antenna Height Limits

94. *Petitions.* ITA, in a Petition for Reconsideration filed in PR Docket No. 92-257, requests that we adopt changes in the power/antenna height tables of Sections 90.283(c) and 90.283(d) of our rules to accommodate users that need to exceed the imposed limits due to circumstances such as terrain effects or coverage requirements.[196]

95. *Discussion.* We are not persuaded that the circumstances described by ITA warrant a change to the general rule. Rather, we believe that these are more appropriately characterized as the exceptional cases. As a result, for these instances we will require a request for waiver of the power/antenna height limits of Section 90.283 of our rules. These waiver requests must include a justification for exceeding the table limits and be accompanied by an interference analysis based upon generally-accepted terrain-based propagation models, showing that co-channel protected entities would receive the same or greater interference protection than provided in the table. We will review these waiver requests on a case-by-case basis.

P. Miscellaneous Issues.

96. Effective Date of new VHF Channels. LMCC requests clarification regarding the effective date of the new VHF channels.[197] As stated in the *R&O* and as indicated by the limitations in each radio service's frequency list, no license applications for any VHF channel that is 7.5 kHz removed from a channel that was available prior to August 18, 1995 will be accepted until August 18, 1996.[198]

97. Measurement Requirements. In Section 90.211 of our rules, we require analog equipment to meet the emission limitations under all possible conditions. Motorola and TIA request that this requirement be amended to refer to the type acceptance procedures under Part 2 of our rules.[199] Otherwise, Motorola states that the current rule "places a nearly impossible measurement on both manufacturers and on the Commission."[200] Motorola alternatively suggests

[195] The Government maritime mobile service has a frequency allocation in the 157.0375 - 157.1875 MHz band.

[196] ITA Petition for Reconsideration in PR Docket No. 92-257 at 3-4.

[197] LMCC Petition for Reconsideration at 11.

[198] *See R&O* at para. 41.

[199] Motorola Petition for Reconsideration at 8; TIA Petition for Reconsideration at 4.

[200] *See* Motorola Petition for Reconsideration at 8.

that the phrase, "under all possible conditions", be deleted.[201] We agree with Motorola and TIA and thus amend Section 90.211(a) to refer to the type acceptance procedures specified in Part 2 of the rules.

98. Frequency Coordinator Responsibilities. Several entities request that the Commission clarify the role and responsibilities of frequency coordinators in light of the technical changes adopted in the *R&O* and our decision to consolidate the frequency pools of the radio services.[202] Others request that we consider allowing frequency coordinators more authority regarding the expansion of low power operations.[203] We will defer action on these requests until a later date.

99. Migration of Low Power Stations. PCIA recommends that the Commission allow a six-month transition period for licensees to convert their systems before accepting any new applications on these designated channels.[204] Schlumberger and HP state that the Commission needs to impose adjacent channel protection criteria for low power channels.[205] HP and Spacelabs urge the Commission to establish blocks of contiguous spectrum based on functional requirements and technical compatibility for the exclusive use of low power systems.[206] The issues regarding low power stations and the migration to designated low power channels will be affected by the outcome of the effort to consolidate the radio services. Therefore, resolution of these issues will be the subject of a future Order. Additionally, we note that several blocks of low power spectrum already exist in the Business Radio Service[207] and there is a proposal in OET Docket No. 95-177 to permit the operation of low power unlicensed biomedical telemetry devices on TV channels 7 - 13 and on UHF TV channels.[208]

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[201] *See* Motorola Petition for Reconsideration at 8.

[202] *See, e.g.*, UTC Petition for Reconsideration at 6-8; Alarm Industry Communications Committee Petition for Reconsideration at 6-7.

[203] *See, e.g.*, Spacelabs Medical, Inc. (Spacelabs) Petition for Reconsideration at 7-8; HP Petition for Reconsideration at 3-4.

[204] HP Petition for Reconsideration at 5; PCIA Petition for Reconsideration at 7.

[205] Schlumberger Petition for Reconsideration at 4; HP Petition for Reconsideration at 4.

[206] HP Petition for Reconsideration at 3-4; Spacelabs Petition for Reconsideration at 7-8.

[207] *See* 47 C.F.R. § 90.75. The following frequencies are limited to 2 watts output power: 457.525 MHz - 457.61875 MHz, 465.650 MHz - 465.89375 MHz, and 467.750 MHz - 467.925 MHz.

[208] Amendment of Part 15 of the Commission's Rules to Permit Operation of Biomedical Telemetry Devices on VHF TV Channels 7-13 and on UHF TV Channels, *Notice of Proposed Rule Making*, OET Docket No. 95-177, FCC 95-488, 11 FCC Rcd 1063 (1996).

100. Emission Designators. Since the designator "W7W" has been authorized for technology designed to provide data, voice, and facsimile, Motorola and Securicor recommend that Sections 90.207(a) and 90.207(c) of our rules be modified to include the symbol "W" as a valid emission designator under Part 90.[209] The list of the most common emission designator symbols provided in Section 90.207 of our rules was intended as an informal guide for applicants, many of whom do not have a copy of Part 2 of our rules, 47 C.F.R. Part 2. The complete list of valid symbols for all rule parts continues to remain in Section 2.201 of our rules. We are modifying the introductory text in Section 90.207 of our rules to clarify this point. Additionally, since radios that deliver multiple types of information are becoming more common, we add the symbol W to the list of designators in Sections 90.207(a) and 90.207(c) of our rules.

101. Wide-Area Systems. The Forestry Conservation Communications Association (FCCA) requests that certain VHF high-band channels in the Forestry-Conservation Radio Service be designated for statewide use and have the same protection as similar channels in the Police Radio Service.[210] APCO supports this recommendation, stating that many state public safety agencies need wide-area channels to cover their entire area of jurisdiction.[211] In light of the work of the Public Safety Wireless Advisory Committee and the Commission's overall evaluation and assessment of public safety wireless communications in WT Docket No. 96-86, it would be premature at this time to make decisions regarding the designation of channels for wide-area operation.[212] Thus, we decline to act on the requests of FCCA and APCO at this time.

102. Interference Protection Standards. FCCA expresses the need for interference protection standards that are common to public safety entities. It stresses, however, that these standards should be set by manufacturers and users.[213] To that end, LMCC states that it is working to develop tables and standards which could be used by frequency coordinators.[214] We agree with FCCA that the user community would benefit from a common set of interference protection standards. We also encourage industry efforts in the PLMR community, such as those described by LMCC, aimed at the development of such standards.

103. New Channels. FCCA requests that we allow licensees to use a new channel when they are already licensed for both of its adjacent channels.[215] This issue was discussed in the

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[209] Motorola Petition for Reconsideration at 8; Securicor Comments on Petitions for Reconsideration at 4.

[210] FCCA Petition for Reconsideration at 2.

[211] APCO Opposition and Comments to Petitions for Reconsideration at 5.

[212] *See Public Safety Notice*, 11 FCC Rcd at 12460.

[213] FCCA Petition for Reconsideration at 3.

[214] LMCC Petition for Reconsideration at 13.

[215] FCCA Petition for Reconsideration at 3.

outstanding *FNPRM* in this proceeding. Therefore, we defer the decision on the treatment of new channels until a future Report and Order responding to the *FNPRM*.

104. Fixed Operational Use. APCO requests clarification regarding whether fixed operational use will be permitted for new stations on the former 25 kHz primary channels and the former 12.5 kHz offset channels.[216] Fixed operational use is permitted on a secondary basis pursuant to Sections 90.261 and 90.419 of our rules. This type of use, unless specifically prohibited, will continue to be permitted in accordance with the referenced rule sections and applicable channel bandwidth limitations.

105. 470-512 MHz Band. LCS states that the new rules in this band are unnecessary in the Los Angeles area because 12.5 kHz channel spacing already exists in many cases and the new rules add extreme expense and hardship to existing users.[217] Florida requests clarification that the portion of this band available in Miami, Florida is channelized at 6.25 kHz.[218] We disagree with LCS and decline to make any changes in the 470-512 MHz band or to provide rules specific to Los Angeles. By providing licensees that migrate to narrowband technology relief from current congestion, they will benefit, not suffer, from narrowband channels. Further, because there is no mandate for licensees to replace their systems now, or at any time in the future, there is no expense or hardship forced on existing users. We clarify Section 90.311(b) of our rules to state explicitly that the portions of the 470-512 MHz band available in Miami, Florida, Dallas, Texas, and Houston, Texas are channelized with 6.25 kHz channel spacings.

106. Spectrum Comparison. Florida requests that the Commission ensure that each radio service has the same amount of spectrum available now as they did prior to the adoption of the *R&O*. Florida requests that we show a comparison of the PLMR spectrum allocations before and after the channel splits.[219] A comparison of the total number of channels available for licensing in each service before and after implementation of the new channel plan is provided in Appendix C. This comparison shows that each radio service's share of the total number of available channels closely approximates its share prior to the adoption of the *R&O*.

107. Technician Certification. Florida notes that the *R&O* gives manufacturers or their representatives the authority to retrofit existing equipment with conversion kits to make them compatible with narrower channel bandwidths. In the absence of mandated certification, Florida asserts that there is no assurance that the equipment will be modified correctly and therefore

[216] APCO Petition for Reconsideration at 8.

[217] LCS Petition for Reconsideration at 5.

[218] Florida Petition for Reconsideration at 1.

[219] Florida Petition for Reconsideration at 2.

requests that the Commission revisit technician certification mandates.[220] We conclude that the subject of technician certification is beyond the scope of this proceeding, and thus, we will not address Florida's request.

108. Station Identification. LMCC requests that the Commission modify Section 90.425 of our rules to allow licensees transmitting in digital format to transmit a station identifier by digital transmission of the call sign.[221] In its request, LMCC notes that the rules allow digital transmission of station identification on frequencies above 800 MHz when licensees have exclusive use of a channel.[222] Because the radio environment of the Refarming bands is characterized by sharing, the rules pertaining to exclusive use channels above 800 MHz are not appropriate for comparison. Therefore, we decline, at this time, to grant LMCC's request.

109. Stolen Vehicle Recovery. LoJack Corporation requests clarification that the type acceptance requirements of Section 90.203 of our rules do not apply to equipment operating on 173.075 MHz.[223] This frequency is used in the Police Radio Service for Stolen Vehicle Recovery on a shared basis with the Federal Government.[224] The type acceptance requirements of Section 90.203 of our rules apply in the absence of frequency specific technical requirements.[225] Therefore, the relevant technical specifications for equipment used in stolen vehicle recovery systems on 173.075 MHz are listed in Section 90.19(f)(7) of our rules. We are amending Section 90.203(j) of our rules to clarify this point.

IV. CONCLUSION

110. With the adoption of this *Memorandum Opinion and Order*, we finalize the new channel plan and incorporate certain modifications to our regulatory and technical framework for the PLMR services in Part 90 of the Commission's Rules. These new rules will provide greater technical flexibility for PLMR licensees and equipment manufacturers, promote the highly effective and efficient use of the PLMR spectrum, and create an environment which will provide users the opportunity to introduce advanced technologies into the private land mobile radio services.

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[220] Florida Petition for Reconsideration at 2.

[221] LMCC Petition for Reconsideration at 7.

[222] *See* 47 C.F.R. § 90.647(c).

[223] *Ex parte* filing of LoJack Corporation of September 21, 1995.

[224] *See* 47 C.F.R. § 90.19(f)(7).

[225] *See* 47 C.F.R. § 90.203(j).

V. FINAL REGULATORY FLEXIBILITY ANALYSIS

111. 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* in PR Docket 92-235.[226] The Commission sought written public comments on the proposals in the *Refarming Notice*, including on the IRFA. The Commission's Final Regulatory Flexibility Analysis (FRFA) in this *Memorandum Opinion and Order* conforms to the RFA, as amended by the Contract With America Advancement Act of 1996.[227]

A. Need For and Objective of the Proposed Rule

112. Our objective is to increase spectrum efficiency and facilitate the introduction of advanced technologies into the 150-174 MHz, 421-430 MHz, 450-470 MHz, and 470-512 MHz PLMR bands. The *Report and Order* in this proceeding modified the Commission's rules to resolve many of the technical issues which inhibited the use of spectrally efficient technologies in these frequency bands. This *MO&O* address petitions for reconsideration and clarification received in response to the *Report and Order*.

113. We find that the potential benefits to the PLMR community exceed any negative effects that may result from the promulgation of rules for this purpose. Thus, we conclude that the public interest is served by modifying our rules to increase the spectral efficiency of the PLMR bands.

B. Summary of Significant Issues Raised by the Public Comments in Response to the Initial Regulatory Flexibility Analysis

114. No comments were submitted in direct response to the IRFA. We have, however, reviewed general comments that may impact small businesses.

C. Description and Estimate of the Number of Small Entities Subject to which the Rules Apply

115. The rules adopted in this *Memorandum Opinion and Order* will apply to small business that choose to use, manufacture, or design radios that operate in the PLMR bands below 512 MHz. The are no Commission imposed requirements, however, for any entity to use or produce these products.

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[226] Replacement of Part 90 by Part 88 to Revise the Private Land Mobile Radio Services and Modify the Policies Governing Them, *Notice of Proposed Rule Making*, PR Docket 92-235, 7 FCC Rcd 8105 (1992) (*Refarming Notice*).

[227] Pub. L. No. 104-121, 110 Stat. 847 (1996) (CWAAA). 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.*

Estimates for PLMR Manufacturers

116. The Commission has not developed a definition of small entities specifically applicable to PLMR manufacturers. Therefore, for the purposes of this analysis, the applicable definition of small entity is the definition under the Small Business Administration (SBA) rules applicable to radio and television broadcasting and communications equipment manufacturers. The SBA defines a small entity in this category as one in which less than 750 persons are employed.[228]

117. Because 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 entities that manufacture PLMR equipment and is unable at this time to determine the number of manufacturers which are small businesses. However, the 1992 Census of Manufacturers, conducted by the Bureau of Census, which is the most comprehensive and recent information available, shows that approximately 925 out of the 948 entities manufacturing radio and television transmitting equipment in 1992 employed less than 750 persons.[229] We are unable to discern from the Census data precisely how many of these manufacturers produce private land mobile radios. Further, any entity may choose to manufacture such radio equipment. Therefore, for purposes of our evaluations and conclusions in this Final Regulatory Flexibility Analysis, we estimate that there are at least 925 manufacturers and potential manufacturers of PLMR equipment which are small businesses, as that term is defined by the SBA.

Estimates for PLMR Licensees

118. Private land mobile radio system serve an essential role in a vast range of industrial, business, land transportation, and public safety activities. These radios are used by companies of all sizes operating in all U.S. business categories. Because of the vast array of PLMR users, the Commission has not developed nor would it be possible to develop a definition of small entities specifically applicable to PLMR users. For the purpose of determining whether a licensee is a small business as defined by the SBA, each licensee would need to be evaluated within its own business area.

119. Because the Regulatory Flexibility Act amendments were not in effect until the record in this proceeding was closed, the Commission was unable to request information

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[228] *See* 13 C.F.R. § 121.201, Standard Industrial Classification (SIC) Code 3663.

[229] *See* 1992 Census of Manufactures, Industry Series, Communication Equipment, Including Radio and Television, Industries 3651, 3652, 3661, 3663, and 3669, Issued March 1995, Table 4. This table shows a total of 23 manufacturers with an average of 1,000 employees or more and 908 with an average of 499 employees or less. It lists a total of 17 manufacturers with an average of 500-999 employees. Because we could not determine the number of manufacturers in 500-999 category with an average of 750 employees or less, we assume all 17 are small businesses for the purpose of this evaluation.

regarding the number of small entities that are private land mobile radio licensees. Therefore, the Commission is unable at this time to determine the number of small businesses which could be impacted by the rules. However, the Commission's fiscal year 1994 annual report indicates that at the end of fiscal year 1994 there were 1,101,711 licensees operating 12,882,623 transmitters in the PLMR bands below 512 MHz.[230] Further, because any entity engaged in a commercial activity is eligible to hold a PLMR license, these rules could potentially impact every small business in the U.S.

D. Description of Projected Reporting, Recordkeeping, and Other Compliance Requirements of the Rules

120. There are no general reporting or recordkeeping requirements. However, for certain requests we have substituted a new, less burdensome reporting requirement in place of a requirement for applicants to file applications for waiver or modification.

(1) In order to obtain a type acceptance grant, PLMR radios that transmit data must meet a specified spectrum efficiency standard -- measured in bits per second per Hertz. For radios that transmit bit rates slower than the specified standard, our rules permit manufacturers an alternative to requesting a waiver of the technical rules. Type acceptance grants may be obtained, provided that the applicant submits a technical analysis which demonstrates that the slower data rate will provide more spectral efficiency than the standard data rate.[231]

(2) Our rules provide allowable combinations of antenna height and effective radiated power (ERP) based on the size of the area an applicant intends to serve and a certain signal strength at the edge of this service area. Rather than filing a waiver request, we are allowing applicants to exceed the reference antenna height, provided they correspondingly lower their ERP and demonstrate that the signal strength of their system at the edges of their service area meets the general limits.[232]

(3) Licensees, when making changes to their radio systems, are normally required to file an application for modification. However, in instances where the only modification to a radio system is a narrowing of its operating bandwidth, we will

[230] *See* Federal Communications Commission, 60th Annual Report, Fiscal Year 1994 at 120-121.

[231] *See* para. 22, *supra*.

[232] *See* para. 32, *supra*.

not require an application for modification. Instead, we are only requiring that licensees notify the Commission of the change.[233]

E. Steps Taken By Agency to Minimize Significant Economic Impact on Small Entities Consistent with Stated Objectives

121. The Commission, in this *MO&O*, has considered petitions to reconsider the rules adopted in the *R&O* in this proceeding. In doing so, the Commission has adopted several alternatives which minimize burdens placed on small entities. First, the Commission reaffirms its decision to implement the transition to narrowband equipment through the type acceptance process. Users are not required to replace their existing systems, rather they are provided flexibility to choose a transition schedule that best fulfills their needs while balancing technical capabilities and financial considerations.[234] Second, private paging systems, many of which are operated by small entities, will not be subject to many of the new rules. This approach, by not imposing new requirements on private paging licensees, will lower the cost of expanding such systems.[235] Third, we provide applicants the ability to deviate from the new power/antenna height restrictions, which only apply to new stations, without applying for a waiver. This approach eliminates the need for small entities to remit waiver fees of $125 per rule section per station. Additionally, it eliminates the need for small entities to expend clerical support to prepare these waiver requests.[236] Fourth, we allow manufacturers to make permissive changes to previously type accepted equipment. This will allow small entities to continue supporting their existing equipment and customer base in advance of changing their production facilities to manufacture radios compliant with the new spectrum efficiency rules.[237] Fifth, we ease the frequency stability requirements for narrowband radios and extend the exemption from technical standards for low power transmitters to all radio services. These changes will lower development and production costs for small entities.[238] Sixth, we will not require licensees operating on 5 kHz channels under former Section 90.271 of our rules to comply with the new channel plan by August 1, 2001. Instead, these licensees can continue operating on their current frequency as long as they do not cause interference to other users. This approach will lower costs to small entities by not requiring those who operate such systems to modify them sooner than necessary or at all.[239]

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[233] *See* para. 40, *supra*.

[234] *See* para. 15, *supra*.

[235] *See* para. 26, *supra*.

[236] *See* para. 31, *supra*.

[237] *See* para. 46, *supra*.

[238] *See* para. 50, *supra*.

[239] *See* para. 90, *supra*.

F. Commission's Outreach Efforts to Learn of and Respond to the Views of Small Entities pursuant to 5 U.S.C. § 609

122. The Commission has, in this proceeding, taken several steps to learn and respond to the views of small entities. In response to the *Refarming Notice*, we held two public forums. On November 14, 1991, the Private Radio Bureau, in cooperation with the Annenberg Washington Program, Communications Policy Studies of Northwestern University, sponsored a conference on Refarming and on May 16, 1993, the Private Radio Bureau held a Refarming technology Roundtable. Additionally, throughout the course of this proceeding the representatives of the Private Wireless Division (PWD) of the Wireless Telecommunications Bureau have had numerous *ex parte* discussions with small entities or their representatives. For example, the PWD has met with many of the frequency coordinators for the nineteen PLMR services.[240]

G. Report to Congress

123. The Commission shall send a copy of this final Regulatory Flexibility analysis, along with the *Memorandum Opinion and Order*, in a report to Congress pursuant to the SBREFA.[241] A copy of this FRFA will also be published in the Federal Register.

VI. ORDERING CLAUSES

124. In view of the foregoing and pursuant to the authority contained in Sections 4(i), 303(r), and 405 or the Communications Act of 1934, as amended, 47 U.S.C. §§ **154(i), 303(r)**, and **405**, and Section 1.429(i) of the Commission's Rules, 47 C.F.R. § 1.429(i), **IT IS ORDERED** that the Petitions for Reconsideration described above **ARE GRANTED** as indicated herein and **ARE DENIED** in all other respects.

125. **IT IS FURTHER ORDERED** that pursuant to the authority contained in Sections 4(i) and 303(r) of the Communications Act of 1934, as amended, 47 U.S.C. §§ 4(i) and 303(r), Part 90 of the Commission's Rules **IS AMENDED** as set forth below effective [30 days after publication in the Federal Register].

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[240] Many of the frequency coordinators are trade associations and represent their members, many of which are small entities, views on telecommunications matters.

[241] *See* 5. U.S.C. § 801(a)(1)(A).

126. *Contact.* For further information concerning this *Memorandum Opinion and Order*, contact Ira Keltz, Wireless Telecommunications Bureau, Federal Communications Commission, Washington, D.C. 20554, at (202) 418-0616.

FEDERAL COMMUNICATIONS COMMISSION

William F. Caton
Acting Secretary

APPENDIX A

LIST OF PETITIONERS

Petitions for Reconsideration

Advanced Meter Reading Technologies (AMRT)
Alarm Industry Communications Committee (AICC)
Association of Public-Safety Communications Officials-International, Inc. (APCO)
Automobile Association of America (AAA)
AzCOM Paging, Inc. (AzCOM)
Commonwealth of Virginia, Department of Health (Virginia)
E.F. Johnson Company (E.F. Johnson)
Forestry Conservation Communications Association (FCCA)
Hewlett-Packard Company (HP)
International Municipal Signal Association and International Association of Fire Chiefs, Inc. (IMSA/IAFC)
Kenwood Communications Corporation, Uniden America Corporation, Maxon America, Inc. (Joint Petitioners)
Land Mobile Communications Council (LMCC)
License Communication Services, Inc. (LCS)
Midland International Corporation (Midland)
Motorola, Inc. (Motorola)
Page Hawaii, Inc. (Page Hawaii)
Personal Communications Industry Association (PCIA)
Schlumberger Meter Communication Systems (Schlumberger)
SEA Inc. (SEA)
Securicor Radiocoms Limited and Linear Modulation Technology Limited (Securicor)
Spacelabs Medical, Inc. (Spacelabs)
State of Florida, Division of Communications (Florida)
Telecommunications Industry Association (TIA)
UTC, The Telecommunications Association (UTC)

Oppositions and Comments to Petitions for Reconsideration

Association of Public-Safety Communications Officials-International, Inc. (APCO)
Nippon Telegraph and Telephone Company (NTT)
SEA, Inc. (SEA)
Securicor Radiocoms Limited and Linear Modulation Technology Limited (Securicor)
UTC, The Telecommunications Association (UTC)

Responses to Oppositions for Reconsideration

AzCOM Paging, Inc. (AzCOM)
Page Hawaii, Inc. (Page Hawaii)
Securicor Radiocoms Limited and Linear Modulation Technology Limited (Securicor)