

Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of
Amendment of Sections 90.20(d)(34) and 90.265
of the Commission's Rules to Facilitate the Use of
Vehicular Repeater Units
PS Docket No. 13-229
RM-11635

ORDER AND NOTICE OF PROPOSED RULEMAKING

Adopted: September 16, 2013

Released: September 16, 2013

Comment Date: [60 days after date of publication in the Federal Register]
Reply Comment Date: [90 days after date of publication in the Federal Register]

By the Commission:

TABLE OF CONTENTS

Heading Paragraph #
I. INTRODUCTION..... 1
II. BACKGROUND..... 3
III. COMMENTS 9
IV. ORDER 16
V. NOTICE OF PROPOSED RULEMAKING 21
VI. PROCEDURAL MATTERS..... 34
A. Ex Parte Presentations 34
B. Comment Filing Procedures 35
C. Accessible Formats 36
D. Regulatory Flexibility Analysis 37
E. Paperwork Reduction Act Analysis 38
F. Congressional Review Act..... 39
VII. ORDERING CLAUSES 40
APPENDIX A - Proposed Rules
APPENDIX B - Initial Regulatory Flexibility Analysis
APPENDIX C - List of Commenters to the Public Notice

I. INTRODUCTION

1. In this Order and Notice of Proposed Rulemaking, which we adopt in response to an Amended Petition for Rulemaking filed by Pyramid Communications, Inc. (Pyramid),¹ we solicit

¹ See Modification of Sections 90.20(d)(34) and 90.265 of the Commission's Rules to Facilitate the Use of Vehicular Repeater Units, Petition for Rule Making of Pyramid Communications, Inc. (filed Aug. 16, 2011) (Amended Petition); Petition to Supplement of Pyramid Communications (filed Aug. 16, 2011) (Petition to Supplement).

comment on whether to amend Part 90 of the Commission's rules² to allow the licensing and operation of vehicular repeater systems (VRS) and other mobile repeaters by public safety licensees on certain frequencies in the VHF band.³ Mobile repeaters are beneficial for public safety because they can provide first responders with enhanced in-building radio coverage at emergency sites, thereby enabling first responders to remain in radio contact when they are inside a building. For example, a mobile repeater enables firefighters to communicate on hand-held radios with their command center when they enter a building, encounter an in-building fire, and need to call for backup assistance on the spot. Without a repeater to relay the communications, the firefighters inside the building might be cut off from communicating with the command center.

2. Given the importance of mobile repeaters to public safety, the purpose of this proceeding is to explore whether there is a need to make additional spectrum available to support mobile repeater capability. For the reasons discussed below, we grant the Amended Petition in part and initiate a rulemaking that proposes to allow VRS operations on six remote control and telemetry channels at 173 MHz, subject to coordination procedures. However, we deny the portion of the Amended Petition that seeks to initiate a rulemaking to permit VRS operations on nine Federal and forest firefighting channels in the 170-172 MHz band.

II. BACKGROUND

3. Portions of the VHF band are used by Private Land Mobile Radio Service licensees, including public safety licensees,⁴ predominantly for voice operations. The Commission's rules designate 488 frequencies, totaling approximately 3.6 megahertz of spectrum in the VHF band, for public safety use.⁵ Licensees may operate mobile repeater stations, including vehicular repeaters, on certain VHF mobile frequencies under Section 90.247 of the Commission's rules.⁶

4. On June 27, 2011, Pyramid, a manufacturer of wireless data and voice equipment, filed a Petition for Rulemaking requesting that the Commission amend its rules to expand the number of VHF band frequencies available for VRS use by public safety licensees.⁷ On August 16, 2011, Pyramid filed the Amended Petition to provide clarification and correct typographical errors.⁸ We treat the Amended Petition as superseding the Initial Petition, but we also consider four additional VHF frequencies that were identified in the Initial Petition but not included in the Amended Petition.

5. In the Amended Petition, Pyramid contends that VRS units are essential to extend coverage of radio systems to the inside of buildings so that first responders going into a building can

² 47 C.F.R. Part 90.

³ The very high frequency (VHF) band is the range of radio frequency electromagnetic waves from 30 MHz to 300 MHz. For the purposes of this rulemaking, the VHF band refers to the VHF high band range of 150 MHz to 173.4 MHz, which includes several Private Land Mobile allocations. *See* 47 C.F.R. § 2.106.

⁴ *See* 47 C.F.R. § 90.20.

⁵ *Id.*

⁶ 47 C.F.R. § 90.247. A mobile repeater station is "a mobile station authorized to retransmit automatically on a mobile service frequency, communications to or from hand-carried transmitters." 47 C.F.R. § 90.7. Vehicular repeaters fall within this definition, as do other mobile repeaters that are not vehicle-mounted.

⁷ Modification of Sections 90.20(d)(24) [sic] and 90.65 [sic] of the Commission's Rules to Facilitate the Use of Vehicular Repeater Units, Petition for Rule Making of Pyramid Communications, Inc. (filed June 27, 2011) (Initial Petition).

⁸ Amended Petition; Petition to Supplement at 1.

maintain communications.⁹ According to Pyramid, current filter technology requires VRS units to operate on frequencies that are separated by 2-5 megahertz from the system's main licensed frequencies.¹⁰ Pyramid asserts that there are insufficient existing VHF frequencies to support VRS that are sufficiently distant from the 150-159 MHz public safety frequencies and that are not already saturated with other existing base/mobile operations.¹¹ Pyramid therefore proposes that the Commission designate additional VHF spectrum for VRS use.

6. Pyramid identifies two specific VHF allocations that it contends would be suitable for communication between portable radios and VRS units. First, Pyramid identifies nine frequencies in the 170-172 MHz band that are allocated for Federal use on a primary basis but are also available for assignment to non-Federal licensees engaged in forest firefighting and forest conservation activities.¹² Pyramid proposes to lift this limitation so that these channels could be used by VRS units for purposes other than fighting forest fires, *e.g.*, for fighting in-building fires.¹³ Pyramid also states that to address potential concerns that VRS use by police might cause interference to firefighters, Pyramid "would not oppose" limiting VRS use of these frequencies to firefighters.¹⁴

7. Second, Pyramid identifies six frequencies in the 173 MHz band currently designated for fixed remote control and telemetry operations.¹⁵ These six frequencies are shared between the Public Safety and Industrial/Business (I/B) Pools, have a 6 kilohertz bandwidth limitation, and do not permit voice operation due to the telemetry designation.¹⁶ Pyramid states that the Land Mobile Communications Council (LMCC) "has developed frequency coordination standards by which radio systems can be coordinated on adjacent frequencies where bandwidths overlap."¹⁷ Pyramid contends that utilization of these standards will ensure that VRS use of the six frequencies identified in the Amended Petition will not cause adjacent channel interference.¹⁸ On this basis, Pyramid proposes that the Commission lift the restriction on voice operation and allow low power VRS operation on the six 173 MHz frequencies.¹⁹

⁹ Amended Petition at 1-2.

¹⁰ *Id.*

¹¹ *Id.* at 4.

¹² These frequencies are assignable on a secondary basis to any U.S. government station. *See* 47 C.F.R. § 90.265(c)(1). The frequencies will be assigned only to licensees directly responsible for the prevention, detection, and suppression of forest fires. 47 C.F.R. § 90.265(c)(2)-(3). For individual applications, the Commission's rules require a Letter of Concurrence from the United States Department of Agriculture (USDA). *See* 47 C.F.R. § 90.265(c)(6).

¹³ Amended Petition at 4.

¹⁴ *Id.* at 5.

¹⁵ *Id.* at 6.

¹⁶ *See id.* at 6-7. The frequencies are 173.2375, 173.2625, 173.2875, 173.3125, 173.3375, and 173.3625 MHz (telemetry channels). Telemetry is "the transmission of *non-voice* signals for the purpose of automatically indicating or recording measurements at a distance from the measuring equipment." (Emphasis added.) *See* 47 C.F.R. §§ 90.7, 90.20(d)(34).

¹⁷ Amended Petition at 6-7. The six telemetry channels are interleaved with seven frequencies that have no usage limitations in the I/B Pool. *See* 47 C.F.R. § 90.35(b). For further discussion, *see infra* para. 27.

¹⁸ Amended Petition at 7.

¹⁹ *Id.*

8. On October 14, 2011, the Public Safety and Homeland Security Bureau (Bureau) released a public notice seeking comment on the Amended Petition.²⁰ The Bureau sought comment on Pyramid's proposals regarding the 170-172 MHz forest firefighting frequencies and the 173 MHz telemetry frequencies.²¹ The Bureau asked whether the Commission should remove the limitation in Section 90.20(d)(33), which imposes a bandwidth limit of 6 kilohertz on the six telemetry channels, since voice communications typically occupy a bandwidth of 11.25 kilohertz.²² The Bureau also noted that the Initial Petition, but not the Amended Petition, had proposed to allow VRS use of four additional frequencies immediately adjacent to the six telemetry channels.²³ Accordingly, the Bureau asked whether the Commission should consider all ten 173 MHz frequencies for VRS operation.²⁴ Finally, the Bureau sought comment on "the potential costs and benefits of Pyramid's proposal, including: (1) how and in what ways the remote control and telemetry channels are used today; (2) the compatibility of the proposed VRS voice operations with incumbent remote control and telemetry operations; and (3) adjacent channel interference as a result of modifying or removing bandwidth limitations on frequencies in the 173 MHz band."²⁵ The comment period closed on November 18, 2011.²⁶

III. COMMENTS

9. The Commission received 31 responsive comments and reply comments, with supporting commenters outnumbering opposing commenters. Full supporters include various public safety agencies, equipment dealers, and individuals. Two certified frequency coordinators offer more reserved support for VRS use of the 173 MHz channels. Four certified frequency coordinators and a county water management agency oppose the petition.

10. *Comments supporting Pyramid proposals.* Nineteen commenters support all of Pyramid's proposals.²⁷ Some of these commenters argue that in-building portable radio coverage can be challenging or non-existent due to the use of modern construction materials that attenuate radio signals, and that vehicular repeaters are an important link between portable and base communications.²⁸ Several

²⁰ Public Safety and Homeland Security Bureau Seeks Comment on Pyramid Communications Inc.'s Petition for Rulemaking to Facilitate the Use of Vehicular Repeater Units by Public Safety Licensees in the VHF Band, RM-11635, *Public Notice*, 26 FCC Rcd 14355 (PSHSB 2011) (*Public Notice*).

²¹ *Id.* at 14356.

²² *Id.* at 14357.

²³ *Id.* The frequencies are 173.20375, 173.210, 173.390, and 173.39625 MHz.

²⁴ *Id.*

²⁵ *Public Notice* at 14358.

²⁶ See Appendix C for a list of commenters.

²⁷ See Comments of Justin Bellen, Tower Communications Co., and Reply Comments of Alpha-Zulu Solutions LLC, Beltronics, Inc., Cassie Adams, David Patton, Jay Tompson, Mary Langford, Co-Meg Sales, McLaughlin Long Marketing, Rob Hendrickson, Wisconsin State Patrol, Advanced PLM Sales and Marketing, Mark Schaaf, Scott Pasley, Brian Mortenson, Jamestown Communications, Inc., Robert Harvey, Pyramid Communications. Ozbourn Communications, LLC submitted a supportive filing after the reply comment deadline. By contrast, the other comments that we discuss *infra* support only certain aspects of Pyramid's proposals or oppose Pyramid's proposals.

²⁸ Tower Communications Co. Comments at 1; Beltronics Inc. Comments at 1.

parties support this proceeding for the safety of first responders.²⁹ Mark Schaff (Schaff) argues that the VHF plan makes it difficult to achieve 3-5 megahertz separation between the mobile transmit frequencies and the vehicle repeater frequency.³⁰ Therefore, Schaff states that making frequencies at 170 MHz available for VRS would make it easier to set up in-band repeaters.³¹ Wisconsin State Patrol (Wisconsin) urges the Commission to consider all ten frequencies at 173 MHz (including the four identified in the Initial Petition), as well as the 170-172 MHz frequencies, for VRS operation.³²

11. Other commenters support specific elements of Pyramid's proposal but take no position on others. The Commonwealth of Virginia, Department of State Police (Commonwealth) supports VRS use of the six 173 MHz telemetry frequencies and also supports allowing VRS use of 170-172 MHz frequencies, but for forestry purposes only.³³ The Association of Public-Safety Communications Officials-International, Inc. (APCO), a certified frequency coordinator, states that it "is not prepared to take a position on all of Pyramid's specific recommendations at this time" but that it "strongly support[s] the initiation of a rulemaking proceeding to explore ways to improve VRS capability."³⁴ The Enterprise Wireless Alliance (EWA), another certified coordinator, takes no position on VRS use of 170-172 MHz frequencies, but supports consideration of designating some 173 MHz frequencies for VRS voice operations "subject, of course, to appropriate frequency coordination procedures."³⁵ EWA cautions that VRS use of these frequencies must be carefully coordinated to ensure continued availability of the telemetry channels for use by EWA and Utilities Telecommunications Council (UTC) members, "who have made productive use of these frequencies to support a variety of essential business enterprise and critical infrastructure non-voice applications."³⁶ EWA opposes rule changes "that might compromise these operations," but posits that "[g]iven the highly localized nature of VRS usage, [the telemetry] frequencies should be able to be reused in adjacent communities without interference."³⁷ APCO, Pyramid, and Wisconsin also state that frequency coordination can minimize potential VRS interference to remote control and telemetry operations.³⁸

12. *Comments opposing VRS on 170-172 MHz.* Two other certified frequency coordinators, the Forestry Conservation Communications Association (FCCA) and the International Municipal Signal Association/International Association of Fire Chiefs (IMSA/IAFC), oppose VRS use of the 170-172 MHz frequencies. While these parties do not oppose the concept of VRS, they assert that because the 170-172 MHz band frequencies are assigned on a primary basis to the federal government, the Commission lacks authority to allow VRS use absent concurrence from federal users and/or the National Telecommunications and Information Administration (NTIA).³⁹ IMSA/IAFC also express concern that

²⁹ Cassie Adams Comments at 1; David Patton Comments at 1; Mary Langford Comments at 1; Alpha-Zulu Solutions LLC Comments at 1; Justin Bellen Comments at 1; Robert Harvey Reply Comments at 1.

³⁰ Mark Schaff Reply Comments at 1.

³¹ *Id.*

³² Wisconsin State Patrol (Wisconsin) Reply Comments at 1.

³³ Commonwealth of Virginia Department of State Police (Commonwealth) Reply Comments at 2.

³⁴ Association of Public-Safety Communications Officials-International, Inc. (APCO) Comments at 2.

³⁵ Enterprise Wireless Alliance (EWA) Reply Comments at 3-4.

³⁶ EWA Reply Comments at 3.

³⁷ *Id.* at 4.

³⁸ Wisconsin Reply Comments at 1, APCO Comments at 2, Pyramid Reply Comments at 1.

³⁹ FCCA Comments at 2, IMSA/IAFC Comments at 4.

VRS use could interfere with use of these channels for forest firefighting operations.⁴⁰ FCCA notes that the locations of forest fires cannot be predicted, so “[o]nce a fire starts, it is critical to be able to move into an area quickly and establish communications.”⁴¹ IMSA/IAFC state that “[t]here is often no clear distinction between forested and non-forested areas, and buildings, shopping malls and arenas are increasingly located at the perimeters of forested areas.”⁴² Both commenters also cite as precedent a 2003 determination by the Wireless Telecommunications Bureau that forest firefighting channels are not routinely available for low power police surveillance operations.⁴³

13. *Comments opposing VRS on 173 MHz telemetry channels.* The Yuba County Water Agency, California (Yuba) and certified frequency coordinators UTC and the American Petroleum Institute (API) express concerns that VRS could interfere with incumbent telemetry operations in the 173 MHz band. UTC states that allowing voice operations on these frequencies “would threaten interference to [telemetry] operations, thereby jeopardizing the underlying services that they support and the general public that relies on those services.”⁴⁴ UTC also contends that existing frequency coordination procedures will not mitigate the risk of interference because they are designed to address interference between adjacent voice systems rather than interference between voice-based VRS and data-based telemetry/remote control operations.⁴⁵ Yuba contends that “[t]here is a high likelihood that police and fire use of [VRS] would interfere with the Agency telemetry system.”⁴⁶ API argues that “Pyramid does not describe how its proposal will not result in the very interference to others that it seeks to avoid (both from and to Public Safety VRS operations) for itself.”⁴⁷

14. UTC and API also argue that Pyramid has failed to document the need for additional spectrum to support VRS. UTC asserts that there is “very little if any technical justification in the petition for the relief that Pyramid seeks, and there is almost no discussion of possible alternatives and/or interference mitigation strategies.”⁴⁸ API argues that Pyramid has not demonstrated why VRS could not be accommodated on existing frequencies through improved filter technology or regional, state and local planning.⁴⁹ API suggests that it is premature to conclude that the VHF band is saturated with existing base/mobile operations because narrowbanding could make additional VHF spectrum available after the January 1, 2013 deadline.⁵⁰ API also contends that critical infrastructure industry entities have greater need than VRS for additional spectrum.⁵¹

⁴⁰ IMSA/IAFC Comments at 5.

⁴¹ FCCA Comments at 2.

⁴² IMSA/IAFC Comments at 5.

⁴³ FCCA Comments at 4, IMSA/IAFC Comments at 6 (*citing* Letter from D’wana R. Terry, Chief, Public Safety and Private Wireless Division, Wireless Telecommunications Bureau, to Mr. Joe Friend, National Office Manager, FCCA, dated Dec. 4, 2003, 18 FCC Rcd 24668 (WTB PSPWD 2003) (Terry Letter)).

⁴⁴ Utilities Telecom Council (UTC) Comments at 1.

⁴⁵ *See* UTC Reply Comments at 1.

⁴⁶ Yuba County Water Agency, California (Yuba) Comments at 2.

⁴⁷ American Petroleum Institute (API) Reply Comments at 4.

⁴⁸ UTC Comments at 3.

⁴⁹ API Reply Comments at 3.

⁵⁰ API Reply Comments at 3.

⁵¹ *Id.* at 4.

15. In reply, the Commonwealth argues that VRS use of telemetry frequencies “to help fill a critical gap in public safety coverage for first responders” should take priority over “the risk of minor delays in utility monitoring.”⁵² The Commonwealth also contends that the risk of VRS causing interference to utility telemetry is low because VRS use will be highly sporadic.⁵³ Indeed, given that VRS units are intended for temporary use at indeterminate locations, the Commonwealth argues that VRS use should not be subject to frequency coordination.⁵⁴

IV. ORDER

16. As evidenced by Section 90.247 of the rules, the Commission has long recognized the public interest benefit of vehicular repeaters (mobile repeater stations), which provide in-building coverage and extended communications range for hand-held units used by police, fire, and rescue personnel in the field. As we noted above, mobile repeaters can improve the safety of first responders by enabling them to stay in radio contact with their command centers in difficult coverage environments where they might otherwise be cut off from communicating. We point out that licensees may operate mobile repeater stations on most frequencies in the VHF band without any rule change under Section 90.247. The predominant use of mobile repeater stations is for land mobile voice operation, which is allowed on most VHF frequencies.

17. However, a rulemaking is necessary to consider allowing mobile repeater stations on the particular VHF frequencies that Pyramid identified because these frequencies have specific rules and limitations that render the frequencies incompatible with mobile repeater stations absent a rule change. For example, the six telemetry and remote control channels are non-voice by definition, and thus, our rules do not allow voice operation and therefore do not allow mobile repeater station operations on telemetry and remote control channels. Hence, Pyramid urges the Commission to “remov[e] the thirty year old restriction on voice operation.”⁵⁵ The Federal forest firefighting channels have limitations on allocation and how the channels are used that are also incompatible with Pyramid’s proposed mobile repeater stations use, absent rule changes.

18. In its Amended Petition, Pyramid states that public safety users in the VHF band have a particular need for an in-band VRS solution because there is virtually no allocation of public safety spectrum that can be used for VRS that provides the required spectral separation from the 150-159 MHz operating frequencies and that is not already saturated with existing base/mobile operations.⁵⁶ The record persuades us that we should initiate a rulemaking proceeding to determine whether additional spectrum is needed to support VHF in-band mobile repeater stations. Accordingly, by adopting the accompanying *Notice of Proposed Rulemaking* we grant the portion of Pyramid’s Amended Petition that seeks to initiate such a proceeding.⁵⁷

19. However, we deny the portion of Pyramid’s Amended Petition that seeks to initiate a proceeding regarding the nine Federal and forest firefighting channels at 170-172 MHz. On April 3,

⁵² Commonwealth Reply Comments at 3.

⁵³ *Id.*

⁵⁴ *Id.*

⁵⁵ Amended Petition at 7.

⁵⁶ *See id.* at 4.

⁵⁷ As an ancillary matter, we need not define “vehicular repeater units” in Section 90.7 of our rules as Pyramid requests because these units fall into the category of mobile repeater stations. The Commission’s rules define and detail the use of mobile repeater stations in Sections 90.7 and 90.247, respectively. Accordingly, the new rules we propose as a result of the Notice of Proposed Rulemaking refer to these units as mobile repeater stations.

2013, NTIA filed a letter recommending that the Commission deny the Pyramid Petition in part with respect to these channels.⁵⁸ NTIA noted that the U.S. Department of Agriculture and the U.S. Forest Service make extensive use of these channels.⁵⁹ NTIA states that because the Forest Service supports critical public safety operations, NTIA needs to ensure an interference-free environment.⁶⁰ NTIA opposes even secondary status for VRS users because VRS public safety services should not be placed at risk by creating conflicts with primary Federal safety operations, and neither group will want to face interference or other coordination conflicts during an operation.⁶¹ Based on NTIA's recommendation, we decline to include the nine Federal channels in our rulemaking proceeding.

20. We also decline to include in our rulemaking proceeding the four additional 173 MHz frequencies identified by Pyramid in the Initial Petition.⁶² Because Pyramid did not list these frequencies in the Amended Petition, it is not clear whether Pyramid intended to propose their inclusion, but even if it did so intend, we believe they are not suitable for VRS use. Two of the four frequencies (173.210 and 173.390 MHz) have a bandwidth limit of only 3 kilohertz, which is insufficient bandwidth for satisfactory voice operation based on today's available technology.⁶³ We also agree with APCO that the four frequencies should not be considered for VRS use because the 6.25 kilohertz separation between the lower two and upper two frequencies "results in insufficient separation between the two frequencies for voice use, and makes coordination difficult."⁶⁴

V. NOTICE OF PROPOSED RULEMAKING

21. In this Notice of Proposed Rulemaking, we seek comment on rule amendments to provide for the expanded use of mobile repeaters for public safety. Although we do not seek to expand the authority for mobile repeaters under Section 90.247, we propose to amend Sections 90.20 (limitations 32, 33, and 34) and 90.175 of our rules⁶⁵ to enable mobile repeaters to operate on the telemetry channels discussed above. We also seek comment on whether frequency coordination methods could protect telemetry users from interference. Next, we seek comment on issues raised in the comments to the public notice, including wide area mobile repeater operations, bandwidth, and power. We also seek comment on the costs and burdens of rule changes, and on whether current mobile repeater filter technologies can support reduced frequency separation requirements. Finally, we explore the mobile repeater environment in other public safety bands besides VHF, and seek comment on Industrial/Business licensees' usage of mobile repeaters.

22. *Telemetry channels.* We seek comment on whether to permit public safety mobile repeater station operations on the six remote control and telemetry channels at 173 MHz subject to coordination. The record suggests that there may be a need to make additional VHF channels available

⁵⁸ See Letter from Karl B. Nebbia, Associate Administrator, Office of Spectrum Management, National Telecommunications and Information Administration, to Julius Knapp, Chief, Office of Engineering and Technology, Federal Communications Commission, RM-11635 (dated April 3, 2013) (NTIA Letter).

⁵⁹ *Id.* at 2.

⁶⁰ *Id.*

⁶¹ *Id.*

⁶² The other four frequencies are 173.20375, 173.210, 173.390, and 173.39625 MHz. See Initial Petition at 7 note 10.

⁶³ See 47 C.F.R. § 90.20(d)(54).

⁶⁴ APCO Comments at 2.

⁶⁵ 47 C.F.R. §§ 90.20(d)(32)-(34), 90.175.

for VRS use beyond those that are already available. We seek comment on whether this is the case. Are frequencies in the 150-159 MHz band not suitable for VRS use, as Pyramid contends, because of limited spectral separation and heavy use by existing base mobile operations? Are there are other alternatives that should be considered, as API and UTC suggest?⁶⁶ For example, has implementation of the Commission's narrowbanding mandate freed up VHF spectrum that could be used for VRS? Should VRS spectral needs be given priority over other potential uses, such as critical infrastructure use?

23. To the extent that additional VHF spectrum may be needed for VRS use, we seek comment on the appropriateness of making the six 173 MHz remote control and telemetry channels available for this purpose. Do commenters agree with EWA that neighboring VRS users should be able to share use of the same frequency given the localized and limited time nature of such operations, and that such sharing should minimize the potential for harmful interference to incumbent telemetry users?⁶⁷ We note that some telemetry data operations are used for safety-related purposes, such as monitoring and controlling water quality and volume for public health and flood control. Would frequency coordination be sufficient to mitigate the risk of interference between VRS and telemetry uses? Should we consider modifying the current VHF band coordination methodology, including the use of exclusion zones, to reduce instances of interference? Since mobile repeater stations are not fixed operations, we seek comment on whether a modified VHF coordination practice could accommodate mobile repeater stations. We also seek comment on alternative frequency coordination procedures that could accommodate such usage.

24. *Protection of telemetry users.* We seek comment about the typical configuration and usage of telemetry stations. Are telemetry systems generally point-to-point, point-to-multipoint, or a mix? What are typical duty cycles and data rates? What types of error correction and retransmit protocols do telemetry operators use? In the context of telemetry station configuration and usage, what is the best way to protect them from mobile repeater stations through coordination? For example, is it feasible to prohibit mobile repeater use inside the service area of a co-channel incumbent station (*i.e.*, an exclusion zone)?⁶⁸ We invite suggestions for other coordination procedures, depending on the characteristics of the incumbent telemetry station. Would an exclusion zone coordination methodology address UTC's concern about the lack of a frequency coordination standard for voice and data operations? Would a typical public safety mobile repeater station licensee be able to instruct its first responders to avoid using a co-channel frequency for mobile repeater stations in these exclusion zones with reasonable accuracy?

25. We seek comment on whether frequency coordinators could add special conditions to the mobile repeater applications, *e.g.*, by listing active, co-channel incumbent call signs and associated exclusion zones that demarcate where mobile repeater operations would be specifically prohibited from the authorization requested by the application. We seek comment on possible exceptions to such an approach, such as when the mobile repeater station user has obtained written concurrence from the incumbent licensee, or the VRS user and incumbent user are the same licensee.⁶⁹ What should be the

⁶⁶ See UTC Comments at 3, API Reply Comments at 3-4.

⁶⁷ See EWA Reply Comments at 4.

⁶⁸ There are several ways that licensees can define service areas. For example: a service contour that depends on the transmitter height and power; a radius around a set of coordinates; a rectangular area defined by a set of latitudes and longitudes; or jurisdictional boundaries. Commenting parties should address the appropriate definition of "service area" for purposes of this proceeding.

⁶⁹ For example, a governmental jurisdiction that conducts telemetry operations on one of these frequencies for its water utility service may have a fire department that is in need of a frequency for mobile repeater station operations. Both uses would be administered by the same licensee, that is, the governmental jurisdiction.

protocol if a mobile repeater station user becomes licensed on a vacant frequency, but a telemetry user is later licensed on that frequency in the mobile repeater station user's operating area? Should a mobile repeater be allowed to cease protecting the exclusion zone if the incumbent telemetry license were to expire, cancel, or terminate and absent the filing of a petition for reconsideration of the change in license status?⁷⁰

26. *Wide area mobile repeater operations.* If a wide area or statewide applicant cannot achieve complete mobile repeater coverage on one telemetry frequency due to a conflict with exclusion zones, could the applicant achieve greater coverage by applying for multiple telemetry frequencies, thereby avoiding interference in the prohibited exclusion zones? Would these measures address the Commonwealth's argument that frequency coordination is unnecessary in general and unworkable for statewide VRS use?

27. *Frequency bandwidth.* Wisconsin supports the use of VRS on telemetry channels, stating that "[a]djacent channel interference issues will be diminished with the imminent conversion of all operations to 11K or less operation."⁷¹ The six telemetry channels are interleaved with seven channels in the I/B Pool.⁷² The spacing between channels is 12.5 kilohertz. Prior to the narrowbanding deadline of January 1, 2013, the interstitial I/B channels had a 20 kilohertz bandwidth limit,⁷³ while the six telemetry channels have a 6 kilohertz bandwidth limit⁷⁴ to minimize mutual bandwidth overlap. However, now that the narrowbanding deadline has passed, the interstitial I/B channels have a bandwidth limit of 11.25 kilohertz, which would allow mobile repeater stations on the telemetry channels to use greater than 6 kilohertz bandwidth and up to 11.25 kilohertz bandwidth without mutual bandwidth overlap. Consequently, we propose to allow mobile repeater operations to use up to 11.25 kilohertz bandwidth on the six telemetry channels. We acknowledge that PLMR stations that meet the efficiency standard of one voice channel per 12.5 kilohertz bandwidth may still use up to 20 kilohertz authorized bandwidth,⁷⁵ but that most radios operate at 11.25 kilohertz bandwidth or less.

28. We seek comment on what proportion of I/B users of the interstitial channels could be affected by bandwidth overlap because they operate at greater than 11.25 kilohertz bandwidth and choose to satisfy the narrowbanding requirement by meeting the efficiency standard. Can mobile repeater stations operate within the other technical limits of Section 90.20(d)(33) of the Commission's rules, or should the Commission not apply these limits to mobile repeater stations on the six telemetry channels?⁷⁶

⁷⁰ See 47 C.F.R. § 1.106(f). The mobile repeater station licensee could periodically check the status of incumbent telemetry stations that it must protect by searching the relevant call signs in ULS at <http://wireless2.fcc.gov/UlsApp/UlsSearch/searchLicense.jsp>. On the main page of a license, the change in status date would appear under the "Dates" section in the "Cancellation" box.

⁷¹ Wisconsin Reply Comments at 1. Wisconsin refers to the narrowbanding requirement, where all PLMR stations in the 150-174 and 406-512 MHz bands must operate on channels with a bandwidth of 12.5 kHz or less beginning January 1, 2013, unless the operations meet the efficiency standard of § 90.203(j)(3). The efficiency standard does not reduce bandwidth but achieves the narrowband equivalent of at least one channel per 12.5 kHz of channel bandwidth for voice and transmission rates of at least 4800 bits per second per 6.25 kHz for data systems operating with bandwidths greater than or equal to 12.5 kHz. See 47 C.F.R. §§ 90.203(j)(3), 90.209(b)(5).

⁷² The interstitial I/B Pool channels are 173.225, 173.250, 173.275, 173.300, 173.325, 173.350, and 173.375 MHz.

⁷³ 47 C.F.R. § 90.209(b)(5).

⁷⁴ 47 C.F.R. § 90.20(d)(33).

⁷⁵ See 47 C.F.R. § 90.203(j)(3).

⁷⁶ *Id.* Specifically, "[f]or FM transmitters, the sum of the highest modulating frequency in Hertz and the amount of the frequency deviation or swing in Hertz may not exceed 2800 Hz and the maximum deviation may not exceed 2.5 (continued....)"

We clarify that the provisions of Section 90.247 would apply to VRS or mobile repeater operations on these telemetry channels or any other spectrum that supports such use. We do not perceive a conflict between the rules proposed herein and Section 90.247 of the Commission's rules. We also seek comment on whether all operations on the six telemetry channels should remain secondary to adjacent channel land mobile operations now that the narrowband deadline has passed.⁷⁷

29. *Power.* The Commonwealth seeks a power limit increase on the telemetry channels for VRS if the channels are made available for VRS use.⁷⁸ The current ERP limit for mobile stations is 2 watts;⁷⁹ the Commonwealth seeks 5 watts for both VRS and portable radios. The Commonwealth contends public safety "needs dedicated frequencies of equal transmitter power to that of a VHF portable, to create a balanced network."⁸⁰ We seek comment on the Commonwealth's proposal, but only for mobile repeater operation on the six telemetry channels. We do not propose to increase the 2-watt power limit for the existing telemetry and remote control use.

30. *Costs and burdens.* We also seek comment on the costs and burdens associated with allowing mobile repeater stations on the six telemetry channels. Would incumbent licensees experience any increased costs if we allow mobile repeater stations on the six telemetry channels? Approximately how many more staff-hours would frequency coordinators spend on a mobile repeater station coordination, relative to a non- mobile repeater station coordination in the VHF band, if we impose the coordination requirement that we discussed above? If there is a significant difference, can frequency coordinators estimate the effect on coordination fees? Does the supposed benefit that mobile repeater stations provide justify an increased coordination cost? We seek comment on any other costs that we have not considered.

31. *Filters and other technical solutions.* We seek comment generally on whether improvements to mobile repeater equipment and filter design could reduce the frequency separation requirements for mobile repeaters. FCCA, UTC, and API argue that Pyramid's frequency spread argument does not establish that the frequencies proposed by Pyramid for VRS use are the only frequencies it could use, or that filter improvements could not reduce the separation requirement.⁸¹ UTC argues that "[t]here is very little if any technical justification in the petition for the relief that Pyramid seeks, and there is almost no discussion of possible alternatives and/or interference mitigation strategies."⁸² FCCA states, "perhaps other filter technologies, such as very small surface acoustic wave ('SAW') filters, could be adapted for vehicular repeater use."⁸³ EWA "urges the VRS vendor community to investigate technological advances that might expand spectrum options in the future."⁸⁴ Accordingly, we seek comment on filter design in general to allow for smaller frequency separation. We also seek comment on the feasibility of adapting SAW filters, or other filter technology, for mobile repeater use.

(Continued from previous page) _____

kHz. For AM transmitters, the highest modulation frequency may not exceed 2000 Hz. The carrier frequency must be maintained within .0005 percent of the center of the frequency band." *Id.*

⁷⁷ See 47 C.F.R. § 90.20(d)(32).

⁷⁸ Commonwealth Comments at 4; Commonwealth Reply Comments at 4.

⁷⁹ 47 C.F.R. § 90.20(d)(32).

⁸⁰ Commonwealth Comments at 4.

⁸¹ See FCCA Comments at 2-3, UTC Comments at 3, API Reply Comments at 3.

⁸² UTC Comments at 3.

⁸³ FCCA Comments at 3.

⁸⁴ EWA Reply Comments at 3.

We particularly invite other manufacturers of vehicular and mobile repeaters to comment and provide information on frequency separation requirements for in-band repeaters and filters that can minimize the frequency separation. We also ask commenting parties to discuss the advantages and disadvantages of cross-band repeaters as an alternative to in-band repeaters.

32. *Other public safety bands.* Next, we seek comment on whether there are other spectrum bands or frequencies that could be used for public safety mobile repeater operations. Are there other alternatives in the VHF band?⁸⁵ What is the status of mobile repeaters in the 450-470 MHz, 700 MHz, and 800 MHz public safety bands? To what extent do public safety licensees in these bands experience challenges in locating suitable and available frequencies that can be used for mobile repeater stations? Bearing in mind that mobile repeater stations generally are allowed on any private land mobile radio service frequency that the Commission's rules do not designate for an incompatible purpose, what steps could the Commission take to facilitate mobile repeater use in 450-470 MHz, 700 MHz, and 800 MHz bands? Are there adequate frequencies in these bands where land mobile voice operations, and by extension mobile repeater stations, are already permitted, or should the Commission consider changing rules to allow land mobile voice operations and mobile repeater stations on certain frequencies that the rules currently render incompatible with such use? If so, which frequencies should the Commission consider?

33. *Industrial/Business licensees.* While much of the discussion herein is focused on public safety users, we also seek comment on the I/B community's interest in using mobile repeater stations in the VHF band. What is the current state of I/B mobile repeater usage? Do I/B licensees need more VHF spectrum for mobile repeater stations that can be shared with existing applications, such as telemetry? Should the Commission include I/B eligibles in this rulemaking and consider amendments to Section 90.35 that are analogous to the rule changes we propose *supra* to Section 90.20, so that I/B users in addition to public safety users would be allowed to use the six telemetry channels for VRS?

VI. PROCEDURAL MATTERS

A. *Ex Parte* Presentations

34. This matter shall be treated as a "permit-but-disclose" proceeding in accordance with the Commission's *ex parte* rules.⁸⁶ Persons making *ex parte* presentations must file a copy of any written presentation or a memorandum summarizing any oral presentation within two business days after the presentation (unless a different deadline applicable to the Sunshine period applies). Persons making oral *ex parte* presentations are reminded that memoranda summarizing the presentation must (1) list all persons attending or otherwise participating in the meeting at which the *ex parte* presentation was made, and (2) summarize all data presented and arguments made during the presentation. If the presentation consisted in whole or in part of the presentation of data or arguments already reflected in the presenter's written comments, memoranda, or other filings in the proceeding, the presenter may provide citations to such data or arguments in his or her prior comments, memoranda, or other filings (specifying the relevant page and/or paragraph numbers where such data or arguments can be found) in lieu of summarizing them in the memorandum. Documents shown or given to Commission staff during *ex parte* meetings are deemed to be written *ex parte* presentations and must be filed consistent with rule 1.1206(b). In

⁸⁵ See APCO Comments at 2 (recommending that the Commission broaden the scope of the proceeding beyond the frequencies identified by Pyramid). In seeking comment on additional spectrum bands and frequencies, we do not open a proceeding that considers the use of the nine 170-172 MHz Federal and forest firefighting channels or the four other telemetry frequencies as discussed in the Order above. Those frequencies are not part of this rulemaking proceeding.

⁸⁶ 47 C.F.R. § 1.200 *et seq.*

proceedings governed by rule 1.49(f) or for which the Commission has made available a method of electronic filing, written *ex parte* presentations and memoranda summarizing oral *ex parte* presentations, and all attachments thereto, must be filed through the electronic comment filing system available for that proceeding, and must be filed in their native format (*e.g.*, .doc, .xml, .ppt, searchable .pdf). Participants in this proceeding should familiarize themselves with the Commission's *ex parte* rules.

B. Comment Filing Procedures

35. Pursuant to sections 1.415 and 1.419 of the Commission's rules, 47 CFR §§ 1.415, 1.419, interested parties may file comments and reply comments on or before the dates indicated on the first page of this document. **All filings related to this Notice of Proposed Rulemaking should refer to RM-11635 and PS Docket No. 13-229.**

- Electronic Filers: Comments may be filed electronically using the Internet by accessing the ECFS: <http://fjallfoss.fcc.gov/ecfs2/>.
- Paper Filers: Parties who choose to file by paper must file an original and one copy of each filing. If more than one docket or rulemaking number appears in the caption of this proceeding, filers must submit two additional copies for each additional docket or rulemaking number.

Filings can be sent by hand or messenger delivery, by commercial overnight courier, or by first-class or overnight U.S. Postal Service mail. All filings must be addressed to the Commission's Secretary, Office of the Secretary, Federal Communications Commission.

- All hand-delivered or messenger-delivered paper filings for the Commission's Secretary must be delivered to FCC Headquarters at 445 12th St., SW, Room TW-A325, Washington, DC 20554. The filing hours are 8:00 a.m. to 7:00 p.m. All hand deliveries must be held together with rubber bands or fasteners. Any envelopes and boxes must be disposed of before entering the building.
 - Commercial overnight mail (other than U.S. Postal Service Express Mail and Priority Mail) must be sent to 9300 East Hampton Drive, Capitol Heights, MD 20743.
 - U.S. Postal Service first-class, Express, and Priority mail must be addressed to 445 12th Street, SW, Washington DC 20554.
- People with Disabilities: To request materials in accessible formats for people with disabilities (braille, large print, electronic files, audio format), send an e-mail to fcc504@fcc.gov or call the Consumer & Governmental Affairs Bureau at 202-418-0530 (voice), 202-418-0432.

C. Accessible Formats

36. To request materials in accessible formats for people with disabilities (Braille, large print, electronic files, audio format), send an e-mail to fcc504@fcc.gov or call the Consumer & Governmental Affairs Bureau at 202-418-0530 (voice), 202-418-0432 (TTY).

D. Regulatory Flexibility Analysis

37. As required by the Regulatory Flexibility Act of 1980, *see* 5 U.S.C. § 603, the Commission has prepared an Initial Regulatory Flexibility Analysis (IRFA) of the possible significant economic impact on small entities of the policies and rules addressed in this document. The IRFA is set forth in Appendix B. Written public comments are requested on the IRFA. These comments must be

filed in accordance with the same filing deadlines as comments filed in response to this Notice of Proposed Rulemaking as set forth in paragraph 35, and have a separate and distinct heading designating them as responses to the IRFA.

E. Paperwork Reduction Act Analysis

38. This document contains proposed modified information collection requirements. The Commission, as part of its continuing effort to reduce paperwork burdens, invites the general public and the Office of Management and Budget (OMB) to comment on the information collection requirements contained in this document, as required by the Paperwork Reduction Act of 1995, Public Law 104-13. In addition, pursuant to the Small Business Paperwork Relief Act of 2002, Public Law 107-198, *see* 44 U.S.C. 3506(c)(4), we seek specific comment on how we might further reduce the information collection burden for small business concerns with fewer than 25 employees.

F. Congressional Review Act

39. The Commission will send a copy of this Order and Notice of Proposed Rulemaking in a report to be sent to Congress and the Government Accountability Office pursuant to the Congressional Review Act (CRA), *see* 5 U.S.C. § 801(a)(1)(A).

VII. ORDERING CLAUSES

40. Accordingly, IT IS ORDERED that pursuant to sections 4(i) and 303 of the Communications Act of 1934, as amended, 47 U.S.C. §§154(i) and 303, and section 1.407 of the Commission's rules, 47 C.F.R. § 1.407, this Order and Notice of Proposed Rulemaking IS ADOPTED.

41. IT IS FURTHER ORDERED that pursuant to sections 4(i) and 303 of the Communications Act of 1934, as amended, 47 U.S.C. §§154(i) and 303, and sections 1.401(e) and 1.407 of the Commission's rules, 47 C.F.R. §§ 1.401(e) and 1.407, the petition for rulemaking filed by Pyramid Communications, Inc., on June 27, 2011, as amended on August 16, 2011, IS GRANTED to the extent described herein and IS OTHERWISE DENIED.

42. IT IS FURTHER ORDERED that the Commission's Consumer and Governmental Affairs Bureau, Reference Information Center, SHALL SEND a copy of this Order and Notice of Proposed Rulemaking, including the Initial Regulatory Flexibility Analysis, to the Chief Counsel for Advocacy of the Small Business Administration.

43. IT IS FURTHER ORDERED that pursuant to applicable procedures set forth in Sections 1.415 and 1.419 of the Commission's rules, 47 C.F.R. §§ 1.415, 1.419, interested parties may file comments on this Notice of Proposed Rulemaking on or before 60 days after publication in the Federal Register, and interested parties may file reply comments on or before 90 days after publication in the Federal Register.

FEDERAL COMMUNICATIONS COMMISSION

Marlene H. Dortch
Secretary

APPENDIX A

Proposed Rules

Part 90 of Chapter 1 of Title 47 of the Code of Federal Regulations is amended as follows:

1. The authority citation for Part 90 continues to read as follows:

Authority: Sections 4(i), 11, 303(g), 303(r), and 332(c)(7) of the Communications Act of 1934, as amended, 47 U.S.C. 154(i), 161, 303(g), 303(r), and 332(c)(7), and Title VI of the Middle Class Tax Relief and Job Creation Act of 2012, Pub. L. 112-96, 126 Stat. 156.

2. Section 90.20 is amended by revising paragraphs (d)(32), (33), and (34) to read as follows:

§ 90.20 Public Safety Pool.

* * * * *

(d) * * *

(32) The maximum effective radiated power (ERP) may not exceed 20 watts for fixed stations, 2 watts for mobile stations, and 5 watts for mobile repeater stations and hand-carried transmitters that communicate directly with mobile repeater stations in the Public Safety Pool. The height of the antenna system may not exceed 15.24 meters (50 ft.) above ground. All such operation is on a secondary basis to adjacent channel land mobile operations.

(33) For FM transmitters, the sum of the highest modulating frequency in Hertz and the amount of the frequency deviation or swing in Hertz may not exceed 2800 Hz and the maximum deviation may not exceed 2.5 kHz. For AM transmitters, the highest modulation frequency may not exceed 2000 Hz. The carrier frequency must be maintained within .0005 percent of the center of the frequency band, and the authorized bandwidth may not exceed 6 kHz, except for mobile repeater stations and hand-carried transmitters that communicate directly with mobile repeater stations in the Public Safety Pool, in which case the authorized bandwidth may not exceed 11.25 kHz.

(34) This frequency is available on a shared basis with the Industrial/Business Pool for remote control and telemetry operations. In cases where § 90.20(d)(32) applies to this frequency, licensees who are eligible in the Public Safety Pool may also use this frequency for mobile repeater stations and hand-carried transmitters that communicate directly with mobile repeater stations subject to the frequency coordination requirements of § 90.175(b)(4). Mobile repeater stations shall not operate within the service areas of active co-channel incumbent remote control and telemetry stations as determined by the applicable frequency coordinator and listed in a special condition on the mobile repeater station operator's license. If any listed incumbent license on the special condition becomes expired, canceled, or terminated, then this requirement shall not apply to the associated service area beginning 30 days after the change in license status in the Commission's Universal Licensing System, absent the filing of a petition for reconsideration of the change in license status.

* * * * *

3. Section 90.175 is amended by adding paragraph (b)(4) to read as follows:

§ 90.175 Frequency coordinator requirements.

* * * * *

(b) * * *

(4) For any application for public safety mobile repeater station operations on frequencies denoted by both §§ 90.20(d)(32) and 90.20(d)(34), the frequency coordinator responsible for the application must determine and disclose to the applicant the call signs and the service areas of all active co-channel incumbent remote control and telemetry stations inside the applicant's proposed area of operation by adding a special condition to the application, except when the applicant has obtained written concurrence from an affected incumbent licensee, or when the applicant and the incumbent licensee are the same entity.

* * * * *

APPENDIX B

Initial Regulatory Flexibility Analysis

1. As required by the Regulatory Flexibility Act of 1980, as amended (RFA),¹ the Commission has prepared this Initial Regulatory Flexibility Analysis (IRFA) of the possible significant economic impact on a substantial number of small entities by the policies and rules proposed in this Notice of Proposed Rulemaking (NPRM). The Commission requests written public comments on this IRFA. Comments must be identified as responses to the IRFA and must be filed by the deadlines for comments on the NPRM provided in Section VI of the item. The Commission will send a copy of the NPRM, including this IRFA, to the Chief Counsel for Advocacy of the Small Business Administration (SBA).² In addition, the Commission will ensure that the NPRM and IRFA (or summaries thereof) will be published in the Federal Register.³

A. Need for, and Objectives of, the Proposed Rules

2. The purpose of today's NPRM is to explore the licensing and operation of vehicular repeater systems (VRS), which fall into the category of mobile repeater stations, by public safety licensees in the VHF band.⁴ Equipment designer and manufacturer Pyramid Communications, Inc. (Pyramid) requested the Commission commence a rulemaking proceeding to allow VRS on certain frequencies in the VHF band. Mobile repeater stations are vehicle-mounted repeaters that repeat transmissions from low-powered, hand-held portable radios in the immediate vicinity to distant fixed repeaters or base stations. Mobile repeater stations also receive signals from the distant fixed repeaters or base stations and retransmit them on the designated mobile repeater station frequency to handheld portable radios in the immediate vicinity for better in-building coverage. Mobile repeater stations not only improve communications for public safety personnel carrying portable radios, but also provide links to the main system and thus improve safety.

3. Pyramid's VRS provide an in-band solution, which saves field personnel from having to carry two portable radios,⁵ but Pyramid states that current filter technology requires a frequency separation of 2 to 5 megahertz from the main system operating frequencies. Public safety licensees in the VHF band operate primarily in the range 150 to 160 MHz. However, these frequencies are congested in many areas, so often no frequency can be found that is at least 2 megahertz separated from a licensee's operating frequencies. Pyramid proposed to make two groups of VHF frequencies available for communication between portable radios and VRS units: (i) nine channels at 170-172 MHz from Section 90.265(c), which are currently allocated to the Federal Government and designated on a secondary basis for forest firefighting and conservation;⁶ and (ii) six channels at 173 MHz: 173.2375, 173.2625, 173.2875,

¹ See 5 U.S.C. § 603. The RFA, see 5 U.S.C. §§ 601-612, has been amended by the Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA), Pub. L. No. 104-121, Title II, 110 Stat. 857 (1996).

² See 5 U.S.C. § 603(a).

³ *Id.*

⁴ In the context of this rulemaking, we presume the VHF band to be 150-174 MHz.

⁵ A cross-band mobile repeater solution would have adequate frequency separation, but it would burden field personnel with two portable radios – one for the main operating system frequencies that operates in one frequency band, and another for VRS that operates in a different frequency band.

⁶ The 170-172 MHz channels are available for assignment to licensees engaged in forest firefighting and conservation activities. Each applicant must obtain written concurrence from USDA. See 47 C.F.R. § 90.265(c). Wireless Telecommunications Bureau staff also previously clarified that these frequencies are only available for (continued....)

173.3125, 173.3375, and 173.3625 MHz, which are shared between the Public Safety and Industrial/Business (I/B) Pools and designated for remote control and telemetry operations.

B. Legal Basis

4. Authority for the actions proposed in this *NPRM* may be found in sections 4(i) and 303 of the Communications Act of 1934, as amended, 47 U.S.C. §§ 154(i) and 303.

C. Description and Estimate of the Number of Small Entities to Which Rules Will Apply

5. The RFA directs agencies to provide a description of, and, where feasible, an estimate of, the number of small entities that may be affected by the rules adopted herein.⁷ The RFA generally defines the term “small entity” as having the same meaning as the terms “small business,” “small organization,” and “small governmental jurisdiction.”⁸ In addition, the term “small business” has the same meaning as the term “small business concern” under the Small Business Act.⁹ A “small-business concern” is 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”).¹⁰ Below, we further describe and estimate the number of small entities that may be affected by the rule changes we propose in this *NPRM*.

6. *Small Businesses, Small Organizations, and Small Governmental Jurisdictions.* The RFA directs agencies to provide a description of and, where feasible, an estimate of the number of small entities that may be affected by the proposed rules, if adopted.¹¹ Our action may, over time, affect small entities that are not easily categorized at present. We therefore describe here, at the outset, three comprehensive, statutory small entity size standards.¹² First, nationwide, there are a total of approximately 27.9 million small businesses, according to the SBA.¹³ In addition, a “small organization” is generally “any not-for-profit enterprise which is independently owned and operated and is not dominant in its field.”¹⁴ Nationwide, as of 2007, there were approximately 1,621,315 small organizations.¹⁵ Finally, the term “small governmental jurisdiction” is defined generally as “governments of cities, towns,

(Continued from previous page) _____

forest firefighting and conservation activities and are not available for police surveillance operations. See Letter from D’wana R. Terry, Chief, Public Safety and Private Wireless Division, Wireless Telecommunications Bureau to Mr. Joe Friend, National Office Manager, FCCA, dated Dec. 4, 2003, 18 FCC Rcd 24668 (WTB PSPWD 2003).

⁷ 5 U.S.C. § 603(b)(3).

⁸ 5 U.S.C. § 601(6).

⁹ 5 U.S.C. § 601(3) (incorporating by reference the definition of “small business concern” in the Small Business Act, 15 U.S.C. § 632). Pursuant to 5 U.S.C. § 601(3), the statutory definition of a small business applies “unless an agency, after consultation with the Office of Advocacy of the Small Business Administration and after opportunity for public comment, establishes one or more definitions of such term which are appropriate to the activities of the agency and publishes such definition(s) in the Federal Register.” 5 U.S.C. § 601(3).

¹⁰ 15 U.S.C. § 632.

¹¹ 5 U.S.C. § 603(b)(3).

¹² See 5 U.S.C. §§ 601(3)–(6).

¹³ See http://www.sba.gov/sites/default/files/FAQ_Sept_2012.pdf (last visited August 28, 2013; figures are from 2010).

¹⁴ 5 U.S.C. § 601(4).

¹⁵ INDEPENDENT SECTOR, *THE NEW NONPROFIT ALMANAC & DESK REFERENCE* (2010).

townships, villages, school districts, or special districts, with a population of less than fifty thousand.”¹⁶ As of 2007, the U.S. Census Bureau identifies approximately 89,527 governmental jurisdictions in the United States, including the Federal Government and 50 state governments.¹⁷ This number includes 39,044 county governments, municipalities, and townships, of which 37,546 (approximately 96.2 percent) have populations of fewer than 50,000, and of which 1,498 have populations of 50,000 or more. Thus, we estimate the number of small governmental jurisdictions overall to be 86,043 or fewer. These entities are included here because many of these small government jurisdictions are also licensees.

7. *Public Safety Radio Licensees.* As a general matter, Public Safety Radio Pool licensees include police, fire, local government, forestry conservation, highway maintenance, and emergency medical services.¹⁸ Because of the vast array of public safety licensees, the Commission has not developed a small business size standard specifically applicable to public safety licensees. The SBA rules contain a definition for Wireless Telecommunications Carriers (except Satellite) which encompasses business entities engaged in radiotelephone communications employing no more than 1,500 persons.¹⁹ With respect to local governments, in particular, since many governmental entities comprise the licensees for these services, we include under public safety services the number of government entities affected. According to Commission records, there are a total of approximately 78,991 licenses within these services in the VHF band, 150-174 MHz.²⁰

8. *Private Land Mobile Radio Licensees.* Private land mobile radio (PLMR) systems 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 a small business size standard specifically applicable to PLMR users. The SBA rules, however, contain a definition for Wireless Telecommunications Carriers (except Satellite) which encompasses business entities engaged in radiotelephone communications employing no more than 1,500 persons.²¹ According to the Commission’s records, there are a total of 3,374 licenses in the frequencies range 173.225 MHz to

¹⁶ 5 U.S.C. § 601(5).

¹⁷ U.S. CENSUS BUREAU, STATISTICAL ABSTRACT OF THE UNITED STATES: 2012, Table 428. *See* <http://www.census.gov/prod/2011pubs/12statab/stlocgov.pdf> (last visited August 28, 2013).

¹⁸ *See* subparts A and B of Part 90 of the Commission’s Rules, 47 C.F.R. §§ 90.1-90.22. Police licensees serve state, county, and municipal enforcement through telephony (voice), telegraphy (code), and teletype and facsimile (printed material). Fire licensees are comprised of private volunteer or professional fire companies, as well as units under governmental control. Public Safety Radio Pool licensees also include state, county, or municipal entities that use radio for official purposes. State departments of conservation and private forest organizations comprise forestry service licensees that set up communications networks among fire lookout towers and ground crews. State and local governments are highway maintenance licensees that provide emergency and routine communications to aid other public safety services to keep main roads safe for vehicular traffic. Emergency medical licensees use these channels for emergency medical service communications related to the delivery of emergency medical treatment. Additional licensees include medical services, rescue organizations, veterinarians, persons with disabilities, disaster relief organizations, school buses, beach patrols, establishments in isolated areas, communications standby facilities, and emergency repair of public communications facilities.

¹⁹ *See* 13 C.F.R. § 121.201, NAICS code 517210.

²⁰ This figure was derived from Commission licensing records as of August 16, 2013. Licensing numbers change on a daily basis. We do not expect this number to be significantly smaller today. This does not indicate the number of licensees, as licensees may hold multiple licenses. There is no information currently available about the number of public safety licensees that have fewer than 1,500 employees.

²¹ *See* 13 C.F.R. § 121.201, NAICS code 517210.

173.375 MHz, which is the range affected by this NPRM.²² Despite the lack of specific information, however, the Commission believes that a substantial number of PLMR licensees may be small entities.

9. *Frequency Coordinators.* Neither the Commission nor the SBA has developed a small business size standard specifically applicable to spectrum frequency coordinators. There are nine frequency coordinators certified by the Commission to coordinate frequencies allocated for public safety use.²³ The Commission has not developed a small business size standard specifically applicable to frequency coordinators. The SBA rules, however, contain a definition for Wireless Telecommunications Carriers (except Satellite) which encompasses business entities engaged in radiotelephone communications employing no more than 1,500 persons.²⁴ Under this category and size standard, we estimate that a majority of frequency coordinators can be considered small.

10. *Radio and Television Broadcasting and Wireless Communications Equipment Manufacturing.* The Census Bureau defines this category as follows: “This industry comprises establishments primarily engaged in manufacturing radio and television broadcast and wireless communications equipment. Examples of products made by these establishments are: transmitting and receiving antennas, cable television equipment, GPS equipment, pagers, cellular phones, mobile communications equipment, and radio and television studio and broadcasting equipment.”²⁵ The SBA has developed a small business size standard for Radio and Television Broadcasting and Wireless Communications Equipment Manufacturing, which is: all such firms having 750 or fewer employees. According to Census Bureau data for 2011, there were a total of 809 establishments in this category that operated for part or all of the entire year. According to Census bureau data for 2011, there were a total of 939 firms in this category that operated for the entire year. Of this total, 784 had less than 500 employees and 12 had 1000 or more employees.²⁶ Thus, under that size standard, the majority of firms can be considered small.

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

11. The RFA requires that an agency’s IRFA include a description of the projected reporting, recordkeeping, and other compliance requirements.²⁷ The rules proposed by the NPRM may impose such requirements on small entity PLMR licensees because they would allow public safety mobile repeater station licensees to operate on the six 173 MHz telemetry channels where incumbent PLMR licensees currently operate. Allowing mobile repeater station operations on those six channels could impose compliance requirements or other costs on PLMR licensees because additional operations on 173 MHz might require PLMR licensees to engage in new frequency coordination activities or otherwise affect their use of those channels. While equipment manufacturers would not be directly regulated under our proposed rules, we note that the NPRM’s proposal to allow both mobile repeater station and incumbent

²² This figure was derived from Commission licensing records as of August 16, 2013. Licensing numbers change on a daily basis. We do not expect this number to be significantly smaller today. This does not indicate the number of licensees, as licensees may hold multiple licenses. There is no information currently available about the number of licensees that have fewer than 1,500 employees.

²³ See <http://transition.fcc.gov/pshs/public-safety-spectrum/coord.html> (last visited August 28, 2013).

²⁴ See 13 C.F.R. § 121.201, NAICS code 517210.

²⁵ The NAICS Code for this service 334220. See 13 C.F.R. § 121.201. See also <http://www.census.gov/cgi-bin/sssd/naics/naicsrch?code=334220&search=2007%20NAICS%20Search>.

²⁶ See <http://censtats.census.gov/cgi-bin/cbpnaic/cbpdetl.pl>.

²⁷ 5 U.S.C. § 603(b)(4).

PLMR operations on the six 173 MHz channels could alter the competitive marketplace in a manner that affects equipment manufacturers.

12. We do not anticipate that the proposed rules would impose compliance costs on public safety mobile repeater station licensees within the meaning of the RFA. The rules under consideration would not impose additional regulatory requirements on mobile repeater station operators, but instead provide them with the option of using spectrum at 173 MHz for their mobile repeater station operations. The proposed rules would not require mobile repeater station operators to modify their operations. Similarly, we do not anticipate that the proposed rules would impose significant costs on frequency coordinators. Frequency coordinators generally recover their costs from the applicants or licensees that use their services. To the extent that the proposed rules impose any compliance requirements on frequency coordinators, we are unaware of any rule or other limitation that would prevent the coordinators from recovering their costs from the applicants or licensees.

13. We seek comment on our analysis and the tentative conclusions in this section.

E. Steps Taken to Minimize the Significant Economic Impact on Small Entities, and Significant Alternatives Considered

14. The RFA requires an agency to describe any significant alternatives that it has considered in developing its approach, which may include the following four alternatives (among others): “(1) the establishment of differing compliance or reporting requirements or timetables that take into account the resources available to small entities; (2) the clarification, consolidation, or simplification of compliance and reporting requirements under the rule for such small entities; (3) the use of performance rather than design standards; and (4) an exemption from coverage of the rule, or any part thereof, for such small entities.”²⁸

15. The proposal to allow mobile repeater stations on the six telemetry channels may impose a significant economic impact on small entities as described above. We have considered alternatives to this proposal, including a request that we launch a proceeding that would allow mobile repeater station use on the nine Federal and forest firefighting channels at 170-172 MHz. However, as discussed above, we determined that the relative complexity of the interference protection issues counseled against a rulemaking proceeding that addresses operations at 170-172 MHz. Moreover, while the proposal to allow mobile repeater station operations on the 173 MHz telemetry channels may impose a significant economic impact on incumbent PLMR licensees who use, or are interested in using, those channels. The alternative—namely, not allowing mobile repeater station operation on the six telemetry channels—could have a significant, negative effect on the ability of first responders to maintain the safety of life and property. We tentatively decline to pursue this alternative as inconsistent with our obligation to serve the public interest.

F. Federal Rules that May Duplicate, Overlap, or Conflict with the Proposed Rules

16. None.

²⁸ 5 U.S.C. § 603(c).

APPENDIX C**List of Commenters to the Public Notice**Comments

Alpha-Zulu Solutions LLC (Alpha-Zulu)
Association of Public-Safety Communications Officials-International, Inc. (APCO)
Beltronics Inc. (Beltronics)
Cassie Adams (Adams)
Co-Meg Sales (Co-Meg)
Commonwealth of Virginia Department of State Police (Commonwealth)
David Patton (Patton)
Forestry Conservation Communications Association (FCCA)
International Municipal Signal Association/International Association of Fire Chiefs (IMSA/IAFC)
Jay Thompson (Thompson)
Justin Bellen (Bellen)
Mary Langford (Langford)
McLaughlin Long Marketing (McLaughlin)
Rob Hendrickson (Hendrickson)
Tower Communications Co. (Tower)
Utilities Telecom Council (UTC)
Yuba County Water Agency, California (Yuba)

Reply Comments

Advanced PLM Sales and Marketing (Advanced PLM)
American Petroleum Institute (API)
Brian Mortenson (Mortenson)
Commonwealth
Enterprise Wireless Alliance (EWA)
Jamestown Communications, Inc. (Jamestown)
Mark Schaff, Mid Nebraska Comm (Schaff)
Pyramid Communications, Inc. (Pyramid)
Robert Harvey (Harvey)
Scott Pasley (Pasley)
UTC
Wisconsin State Patrol (Wisconsin)

Late-filed Comment

Ozborn Communications LLC