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

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| In the Matter of | ) | |
| | ) | |
| Amendment of Sections 90.20(d) and 90.265 of the Commission's Rules to Facilitate the Use of Vehicular Repeater Units | ) | PS Docket No 13-229 |
| | ) | |
| Trinity County, California | ) | FCC File No. 0006127744 |
| | ) | |
| County of Williams Sheriff's Department | ) | FCC File No. 0006070064 |
| | ) | |
| Panhandle Regional Planning Commission | ) | FCC File No. 0005883249 |
| | ) | |
| City of Prineville, Oregon | ) | FCC File No. 0006263046 |

**REPORT AND ORDER**

**Adopted: August 6, 2015** **Released: August 10, 2015**

By the Commission:

## I. INTRODUCTION

1. In this *Report and Order* we amend Part 90 of the Commission's rules[1] to allow the licensing and operation of vehicular repeater systems (VRS) and other mobile repeaters[2] on six remote control and telemetry channels in the VHF band.[3] We dismiss as moot certain applications seeking to operate mobile repeaters on these channels on a waiver basis.

2. Mobile repeaters extend the range of hand-held radios by allowing them to transmit their signals to a more powerful vehicle radio which then repeats the signals, on a different frequency to a base station. They also allow public safety vehicles to serve as *ad hoc* command centers, by allowing multiple hand-held units to use the vehicle repeater frequency as an on-scene tactical channel, especially in situations when there is inadequate coverage from the parent base station.

3. Public safety entities have increasingly turned to VRS as a cost-effective way to enhance the overall effectiveness of a public safety communication system at a fraction of the cost of achieving the same result using infrastructure improvements. However, as we will detail below, there are technical and fiscal considerations that limit the choice of discrete frequencies that are available for VRS use in any given system. Today, we provide public safety entities with six additional frequencies for VRS use,

[1] 47 C.F.R. Part 90 *et. seq.*

[2] 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.

[3] 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).

which will allow greater use of this valuable public safety technology while providing protection for incumbent telemetry users who rely on these frequencies for control of critical infrastructure systems.

## II. BACKGROUND

4. In 2011, Pyramid Communications, Inc. (Pyramid), a manufacturer of wireless data and voice equipment, asked the Commission to amend our rules to allow the use of mobile repeaters in two specific VHF band segments:[4]

- Nine frequencies in the 170-172 MHz band;[5] and
- Six offset frequencies in the 173 MHz band.[6]

5. Although Section 90.247 of the Commission's rules allows the use of mobile repeater stations on most frequencies in the VHF band, the 173 MHz band VHF frequencies in question are subject to specific rules and limitations that preclude the use of mobile repeater stations on these frequencies. Specifically, these frequencies are designated for telemetry and remote control operations which are non-voice by definition, and thus are not naturally compatible with waveforms used by mobile repeater stations which support voice operations.[7]

6. On September 16, 2013, the Commission granted Pyramid's petition in part and launched a rulemaking in the above-captioned docket to explore whether there is a need to make additional spectrum available to support mobile repeater capability.[8] In the *VRS NPRM*, the Commission declined to seek comment on VRS operations on the nine channels that Pyramid had identified in the 170-172 MHz band, but did propose to allow mobile repeater use on the six telemetry channels in the 173 MHz band.[9] The Commission sought comment on its proposal to amend Sections 90.20 (limitations 32, 33, and 34) and 90.175 of the Commission's rules to enable mobile repeaters to operate on the 173 MHz band channels.[10] In addition, the Commission sought comment on the following issues:[11]

- Whether other spectrum bands or frequencies could also be used for public safety mobile repeater operations;

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[4] 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). *See also* 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).

[5] *See* 47 C.F.R. § 90.265(c). The frequencies are allocated for Federal use on a primary basis but also available for assignment to non-Federal licensees engaged in forest firefighting and forest conservation activities. *Id.*

[6] *See* n. 3 *supra*. These frequencies are currently designated for fixed remote control and telemetry operations. They are shared between the Public Safety and Industrial/Business (I/B) Pools, are limited to a 6 kilohertz bandwidth, and do not permit voice operation due to the telemetry designation. *See* 47 C.F.R. §§ 90.7, 90.20(d)(32-34).

[7] *See id*.

[8] Amendment of Sections 90.20(d)(34) and 90.265 of the Commission's Rules to Facilitate the Use of Vehicular Repeater Units, *Order and Notice of Proposed Rulemaking,* 28 FCC Rcd 13544, 13545 ¶ 2 (2013) (*VRS NPRM*). By adopting the accompanying *VRS NPRM*, the Commission granted the portion of Pyramid's Amended Petition that sought to initiate such a proceeding. *See id*. at ¶ 18.

[9] *Id.* at 13550-51 ¶¶ 19-21.

[10] *Id.* at ¶ 21, *see also* 47 C.F.R. §§ 90.20(d)(32)-(34), 90.175.

[11] *VRS NPRM* at ¶¶ 24-33

- Whether improvements to mobile repeater equipment and filter design could reduce the minimum frequency separation requirements for mobile repeaters;
- Whether to allow Industrial/Business use of mobile repeater stations on these channels;
- Whether to impose bandwidth restrictions on these frequencies;
- Whether frequency coordination could protect telemetry users from interference;
- Whether to allow wide-area mobile repeater operations on these frequencies;
- Whether to allow VRS units to exceed the 2 watt power limit that applies to these channels; and
- The costs and burdens associated with allowing mobile repeater stations on the six 173 MHz band channels.

## III. DISCUSSION

### A. Mobile Repeater Station Operations

7. In the *VRS NPRM,* the Commission proposed allowing public safety mobile repeater stations on the six telemetry and remote control channels subject to coordination.[12] Generally, public safety entities and manufacturers supported this proposal, citing the dearth of available VHF spectrum with sufficient spectral separation from commonly used VHF police and fire operating channels.[13] Manufacturers claim that VRS units require 2-5 MHz of frequency separation between the mobile radio frequency and the portable radio "talk-back" frequency to prevent interference.[14] Since the vast majority of VHF Public Safety Pool and Industrial/Business Pool channels are in the 150-160 MHz range, VRS units operating on the six 173 MHz band frequencies would have ample separation from the service channels.

8. Critical infrastructure industry (CII) entities opposed the proposal, primarily on the grounds that the telemetry channels are heavily used, there is a shortage of available frequencies for non-voice operations in the Part 90 Public Land Mobile Radio (PLMR) bands, and that allowing VRS use of these channels would limit CII entities' ability to expand supervisory control and data acquisition (SCADA) systems used to assure reliability and safety in the electrical grid and gas networks.[15]

9. As a preliminary matter, the Commission asked whether alternative frequencies were available for mobile repeater use.[16] Commenting parties argued rather that the Commission, in addition to authorizing the use of mobile repeaters in the 173 MHz band, should also allow the use of VRS units in a variety of other bands, including the 700 MHz band,[17] underutilized broadcast spectrum,[18] frequencies now allocated for Rural Radiotelephone Service,[19] and certain UHF medical telemetry spectrum.[20]

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[12] *VRS NPRM* at ¶ ¶ 21-23.

[13] W.A. Hendrickson (1) Comments at 1; W.A. Hendrickson (2) Comments at 1; Secom Systems Comments at 2; Capitol Electronics Comments at 1-3; Wyoming Comments at 2; Virginia Comments at 2; APCO Comments at 1-2; NetMark Comments at 1; Alpha-Zulu Comments at 1; Region 33 Comments at 1; LDL Comments at 3; ADH Comments at 1; Cambridge Comments at 1.

[14] Secom Systems Comments at 2; Capitol Electronics Comments at 2; Pyramid Comments at 5. We note that Region 33 claims that manufacturers have told it that separation of at least 10 MHz is optimal. *See* Region 33 Comments at 1.

[15] Edison Comments at 3; NUSCO Comments at 1; UTC Comments at 1; OHIO SIEC Comments at 2.

[16] *VRS NPRM* at ¶ 22.

[17] Pyramid Comments at 9, APCO Comments at 2-3, Ohio Comments at 3, NRPC Comments at 2-4, Region 13 Comments at 2-3.

10. The interest in authorizing VRS in multiple bands appears to stem from the fact that public safety licensees have a preference for systems in which base stations, portables and VRS units all operate in the same band. Since public safety licensees can operate systems in VHF, UHF, 700 MHz or 800 MHz, these licensees want the ability to deploy VRS in any of those bands as well. Thus, licensees using 800 MHz systems prefer to use VRS that also operate in the 800 MHz band, while licensees using 700 MHz prefer to use VRS that also operates in the 700 MHz band. Virginia, for example, explains that it prefers using VHF mobile repeaters in VHF systems in the same band because, while it is desirable to have the portable unit first attempt to communicate with the VRS in the motor vehicle, if that link is lost due to an obstruction and a base station is nearby, the portable unit can maintain communications directly through the base station.[21] Moreover, Virginia notes that using VRS units that operate in a separate band from the base stations and portables "would require separate portable radios (not practically or economically feasible) or buying dual-band portables that could operate on both bands simultaneously (perhaps a technical solution, but not a practical solution absent funding to pay for thousands of such units)."[22]

11. The Commission also sought comment generally on whether improvements to mobile repeater equipment and filter design could reduce the requisite 2-5 MHz frequency separation between the mobile radio frequency and the portable radio "talk-back" frequency for mobile repeaters. This would increase the number of discrete frequencies that licensees could designate for mobile repeater use.[23] Commenters generally stated that the current state of filter technology precludes the use of filters to reduce the minimum frequency separation between the mobile radio frequencies and the portable "talk-back" frequencies.[24]

12. As we discuss in more detail below, we agree with those commenters who believe that the six VHF frequencies at issue are suitable for VRS use. We also agree that the Commission should continue to explore the use of VRS in other spectral bands and monitor filter technology to see if improvements can reduce the amount of spectral separation. However, given public safety's stated preference for the use of in-band VRS, coupled with the fact that it is currently not possible to reduce the requisite spectral separation through filter technology, we do not believe that frequencies in other bands are useful options for mobile repeater use at this time. Thus we will limit our analysis here to the six telemetry and remote control channels in the 173 MHz band.

### B. Current Level of Use

13. While public safety entities and manufacturers generally support the proposal to authorize VRS operations on the proposed frequencies citing the dearth of available and usable VHF spectrum, some CII entities oppose use of the proposed frequencies, claiming that these channels are heavily used.[25] Some CII parties have further opposed VRS operations arguing that, while telemetry is data-only, VRS is primarily voice operations, and thus allowing VRS operations on these channels would heighten the risk of interference due to the inherent incompatibility of voice and data.[26]

(Continued from previous page)

[18] Virginia Comments at 3.

[19] APCO Comments at 2.

[20] *Id.*

[21] Virginia Comments at 4-5.

[22] *Id.* at 4

[23] *VRS NPRM* at ¶ 31

[24] *See generally* Pericle Comments, Pyramid Comments at 6-7.

[25] EEI Comments at 2-3,

[26] EEI Comments at 3, Northeast Utilities Service Company Comments at 1, UTC Comments at 1, UTC Reply Comments at 3.

14. In evaluating the potential impact of VRS operations on these channels, it is instructive to assess the current level of use of the telemetry channels. The frequencies are currently designated for fixed remote control and telemetry operations and are shared between the Public Safety and Industrial/Business (I/B) Pools. The Commission first authorized these channels for telemetry use in 1977, and they have been available for telemetry use for over thirty years.[27] A review of our ULS licensing database reveals that, nationwide, these six channels are not heavily populated.

| Frequency (MHz) | 173.2375 | 173.2625 | 173.2875 | 173.3125 | 173.3375 | 173.3625 |
|---|---|---|---|---|---|---|
| Number of Call Signs | 397 | 440 | 401 | 365 | 401 | 371 |
| Number of Base Stations | 1278 | 1620 | 1455 | 1350 | 1332 | 1242 |
| Number of Users[28] | 267 | 260 | 236 | 223 | 223 | 244 |

15. Mapping the base stations associated with these frequencies shows their geographical distribution.


**Figure 1: Base Stations using 173.2375 MHz**

[27] Amendment of Parts 89 and 91 of the Commission's Rules and Regulations to make available four 173 MHz splinter frequencies to the Local Government and Manufacturers Radio Services for telemetry and remote control operations, *Second Report and Order,* 65 FCC 2nd 898 (1977) (*Allocation Order*).

[28] Pyramid Design and Manufacturing Inc., Reply Comments at 6, footnote 8.


Figure 2: Base Stations Using 173.2625 MHz


Figure 3: Base Stations Using 173.2875 MHz


Figure 4: Base Stations Using 173.3125 MHz


Figure 5: Base Stations Using 173.3375 MHz


**Figure 6: Base Stations Using 173.3625 MHz**

16. As evident from the above figures, use of these frequencies tends to occur in clusters. In addition, there is not a large embedded base of telemetry systems on these channels, and these systems tend to be geographically scattered. This means that there are large sections of the country where these channels are essentially fallow, and thus could readily accommodate mobile repeater use. Given the relatively light use of these channels coupled with their geographic separation we conclude that these channels can accommodate VRS use, without unduly impacting telemetry use

17. In the discussion below we impose licensing restrictions intended to allow for the expansion of incumbent telemetry operations, and implementation of new telemetry operations in the band. Additionally, while we agree with those parties that note that voice and data are inherently incompatible operations, we impose frequency coordination requirements which we believe will allow mobile repeaters on these channels without adversely affecting telemetry operations.[29] Finally, given record evidence that interest in VRS use is not limited to public safety entities,[30] we allow Industrial Business (I/B) licensees to use mobile repeaters on these frequencies.[31] We therefore amend section 90.35 of the rules to accommodate this decision.[32]

### C. Technical Restrictions

18. When the Commission first authorized these channels in 1977, the channels adjacent to the telemetry channels operated with a 20 kilohertz bandwidth limit and a 25 kHz channel separation.[33]

[29] *See* Letter from Brett Kilbourne, Vice President and Deputy General Counsel, UTC to Marlene Dortch, Secretary, FCC, filed July 7, 2015 (UTC Ex Parte) (indicating its support for allowing use of VRS on these channels with prior coordination requirements despite prior interference concerns) at 1.

[30] *See* Amtrak Comments at 1. (Noting that since railroads are ineligible for public safety authorizations, in order for railroad police to use VRS on these channels, I/B users must be eligible as well).

[31] *See VRS NPRM* at ¶ 27-28, UTC Comments at 16.

[32] We note that while UTC has opposed allowing I/B use of mobile repeaters, its opposition derived from its initial objection to the use of these channels for VRS use generally, as opposed to objections to I/B use of mobile repeaters in particular. UTC Comments at 15-16; UTC Ex Parte at 1.

[33] *Allocation Order*, 65 FCC 2nd 904 ¶ 18.

As depicted below, this lead to spectral overlap on the edges of the offset channel and the adjacent channels.

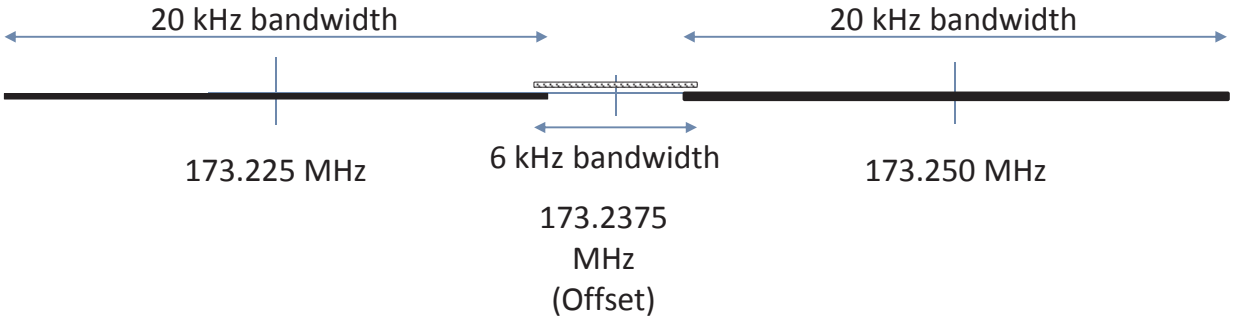


**Figure 7: Pre-2013 Channel Separation**

19. In order to minimize this spectral overlap and consequent mutual interference, the Commission relegated the six telemetry channels to secondary status and limited them to a maximum bandwidth of 6 kilohertz.[34] In addition, the Commission also imposed technical restrictions on telemetry base stations limiting the use of omni-directional antennas, power levels and antenna heights.[35]

20. As a result of the Commission's UHF/VHF narrowband initiative,[36] the vast majority of VHF users on standard channels have reduced their bandwidth from 20 kHz to 11.25 kHz while maintaining 25 kHz channel separation.[37] As depicted below, this has increased the spectral separation between the offset channels and the standard channels to such an extent that not only does a 6 kHz channel have no spectral overlap, but a standard 11.25 kHz channel can operate using this center frequency without having spectral overlap with the adjacent channels.

21. The Commission additionally notes that although it has not mandated the use of 6.25 kHz equipment in the VHF band, the technology to support quality voice communications using 6.25 kHz bandwidth exists and can create additional options for jurisdictions waiting to take advantage of the channels made available in this order.

[34] *Id.* at 904-905 ¶ 19.

[35] *Id.*

[36] *See* 47 C.F.R. § § 90.203(j), 90.209 (b)(5); *see also* Implementation of Sections 309(j) and 337 of the Communications Act of 1934 as Amended; Promotion of Spectrum Efficient Technologies on Certain Part 90 Frequencies, *Third Memorandum Opinion and Order and Third Further Notice of Proposed Rule Making and Order*, WT Docket No. 99-87, RM-9332, 19 FCC Rcd 25045 (2004).

[37] *See* 47 C.F.R. § 90.209(b)(5). As we noted in the *VRS NPRM ,* 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, but that most radios operate at 11.25 kilohertz bandwidth or less. *VRS NPRM* at ¶¶ 27, 21.

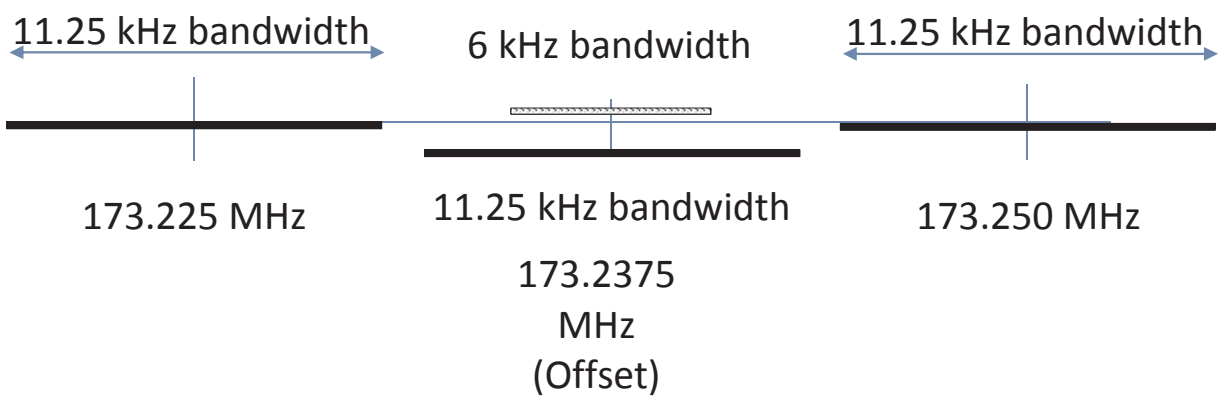


**Figure 8: Post-2013 Channel Separation**

22. In the *NPRM*, the Commission proposed allowing mobile repeater stations to operate using bandwidths of up to 11.25 kHz to capitalize on this increased spectral separation and also sought specific comment on rule amendments to provide for the expanded use of mobile repeaters for public safety.[38] In response, the American Petroleum Institute (API) suggested that, rather than adopting the proposal, the Commission consider removing the existing restrictions on omni-directional antennas, fixed station power limits and antenna heights for telemetry stations in order to increase the usage of the 173 MHz band by CII.[39]

23. As a result of this request, we undertook a further analysis of the effect of narrowbanding on these telemetry issues. After further study, we note that the removal of adjacent channel overlap, as depicted in Figure 8, *supra*, obviates the rationale not only behind the original 6 kilohertz restriction on telemetry use, but on the other restrictions described in paragraph 18 *supra*. Thus, in the interest of removing unnecessary regulatory burdens, we will allow *all* users of these channels – including telemetry licensees – to operate using 11.25 kHz bandwidth. In addition, we will make these six telemetry channels co-primary with adjacent channel land mobile operations as the Utilities Telecom Council (UTC) suggests,[40] and remove the restrictions on omni-directional antennas, fixed station power limits and antenna heights for telemetry stations. We believe that leaving these restrictions in place would unduly burden licensees without providing any discernable benefit. On the other hand, removing these restrictions will allow telemetry users to achieve greater data throughput and reduce the construction costs associated with telemetry stations as these licensees no longer need to add components to their systems in order to meet technical standards that are no longer necessary.[41]

[38] *See VRS NPRM* at ¶ 27.

[39] API Reply Comments at 7-8. Specifically, while API initially opposed the rule changes in the *VRS NPRM*, it suggested removing these "outdated rule restrictions" to potentially increase the usefulness of the band. More recently API has expressed its support for allowing VRS use subject to the coordination provisions and other safeguards provided herein. See Letter from Gregory Kunkle, Keller and Heckman LLP to Marelene Dortch, FCC, filed July 8, 2015 (API Ex Parte) at 1; *see also* n. 53 *infra*.

[40] UTC Comments at 12. *See* 47 C.F.R. §§ 90.20(d)(32), 90.35(c)(42)

[41] See UTC Ex Parte at 1 (noting that "utilities need to be able to provide coverage over wide areas, and reducing antenna height and power limitations will also help utilities to meet their coverage requirements); API Ex Parte at 1 ("relaxation of outdated, unnecessary technical restrictions will promote critical infrastructure's effective use of the band.").

### D. Protection of Telemetry Users

24. In the *NPRM,* the Commission sought comment on various means to protect incumbent telemetry users from mobile repeater stations as well on mechanisms to ensure the continued viability of telemetry use if mobile repeaters are allowed on to these frequencies.[42]

#### 1. Frequency Coordination

25. In the *NPRM,* the Commission sought comment on the best way to protect telemetry users from mobile repeater stations through coordination and proposed a frequency coordination mechanism similar to that used in other bands.[43] Commenting parties differed on the effectiveness of various frequency coordination schemes. Manufacturers generally believe current frequency coordination methods will suffice because VRS units operate at low power (2 watts or less).[44] However, the land mobile coordinator community, with the exception of UTC, believes that additional work is needed to develop appropriate frequency coordination protocols.[45] The National Public Safety Telecommunications Council (NPSTC) recommends the Commission undertake this effort, the Enterprise Wireless Alliance (EWA) proposes that the Land Mobile Communications Council (LMCC) develop such protocols, while RadioSoft states that it intends to do so itself.[46]

26. UTC and API initially contended that frequency coordination is of limited use because of "the mobile and nomadic nature of VRS."[47] UTC argued that it would be impractical to implement exclusion zones because many licenses for telemetry channels do not have coordinates and are licensed instead on a wide area basis, making it practically difficult to implement an exclusion zone.[48] API has contended that implementing exclusion zones would retard the ability of existing systems to expand.[49] UTC has contended that even if first responders followed instructions and avoided an exclusion zone, first responders may not be aware of factors, such as increased elevation and propagation characteristics of VHF, which could still lead to interference to telemetry operations.[50] Moreover, UTC argued that first responders are likely to be concentrating on communicating during an emergency, rather than worrying about causing interference to telemetry operations in an exclusion zone.[51] Finally, UTC argued that the LMCC "has yet to agree on a coordination procedure for adjacent channel interference involving trunked systems (let alone one that would account for differences between voice and data)."[52] More recently, however, both UTC and API have expressed support for VRS use on the six telemetry channels subject to frequency coordination. Specifically, UTC indicated that, while previously concerned about VRS use due to interference concerns, it "now believes that as a technical matter it is possible that the potential for

[42] *VRS NPRM* at ¶¶ 24-26

[43] *VRS NPRM* at ¶ 24, and proposed rule 90.175(b)(4).

[44] Secom Systems Comments at 2; Alpha-Zulu Comments at 1; ADH Comments at 1, Cambridge Comments at 1.

[45] NPSTC Comments at 4; EWA Comments at 3; APCO Comments at 1-2;

[46] NPSTC Comments at 4; EWA Reply Comments at 3-4; RadioSoft Reply Comments at 4.

[47] UTC Comments at 8, API Reply Comments at 4.

[48] UTC Comments at 8-9. An exclusion zone is an area defined by a distance from a geographic point (denoted by longitude and latitude) in which potentially interfering operations are prohibited. An exclusion zone regime tends to be more static than a frequency coordination regime which allows coordinators to design systems in order to minimize the possibility of interference.

[49] API Reply Comments at 5.

[50] UTC Comments at 10.

[51] UTC Comments at 10.

[52] UTC Comments at 9.

interference can be mitigated through the development and application of appropriate standards for frequency coordination of VRS of these channels."[53]

27. We agree and are persuaded that the only way to accommodate both telemetry and VRS on these frequencies is through frequency coordination to both ensure geographic separation as well as minimizing the risk of commingling voice and data operations. However, we agree with the LMCC that appropriate coordination protocols need to be developed. Since no party provided us with a specific coordination protocol, we direct the coordinator community to develop a consensus protocol for VRS coordination.[54] This protocol must conform to our existing Part 90 technical requirements so as to minimize the possibility of harmful interference. In addition to eliminating mutual exclusive applications, this protocol should also reflect the new restrictions we impose today to ensure the efficient use of this spectrum.

28. Once such consensus is reached, the coordinators must send it to the Wireless Telecommunications Bureau and the Public Safety and Homeland Security Bureau for approval. We hereby direct those Bureaus to evaluate and, if it is satisfactory, approve this protocol. Until the protocol is approved, we will not accept applications for mobile repeaters on these frequencies. The Bureaus will announce, via *Public Notice,* when we will begin to accept applications for VRS use of these channels.

29. We encourage further study by vendors, NPSTC and others on protocols that might support spectrum sharing between telemetry and VRS operators at some future date.

### 2. Wide area mobile repeater operations

30. In the *VRS NPRM,* the Commission sought comment on whether if a wide area or statewide applicant could not achieve complete mobile repeater coverage on one telemetry frequency due to a conflict with exclusion zones, if the applicant might achieve greater coverage by applying for multiple telemetry frequencies and thus avoid interference in the prohibited exclusion zones.[55] In its comments, Virginia requested area-wide or statewide authorizations as a means to provide wide-area VRS coverage.[56] Amtrak has asked that we allocate one or two of these channels on a nationwide basis.[57] UTC opposed such a licensing scheme because of concerns that such a scheme could encourage speculative licensing, which would exacerbate the scarcity of telemetry frequencies.[58] However, UTC now supports authorizing VRS on a secondary basis for statewide systems.[59] API expressed similar concern that opening the 173 MHz band to Public Safety VRS use could lead to the band being quickly

[53] UTC Ex Parte at 1. See also API Ex Parte at 1 (concurring with UTC's outlined support).

[54] The Commission has done this in the past. *See* Replacement of Part 90 by Part 88 to Revise the Private Land Mobile Radio Services and Modify the Policies Governing Them, *Second Report and Order,* PR Docket No. 92-235, 12 FCC Rcd 14307, 14330-31 ¶ 43 (1997) (The Commission directed the certified frequency coordinators for the PLMR services to reach a consensus on the applicable coordination procedures for the 12.5 kHz offset channels in the 470-512 MHz band); 1998 Biennial Regulatory Review – 47 C.F.R. Part 90 - Private Land Mobile Radio Services, WT Docket No. 98-182, *Report and Order and Further Notice of Proposed Rule Making*, 15 FCC Rcd 16,673, 16,686 ¶ 25 (2000) (Commission states that it will rely on [frequency coordinators] to specify a "level" of monitoring and that the FACs must develop and employ uniform procedures concerning the certification of applications proposing trunked systems that require monitoring).

[55] *VRS NPRM* at ¶26.

[56] VA Comments at 4.

[57] Amtrak Comments at 1.

[58] UTC Comments at 11.

[59] UTC Ex Parte at 1 (noting that limiting authorizations in this way would balance public safety access to the frequencies with protecting utility systems from harmful interference).

occupied and the preclusion of future telemetry uses but now supports VRS statewide operations authorized on a secondary basis.[60]

31. We are sensitive to stated concerns with regard to the scarcity of this spectrum as well as the need to preserve its existence for future telemetry use. Therefore, as a first step in ensuring the continued viability of telemetry once we allow mobile repeaters on these channels, we will only allow area-wide or state-wide authorizations on a secondary basis. We decline to allow the licensing of mobile repeaters of these channels state-wide on a primary basis because this could result in the frequencies quickly becoming too encumbered to allow for expanded telemetry use. Moreover, the itinerant nature of mobile repeaters complicates frequency coordination, with the accuracy of the coordination decreasing as the size of the service area increases. Therefore, to maximize the efficiency and accuracy of frequency coordination and to allow for maximum frequency reuse, we will limit primary status to licensees seeking either county-wide authorizations or authorizations which describe the area of normal day-to-day operation in terms of a maximum distance from a geographic center (latitude and longitude). In order to harmonize this with our other rules governing low power use, we limit this distance to 80 kilometers.[61] We further encourage development of "geo-targeted" VRS mobile radios that might allow reduced geographic offset from telemetry radios through more granular determination of proximity to licensed fixed users.

32. We further address concerns regarding the potential scarcity of telemetry frequencies as well as inhibiting the filing of speculative applications by imposing loading requirements for licensees seeking to license mobile repeaters on these frequencies. We have imposed similar restrictions in other PLMR bands.[62] Specifically, we will use a channel loading requirement of 50 transmitter-receivers. A licensee will be required to show that it has fully loaded an assigned frequency before it may be assigned an additional frequency in that area. Loading standards will be applied in terms of the number of units actually in use or to be placed in use within 8 months following authorization. In other words, a licensee can demonstrate that it has loaded a frequency even if it does not have 50 units in place, if it can provide evidence (*e.g.,* equipment receipts, work orders, etc.) demonstrating that it will exceed 50 units within eight months.

33. We note that loading is different than channel capacity, *i.e.,* the amount of usage a given frequency can accommodate before congestion renders the frequency unusable. We note that channel capacity may be reached either by the requirements of a single licensee or by several users sharing a channel. Until a channel is loaded to capacity it will be available for assignment to other users in the same area.

34. We anticipate that the frequency coordinators will utilize channel capacity as the principal criterion for assigning these frequencies. For example, a coordinator should provide another channel to an entity that already has a channel only if its current channel is loaded to full capacity or if a second channel is needed for interference reasons. Similarly, we anticipate coordinators will assign users in the same area to the same channel if the channel is not loaded to full capacity and interference would not result, even if this means that the two entities' use would exceed the 50 unit loading capacity.

35. We impose these restrictions and procedures to ensure sufficient spectrum to allow both Business Industrial and Public Safety entities to add new systems or expand existing systems.

[60] API Reply Comments at 5; API Ex Parte at 1.

[61] *See* 47 C.F.R. § 90.267(b)(2).

[62] *See* 47 C.F.R. §§ 90.313 (UHF Band), 90.631, 90.633 (800 MHz and 900 MHz bands).

### E. Power Limits

36. In the *NPRM* the Commission sought comment on its tentative conclusion to increase the current ERP limit for mobile repeater operation on the six telemetry channels from 2 watts to 5 watts.[63] NPSTC and Virginia supported the tentative conclusion, arguing that increasing the ERP maximizes coverage and improves building penetration.[64] Virginia notes that its users utilize VRS in a wide variety of terrain including wooded hills and ravines and that in such terrain the difference between 2 watts and 5 watts may provide the additional coverage necessary to maintain communications.[65]

37. UTC opposes the tentative conclusion because the proposed increase in power could increase the potential for interference to telemetry operations especially if existing telemetry and remote control operations remain limited to 2 watts.[66] However, UTC asks that if we increase the ERP for VRS operations to 5 watts, we allow telemetry users to operate at 5 watts as well.[67]

38. Pyramid concedes that increasing the power to more than 2 watts would provide better building penetration, but posits that limiting interference to other users is of paramount importance and thus limiting power to 2 watts ERP on the 173 MHz channels strikes the appropriate balance between providing adequate building penetration while minimizing interference to other users.[68]

39. On balance, we do not believe the record supports deviating from our tentative conclusion to allow VRS to operate with 5 watts ERP. Because VRS units are often involved in matters dealing with the safety of life and property, we agree with Virginia that raising the power level is more than a matter of convenience, but may provide a critical difference in ensuring building penetration and maintaining emergency communications in both urban and rural settings. We also decline to increase the 2-watt power limit for telemetry and remote control use. We expressly declined to propose such an increase in the *NPRM*,[69] and we see no need to revisit the matter now.

40. We believe that UTC's interference concerns can be adequately addressed through other mechanisms than limiting VRS power to 2 watts. We agree with NPSTC that frequency coordination will minimize potential interference.[70] Moreover, since VRS operations are itinerant in nature, both geographically and temporally, any potential interference will be limited in scope and duration. Finally, if VRS interference situations present themselves, VRS users must make reasonable efforts to mitigate interference to telemetry users.

### F. Cost and Benefits

41. We only received one significant comment on the costs and burdens associated with allowing mobile repeater stations on these six channels. UTC believes that utilities would be faced with the cost of having to buy spectrum from brokers who profit from selling spectrum they have bought at auction.[71] UTC argues that utilities would pass the cost of this spectrum on to the public, which is not in

[63] *VRS NPRM* at ¶ 29.

[64] Commonwealth Comments at 4; NPSTC Comments at 4.

[65] Commonwealth Reply Comments at 2.

[66] UTC Comments at 12-13.

[67] *Id.* at 13.

[68] Pyramid Comments at 4.

[69] *NPRM* at ¶ 29.

[70] NPSTC Comments at 4.

[71] UTC Comments at 13.

the public interest. [72] UTC also contends that it is unable to estimate the increased costs associated with coordination and whether the benefits associated with VRS would justify an increased coordination cost.[73]

42. We believe that allowing VRS use of these channels will enhance the safety of life and property by allowing first responders to make greater use of their existing VHF networks. This is not an insignificant benefit. We recognize that the rules we impose today will impose frequency coordination costs on licensees, however, coordination fees are not unique to these channels. However, the licensing restrictions we impose today are intended to ensure the continued availability of telemetry spectrum, thus minimizing the possibility that telemetry users would have to purchase or lease spectrum from third parties.

### G. Pending applications

43. There are three applications pending before the Public Safety and Homeland Security Bureau from entities seeking authority to operate mobile repeaters on the channels in question on a waiver basis:

- Trinity County, California (FCC File 0006127744) seeks to add 173.2375 MHz to its existing authorization WPCV354
- County of Williams, Sherriff's Department (FCC File 0006070064) seeks authority to operate on 173.3250 MHz
- Panhandle Regional Planning Commission (FCC File 0005883249) seeks authority to operate on all six frequencies

44. We dismiss these applications without prejudice to them being refiled under the applications procedures set out in the subsequent *Public Notice* described in paragraph 27 *supra*.[74]

45. Similarly, we dismiss without prejudice the application and associated request for waiver from the City of Prineville, Oregon (FCC File 0006263046) seeking authority to operate mobile repeaters on 173.210 MHz, another frequency set aside for low power telemetry operation. Under the Commission's waiver standard to obtain a waiver of the Commission's rules, a petitioner must demonstrate either that: (i) the underlying purpose of the rule(s) would not be served or would be frustrated by application to the present case, and that a grant of the waiver would be in the public interest;[75] or (ii) in view of unique or unusual factual circumstances of the instant case, application of the rule(s) would be inequitable, unduly burdensome, or contrary to the public interest, or the applicant has no reasonable alternative.[76] Prineville cannot meet the waiver standard now that the instant *Report and Order* offers it a reasonable alternative to operating pursuant to a waiver of the Commission's rules.[77]

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[72] *Id.*

[73] *Id.*

[74] *See* In the Matter of Rulemaking to Amend Parts 1,2,21 and 25 of the Commission's Rules to Redesignate the 27.5-29.5 GHz Frequency Band, to Reallocate the 29.5-30.GHz Frequency Band, to Establish Rules and Policies for Local Multipoint Distribution Service and for Fixed Satellite Services, *Third Order on Reconsideration*, 13 FCC Rcd 4856, 4942 ¶¶ 196-197 (1998) (Commission properly dismissed waiver applications pending before it upon the adoption of new service rules).

[75] 47 C.F.R. § 1.925(b)(3)(i).

[76] 47 C.F.R. § 1.925(b)(3)(ii).

[77] *See* 47 C.F.R. § 1.925(b)(3)(ii).

## IV. PROCEDURAL MATTERS

### A. Regulatory Flexibility Analysis

46. Pursuant to the Regulatory Flexibility Act of 1980,[78] as amended, the Final Regulatory Flexibility Analysis in this *Report and Order* is attached as Appendix B.

### B. Paperwork Reduction Act Analysis

47. This document contains new information collection requirements subject to the Paperwork Reduction Act of 1995 (PRA), Public Law 104-13. The Commission has authority to collect this information subject to OMB control number OMB Control No. 3060-0798.[79]

### C. Congressional Review Act

48. The Commission will send a copy of this Report and Order to Congress and the Government Accountability Office pursuant to the Congressional Review Act.[80]

## V. ORDERING CLAUSES

49. Accordingly, IT IS ORDERED that, pursuant to Sections 1, 4(i), 303, 316, 332 and 337 of the Communications Act of 1934, as amended, 47 U.S.C. §§ 151, 154(i), 303, 316, 332 and 337, this *Report and Order* IS HEREBY ADOPTED.

50. IT IS FURTHER ORDERED that the amendments of the Commission's Rules as set forth in Appendix B ARE ADOPTED, effective thirty days from the date of publication in the Federal Register.

51. IT IS FURTHER ORDERED that, pursuant to Section 4(i) of the Communications Act of 1934, as amended, 47 U.S.C. § 154(i), and Section 1.925(b)(3) of the Commission's rules, 47 C.F.R. § 1.925(b)(3), the Modification Application and associated Request for Waiver filed by Trinity County, California on January 31, 2014 ARE DISMISSED.

52. IT IS FURTHER ORDERED that, pursuant to Section 4(i) of the Communications Act of 1934, as amended, 47 U.S.C. § 154(i), and Section 1.925(b)(3) of the Commission's rules, 47 C.F.R. § 1.925(b)(3), the Application and associated Request for Waiver filed by Williams County Sheriff's Department on December 26, 2013, ARE DISMISSED.

53. IT IS FURTHER ORDERED that, pursuant to Section 4(i) of the Communications Act of 1934, as amended, 47 U.S.C. § 154(i), and Section 1.925(b)(3) of the Commission's rules, 47 C.F.R. § 1.925(b)(3), the Application and associated Request for Waiver filed by Panhandle Regional Planning Commission on August 5, 2013, ARE DISMISSED.

54. IT IS FURTHER ORDERED that the Commission SHALL SEND a copy of this *Report and Order* in a report to be sent to Congress and the General Accounting Office pursuant to the Congressional Review Act, 5 U.S.C. § 801(a)(1)(A).

FEDERAL COMMUNICATIONS COMMISSION

Marlene H. Dortch
Secretary

[78] *See* 5 U.S.C. § 604.

[79] *See* 47 C.F.R. § 0.408(b)

[80] *See* 5 U.S.C. § 801(a)(1)(A)

## APPENDIX A

## Final 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 (c)(3)and by adding paragraphs (d)(90), (91), (92) and (93) to read as follows:

**§ 90.20 Public Safety Pool.**

* * * * *

(c) * * *

(3) Frequencies.

PUBLIC SAFETY POOL FREQUENCY TABLE

| Frequency or band | Class of station(s) | Limitations | Coordinator |
|---|---|---|---|
| * * * | * | | |
| Megahertz | | | |
| * * * | * | | |
| 173.2375 ..... | ….do…..... | 90, 91, 92, 93 | PX |
| 173.2625 ..... | ….do…..... | 90, 91, 92, 93 | PX |
| 173.2875 ..... | ….do…..... | 90, 91, 92, 93 | PX |
| 173.3125 ..... | ….do…..... | 90, 91, 92, 93 | PX |
| 173.3375 ..... | ….do…..... | 90, 91, 92, 93 | PX |
| 173.3625 ..... | ….do…..... | 90, 91, 92, 93 | PX |
| * * * | * | | |

(d) * * *

(90) The maximum effective radiated power (ERP) may not exceed 2 watts for mobile stations, and 5 watts for mobile repeater stations and hand-carried transmitters that communicate directly with mobile repeater stations. .

(91) 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 2.8 kHz and the maximum deviation may not exceed 2.5 kHz. For AM transmitters, the highest modulation frequency may not exceed 2.0 kHz. The carrier frequency must be maintained within .0005 percent of the center of the frequency band, and the authorized bandwidth may not exceed 11.25 kHz.

(92) 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 seeking primary status for the use of this frequency for mobile repeater stations and hand-carried transmitters that communicate directly with mobile repeater stations must describe the area of normal day-to-day operations either in terms of operation in a specific county or in the

terms of maximum distance from a geographic center (latitude and longitude) and shall be subject to the frequency coordination requirements of § 90.175.

(93) Mobile repeaters operating on this frequency are subject to a channel loading requirement of 50 transmitter-receivers. Loading standards will be applied in terms of the number of units actually in use or to be placed in use within 8 months following authorization. A licensee will be required to show that an assigned frequency is at full capacity before it may be assigned a second or additional frequency. Channel capacity may be reached either by the requirements of a single licensee or by several users sharing a channel. Until a channel is loaded to capacity it will be available for assignment to other users in the same area.

* * * * *

3. Section 90.35 is amended by revising paragraphs (b)(3)and by adding paragraphs (c)(92),(93) (94) and (95) to read as follows:

**§ 90.35 Industrial/Business Pool.**

* * * * *

(b) * * *

(3) Frequencies.

INDUSTRIAL BUSINESS POOL FREQUENCY TABLE

| Frequency or band | Class of station(s) | Limitations | Coordinator |
|---|---|---|---|
| * * * * | | | |
| Megahertz | | | |
| * * * * | | | |
| 173.2375 | ….do…. | 41, 92, 93, 94, 95 | |
| * * * * | | | |
| 173.2625 | ….do…. | 41, 92, 93, 94, 95 | |
| * * * * | | | |
| 173.2875 | ….do…. | 41, 92, 93, 94, 95 | |
| * * * * | | | |
| 173.3125 | ….do…. | 41, 92, 93, 94, 95 | |
| * * * * | | | |
| 173.3375 | ….do…. | 41, 92, 93, 94, 95 | |
| * * * * | | | |
| 173.3625 | ….do…. | 41, 92, 93, 94, 95 | |
| * * * * | | | |

(c) * * *

(92) 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 2.8 kHz and the maximum deviation may not exceed 2.5 kHz. For AM transmitters, the highest modulation frequency may not exceed 2.0 kHz. The carrier frequency must be maintained within .0005 percent of the center of the frequency band, and the authorized bandwidth may not exceed 11.25 kHz.

(93) This frequency is available on a shared basis with the Public Safety Pool for remote control and telemetry operations. In cases where § 90.35(c)(95) applies to this frequency,

licensees seeking primary status for the use of this frequency for mobile repeater stations and hand-carried transmitters that communicate directly with mobile repeater stations must describe the area of normal day-to-day operations either in terms of operation in a specific county or in the terms of maximum distance from a geographic center (latitude and longitude) and shall be subject to the frequency coordination requirements of § 90.175.

(94) Mobile repeaters operating on this frequency are subject to a channel loading requirement of 50 transmitter-receivers. Loading standards will be applied in terms of the number of units actually in use or to be placed in use within 8 months following authorization. A licensee will be required to show that an assigned frequency pair is at full capacity before it may be assigned a second or additional frequency. Channel capacity may be reached either by the requirements of a single licensee or by several users sharing a channel. Until a channel is loaded to capacity it will be available for assignment to other users in the same area.

(95) The maximum effective radiated power (ERP) may not exceed 2 watts for mobile stations, and 5 watts for mobile repeater stations and hand-carried transmitters that communicate directly with mobile repeater stations.

* * * * *

4. 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 mobile repeater station operations on frequencies denoted by both §§ 90.20(d)(90) and 90.20(d)(92), or by both §§ 90.35(c)(93) and 90.35(c)(95)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

### Final Regulatory Flexibility Analysis
### (*Report and Order*)

1. As required by the Regulatory Flexibility Act (RFA), an Initial Regulatory Flexibility Analysis (IRFA) was incorporated into the *Notice of Proposed Rule Making* of this proceeding. The Commission sought written public comment on the IRFA. The RFA[1] requires that an agency prepare a regulatory flexibility analysis for notice-and-comment rulemaking proceedings, unless the agency certifies that "the rule will not, if promulgated, have a significant economic impact on a substantial number of small entities."[2] The RFA generally defines "small entity" as having the same meaning as the terms "small business," "small organization," and "small governmental jurisdiction."[3] In addition, the term "small business" has the same meaning as the term "small business concern" under the Small Business Act.[4] 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).[5] The present Final Regulatory Flexibility Analysis (FRFA) conforms to the RFA.

#### A. Need for, and Objectives of, the Report and Order

2. It this *Report and Order,* we amend the Commission's Rules to allow the licensing and operation of vehicular repeater systems (VRS) and other mobile repeaters on six remote control and telemetry channels in the VHF band. The rule changes adopted are intended to promote flexible and efficient use of these channels. In order to achieve this objective, we:

- Allow the use of mobile repeaters on the following six telemetry channels: 173.2375, 173.2625, 173.2875, 173.3125, 173.3375, and 173.3625 MHz
- Allow the use of bandwidths up to 11.25 kHz on these channels
- Require frequency coordination for applications seeking primary status on these frequencies
- Limit applicants to a license a maximum of three channels on a primary basis

#### B. Summary of Significant Issues Raised by Public Comments in Response to the IRFA

3. There were no comments filed that specifically addressed the rules and policies proposed in the IRFA.

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[1] *See* 5 U.S.C. § 603. The RFA, *see* 5 U.S.C. § 601 *et seq*., has been amended by the Contract With America Advancement Act of 1996, Pub. L. No. 104-121, 110 Stat. 847 (1996) (CWAAA). Title II of the CWAAA is the Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA).

[2] *See* 5 U.S.C. § 605(b).

[3] 5 U.S.C. § 601(6).

[4] 5 U.S.C § 601(3) (incorporating by reference the definition of "small business concern" in 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] 15 U.S.C. § 632.

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

4. The RFA directs agencies to provide a description of and, where feasible, an estimate of the number of entities that will be affected by the rules.[6] The RFA generally defines the term "small entity" as having the same meaning as the terms "small business," "small organization," and "small governmental jurisdiction."[7] In addition, the term "small business" has the same meaning as the term "small business concern" under the Small Business Act.[8] 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 SBA.[9]

5. *Public Safety Radio Licensees*. As a general matter, Public Safety Radio Licensees include police, fire, local government, forestry conservation, highway maintenance, and emergency medical services.[10] For the purpose of determining whether a Public Safety Radio Licensee is a small business as defined by the SBA, we use the broad census category, Wireless Telecommunications Carriers (except Satellite). This definition provides that a small entity is any such entity employing no more than 1,500 persons.[11] For this category, census data for 2007 show that there were 11,163 establishments that operated for the entire year.[12] Of this total, 10,791 establishments had employment of 999 or fewer employees and 372 had employment of 1000 employees or more.[13] The Commission does not require Public Safety Radio Licensees to disclose information about number of employees, so the Commission does not have information that could be used to determine how many Public Safety Radio licensees constitute small entities under this definition. Nonetheless, the Commission estimates that the majority of Public Safety Radio Licensees are small entities.[14]

6. *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 engag*ed in*

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[6] 5 U.S.C. § 604(a)(3).

[7] 5 U.S.C. § 601(6).

[8] 5 U.S.C. § 601(3) (incorporating by reference the definition of "small business concern" in 15 U.S.C. § 632). Pursuant to the RFA, 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).

[9] Small Business Act, 15 U.S.C. § 632 (1996).

[10] *See* subparts A and B of Part 90 of the Commission's Rules, 47 C.F.R. §§ 90.1-90.22.

[11] *See* 13 C.F.R. §121.201, NAICS code 517210.

[12] U.S. Census Bureau, Subject Series: Information, Table 5, "Establishment and Firm Size: Employment Size of Firms for the United States: 2007 NAICS Code 517210" (issued Nov. 2010).

[13] http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ECN_2007_US_51SSSZ2&prodType=table*Id*. Available census data do not provide a more precise estimate of the number of firms that have employment of 1,500 or fewer employees; the largest category provided is for firms with "100 employees or more."

[14] *See http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ECN_2007_US_51SSSZ2&prodType=table*

*radiotelephone communications employing no more than 1,500 persons*.[15] According to the Commission's records, there are a total of 3,374 licenses in the frequencies range 173.225 MHz to 173.375 MHz, which is the range affected by this NPRM.[16] Despite the lack of specific information, however, the Commission believes that a substantial number of PLMR licensees may be small entities.

7. *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.[17] 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.[18] Under this category and size standard, we estimate that a majority of frequency coordinators can be considered small.

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

5. This *Report and Order* adopts a rule that will entail reporting, recordkeeping, and/or third-party consultation. Specifically, the *Report and Order* requires applicants for mobile repeater authorizations receive frequency coordination prior to filing a license application with the Commission. While the preparation of an application does not require the hiring of professionals, frequency coordinators do charge a fee for their services. Therefore, licensees will incur a one-time burden each time an application is filed with the Commission. The estimated burden and cost levels are described in more detail in the supporting statement for OMB 3060-1198, ICR Ref. No. 201404-30.

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

6. 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."[19]

7. The *Report and Order* adopts changes to the rules covering operation on six telemetry channels in the 173 MHz band. In formulating rule changes in the *Report and Order*, we strived to promote efficient use of spectrum.

8. The *Report and Order* requires applicants obtain frequency coordination prior to filing a license application with the Commission. Given the Commission's previous reliance on frequency coordination as a mechanism to minimize the occurrence of harmful interference, we did not consider other alternatives to frequency coordination. In addition, we note that there are no methods by which to reduce the burden of frequency coordination on smaller entities. The *Report and Order* concludes that

[15] *See* 13 C.F.R. § 121.201, NAICS code 517210.

[16] 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.

[17] *See* http://transition.fcc.gov/pshs/public-safety-spectrum/coord.html (last visited August 28, 2013).

[18] *See* 13 C.F.R. § 121.201, NAICS code 517210.

[19] 5 U.S.C. § 603(c)(1) – (c)(4).

the benefits of frequency coordination outweigh any potential economic burden associated with frequency coordination.

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

9. None.

### G. Report to Congress

10. The Commission will send a copy of this *Report and Order*, including this FRFA, in a report to be sent to Congress pursuant to the Small Business Regulatory Enforcement Fairness Act of 1996.[20] In addition, the Commission will send a copy of the *Report and Order,* including this FRFA, to the Chief Counsel for Advocacy of the Small Business Administration. A copy of the *Report and Order* and FRFA (or summaries thereof) will also be published in the Federal Register.[21]

[20] *See* 5 U.S.C. § 801(a)(1)(A).

[21] *See* 5 U.S.C. § 604(b).