

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

In the Matter of)	
)	
Implementation of Sections 309(j) and 337 of the Communications Act of 1934 as Amended	)	WT Docket No. 99-87
)	
Promotion of Spectrum Efficient Technologies on Certain Part 90 Frequencies	)	RM-9332
)	

**THIRD MEMORANDUM OPINION AND ORDER,
THIRD FURTHER NOTICE OF PROPOSED RULE MAKING AND ORDER**

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I. INTRODUCTION

1. In this *Third Memorandum Opinion and Order and Third Further Notice of Proposed Rule Making and Order* (“*Third MO&O*,” “*Third Further Notice*,” and “*Order*,” respectively), we address eighteen petitions for reconsideration of the rules adopted in the *Second Report and Order* in this proceeding to promote migration to narrowband (12.5 kHz) technology in the private land mobile radio (PLMR) services.¹ We also seek comment on a proposal to defer or eliminate the requirement in Section 90.203(j)(5) of our Rules that certain applications for equipment authorizations received on or after January 1, 2005 specify 6.25 kHz capability. In addition, we stay the January 1, 2005 date pending resolution of the issues raised in the *Third Further Notice*.

2. The major decisions in the *Third MO&O* are as follows:

- For licensees in the Industrial/Business Radio Pool operating in the 150-174 MHz and 421-512 MHz bands, we affirm the *Second Report and Order*’s January 1, 2013 deadline for migration to 12.5 kHz technology, or a technology that achieves the narrowband equivalent of one channel per 12.5 kHz of channel bandwidth (voice) or 4800 bits per second per 6.25 kHz (data) if the bandwidth for transmissions specified in the modification application is greater than 12.5 kHz.
- For Public Safety Radio Pool licensees operating PLMR services in the same bands, we also establish a January 1, 2013 deadline for migration to 12.5 kHz technology, or a technology that achieves the narrowband equivalent of one channel per 12.5 kHz of channel bandwidth (voice) or 4800 bits per second per 6.25 kHz (data) if the bandwidth for transmissions specified in the modification application is greater than 12.5 kHz.
- We revise the interim dates established in the *Second Report and Order* as follows:
 - Applications for new operations using 25 kHz channels will be accepted until January 1, 2011. After January 1, 2011, applications for new operations using a bandwidth greater than 12.5 kHz will be accepted only to the extent that the equipment meets the spectrum efficiency standard of one channel per 12.5 kHz of channel bandwidth (voice) or 4800 bits per second per 6.25 kHz (data).
 - Applications for modification of operations that expand the authorized contour of an existing station using 25 kHz channels will be accepted until January 1, 2011. After January 1, 2011, applications for modification of operations that expand the authorized contour of an existing station will be accepted only to the extent that the equipment meets the spectrum efficiency standard of one channel per 12.5 kHz of channel bandwidth (voice) or 4800 bits per second per 6.25 kHz (data) if the bandwidth for transmissions specified in the modification application is greater than 12.5 kHz.
 - Manufacture and importation of any 150-174 MHz and 421-512 MHz band

¹ 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, *Second Report and Order and Second Further Notice of Proposed Rulemaking*, WT Docket No. 99-87, RM-9332, 18 FCC Rcd 3034 (2003) (“*Second Report and Order*” and “*Second Further Notice*,” respectively). The *Second Report and Order and Further Notice* was published in the Federal Register on July 17, 2003. 68 Fed. Reg. 42296, 42337 (2003).

equipment operating on a channel bandwidth up to 25 kHz will be permitted until January 1, 2011. After January 1, 2011, manufacture and importation of any 150-174 MHz and 421-512 MHz band equipment operating on a channel bandwidth greater than 12.5 kHz will be accepted only to the extent that the equipment meets the spectrum efficiency standard of one channel per 12.5 kHz of channel bandwidth (voice) or 4800 bits per second per 6.25 kHz (data).

- We revise our Rules to permit applications for certification of equipment received on or after January 1, 2005 operating with a 25 kHz bandwidth, to the extent that the equipment meets the spectrum efficiency standard of one channel per 6.25 kHz of channel bandwidth (voice) or 4800 bits per second per 6.25 kHz (data). However, we stay the January 1, 2005 deadline with respect to certification of equipment in the *Order*, pending resolution of the issues raised in the *Third Further Notice*.
- We revise our Rules to exempt Part 90 paging-only frequencies from the narrowbanding requirements.

3. For Commission licensees operating in the Federal Government bands 150.05-150.8 MHz, 162.0125-173.2 MHz, and 173.4-174 MHz, we recognize that a separate ongoing proceeding – ET Docket No. 04-243 – is addressing whether different narrowbanding requirements are needed to account for the Federal Government’s own narrowbanding plans in those bands. Accordingly, we recognize that the decisions we adopt herein are subject to further modification with respect to those bands and defer decisions with respect to those bands where appropriate.

II. BACKGROUND

4. In the *Refarming* proceeding in 1995, the Commission adopted rule changes to promote the efficient use of the PLMR service and facilitate the introduction of advanced technologies.² In an effort to promote the transition to a more efficient narrowband channel plan, the Commission adopted certain market-based incentives in the PLMR service. The Commission stated that “only increasingly efficient equipment” would be type certified.³ Accordingly, since February 14, 1997, we have certified equipment for 25 kHz channels only if it was also capable of operating on 12.5 kHz or narrower channels, or with the equivalent efficiency.⁴ The *Refarming* rules also provided that equipment applications for equipment certification received after January 1, 2005 would be granted only if the equipment either is capable of operating on 6.25 kHz or narrower channels, or with the equivalent efficiency.⁵ The Commission did not set a date after which it would no longer approve equipment with a wideband mode, or after which such equipment could no longer be manufactured or used.⁶ It believed that no such mandate was needed

² See Replacement of Part 90 by Part 90 by Part 88 to Revise the Private Land Mobile Radio Services and Modify the Policies Governing Them, *Report and Order and Further Notice of Proposed Rulemaking*, PR Docket No. 92-235, 10 FCC Rcd 10076, 10077 ¶ 1 (1995) (“*Refarming Report and Order*”).

³ *Id.* at 10081 ¶ 7.

⁴ *Id.*; 47 C.F.R. § 90.203(j)(2). See *Refarming Report and Order*, 10 FCC Rcd at 10099-100 ¶¶ 38-40.

⁵ See 47 C.F.R. § 90.203(j)(4)-(5) (2002).

⁶ See *Refarming Report and Order*, 10 FCC Rcd at 10100 ¶ 40.

because, as systems wore out and new radios were purchased, users would migrate to the narrower bandwidth of the multi-mode radios in order to avoid excessive adjacent channel interference.⁷

5. In the *Further Notice of Proposed Rule Making* in the present proceeding, the Commission requested comment on a petition for rulemaking filed by the American Mobile Telecommunications Association (AMTA)⁸ proposing that certain Part 90 licensees be required to employ new spectrum efficient technologies.⁹ The Commission tentatively concluded that the current pace of migration to more spectrally efficient technology under the *Reforming* rules had not been sufficiently rapid.¹⁰

6. On February 25, 2003, the Commission released a *Second Report and Order and Second Further Notice of Proposed Rule Making* (“*Second Report and Order*” and “*Second Further Notice*,” respectively) in this proceeding. The Commission determined that because the current rules failed to provide adequate incentive to induce the desired efficiency of use of spectrum in these bands, stronger action would be required to bring about a timely transition to narrowband technology in the PLMR service in the 150-174 MHz and 421-512 MHz bands.¹¹ Specifically, the *Second Report and Order* (1) prohibited any applications for new operations using 25 kHz channels, beginning six months after publication of the *Second Report and Order* in the Federal Register [January 13, 2004]¹²; (2) prohibited any modification applications that expand the authorized contour of an existing station if the bandwidth for transmissions specified in the modification application is greater than 12.5 kHz, beginning six months after publication of the *Second Report and Order* in the Federal Register [January 13, 2004]¹³; (3) prohibited the certification of any equipment capable of operating at one voice path per 25 kHz of spectrum, *i.e.*, equipment that includes a 25 kHz mode, beginning January 1, 2005; (4) prohibited the manufacture and importation of any 150-174 MHz and 421-512 MHz band equipment that can operate on a 25 kHz bandwidth beginning January 1, 2008; and (5) imposed deadlines of January 1, 2013 for licensees in the Industrial/Business Radio Pool and January 1, 2018 for licensees in the Public Safety Radio Pool for migration to 12.5 kHz technology for PLMR systems operating in the 150-174 MHz and 421-512 MHz bands.¹⁴

⁷ *Id.*

⁸ See AMTA Petition for Rulemaking at 3 (filed June 19, 1998).

⁹ See 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; Establishment of Public Service Radio Pool in the Private Mobile Frequencies Below 800 MHz; Petition for Rule Making of the American Mobile Telecommunications Association, *Report and Order and Further Notice of Proposed Rule Making*, WT Docket No. 99-87, RM-9332, RM-9405, RM-9705, 15 FCC Rcd 22709 (1999).

¹⁰ *Id.* at 22772 ¶ 141.

¹¹ *Second Report and Order*, 18 FCC Rcd at 3038 ¶ 12.

¹² By *Order* released December 3, 2003, the Commission determined that good cause had been shown to stay this date pending Commission consideration of the petitions for reconsideration filed in this proceeding. 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, *Order*, WT Docket No. 99-87, RM-9332, 18 FCC Rcd 25491 (2003).

¹³ By *Order* released December 3, 2003, the Commission determined that good cause had been shown to stay this date pending Commission consideration of the petitions for reconsideration filed in this proceeding. *Id.*

¹⁴ *Second Report and Order*, 18 FCC Rcd at 3038 ¶ 12.

7. In the *Second Further Notice*, the Commission sought comment on whether measures similar to those adopted in the *Second Report and Order* to encourage the migration to 12.5 kHz narrowband should also be implemented to facilitate the migration to 6.25 kHz operations.¹⁵ In noting that operations utilizing 12.5 kHz technology were considered by the Commission as a transitional standard to facilitate migration to 6.25 kHz technology, and in light of the measures adopted in the *Second Report and Order*, the Commission tentatively concluded that similar measures were warranted to facilitate migration to 6.25 kHz technology.¹⁶

8. On July 6, 2004, the Commission released a *Notice of Proposed Rulemaking* in ET Docket No. 04-243.¹⁷ In that action, the Commission proposed rules tailored to the bands 150.05-150.8 MHz, 162.0125-173.2 MHz, and 173.4-174 MHz – spectrum that is allocated primarily for Federal Government use, and on which non-Government licensees operate (generally) on a secondary basis.¹⁸ As the National Telecommunications and Information Administration (NTIA) notes in its Petition for Reconsideration, NTIA has established narrowband requirements for Federal Government agencies, and NTIA has set a more rapid transition schedule than the Commission has established for its licensees in this proceeding.¹⁹ Accordingly, the application of our narrowbanding requirements to non-Federal Government users of Federal Government channels will be subject to the decisions we make in ET Docket No. 04-243. We also clarify, as requested by NTIA, that the deadlines adopted in the *Second Report and Order* are not intended to apply to Federal Government stations.²⁰

III. THIRD MEMORANDUM OPINION AND ORDER

A. Mandatory Migration to 12.5 kHz Technology

9. *Background.* As noted above, the *Second Report and Order* imposed deadlines of January 1, 2013 for licensees in the Industrial/Business Radio Pool and January 1, 2018 for licensees in the Public Safety Radio Pool to migrate to 12.5 kHz technology for PLMR systems operating in the 150-174 MHz and 421-512 MHz bands.²¹ The bifurcated date was intended to balance the benefits of a clear deadline

¹⁵ *Second Further Notice*, 18 FCC Rcd at 3045 ¶ 27.

¹⁶ *Id.* (citing *Refarming Report and Order*, 10 FCC Rcd at 10095 ¶ 28).

¹⁷ See Amendment of Parts 2 and 90 of the Commission's Rules to Provide for Narrowband Private Land Mobile Radio Channels in the 150.05-150.8 MHz, 162-174 MHz, and 406.1-420 MHz Bands that Are Allocated for Federal Government Use, *Notice of Proposed Rule Making*, ET Docket No. 04-243, 19 FCC Rcd 12690 (2004).

¹⁸ Specifically, the 150.05-150.8 MHz, 162.0125-173.2 MHz, and 173.4-174 MHz bands are allocated to the fixed and mobile services on a primary basis for Federal use. All non-Federal use in these bands is authorized on a secondary basis (*i.e.*, on an unprotected and non-interfering basis), except for Medical Radiocommunication Systems operating on the frequencies 150.775 MHz, 150.790 MHz, and 163.250 MHz and for Stolen Vehicle Recovery Systems operating on the frequency 173.075 MHz. The Table of Frequency Allocations does not provide for any non-Federal use of the band 173.4-174 MHz. 47 C.F.R. § 2.106.

¹⁹ See NTIA Petition at 3. The NTIA schedule of mandatory completion dates for government agencies is January 1, 2005 for 162-174 MHz, and January 1, 2008 for 138-150.8 MHz and 406.1-420 MHz. See NTIA Manual of Regulations and Procedures for Federal Radio Frequency Management, rev. May, 2003, at Section 5.3.5.2.

²⁰ See NTIA Petition at 3.

²¹ *Second Report and Order*, 18 FCC Rcd at 3038 ¶ 12; 47 C.F.R. § 90.209(b)(5). The bandwidth limitations apply to licensees in the listed bands “[u]nless specified elsewhere.” 47 C.F.R. § 90.209(b)(5). We therefore clarify, as requested by LoJack Corporation, *see* Letter dated December 10, 2003 from Henry Goldberg to John B. (continued....)

with the special needs of Public Safety Radio Pool entities. In its comments to the *Second Further Notice*, the Association of Public-Safety Communications Officials-International, Inc. (APCO) argued that Public Safety Radio Pool licensees in rural areas should have five years longer than those in urban areas to migrate to narrowband technology, in light of state and local government budgetary constraints.²² The Commission declined to adopt phased-in mandatory migration dates for different areas, because many radio systems are integrated across all geographic areas, and having different migration dates, in addition to possibly engendering confusion regarding what rule applies to a particular licensee, could impede interoperability among Public Safety Radio Pool licensees.²³ In order to accommodate the budgetary constraints that Public Safety Radio Pool entities endure, however, the Commission provided all Public Safety Radio Pool licensees five years longer than Industrial/Business Radio Pool licensees to migrate to narrowband technology.²⁴

10. While no petitioner takes issue with the Commission's conclusion²⁵ that the public interest would be best served by establishing a date certain by which PLMR licensees must migrate to narrowband technology, most who address the issue argue that the dates adopted in the *Second Report and Order* should be accelerated.²⁶ A joint petition filed by AMTA, the Industrial Telecommunications Association (ITA), and PCIA – the Wireless Infrastructure Association (Joint Petitioners), proposes that all Industrial/Business Radio Pool licensees' operations meet the 12.5 kHz requirements by January 1, 2008.²⁷ They argue that another ten years is not necessary because many PLMR entities have begun to incorporate the costs of system migration to narrowband into their business plans, and many have had dual-mode equipment for years.²⁸ Other commenters argue that the migration date for Industrial/Business Radio Pool licensees should not be accelerated, because spectrum congestion in all areas does not merit a January 1, 2008 date,²⁹ and because accelerating the date will present logistical and financial difficulties for some users.³⁰

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Muleta, Chief, Wireless Telecommunications Bureau, that the mandatory migration date adopted in the *Second Report and Order* does not apply to stolen vehicle recovery systems (SVRS), because a 20 kHz bandwidth is specified elsewhere, specifically, in 47 C.F.R. § 90.20(e)(6). Because SVRS systems operate on a frequency shared with Federal Government operations, however, the applicable migration date is at issue in ET Docket No. 04-243.

²² See *Second Report and Order*, 18 FCC Rcd at 3040 ¶ 14, 3042 ¶ 19.

²³ See *id.* at 3041 ¶ 17, 3042 ¶ 19.

²⁴ See *id.* at 3042 ¶ 19.

²⁵ See *id.* at 3041 ¶ 17.

²⁶ See, e.g., AMTA, ITA and PCIA Joint Petition at 6; RMC Petition at 5; ITA Reply Comments at 4.

²⁷ AMTA, ITA, and PCIA Joint Petition at 6.

²⁸ *Id.* at 7.

²⁹ American Petroleum Institute (API) Partial Opposition at 4-5; Private Wireless Mining Coalition (Coalition) Opposition at 4-6.

³⁰ See, e.g., American Association of Railroads (AAR) Petition at 6. AAR states that railroads cannot possibly convert the nationwide fleet of 30,000 locomotives to 12.5 kHz technology by 2008 because there is no 12.5 kHz locomotive radio currently available from any manufacturer. *Id.* at 8.

11. Regarding Public Safety Radio Pool licensees, APCO,³¹ the Federal Law Enforcement Wireless Users Group (FLEWUG), and others contend that Public Safety Radio Pool entities will be able to migrate to narrowband technology sooner than 2018.³² They believe that accelerating the final migration date to 2013 will provide an incentive for Public Safety Radio Pool licensees to convert to 12.5 kHz technology, especially if we eliminate or modify the interim dates adopted in the *Second Report and Order*.³³ The Public Safety Wireless Network (PSWN) also notes that the approach taken in the *Second Report and Order*, *i.e.*, different mandatory migration dates for different sets of users, could impede interoperability among users with different migration dates.³⁴

12. *Discussion.* In the *Refarming Report and Order*, the Commission noted that “[d]etermining an appropriate transition period for rechannelization requires balancing the economic and operational impacts of existing users.”³⁵ In deciding to manage the transition to more spectrally efficient use of the PLMR frequency bands by the type acceptance process, the Commission determined that “10 years (at 10 per cent change-out per year) was a reasonable transition cycle.”³⁶ Some commenters to the *Second Further Notice* in this proceeding advocated a migration period shorter than ten years (as short as three years), while others advocated a longer period (as much as fifteen years).³⁷ In the *Second Report and Order*, the Commission recognized that it could not ensure that the lifespan of all 25 kHz equipment is exhausted prior to required migration to 12.5 kHz technology, but concluded that a ten-year period would strike the appropriate balance “between the budgetary exigencies surrounding equipment costs and our goal of promoting spectral efficiency in a fairly expeditious manner.”³⁸ We continue to believe that these considerations should be balanced. In addition, we disagree with the Joint Petitioners’ suggestion that PLMR users should be deemed to have been on notice for years that they would be required to migrate to narrowband technology, and therefore should have planned for an abbreviated migration period.³⁹ Consequently, we do not agree with them that a ten-year migration period is “unnecessarily protracted.”⁴⁰ We therefore will retain January 1, 2013 as the date by which Industrial/Business Radio Pool licensees operating PLMR systems in the 150-174 MHz and 421-512 MHz bands must migrate completely to 12.5

³¹ APCO submitted its petition on behalf of itself and the International Association of Fire Chiefs, Inc., International Association of Chiefs of Police, Major Cities Chiefs Association, National Sheriffs’ Association, Major County Sheriffs’ Association, and National Public Safety Telecommunications Council. In addition, we received statements from approximately sixty local police and fire departments supporting the petition.

³² APCO Petition at 7; FLEWUG Petition at 6; *see also* AMTA, ITA, and PCIA Joint Petition at 12-13; Rural/Metro Corporation Petition at 4; Public Safety Wireless Network (PSWN) Petition at 4.

³³ APCO Petition at 5; FLEWUG Petition at 7; *see also* PSWN Petition at 5, 6.

³⁴ PSWN Petition at 4-6; *see also* Florida Petition at 3.

³⁵ *Refarming Report and Order*, 10 FCC Rcd at 10098 ¶ 35.

³⁶ *Id.* at 10098 ¶ 35.

³⁷ *See Second Report and Order*, 18 FCC Rcd at 3040-41 ¶ 15.

³⁸ *Id.* at 3041 ¶ 18.

³⁹ *See* AMTA, ITA, and PCIA Joint Petition at 7. As noted above, the 1995 *Refarming Report and Order* specifically declined to adopt a mandatory migration date. *See Refarming Report and Order*, 10 FCC Rcd at 10099 ¶ 37.

⁴⁰ *See also* AMTA, ITA, and PCIA Joint Petition at 5.

kHz narrowband technology.⁴¹

13. We also adopt January 1, 2013 as the deadline by which Public Safety Radio Pool licensees operating in the 150-174 MHz and 421-512 MHz bands must migrate completely to 12.5 kHz narrowband technology. The Commission adopted the January 1, 2018 deadline for Public Safety Radio Pool licensees because it believed that Public Safety Radio Pool entities might need additional time. In the current record, however, petitioners and commenters representing public safety agencies unanimously represent that public safety users can accomplish the migration by January 1, 2013. Thus, it appears that the additional time is not necessary, and a ten-year period will permit licensees ample time to budget appropriately,⁴² amortize equipment,⁴³ and to provide continued support and maintenance of existing systems.⁴⁴ Moreover, we believe that a single, uniform date by which all Public Safety Radio Pool and Industrial/Business Radio Pool licensees must migrate to 12.5 kHz narrowband will remove any uncertainty created by multiple deadlines and will encourage an overall migration to narrowband technology in a market-driven and technology-neutral environment.⁴⁵ This decision also reduces the likelihood of a scenario described by Florida as a state of fractured interoperability created by incompatible “islands” of 12.5 kHz users and 25 kHz users with dissimilar equipment.⁴⁶

14. Finally, we observe that our revised narrowbanding schedule for licensees in the Public Safety Radio Pool that operate wideband equipment using frequencies in the 150-174 MHz and 421-512 MHz bands still differs from NTIA’s plan, which requires that Federal agencies operate on narrowband channels not later than January 1, 2005 in the 162-174 MHz band and not later than January 1, 2008 in the 150 MHz band. Nonetheless, we find that advancing the narrowbanding deadline for licensees in the Public Safety Radio Pool to January 1, 2013 will significantly reduce the extended period during which existing non-Federal 25 kHz equipment may not be compatible with Federal operations using the new 12.5 kHz channels.⁴⁷

⁴¹ *But see* discussion regarding treatment of equivalent technologies and paging, *infra* sections III.C & D. The rules we adopt in this proceeding do not alter or amend the exemption from technical standards pursuant to 47 C.F.R. § 90.217.

⁴² *See* PSWN Petition at 7-8.

⁴³ *See* Kenwood Petition at 6; TAIT Petition at 4; AMTA, ITA, and PCIA Joint Petition at 9.

⁴⁴ *See* Rural/Metro Corporation Comments at 5.

⁴⁵ *See* Kenwood Petition for Reconsideration at 3, 5.

⁴⁶ Florida Petition at 3.

⁴⁷ After January 1, 2005, Federal Government systems in the band 162.0125-173.2 MHz must operate within a 12.5 kHz channel. After January 1, 2008, Federal Government systems in the bands 150.05-150.8 MHz and 406.1-420 MHz must operate within a 12.5 kHz channel. As we noted above and in the *Notice of Proposed Rule Making* in ET Docket 04-243, NTIA has adopted a more rapid narrowbanding schedule in these Federal bands than we have required of our licensees, which may affect non-Federal Government operations in these bands. *See* paragraph 8, *supra*. The revised transition date we adopt herein does not change the relationship between Federal Government entities and non-Federal Government licensees that use these Federal Government channels, including the possibility that non-Federal Government licensees may need to modify or discontinue wideband operations sooner than 2013 if they cause interference to Federal Government users.

B. Interim Dates

15. *Background.* As noted above, in addition to adopting final deadlines for migration to narrowband technology, the Commission also adopted interim steps to increase spectrum efficiency. Specifically, the *Second Report and Order* (1) prohibited any applications for new operations using 25 kHz channels, beginning six months after publication of the *Second Report and Order* in the Federal Register [January 13, 2004]; (2) prohibited any modification applications that expand the authorized contour of an existing station if the bandwidth for transmissions specified in the modification application is greater than 12.5 kHz, beginning six months after publication of the *Second Report and Order* in the Federal Register [January 13, 2004]; (3) prohibited the certification of any equipment capable of operating at one voice path per 25 kHz of spectrum, i.e., equipment that includes a 25 kHz mode, beginning January 1, 2005; (4) and prohibited the manufacture and importation of any 150-174 MHz and 421-512 MHz band equipment that can operate on a 25 kHz bandwidth beginning January 1, 2008.⁴⁸ The Commission adopted these measures to “serve as catalysts toward employment of 12.5 kHz technology and encourage licensees to begin their conversion to narrowband technology prior to the mandatory migration dates.”⁴⁹

16. Petitioners and commenters generally oppose the Commission’s decision to adopt interim steps to increase spectrum efficiency.⁵⁰ Some argue that some of the interim dates should be moved back,⁵¹ while others state that these deadlines should be eliminated altogether.⁵²

17. Motorola states that the current policy is a reversal of the Commission’s policy established in the *Refarming* proceeding, in that the Commission previously allowed for backward compatibility with legacy equipment by permitting users to defer wholesale replacement of existing infrastructure as long as it remained operational.⁵³ Others agree that the interim deadlines will hinder the ability of licensees to repair, replace and otherwise maintain existing systems to ensure continued backward compatibility via dual- or multi-mode equipment.⁵⁴ The Private Wireless Mining Coalition (Coalition) agrees that this will unnecessarily disrupt service and reliability, and thus create safety and environmental risks.⁵⁵ API/UTC

⁴⁸ *Second Report and Order*, 18 FCC Rcd at 3038 ¶ 12.

⁴⁹ *Id.* at 3042 ¶ 21.

⁵⁰ *See, e.g.*, AMTA, ITA and PCIA Joint Petition at 10-12; API/UTC Petition at 2; APCO Petition at 6-9; TAIT Petition at 5-6; Suffolk County Police Department Petition at 6; PSWN Petition at 4-5; FLEWUG Petition at 6; NTIA Petition at 5; Kenwood Petition at 5; Florida Petition at 3; AAR Petition at 2.

⁵¹ *See, e.g.*, TAIT Petition at 5, 6 (stating that both the 2005 and 2008 dates impede interoperability, threaten homeland security efforts, hinder economic recovery and impedes narrowband conversion); Kenwood Petition at 5; Motorola Petition at 8.

⁵² *See* AMTA, ITA and PCIA Joint Petition at 12; Motorola Petition for Reconsideration at 9. *See also* PSWN Petition at 6.

⁵³ Motorola Petition at 6.

⁵⁴ *See, e.g.*, AMTA, ITA and PCIA Joint Petition at 12 (stating that restricting equipment is not consistent with the good faith effort of entities trying to comply with deadline while at the same time providing equipment to service current models); *see also* AAR Petition at 9 (railroads have a huge nationwide mobile network comprised of 15,000 base stations, 45,000 mobiles, and 125,000 portables, and dual-mode radios are necessary for the transition to narrowband and for maintenance and expansion of such a vast network).

⁵⁵ Coalition Petition at iii, 4-6.

contends that licensees should continue to have the flexibility to operate existing systems as they replace legacy equipment.⁵⁶ PSWN states that limiting the availability of new 25 kHz equipment will cause existing 25 kHz systems to be repaired or replaced with used, refurbished or rescued spare parts that may not be adequate to restore acceptable communications in functioning networks.⁵⁷ TAIT, a manufacturer of mobile and portable radio communications equipment, states that the rule will unduly burden local and state governments by forcing complete system conversions in order to avoid such problems.⁵⁸ TAIT also argues that the 2008 deadline for manufacture and importation of wideband equipment will not allow sufficient time for a reasonable return on investment.⁵⁹ Others agree that the rule will place burdensome financial strains on state and local resources.⁶⁰

18. Similarly, a number of parties point out that modifications in an entity's operational footprint are routine and necessary to improve the coverage and quality of wireless communications of legacy systems, or to cover new areas of operations.⁶¹ They argue that prohibiting applications to expand existing 25 kHz systems will therefore impede licensees' regular operations.

19. Another argument raised against the interim dates for PLMR operations is that they will impede interoperability, because backward compatibility allows new systems to interoperate with existing operations.⁶² Florida states that many of its interoperability channels have been used for decades by multiple agencies that serve critical local and state public safety needs.⁶³ APCO states that limiting new systems to 12.5 kHz-only operations will prevent new systems from communicating with pre-existing licensees who continue to operate 25 kHz channels.⁶⁴ API/UTC states that backward compatibility plays a crucial role in managing its UHF systems which provide critical safety objectives via Supervisory Control and Data Acquisition (SCADA) systems capabilities, and prohibiting new or expanded 25 kHz operations will jeopardize the licensees' ability to ensure interoperability of mission critical systems.⁶⁵

20. Parties also argue that the interim dates for equipment certification and manufacture will impair interoperability.⁶⁶ FLEWUG points out that these dates will jeopardize the industry's continued good faith efforts to implement TIA/EIA 102-P25 standard, which is utilized by the majority of federal

⁵⁶ API/UTC Petition at 11.

⁵⁷ PSWN Petition at 7.

⁵⁸ TAIT Petition at 5, 6.

⁵⁹ *Id.*

⁶⁰ Suffolk County Petition at 4; Kenwood Petition at 6; TAIT Petition at 4; Rural/Metro Comment to Petitions at 5.

⁶¹ Suffolk County PD Petition at 5; Florida Petition at 3; Coalition Petition at 12. *See also* API/UTC Petition at 9; Motorola Petition at 7.

⁶² APCO Petition at 6; Coalition Petition at 13; PSWIN Petition at 7; AAR Petition at 2; M/A-COM Petition at 11.

⁶³ *See, e.g.*, Florida Petition at 2.

⁶⁴ APCO Petition at 6.

⁶⁵ API/UTC Petition at 5-6, 9; *see also* Motorola Petition at 7.

⁶⁶ FLEWUG Petition at 5; NTIA Petition at 4.

agencies with a public safety mission, including the Department of Defense.⁶⁷ FLEWUG urges the Commission to enable backward compatibility, including the manufacture and importation of multimode equipment through 2013, because it would enable a more seamless and complete transition to narrowband across the Nation.⁶⁸ Likewise, to ensure the proper development of the P25 standard, NTIA requests the 2008 prohibition be delayed to coincide with the final 2018 migration date for Public Safety Radio Pool licensees.⁶⁹

21. Finally, NTIA states that the interim deadlines for equipment certification and manufacture will have a negative effect on the nation's global competitiveness.⁷⁰ Specifically, NTIA states that without the P25 standard, pure competitive procurement will be difficult to achieve and will force public safety agencies to settle for proprietary technologies as opposed to "off-the-shelf" equipment compatible with their state and local government public safety counterparts.⁷¹

22. *Discussion.* Based on the current record, we now conclude that the staggered deadlines adopted in the *Second Report and Order* present significant potential pitfalls that outweigh the benefit that would accrue from whatever acceleration of migration efforts that would occur. We believe that it is in the public interest to avoid the difficulties that could be caused to licensees' current and future operations, especially but not exclusively public safety operations, and in particular efforts to establish public safety interoperability.⁷² We also believe, however, that our rules should encourage licensees to begin planning and implementing migration to narrowband technology well before January 1, 2013.

23. In light of these considerations, we conclude that the most appropriate action is to revise the following interim measures as of January 1, 2011, or two years before the mandatory migration date adopted in this proceeding. Specifically: (1) Applications for new operations using 25 kHz channels will be accepted until January 1, 2011. After January 1, 2011, applications for new operations using a bandwidth greater than 12.5 kHz will be accepted only to the extent that the equipment meets the

⁶⁷ FLEWUG Petition at 4-5; *see* PSWN Petition at 5; NTIA Petition at 5.

⁶⁸ FLEWUG Petition at 7.

⁶⁹ NTIA Petition at 6 (prohibiting 25 kHz equipment limits and eliminates interoperability and is contrary to the TIA/EIA 102-P25 standard that includes a 25 kHz mode for backward compatibility).

⁷⁰ *Id.* at 5.

⁷¹ *Id.*

⁷² The Commission places great importance on facilitating public safety interoperability. *See, e.g.,* The Development of Operational, Technical and Spectrum Requirements For Meeting Federal, State and Local Public Safety Agency Communication Requirements Through the Year 2010, *Fourth Memorandum Opinion and Order*, WT Docket No. 96-86, 17 FCC Rcd 4736, 4746 ¶ 24 (2002). The Commission noted the importance of interoperability when it stated, "[I]nability to communicate hinders cooperation and coordination between public safety agencies on a day-to-day basis as well as during emergencies. We believe that the present inability of public safety agencies to communicate with each other is one of the most critical deficiencies in today's public safety communications." The Development of Operational, Technical and Spectrum Requirements for Meeting Federal, State and Local Public Safety Agency Communication Requirements Through the Year 2010, *Notice of Proposed Rule Making*, WT Docket No. 96-86, 11 FCC Rcd 12460, 12469 ¶ 22 (1996); *see also* The Development of Operational, Technical and Spectrum Requirements for Meeting Federal, State and Local Public Safety Agency Communications Requirements through the Year 2010, *Second Notice of Proposed Rule Making*, WT Docket No. 96-86, 12 FCC Rcd 17706, 17718-22 ¶¶ 27-33 (1997); Final Report of the Public Safety Wireless Advisory Committee 19- 20, 45-48 (Sept. 11, 1996).

spectrum efficiency standard of one channel per 12.5 kHz of channel bandwidth (voice) or 4800 bits per second per 6.25 kHz (data). (2) Applications for modification of operations that expand the authorized contour of an existing station will be accepted until January 1, 2011.⁷³ After January 1, 2011, applications for modification of operations that expand the authorized contour of an existing station using 25 kHz channels will be accepted only to the extent that the equipment meets the spectrum efficiency standard of one channel per 12.5 kHz of channel bandwidth (voice) or 4800 bits per second per 6.25 kHz (data) if the bandwidth for transmissions specified in the modification application is greater than 12.5 kHz. (3) Manufacture and importation of any 150-174 MHz and 421-512 MHz band equipment operating on a channel bandwidth up to 25 kHz will be permitted until January 1, 2011. After January 1, 2011, manufacture and importation of any 150-174 MHz and 421-512 MHz band equipment operating on a channel bandwidth up to 25 kHz will be permitted only to the extent that the equipment meets the spectrum efficiency standard of one channel per 12.5 kHz of channel bandwidth (voice) or 4800 bits per second per 6.25 kHz (data).

24. With respect to certification of equipment, we will not at this time adjust the January 1, 2005 deadline, but we will stay the effectiveness of that deadline in the *Order, infra*, pending release of a *Third Report and Order* in this proceeding.⁷⁴ As discussed below, we are staying the date while we seek comment on a proposal to eliminate or defer that date with respect to 6.25 kHz technology. We will make one change at this time regarding certification of equipment. The *Second Report and Order* in this proceeding modified the standard adopted in the *Refarming* proceeding, in that the *Refarming* rules provided that applications for certification of equipment received on or after January 1, 2005 operating with a 25 kHz bandwidth would be granted if the equipment met the spectrum efficiency standard of one channel per 6.25 kHz of channel bandwidth (voice) or 4800 bits per second per 6.25 kHz (data),⁷⁵ but the *Second Report and Order* prohibited certification of new 25 kHz equipment after January 1, 2005, even if it met this efficiency standard. For the reasons discussed at greater length in the following section, we modify the standard back to that adopted in the *Refarming* proceeding.⁷⁶

25. Because we have adopted an earlier, single date by which licensees must complete final migration to narrowband, we believe that this decision will ensure that operators have maximum flexibility to maintain existing systems without significantly delaying the overall migration of operations in these bands by 2013.⁷⁷ We also believe that licensees will have ample incentive to convert to narrowband by 2013 without either jeopardizing interoperability during the two-year interim or overwhelming our administrative processes with a flood of last-minute waiver requests. As the Joint Petitioners note, because the Commission's Rules already require all new 25 kHz equipment certified since 1997 to be capable of operating at 12.5 kHz, parties that acquire 25 kHz equipment between now and the final migration date will have little basis for claiming or needing waiver relief since the conversion process would not be either technically difficult or prohibitively expensive.⁷⁸ Similarly, we

⁷³ Given that we are amending Section 90.209(b)(6)(i) and (ii) to delay the deadline for applications for new stations and modifications, we hereby lift the stay of Section 90.209(b)(6), upon the effective date of the rules adopted herein.

⁷⁴ See *infra* Section V.

⁷⁵ See 47 C.F.R. 90.203(j)(4) (2002).

⁷⁶ See *infra* Section III.C.

⁷⁷ As pointed out by at least two parties, this decision will ensure the availability of quality equipment and infrastructure from reputable manufacturers. See TAIT Petition at 5; Suffolk County at 5.

⁷⁸ AMTA, ITA and PCIA Joint Petition at 11; see 47 C.F.R. § 90.203(j)(3).

do not believe that those entities with equipment that operates exclusively at 25 kHz will have a basis to seek a waiver since that equipment most likely was either purchased new prior to 1997, in which case it will have been fully depreciated, or purchased 'used' or second-hand with full knowledge of the migration deadline.⁷⁹

26. No later than December 31, 2009, the Wireless Telecommunications Bureau will issue a Public Notice reminding licensees and frequency coordinators of the impending January 1, 2011 deadline for filing new applications and modifications of any systems utilizing 25 kHz channels. The Public Notice will also serve as a reminder that all Public Safety Radio Pool and Industrial/Business Radio Pool licensees are required to migrate to 12.5 kHz technology by January 1, 2013.

27. Finally, we note that the interim dates we establish above may not be appropriate for the licensees operating in the Federal Government bands 150.05-150.8 MHz, 162.0125-173.2 MHz, and 173.4-174 MHz. As these issues are under active consideration in ET Docket No 04-243, the interim dates for those bands will be subject to the decisions we make in that proceeding.

C. Equivalent Technology

28. *Background.* The *Second Report and Order* was ambiguous on the issue of "narrowband-equivalent technology," *i.e.*, equipment that operates on a 25 kHz bandwidth, but with the same efficiency as equipment using narrower bandwidths. While the text of the *Second Report and Order* indicated in places that narrowband-equivalent technology would be permitted,⁸⁰ the plain meaning of the final rules prohibits all 25 kHz operations and equipment, even those meeting a narrowband spectrum efficiency standard. In contrast, the *Refarming Report and Order* expressly permitted "either narrowband or the equivalent efficiency."⁸¹ Specifically, the *Refarming* rules provided that applications for equipment certification received after February 14, 1997 would be granted only if the equipment either (1) was capable of operating on 12.5 kHz channels,⁸² or (2) the equipment met a narrowband efficiency standard, *i.e.*, one channel per 12.5 kHz (voice) or 4800 bits per second per 6.25 kHz (data);⁸³ and applications for equipment certification received after January 1, 2005 would be granted only if the equipment either (1) was capable of operating on 6.25 kHz channels,⁸⁴ or (2) the equipment met a narrowband efficiency standard, *i.e.*, one channel per 6.25 kHz (voice) or 4800 bits per second per 6.25 kHz (data).⁸⁵

29. Petitioners point out the ambiguity in the *Second Report and Order*, and request that we clarify that narrowband equivalent technology will be accepted.⁸⁶ They argue that prohibiting all equipment with a bandwidth greater than 12.5 kHz, even if it meets the 12.5 kHz narrowband efficiency

⁷⁹ *Id.*

⁸⁰ *See, e.g., Second Report and Order*, 18 FCC Rcd at 3038 ¶ 12, 3040 ¶ 14.

⁸¹ *Refarming Report and Order*, 10 FCC Rcd at 10081 ¶ 7.

⁸² *See* 47 C.F.R. § 90.203(j)(2)(i) (2002).

⁸³ *See* 47 C.F.R. § 90.203(j)(3) (2002).

⁸⁴ *See* 47 C.F.R. § 90.203(j)(4)(i)-(iii) (2002).

⁸⁵ *See* 47 C.F.R. § 90.203(j)(4)(iv), (5) (2002).

⁸⁶ Motorola Petition at 12; IPMobileNet Request at 2; M/A-COM Petition at 8.

standard, constitutes a significant change from the *Refarming* rules that threatens to invalidate a significant amount of technical standards and product development work.⁸⁷ IPMobileNet, a manufacturer and distributor of wireless data and next generation voice over IP (VoIP) and data networking systems, states that this rule would affect the deployment of extensive data mobile systems used by government entities for a variety of mission critical public safety functions.⁸⁸ It also asserts that the Commission violated the Administrative Procedure Act by adopting Section 90.209(b)(6) without first providing the public proper notice.⁸⁹

30. *Discussion.* We conclude that we should not depart from the precedent set in the *Refarming* proceeding to permit narrowband-equivalent technology. Therefore, as indicated above,⁹⁰ we will revise the rules to permit the certification of equipment operating on channel bandwidths up to 25 kHz, to the extent that the equipment meets the spectrum efficiency standard of one channel per 6.25 kHz of channel bandwidth (voice) or 4800 bits per second per 6.25 kHz (data). Similarly, we will also revise the rules to permit the continued use, manufacture and importation of equipment operating on channel bandwidths up to 25 kHz, to the extent that the equipment meets the spectrum efficiency standard of one channel per 12.5 kHz of channel bandwidth (voice) or 4800 bits per second per 6.25 kHz (data).⁹¹ We believe that this decision promotes the goals of maximizing both user flexibility and spectrum efficiency in the PLMR spectrum. We also believe that this decision is consistent with the public interest to ensure interoperability and backward compatibility, while promoting our overarching goal to facilitate the migration to narrowband technology. Moreover, given the growing reliance on data-centric transmissions by public safety and government users, we believe that this decision will provide licensees with maximum operational flexibility to utilize channel bandwidths of up to 25 kHz for mobile data.⁹²

D. Paging

31. *Background.* The text of the *Second Report and Order* did not address whether the Commission should exempt paging-only frequencies from the narrowbanding requirements. In the final

⁸⁷ Motorola Petition at 13-14. Motorola states that since 1997, product development has focused entirely on equipment designed to satisfy the one-voice path per 6.25 kHz efficiency standard over large channel widths. Motorola further notes that it is not aware of any significant product development occurring anywhere in the world by any major manufacturer for land mobile technologies designed to operate within channel bandwidths as small as 6.25 kHz. *See also* M/A-Com Petition at 10 (stating that significant R&D investments have been committed to equipment utilizing channel bandwidths greater than 12.5 kHz while at the same time providing at least one voice path per 6.25 kHz of bandwidth in reliance on the Commission's former policy).

⁸⁸ IPMobileNet Request at 2. IPMobileNet claims that a far greater number of units can utilize a single 25 kHz data channel operating at data speeds of 19.2 kbps than could be accommodated on two 12.5 kHz voice channels. *See id.* at 8; *see also* APCO Petition at 11 (stating that mobile data is spectrally efficient because it provides equivalent throughput as narrowband voice channels).

⁸⁹ IPMobileNet Request at 8-9. Because we are revising the rule to clarify that narrowband-equivalent technology is still permitted, we need not address IPMobileNet's argument that prohibiting such equipment would have violated the Administrative Procedure Act.

⁹⁰ *See* paragraph 23, *supra*.

⁹¹ *Id.*

⁹² We note that because of the pending rulemaking proceeding in ET Docket No 04-243, issues relating to equivalent technology in the Federal Government bands 150.05-150.8 MHz, 162.0125-173.2 MHz, and 173.4-174 MHz are subject to further modification.

rules, however, the Commission deleted the first sentence of Section 90.35(c)(29) of the Commission's Rules,⁹³ but, inconsistently, left Sections 90.203(j)(7)⁹⁴ and 90.20(d)(30)⁹⁵ intact. In contrast, the *Refarming Report and Order* expressly exempted Part 90 paging-only frequencies from the narrowbanding requirements.⁹⁶

32. Several petitioners maintain that not exempting Part 90 paging frequencies from narrowbanding requirements appears to be an oversight and procedural error of the *Second Report and Order*.⁹⁷ They point out that the *Second Report and Order* deleted the first sentence of Section 90.35(c)(29) without comment or discussion. They state that deleting the first sentence of Section 90.35(c)(29) imposes narrowband requirements on Industrial/Business Radio Pool, paging-only channels contrary to established Commission policy.⁹⁸

33. *Discussion.* We conclude that we should not depart from the precedent set in the *Refarming* proceeding to exempt paging-only frequencies from the narrowband requirements.⁹⁹ We believe that whatever benefits might have been initially perceived by applying our narrowband requirements to paging carriers are outweighed by the economic burdens the current rule imposes on paging carriers. We note that, because most paging systems in place today are not single-site systems, a narrowband requirement on paging systems would require total system replacement.¹⁰⁰ We are therefore concerned that the costs associated with a systemic overhaul of paging transmitters would have a deleterious effect

⁹³ Section 90.35(c)(29) of the Commission's Rules, which applied to non-Public Safety Radio Pool, paging-only frequencies, previously stated: "This frequency will be authorized a channel bandwidth of 25 kHz. Except when limited elsewhere, one-way paging transmitters on this frequency may operate with an output power of 350 watts." 47 C.F.R. § 90.35(c)(29) (2002).

⁹⁴ "Transmitters designed for one-way paging operations will be certificated with a 25 kHz channel bandwidth and are exempt from the spectrum efficiency requirements of paragraphs (j)(3) and (j)(5) of this section." 47 C.F.R. § 90.203(j)(3) (2002).

⁹⁵ Section 90.20(d)(30) of the Commission's Rules, which applies to public safety paging-only frequencies, provides "This frequency will be authorized a channel bandwidth of 25 kHz notwithstanding §§ 90.203 and 90.209." 47 C.F.R. § 90.35(d)(30).

⁹⁶ *Refarming Report and Order* at 10108 n.116, 10109 n.121. This decision was affirmed on reconsideration. *See* Replacement of Part 90 by Part 88 to Revise the Private Land Mobile Radio Services and Modify the Policies Governing Them and Examination of Exclusivity and Frequency Assignment Policies of the Private Land Mobile Radio Services, *Memorandum Opinion and Order*, 11 FCC Rcd 17676, 17689 ¶ 26 (1996).

⁹⁷ American Association of Paging Carriers at 6; CMRS Petition at 4-9; Private Paging Coalition at 5-8; Kentec Petition at 3; Motorola Petition at 9. *See also* Letter dated Oct. 29, 2004 from Robert D. Primosch, Counsel for Monongahela Communications LLC and Robert Liu, General Manager, to Marlene H. Dortch, Secretary, FCC (Monongahela Letter) (supporting, *inter alia*, petition for rulemaking filed by American Association of Paging Carriers).

⁹⁸ *See, e.g.*, Private Paging Coalition at 4.

⁹⁹ Our decision here to exempt paging only frequencies from the narrowband requirements does not imply that the Commission is also protecting paging from low power operations on 12.5 kHz. *See* Amendment of Part 90 of the Commission's Rules and Policies for Applications and Licensing of Low Power Operations in the Private Land Mobile Radio 450-470 MHz Band, *Memorandum Opinion and Order*, WT Docket No. 01-146, 19 FCC Rcd 22 (2004).

¹⁰⁰ *See, e.g.*, Private Paging Coalition Petition at 9; Motorola Petition at 10.

on the paging industry's ability to provide service.¹⁰¹ We further note that paging channels are neither congested nor do they typically create interference problems. The fact that paging operations use a relatively short duty cycle also supports an exemption of paging-only frequencies from the Commission's narrowbanding requirements. In arriving at our decision to exempt paging on paging channels only from the narrowbanding requirements of this proceeding, we recognize the valuable services paging carriers provide to public safety entities and general users at an affordable cost. Lastly, we believe that our decision here will remove the uncertainty created as a result of the rule changes we formerly adopted in the *Second Report and Order*, and restate our policy to exempt paging from the narrowbanding requirements consistent with the actions established in the *Refarming* proceeding.

34. Finally, we note that the paging channel at 163.250 MHz operates on Federal Government-use spectrum. Accordingly, it is subject to the pending rulemaking proceeding in ET Docket 04-243.

IV. THIRD FURTHER NOTICE OF PROPOSED RULE MAKING

A. Background

35. In the *Second Further Notice*, the Commission sought comment on whether measures similar to those adopted in the *Second Report and Order* to encourage the migration to 12.5 kHz narrowband technology should also be implemented to facilitate the migration to 6.25 kHz operations.¹⁰² The Commission tentatively concluded that similar measures are warranted to facilitate migration to 6.25 kHz technology, but did not propose specific deadlines.¹⁰³

36. As an initial matter, we defer action with regard to whether measures should be adopted to encourage the transition to 6.25 kHz channels in the Federal Government bands 150.05-150.8 MHz, 162.0125-173.2 MHz, and 173.4-174 MHz and will instead address this matter in ET Docket No. 04-243.

B. Discussion

37. The comments unanimously oppose any action by the Commission to implement a mandatory migration requirement for 6.25 kHz technology as "premature and inappropriate."¹⁰⁴ Several comments state that a mandatory conversion to 6.25 kHz would have significant technological hurdles to overcome, would add unnecessary confusion in the industry and would delay actual deployment of spectrum efficient technology.¹⁰⁵ Motorola states that the Commission should permit market forces to shape the demand for 6.25 kHz technology.¹⁰⁶ Motorola points out that while the Project 25 "Phase I" 12.5 kHz FDMA standard is complete, development of a Project 25 "Phase II" 6.25 kHz FDMA standard has just begun. Therefore, Motorola claims that any mandated changes at this time would be a waste of

¹⁰¹ The Private Paging Coalition also notes that two major manufacturers have discontinued the production of new paging transmitters. *See* Private Paging Coalition Petition at 9.

¹⁰² *Second Further Notice*, 18 FCC Rcd at 3045 ¶ 27.

¹⁰³ *Id.*

¹⁰⁴ *See, e.g.*, ITA Comments at 1, 5 (citing lack of availability of equipment); Coalition Comments at 5-6; TAIT Comments at 4-5.

¹⁰⁵ *See, e.g.*, APCO Comments at 2; LMCC Comments at 2-3; ITA Comments at 4.

¹⁰⁶ Motorola Comments at 1.

resources spent on developing a 12.5 kHz standard and would likely increase costs borne by users.¹⁰⁷ Comments also suggest that market demand is not sufficient to spur the manufacture of 6.25 kHz equipment.¹⁰⁸ Existing TDMA technology provides 6.25 kHz equivalency over 12.5 kHz (2-slot) or 25 kHz (4-slot) bandwidths,¹⁰⁹ and most federal agencies have established communications systems based on a 12.5 kHz standard.¹¹⁰ Other comments state that a mandatory migration to 6.25 kHz narrowband is not an economically feasible or technologically viable option for high speed data transmissions,¹¹¹ one-to-many dispatch architecture via simulcast,¹¹² or encryption of voice and data.¹¹³

38. In a separate pleading submitted during the open comment period, Motorola also argues¹¹⁴ that in addition to declining to adopt new rules to encourage migration to 6.25 kHz technology, the Commission should also eliminate the *Refarming* rule that applications for equipment certification received on or after January 1, 2005 will be granted only if the equipment either (1) is capable of operating on 6.25 kHz channels, or (2) the equipment meets a narrowband efficiency standard, *i.e.*, one channel per 6.25 kHz (voice) or 4800 bits per second per 6.25 kHz (data).¹¹⁵ Motorola states that the approach in the *Refarming* rules did not lead to a sufficiently rapid migration to 12.5 kHz narrowband technology, and it is therefore illogical to expect those rules to lead to a sufficiently rapid migration to 6.25 kHz narrowband technology.¹¹⁶

39. In a second petition filed on July 24, 2004, styled as a Petition to Defer, EF Johnson Company, Kenwood U.S.A. Corporation and Motorola, Inc. (Manufacturer Petitioners), three large manufacturers of PLMR equipment, state that enforcement of Section 90.203(j)(5) “would be premature and would place excessive burdens on manufacturers and impose unnecessary costs on licenses”¹¹⁷ because the industry lacks a completed 6.25 kHz equivalent efficiency standard.¹¹⁸ In separate pleadings, Daniels Electronics Ltd. and Ritron, Inc., two other PLMR equipment manufacturers, submitted petitions

¹⁰⁷ *Id.* at 7.

¹⁰⁸ See ITA Comments at 4-5, LMCC Reply Comments at 4, FLEWUG *Ex Parte* Comments at 6.

¹⁰⁹ APCO Comments at 2.

¹¹⁰ *Id.* at 3.

¹¹¹ LMCC Comments at 5.

¹¹² APCO Comments at 4.

¹¹³ AAR Comments at 5.

¹¹⁴ Motorola Petition at 12.

¹¹⁵ See 47 C.F.R. § 90.203(j)(4)-(5).

¹¹⁶ Motorola Petition at 11.

¹¹⁷ Joint Petition of EF Johnson Company, Kenwood U.S.A. and Motorola, Inc. Petition to Defer Enforcement of Section 90.203(j)(5) of the Commission’s Rules, WT Docket No. 99-87, RM-9332 (filed July 14, 2004) (Manufacturer Petition to Defer) at 2. See also Monongahela Letter, *supra* note 97 (supporting, *inter alia*, Manufacturer Petition to Defer).

¹¹⁸ *Id.*

in support of the Petition to Defer.¹¹⁹ The Petition to Defer states that because manufactures cannot develop and deploy 6.25 kHz equivalent efficiency technologies until a standard is developed, enforcement of this rule would “further exacerbate the inability of public safety organizations to communicate with each other.”¹²⁰ According to these manufacturers, although the industry is actively working towards standards for 6.25 kHz equivalent efficiency technologies, the process will not be completed until at least mid-2005,¹²¹ after which time “the manufacturing industry will [still] need approximately 18 months to develop and deploy 6.25 kHz technologies.”¹²² The manufacturers request that the Commission eliminate or, in the alternative, defer the requirement in Section 90.203(j)(5) that applications received on or after January 1, 2005 for equipment operating in the 150-174 MHz and/or 421-512 MHz bands must demonstrate 6.25 kHz or equivalent technology.¹²³

40. Because Motorola’s petition filed during the comment period and the Petition to Defer raise an issue directly connected to the Commission’s inquiry in the *Second Further Notice*, we take this opportunity to seek public comment on the proposal in the Petition to Defer. Specifically, we seek comment on the Manufacturer Petitioners’ assumption that the current rule would place onerous burdens on manufacturers and jeopardize the promotion of interoperability between users in the absence of a 6.25 kHz equivalent efficiency standard. We also seek comment on whether the question hinges on a distinction between equipment-based technologies that are specifically manufactured to utilize 6.25 kHz channel bandwidth as opposed to reconfigured 12.5 kHz equipment or software-defined 12.5 kHz equipment made capable of operating on channel bandwidths with an equivalent efficiency of 6.25 kHz. In the absence of a single, equipment-based 6.25 kHz technology standard, would the deployment of non-standardized equipment capable of utilizing 6.25 kHz equivalent efficiency channel bandwidths significantly hamper interoperability, as the Petition to Defer contends? We seek comment on these issues and any other related issues.

41. In seeking comment on the Petition to Defer, we emphasize that we are not reopening the record for comments regarding the broader issues raised in the *Second Further Notice* regarding migration to 6.25 kHz technology. Because, however, the issue raised in the Petition to Defer is directly related to whether we should adopt rules to implement a migration to 6.25 kHz technologies, we defer our decision on the broader issues until we also have compiled our record with respect to the Petition to Defer.

¹¹⁹ Daniels Electronics Ltd. Petition, WT Docket No. 99-87 (filed Aug. 24, 2004) (Daniels Petition); Ritron, Inc. Petition to Delay Implementation of Section 90.203(j)(5) of the Commission’s Rules, WT Docket No. 99-87 (filed July 29, 2004) (Ritron Petition). Because the Daniels Petition and the Ritron Petition essentially support the Petition to Defer filed by Manufacturer Petitioners, for purposes of this discussion, reference to Manufacturer Petitioners will also include positions articulated from the Daniels and Ritron petitions unless specified otherwise.

¹²⁰ Manufacturer Petition to Defer at 2.

¹²¹ *Id.* at 7.

¹²² *Id.* at 8.

¹²³ Section 90.203(j)(5), 47 C.F.R. § 90.203(j)(5) states in relevant part:

Applications for part 90 certification of transmitters designed to operate on frequencies in the 150-174 MHz and/or 421-512 MHz bands, received on or after January 1, 2005, must include a certification that the equipment meets a spectrum efficiency standard of one voice channel per 6.25 kHz of channel bandwidth.

V. ORDER

42. For the reasons set forth herein, we find that good cause has been shown to stay the January 1, 2005 date, pending resolution of the issues presented in the *Second Further Notice* and the Petition to Defer. As noted previously, the Commission received two other petitions filed in support of the Petition to Defer.¹²⁴ Separately, the Commission also received a petition from M/A-COM requesting a stay of Section 90.203(j)(4) of the Commission's Rules, with regard to the January 1, 2005, cut-off date.¹²⁵

43. In considering requests for stay, the Commission generally considers the four criteria set forth in *Virginia Petroleum Jobbers Association*.¹²⁶ These criteria are (1) a likelihood of success on the merits; (2) the threat of irreparable harm absent the grant of preliminary relief; (3) the degree of injury to other parties if relief is granted; and (4) the issuance of the order will further the public interest.¹²⁷ The Commission then balances these interests in order to determine an administrative response on a case-by-case basis.¹²⁸ The relative importance of the four criteria will vary depending upon the circumstances of the case.¹²⁹ If there is a particularly overwhelming showing in at least one of the factors, we may find that a stay is warranted notwithstanding the absence of another one of the factors.¹³⁰ For the reasons set forth below, we agree with the petitioners that a stay of the January 1, 2005 date is appropriate under the circumstances presented. Specifically, we conclude that a stay will further the public interest, and that no parties will be injured if relief is granted.

44. The petitioners state that enforcement of the cut-off date in Sections 90.203(j)(4) and (j)(5) would place an undue burden on manufacturers, increase the cost of private land mobile radio equipment¹³¹ to end-users, and encourage non-standard, or stop-gap equipment solutions, thus jeopardizing interoperability.¹³² Because no industry-wide standard currently exists to support 6.25 kHz equipment, the petitioners state that manufacturers have no market-based incentive to develop and deploy 6.25 kHz equivalent technologies other than to comply with the Commission's Rules.¹³³ While 6.25 kHz technology is within the state of the art, Ritron states that, compared with 12.5 and 25 kHz technology,

¹²⁴ See *supra* note 114. For purposes of the discussion of the stay, and unless otherwise specified, Ritron, Daniels and the Manufacturer Petitioners will collectively be referred to as "the petitioners."

¹²⁵ M/A-COM Petition for Stay, WT Docket No. 99-87 (filed Dec. 15, 2004) (M/A-COM Petition for Stay);

¹²⁶ *Virginia Petroleum Jobbers Ass'n v. Federal Power Commission*, 259 F.2d 921, 925 (D.C. Cir. 1958) (*Virginia Petroleum Jobbers Ass'n*); see also, e.g., *The 4.9 GHz Band Transferred from Federal Government Use, Order*, FCC 04-185, ¶ 5 (2004); Biennial Regulatory Review – Amendment of Parts 0, 1, 22, 24, 26, 27, 80, 87, 90, 95, 97, and 101 of the Commission's Rules to Facilitate the Development and Use of the Universal Licensing System in the Wireless Telecommunications Services, *Memorandum Opinion and Order*, WT Docket No. 98-20, 14 FCC Rcd 9305, 9307 ¶ 4 (1999) (*ULS Stay*).

¹²⁷ *Virginia Petroleum Jobbers Ass'n.*, 259 F.2d at 925.

¹²⁸ *ULS Stay*, 14 FCC Rcd at 9307 ¶ 4.

¹²⁹ *Id.*

¹³⁰ *Id.*

¹³¹ Ritron Petition at 1-2.

¹³² Petition to Defer at 7-8; Daniels Petition at 1; M/A-COM Petition for Stay at 6.

¹³³ Petition to Defer at 7; Ritron Petition at 3.

not only is it “virtually unusable for the transmission of voice,” but the equipment also tends to be physically large with limited battery life.¹³⁴

45. The Manufacturer Petitioners state that the industry is “still years away” from 6.25 kHz technologies having any meaningful impact on improving spectral efficiency in these bands.¹³⁵ Although the industry is currently working on developing standards for 6.25 kHz technologies, the Petition to Defer states that the process will not be complete until “at least mid-2005.”¹³⁶ Even after a 6.25 kHz standard is completed and adopted, the Manufacturer Petitioners estimate that the manufacturing industry will need “approximately 18 months” to develop and deploy 6.25 kHz technologies.¹³⁷ In light of the petitions, we conclude that a stay of the January 1, 2005 deadline pending resolution of the petitions would further the public interest.

46. In addition, nothing in the record before us suggests that there will be any injury to any other party if the requested relief is granted. A temporary stay of the January 1, 2005 date pending the resolution of the petitions will not exacerbate the problems that the new rules are intended to address. A stay would not result in additional congestion among existing licensees, or preclude the licensing of any new stations that could not be licensed if the prohibition on new and expanded wideband operations were to take effect.

47. In conclusion, we recognize that many PLMR systems are used for extremely important public safety or critical infrastructure purposes. We also are persuaded that there may not be enough time before January 1, 2005 for manufacturers to implement 6.25 kHz technology in a manner consistent with the public interest. As a result, based on the record before us, we are concerned that retaining such deadline would not further the public interest, because it would adversely affect public safety communications and critical infrastructure operations. We also believe that a temporary stay of the deadline would not injure any party. We therefore conclude that a stay of the January 1, 2005 date is appropriate. For the foregoing reasons, therefore, we will stay the January 1, 2005 deadline in Sections 90.203(j)(4) and (j)(5) for filing applications for approval of new 25 wideband equipment. We grant this stay pending resolution of the issues raised in the *Third Further Notice*, including the Petition to Defer.

VI. PROCEDURAL MATTERS

A. Regulatory Flexibility Act Analyses

48. As required by the Regulatory Flexibility Act (RFA), *see* 5 U.S.C. § 604, the Commission has prepared a Supplemental Final Regulatory Flexibility Analysis of the possible impact of the rule changes contained in this *Third MO&O* small entities. The Supplemental Final Regulatory Flexibility Act analysis is set forth in Appendix C. Additionally, we have prepared an Initial Regulatory Flexibility Analysis concerning the impact of the policies and rules addressed by the *Third Further Notice*. The Initial Regulatory Flexibility Analysis is set forth in Appendix D. The Commission’s Consumer Information Bureau, Reference Information Center, will send a copy of this *Third MO&O*, *Third Further Notice and Order*, including the Final and Initial Regulatory Flexibility Act Analyses, to the Chief Counsel for Advocacy of the Small Business Administration.

¹³⁴ Ritron Petition at 3.

¹³⁵ Petition to Defer at 8.

¹³⁶ *Id.* at 7.

¹³⁷ *Id.* at 8.

B. Paperwork Reduction Act of 1995 Analysis

49. This document does not contain new or modified information collection requirements subject to the Paperwork Reduction Act of 1995 (PRA), Public Law 104-13. In addition, therefore, it does not contain any new or modified “information collection burden for small business concerns with fewer than 25 employees,” pursuant to the Small Business Paperwork Relief Act of 2002, Public Law 107-198, see 44 U.S.C. 3506(c)(4).

50. For further information concerning this *Third MO&O, Third Further Notice and Order*, contact Zenji Nakazawa, Esq., Public Safety and Critical Infrastructure Division, Wireless Telecommunications Bureau, Federal Communications Commission, Washington, D.C. 20554, at (202) 418-0680, TTY (202) 418-7233, via e-mail at Zenji.Nakazawa@fcc.gov, or via U.S. Mail at Federal Communications Commission, Wireless Telecommunications Bureau, 445 12th Street, S.W., Washington, D.C. 20554.

51. Alternative formats (computer diskette, large print, audio cassette, and Braille) are available to persons with disabilities by contacting Brian Millin at (202) 418-7426, TTY (202) 418-7365 or via e-mail at bmillin@fcc.gov. This *Third MO&O, Third Further Notice and Order* can be downloaded at <http://wireless.fcc.gov/releases.html#orders>.

C. Filing Procedures

52. Pursuant to 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 or before 60 days after publication in the Federal Register, and reply comments on or before 90 days after publication in the Federal Register. Comments may be filed using the Commission's Electronic Comment Filing System (“ECFS”) or by filing paper copies. See *Electronic Filing of Documents in Rulemaking Proceedings*, 13 FCC Rcd 11322, 11326 (1998).

53. Comments filed through the ECFS can be sent as an electronic file via the Internet to <http://www.fcc.gov/e-file/ecfs.html>. Generally, only one copy of an electronic submission must be filed. If multiple docket or rulemaking numbers appear in the caption of this proceeding, however, commenters must transmit one electronic copy of the comments to each docket or rulemaking number referenced in the caption. In completing the transmittal screen, commenters should include their full name, Postal Service mailing address, and the applicable docket or rulemaking number. Parties may also submit an electronic comment by Internet e-mail. To obtain filing instructions for e-mail comments, commenters should send an e-mail to ecfs@fcc.gov, and should include the following words in the body of the message, “get form <your e-mail address>.” A sample form and directions will be sent in reply.

54. Parties choosing to file by paper must file an original and four copies of each filing. If participants want each Commissioner to receive a personal copy of their comments, an original plus nine copies must be filed. All filings must be sent to the Commission's Secretary, Marlene H. Dortch, Office of the Secretary, Federal Communications Commission, The Portals, 445 12th Street, S.W., Room TW-A325, Washington, D.C. 20554. In addition, courtesy copies should be delivered to Zenji Nakazawa, Public Safety and Critical Infrastructure Division, Wireless Telecommunications Bureau, Federal Communications Commission, 445 12th Street, S.W., Room # 3-C401, Washington, D.C. 20554.

55. All relevant and timely comments will be considered by the Commission before final action is taken in this proceeding. Comments and reply comments will be available for public inspection and duplication during regular business hours in the FCC Reference Information Center, Room CY-A257, 445 12th Street, S.W., Washington, DC 20554. Copies also may be obtained from Best Copy and Printing, Inc. (BCPI), 445 12th Street, S.W., Room CY-B529, Washington, DC 20554, (202) 488-5300, facsimile (202) 488-5563, TTY (202) 488-5562, or via e-mail at fcc@bcpiweb.com or via BCPI's web

site at www.bcpiweb.com.

D. Congressional Review Act Analysis

56. The Commission will send a copy of this *Third MO&O, Third Further Notice and Order* in a report to be sent to Congress and the General Accounting Office pursuant to the Congressional Review Act, *see* 5 U.S.C. 801(a)(1)(A).

VII. ORDERING CLAUSES

57. Accordingly, pursuant to Sections 1, 2, 4(i), 301, 302, and 303 of the Communications Act of 1934, as amended, 47 U.S.C. §§ 151, 152, 154(i), 301, 302, and 303, and Sections 1.421 and 1.425 of the Commission's Rules, 47 C.F.R. §§ 1.421 and 1.425, IT IS ORDERED that the *Third Memorandum Opinion and Order, Third Further Notice of Proposed Rule Making and Order* is hereby ADOPTED.

58. IT IS FURTHER ORDERED that Parts 1 and 90 of the Commission's Rules ARE AMENDED as set forth in Appendix B, and that these Rules shall be effective [**30 days after publication in the Federal Register**].

59. IT IS FURTHER ORDERED that the stay of 47 C.F.R. § 90.209(b)(6), *see* FCC 03-306, 69 Fed. Reg. 17959, SHALL EXPIRE [**30 days after publication in the Federal Register**].

60. IT IS FURTHER ORDERED that the January 1, 2005, deadline in 47 C.F.R. §§ 90.203(j)(4) and (j)(5) IS STAYED effective upon the release of this *Third Memorandum Opinion and Order, Third Further Notice of Proposed Rule Making and Order* pending resolution of the Petition to Defer filed by Motorola, Inc., Kenwood U.S.A. Corporation, and EFJohnson Company, on July 24, 2004.

61. IT IS FURTHER ORDERED that the Commission's Consumer Information Bureau, Reference Information Center, SHALL SEND a copy of this *Third Memorandum Opinion and Order, Third Further Notice of Proposed Rule Making and Order* including the Initial and Final Regulatory Flexibility Analyses, to the Chief Counsel for Advocacy of the U.S. Small Business Administration.

FEDERAL COMMUNICATIONS COMMISSION

Marlene H. Dortch
Secretary

APPENDIX A – PLEADINGS**Petitions**

American Association of Paging Carriers, Allied National Paging Association, Arch Wireless Operating Company, LLC and Metrocall Holdings, Inc.

American Petroleum Institute (API) and United Telecom Council (UTC) (collectively, API/UTC)

American Mobile Telecommunications Association (AMTA), Industrial Telecommunications Association (ITA) and PCIA -- Wireless Infrastructure Association (PCIA) (collectively, AMTA, ITA, PCIA)

Association of American Railroads (AAR)

Association of Public-Safety Communications Officials –International, Inc. (APCO), International Association of Fire Chiefs, Inc. and the International Municipal Signal Association (IAFC/IMSA), International Association of Chiefs of Police (IACP), Major Cities Chiefs Association (MCCA), National Sheriffs' Association (NSA), Major County Sheriffs' Association (MCSA), and National Public Safety Telecommunications Council (NPSTC) (collectively, APCO et al.)

Federal Law Enforcement Wireless Users Group (FLEWUG)

State of Florida, State Technology Office (Florida)

IPMobileNet, Inc. (IPMobileNet)

Kentec Communications Inc. (Kentec)

Kenwood U.S.A. Corporation (Kenwood)

Los Angeles County, Internal Services Department (LAISD)

M/A-COM, Inc. (M/A-COM)

Motorola, Inc. (Motorola)

National Rural Electric Cooperative Association (NRECA)

National Telecommunications and Information Association (NTIA)

Private Paging Coalition

Private Wireless Mining Coalition (Coalition) and Coalition *Ex parte* (filed March 25, 2004)

Public Safety Wireless Network (PSWN)

Suffolk County Police Department (SCPD)

Tait North America, Inc. (TAIT)

Oppositions to Petitions

Association of American Railroads (AAR)

American Mobile Telecommunications Association (AMTA), Industrial Telecommunications Association (ITA) and Wireless Infrastructure Association (PCIA) (collectively, Joint Petitioners)

American Petroleum Institute (API)

Industrial Telecommunications Association (ITA)

Private Wireless Mining Coalition (Coalition)

Rural/Metro Corporation (Rural Metro)

Comments

Association of American Railroads (AAR)

Association of Public-Safety Communications Officials –International, Inc. (APCO), International Association of Fire Chiefs, Inc. and the International Municipal Signal Association (IAFC/IMSA), International Association of Chiefs of Police (IACP), Major Cities Chiefs Association (MCCA), National Sheriffs' Association (NSA), Major County Sheriffs' Association (MCSA), and National Public Safety Telecommunications Council (NPSTC) (collectively, APCO et al.)

Federal Law Enforcement Wireless Users Group (FLEWUG)

Industrial Telecommunications Association (ITA)

Land Mobile Communications Council (LMCC)

Motorola, Inc. (Motorola)

Private Wireless Mining Coalition (Coalition)

Petitions filed in support of Petition to Defer

Daniels Electronics Ltd.

EFJohnson Company, Kenwood U.S.A. Corporation, Motorola, Inc.

Ritron, Inc.

APPENDIX B – FINAL RULES

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

PART 90—PRIVATE LAND MOBILE RADIO SERVICES

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), 332(c)(7).

2. Section 90.20 is amended by revising the table in paragraph (c) and paragraphs (d)(27) and (d)(30) to read as follows:

§ 90.20 Public Safety Pool.

* * * * *

(c) * * * * *

(3) * * *

PUBLIC SAFETY POOL FREQUENCY TABLE

Frequency or band * * * * *	Class of station(s) * * * * *	Limitations * * * * *	Coordinator * * * * *
150.7825..... * * * * *	.....do..... * * * * *	27..... * * * * *	PM * * * * *
151.0025..... * * * * *	.....do..... * * * * *	27, 28..... * * * * *	PH * * * * *
151.0325..... * * * * *	.....do..... * * * * *	27, 28..... * * * * *	PH * * * * *
151.0475..... * * * * *	.....do..... * * * * *	27, 28..... * * * * *	PH * * * * *
151.0625 * * * * *	.....do..... * * * * *	27, 28..... * * * * *	PH * * * * *
151.0775 * * * * *	.....do..... * * * * *	27, 28..... * * * * *	PH * * * * *
151.0925 * * * * *	.....do..... * * * * *	27, 28..... * * * * *	PH * * * * *
151.1075 * * * * *	.....do..... * * * * *	27, 28..... * * * * *	PH * * * * *

151.1225 *****	.....do..... *****	27, 28..... *****	PH *****
151.1375 *****	.....do..... *****	27, 28, 80 *****	PH *****
151.1525 *****	.....do..... *****	27, 28..... *****	PO *****
151.1675 *****	.....do..... *****	27, 28..... *****	PO *****
151.1825 *****	.....do..... *****	27, 28..... *****	PO *****
151.1975 *****	.....do..... *****	27, 28..... *****	PO *****
151.2125 *****	.....do..... *****	27, 28..... *****	PO *****
151.2275 *****	.....do..... *****	27, 28..... *****	PO *****
151.2425 *****	.....do..... *****	27, 28..... *****	PO *****
151.2575 *****	.....do..... *****	27, 28..... *****	PO *****
151.2725 *****	.....do..... *****	27, 28..... *****	PO *****
151.2875 *****	.....do..... *****	27, 28..... *****	PO *****
151.3025 *****	.....do..... *****	27, 28..... *****	PO *****
151.3175 *****	.....do..... *****	27, 28..... *****	PO *****
151.3325 *****	.....do..... *****	27, 28..... *****	PO *****
151.3475 *****	.....do..... *****	27, 28..... *****	PO *****

151.3625 *****	.....do..... *****	27, 28..... *****	PO *****
151.3775 *****	.....do..... *****	27, 28..... *****	PO *****
151.3925 *****	.....do..... *****	27, 28..... *****	PO *****
151.4075 *****	.....do..... *****	27, 28..... *****	PO *****
151.4225 *****	.....do..... *****	27, 28..... *****	PO *****
151.4375 *****	.....do..... *****	27, 28..... *****	PO *****
151.4525 *****	.....do..... *****	27, 28..... *****	PO *****
151.4675 *****	.....do..... *****	27, 28..... *****	PO *****
151.4825 *****	.....do..... *****	27, 28..... *****	PO *****
151.4975 *****	.....do..... *****	7, 27, 28..... *****	PO *****
153.7475 *****	.....do..... *****	27..... *****	PX *****
153.7625 *****	.....do..... *****	27..... *****	PX *****
153.7775 *****	.....do..... *****	27..... *****	PF *****
153.7925 *****	.....do..... *****	27..... *****	PX *****
153.8075 *****	.....do..... *****	27..... *****	PX *****
153.8225 *****	.....do..... *****	27..... *****	PX *****

153.8375 *****	.....do..... *****	27, 31..... *****	PF *****
153.8525 *****	.....do..... *****	27..... *****	PX *****
153.8675 *****	.....do..... *****	27..... *****	PX *****
153.8825 *****	.....do..... *****	27..... *****	PX *****
153.8975 *****	.....do..... *****	27..... *****	PX *****
153.9125 *****	.....do..... *****	27..... *****	PX *****
153.9275 *****	.....do..... *****	27..... *****	PX *****
153.9425 *****	.....do..... *****	27..... *****	PX *****
153.9575 *****	.....do..... *****	27..... *****	PF *****
153.9725 *****	.....do..... *****	27..... *****	PX *****
153.9875 *****	.....do..... *****	27..... *****	PX *****
154.0025 *****	.....do..... *****	27..... *****	PX *****
154.0175 *****	.....do..... *****	27..... *****	PX *****
154.0325 *****	.....do..... *****	27..... *****	PX *****
154.0475 *****	.....do..... *****	27, 28..... *****	PX *****
154.0625 *****	.....do..... *****	27, 28..... *****	PX *****

154.0775 *****	.....do..... *****	27, 28..... *****	PF *****
154.0925 *****	.....do..... *****	27, 28..... *****	PX *****
154.1075 *****	.....do..... *****	27, 28..... *****	PX *****
154.1225 *****	.....do..... *****	27, 28..... *****	PX *****
154.1375 *****	.....do..... *****	27, 28..... *****	PF *****
154.1525 *****	.....do..... *****	27, 28..... *****	PF *****
154.1675 *****	.....do..... *****	27, 28..... *****	PF *****
154.1825 *****	.....do..... *****	27, 28..... *****	PF *****
154.1975 *****	.....do..... *****	27, 28..... *****	PF *****
154.2125 *****	.....do..... *****	27, 28..... *****	PF *****
154.2275 *****	.....do..... *****	27, 28..... *****	PF *****
154.2425 *****	.....do..... *****	27, 28..... *****	PF *****
154.2575 *****	.....do..... *****	27, 28..... *****	PF *****
154.2725 *****	.....do..... *****	19, 27, 28..... *****	PF *****
154.2875 *****	.....do..... *****	19, 27, 28..... *****	PF *****
154.3025 *****	.....do..... *****	19, 27, 28..... *****	PF *****

154.3175 *****	.....do..... *****	27, 28..... *****	PF *****
154.3325 *****	.....do..... *****	27, 28..... *****	PF *****
154.3475 *****	.....do..... *****	27, 28..... *****	PF *****
154.3625 *****	.....do..... *****	27, 28..... *****	PF *****
154.3775 *****	.....do..... *****	27, 28..... *****	PF *****
154.3925 *****	.....do..... *****	27, 28..... *****	PF *****
154.4075 *****	.....do..... *****	27, 28..... *****	PF *****
154.4225 *****	.....do..... *****	27, 28..... *****	PF *****
154.4375 *****	.....do..... *****	27, 28..... *****	PF *****
154.4525 *****	.....do..... *****	27, 28, 80..... *****	PF *****
154.6575 *****	.....do..... *****	27..... *****	PP *****
154.6725 *****	.....do..... *****	16, 27..... *****	PP *****
154.6875 *****	.....do..... *****	16, 27..... *****	PP *****
154.7025 *****	.....do..... *****	16, 27..... *****	PP *****
154.7175 *****	.....do..... *****	27..... *****	PP *****
154.7325 *****	.....do..... *****	27..... *****	PP *****
154.7475 *****	.....do..... *****	27..... *****	PP *****

154.7625 *****	.....do..... *****	27..... *****	PP *****
154.7775 *****	.....do..... *****	27..... *****	PP *****
154.7925 *****	.....do..... *****	27..... *****	PP *****
154.8075 *****	.....do..... *****	27..... *****	PP *****
154.8225 *****	.....do..... *****	27..... *****	PP *****
154.8375 *****	.....do..... *****	27..... *****	PP *****
154.8525 *****	.....do..... *****	27..... *****	PP *****
154.8675 *****	.....do..... *****	27..... *****	PP *****
154.8825 *****	.....do..... *****	27..... *****	PP *****
154.8975 *****	.....do..... *****	27..... *****	PP *****
154.9275 *****	.....do..... *****	16, 27..... *****	PP *****
154.9425 *****	.....do..... *****	16, 27..... *****	PP *****
154.9575 *****	.....do..... *****	27..... *****	PP *****
154.9725 *****	.....do..... *****	27..... *****	PX *****
154.9875 *****	.....do..... *****	27..... *****	PX *****
155.0025 *****	.....do..... *****	27..... *****	PX *****

155.0175 *****	.....do..... *****	27..... *****	PP *****
155.0325 *****	.....do..... *****	27..... *****	PX *****
155.0475 *****	.....do..... *****	27..... *****	PX *****
155.0625 *****	.....do..... *****	27..... *****	PX *****
155.0775 *****	.....do..... *****	27..... *****	PP *****
155.0925 *****	.....do..... *****	27..... *****	PX *****
155.1075 *****	.....do..... *****	27..... *****	PX *****
155.1225 *****	.....do..... *****	27..... *****	PX *****
155.1375 *****	.....do..... *****	27..... *****	PP *****
155.1525 *****	.....do..... *****	27..... *****	PX *****
155.1675 *****	.....do..... *****	10, 27..... *****	PS *****
155.1825 *****	.....do..... *****	10, 27..... *****	PS *****
155.1975 *****	.....do..... *****	27..... *****	PP *****
155.2125 *****	.....do..... *****	10, 27..... *****	PS *****
155.2275 *****	.....do..... *****	10, 27..... *****	PS *****
155.2425 *****	.....do..... *****	10, 27..... *****	PS *****
155.2575 *****	.....do..... *****	27..... *****	PP *****

155.2725 *****	.....do..... *****	10, 27..... *****	PS *****
155.2875 *****	.....do..... *****	10, 27..... *****	PS *****
155.3025 *****	.....do..... *****	10, 27..... *****	PS *****
155.3175 *****	.....do..... *****	27..... *****	PP *****
155.3325 *****	.....do..... *****	27, 38, 39..... *****	PM *****
155.3475 *****	.....do..... *****	27, 39, 40..... *****	PM *****
155.3625 *****	.....do..... *****	27, 39, 40..... *****	PM *****
155.3775 *****	.....do..... *****	27..... *****	PP *****
155.3925 *****	.....do..... *****	27, 38, 39..... *****	PM *****
155.4075 *****	.....do..... *****	27, 38, 39..... *****	PM *****
155.4225 *****	.....do..... *****	27..... *****	PP *****
155.4375 *****	.....do..... *****	27..... *****	PP *****
155.4525 *****	.....do..... *****	16, 27..... *****	PP *****

155.4675 *****	.....do..... *****	16, 27..... *****	PP *****
155.4825 *****	.....do..... *****	27, 41..... *****	PP *****
155.4975 *****	.....do..... *****	27..... *****	PP *****
155.5125 *****	.....do..... *****	16, 27..... *****	PP *****
155.5275 *****	.....do..... *****	27..... *****	PP *****
155.5425 *****	.....do..... *****	27..... *****	PP *****
155.5575 *****	.....do..... *****	27..... *****	PP *****
155.5725 *****	.....do..... *****	27..... *****	PP *****
155.5875 *****	.....do..... *****	27..... *****	PP *****
155.6025 *****	.....do..... *****	27..... *****	PP *****
155.6175 *****	.....do..... *****	27..... *****	PP *****
155.6325 *****	.....do..... *****	27..... *****	PP *****
155.6475 *****	.....do..... *****	27..... *****	PP *****
155.6625 *****	.....do..... *****	27..... *****	PP *****
155.6775 *****	.....do..... *****	27..... *****	PP *****
155.6925 *****	.....do..... *****	27..... *****	PP *****

155.7075 *****	.....do..... *****	27..... *****	PP *****
155.7225 *****	.....do..... *****	27..... *****	PP *****
155.7375 *****	.....do..... *****	27..... *****	PP *****
155.7525 *****	.....do..... *****	27, 80, 83..... *****	PX *****
155.7675 *****	.....do..... *****	27..... *****	PX *****
155.7825 *****	.....do..... *****	27..... *****	PX *****
155.7975 *****	.....do..... *****	27..... *****	PP *****
155.8125 *****	.....do..... *****	27..... *****	PX *****
155.8275 *****	.....do..... *****	27..... *****	PX *****
155.8425 *****	.....do..... *****	27..... *****	PX *****
155.8575 *****	.....do..... *****	27..... *****	PP *****
155.8725 *****	.....do..... *****	27..... *****	PX *****
155.8875 *****	.....do..... *****	27..... *****	PX *****
155.9025 *****	.....do..... *****	27..... *****	PX *****
155.9175 *****	.....do..... *****	27..... *****	PP *****

155.9325 *****	.....do..... *****	27..... *****	PX *****
155.9475 *****	.....do..... *****	27..... *****	PX *****
155.9625 *****	.....do..... *****	27..... *****	PX *****
155.9775 *****	.....do..... *****	27..... *****	PP *****
155.9925 *****	.....do..... *****	27..... *****	PX *****
156.0075 *****	.....do..... *****	27..... *****	PX *****
156.0225 *****	.....do..... *****	27..... *****	PX *****
156.0375 *****	.....do..... *****	27..... *****	PP *****
156.0525 *****	.....do..... *****	27, 42..... *****	PH *****
156.0675 *****	.....do..... *****	27, 42..... *****	PH *****
156.0825 *****	.....do..... *****	27..... *****	PH *****
156.0975 *****	.....do..... *****	27..... *****	PP *****
156.1125 *****	.....do..... *****	27..... *****	PH *****
156.1275 *****	.....do..... *****	27..... *****	PH *****
156.1425 *****	.....do..... *****	27..... *****	PH *****

156.1575 *****	.....do..... *****	27..... *****	PP *****
156.1725 *****	.....do..... *****	27, 42, 43..... *****	PH *****
156.1875 *****	.....do..... *****	27, 42, 43..... *****	PH *****
156.2025 *****	.....do..... *****	27, 43..... *****	PH *****
156.2175 *****	.....do..... *****	27..... *****	PP *****
156.2325 *****	.....do..... *****	27, 43..... *****	PH *****
158.7375 *****	.....do..... *****	27, 80..... *****	PP *****
158.7525 *****	.....do..... *****	27..... *****	PX *****
158.7675 *****	.....do..... *****	27..... *****	PX *****
158.7825 *****	.....do..... *****	27..... *****	PX *****
158.7975 *****	.....do..... *****	27..... *****	PP *****
158.8125 *****	.....do..... *****	27..... *****	PX *****
158.8425 *****	.....do..... *****	27..... *****	PX *****
158.8575 *****	.....do..... *****	27..... *****	PP *****
158.8725 *****	.....do..... *****	27..... *****	PX *****

158.9025 *****	.....do..... *****	27..... *****	PX *****
158.9175 *****	.....do..... *****	27..... *****	PP *****
158.9325 *****	.....do..... *****	27..... *****	PX *****
158.9625 *****	.....do..... *****	27..... *****	PX *****
158.9775 *****	.....do..... *****	27..... *****	PP *****
158.9925 *****	.....do..... *****	27, 43..... *****	PH *****
159.0075 *****	.....do..... *****	27, 43..... *****	PH *****
159.0225 *****	.....do..... *****	27, 43..... *****	PH *****
159.0375 *****	.....do..... *****	27..... *****	PP *****
159.0525 *****	.....do..... *****	27, 43..... *****	PH *****
159.0675 *****	.....do..... *****	27, 43..... *****	PH *****
159.0825 *****	.....do..... *****	27, 43..... *****	PH *****
159.0975 *****	.....do..... *****	27..... *****	PP *****
159.1125 *****	.....do..... *****	27, 43..... *****	PH *****
159.1275 *****	.....do..... *****	27, 43..... *****	PH *****
159.1425 *****	.....do..... *****	27, 43..... *****	PH *****

159.1575 *****	.....do..... *****	27..... *****	PP *****
159.1725 *****	.....do..... *****	27, 43..... *****	PH *****
159.1875 *****	.....do..... *****	27..... *****	PH *****
159.2025 *****	.....do..... *****	27..... *****	PH *****
159.2175 *****	.....do..... *****	27..... *****	PP *****
159.2325 *****	.....do..... *****	27..... *****	PO *****
159.2475 *****	.....do..... *****	27, 46..... *****	PO *****
159.2625 *****	.....do..... *****	27, 46..... *****	PO *****
159.2775 *****	.....do..... *****	27, 46..... *****	PO *****
159.2925 *****	.....do..... *****	27, 46..... *****	PO *****
159.3075 *****	.....do..... *****	27, 46..... *****	PO *****
159.3225 *****	.....do..... *****	27, 46..... *****	PO *****
159.3375 *****	.....do..... *****	27, 46..... *****	PO *****
159.3525 *****	.....do..... *****	27, 46..... *****	PO *****
159.3675 *****	.....do..... *****	27, 46..... *****	PO *****
159.3825 *****	.....do..... *****	27, 46..... *****	PO *****

159.3975 *****	.....do..... *****	27, 46..... *****	PO *****
159.4125 *****	.....do..... *****	27, 46..... *****	PO *****
159.4275 *****	.....do..... *****	27, 46..... *****	PO *****
159.4425 *****	.....do..... *****	27, 46..... *****	PO *****
159.4575 *****	.....do..... *****	27..... *****	PO *****
159.4725 *****	.....do..... *****	27, 80..... *****	PO *****

(d) *****

(27) This frequency will be assigned with an authorized bandwidth not to exceed 11.25 kHz. In the 450-470 MHz band, secondary telemetry operations pursuant to § 90.238(e) will be authorized on this frequency.

(30) This frequency will be authorized a channel bandwidth of 25 kHz.

3. Section 90.35 is amended by revising the table in paragraph (b)(3), and paragraphs (c)(29) and (c)(30) to read as follows:

§ 90.35 Industrial/Business Pool.

(b) *****

(3) ***

INDUSTRIAL/BUSINESS POOL FREQUENCY TABLE

Frequency or band	Class of station(s)	Limitations	Coordinator
-------------------	---------------------	-------------	-------------

***** 150.8525 *****	*****do..... *****	***** 30..... *****	***** LA *****
150.8675 *****	....do..... *****	30..... *****	LA *****
150.8825 *****	....do..... *****	30..... *****	LA *****
150.8975 *****	....do..... *****	30..... *****	LA *****
150.9425 *****	....do..... *****	30..... *****	LA *****
150.9575 *****	....do..... *****	30..... *****	LA *****
150.9725 *****	....do..... *****	30..... *****	LA *****
150.9875 *****	....do..... *****	8, 30. *****	IP *****
151.0025 *****	....do..... *****	30, 31. *****	*****
151.0175 *****	....do..... *****	30, 31. *****	*****
151.0325 *****	....do..... *****	30, 31. *****	*****
151.0475 *****	....do..... *****	30, 31. *****	*****
151.0925 *****	....do..... *****	30, 31. *****	*****
151.1075 *****	....do..... *****	30, 31. *****	*****
151.1225 *****	....do..... *****	30, 31. *****	*****
151.1375 *****	....do..... *****	30, 31. *****	*****

151.1525 *****	....do..... *****	30, 31. *****	*****
151.1675 *****	....do..... *****	30, 31. *****	*****
151.2125 *****	....do..... *****	30, 31. *****	*****
151.2275 *****	....do..... *****	30, 31. *****	*****
151.2425 *****	....do..... *****	30, 31. *****	*****
151.2575 *****	....do..... *****	30, 31. *****	*****
151.2725 *****	....do..... *****	30, 31. *****	*****
151.2875 *****	....do..... *****	30, 31. *****	*****
151.3325 *****	....do..... *****	30, 31. *****	*****
151.3475 *****	....do..... *****	30, 31. *****	*****
151.3625 *****	....do..... *****	30, 31. *****	*****
151.3775 *****	....do..... *****	30, 31. *****	*****
151.3925 *****	....do..... *****	30, 31. *****	*****
151.4075 *****	....do..... *****	30, 31. *****	*****
151.4225 *****	....do..... *****	30, 31. *****	*****

151.4375 *****	....do..... *****	30, 31. *****	*****
151.4525 *****	....do..... *****	30, 31. *****	*****
151.4675 *****	....do..... *****	30, 31. *****	*****
151.4825 *****	....do..... *****	30, 31. *****	*****
151.4975 *****	....do..... *****	30, 32. *****	*****
151.5125 *****	....do..... *****	17, 30, *****	*****
151.5275 *****	....do..... *****	30 *****	*****
151.5425 *****	....do..... *****	30 *****	*****
151.5575 *****	....do..... *****	30 *****	*****
151.5725 *****	....do..... *****	30 *****	*****
151.5875 *****	....do..... *****	30 *****	*****
151.6025 *****	....do..... *****	30 *****	*****
151.6475 *****	....do..... *****	30 *****	*****
151.6625 *****	....do..... *****	30 *****	*****
151.670 151.6775 *****	....do..... ....do..... *****	30 30 *****	***** *****

151.700 *****	....do..... *****	10, 30, 34. *****	*****
151.7225 151.730 151.7375 *****	....do..... ....do..... ....do..... *****	30 30 30 *****	*****
151.760 *****	....do..... *****	10, 30, 34. *****	*****
151.7825 151.790 151.7975 *****	....do..... ....do..... ....do..... *****	30 30 30 *****	*****
151.8425 151.850 151.8575 *****	....do..... ....do..... ....do..... *****	30..... 30..... 30..... *****	*****
151.9025 151.910 151.9175 *****	....do..... ....do..... ....do..... *****	30..... 30..... 30..... *****	*****
151.9625 151.970 151.9775 *****	....do..... ....do..... ....do..... *****	30..... 30..... 30..... *****	*****
152.2775 *****	....do..... *****	6, 30. *****	*****
152.2925 *****	....do..... *****	6, 30.. *****	*****
152.3075 *****	....do..... *****	6, 30.. *****	*****
152.3225 *****	....do..... *****	6, 30.. *****	*****
152.3375 *****	....do..... *****	6, 30.. *****	*****

152.3525 *****	...do..... *****	6, 30.. *****	*****
152.3675 *****	...do..... *****	6, 30.. *****	*****
152.3825 *****	...do..... *****	6, 30.. *****	*****
152.3975 *****	...do..... *****	6, 30.. *****	*****
152.4125 *****	...do..... *****	6, 30.. *****	*****
152.4275 *****	...do..... *****	6, 30.. *****	*****
152.4425 *****	...do..... *****	6, 30.. *****	*****
152.4575 *****	...do..... *****	6, 30.. *****	*****
152.8775 *****	...do..... *****	30..... *****	*****
152.8925 *****	...do..... *****	30..... *****	*****
152.9075 *****	...do..... *****	30..... *****	*****
152.9225 *****	...do..... *****	30..... *****	*****
152.9375 *****	...do..... *****	30..... *****	*****
152.9525 *****	...do..... *****	30..... *****	*****
152.9675 *****	...do..... *****	30..... *****	*****
152.9825 *****	...do..... *****	30..... *****	*****

152.9975 *****	....do..... *****	30..... *****	*****
153.0125 *****	....do..... *****	30..... *****	*****
153.0275 *****	....do..... *****	30..... *****	*****
153.0425 *****	....do..... *****	30..... *****	*****
153.0575 *****	....do..... *****	4, 7, 30. *****	*****
153.0725 *****	....do..... *****	30..... *****	*****
153.0875 *****	....do..... *****	4, 7, 30. *****	*****
153.1025 *****	....do..... *****	30, 80. *****	*****
153.1175 *****	....do..... *****	4, 7, 30. *****	*****
153.1325 *****	....do..... *****	30..... *****	*****
153.1475 *****	....do..... *****	4, 7, 30. *****	*****
153.1625 *****	....do..... *****	30..... *****	*****
153.1775 *****	....do..... *****	4, 7, 30. *****	*****
153.1925 *****	....do..... *****	30..... *****	*****
153.2075 *****	....do..... *****	4, 7, 30. *****	*****
153.2225 *****	....do..... *****	30..... *****	*****

153.2375 *****	....do..... *****	4, 7, 30. *****	*****
153.2525 *****	....do..... *****	30..... *****	*****
153.2625 *****	....do..... *****	4, 7, 30. *****	*****
153.2825 *****	....do..... *****	30..... *****	*****
153.2975 *****	....do..... *****	4, 7, 30. *****	*****
153.3125 *****	....do..... *****	30..... *****	*****
153.3275 *****	....do..... *****	4, 7, 30. *****	*****
153.3425 *****	....do..... *****	30..... *****	*****
153.3575 *****	....do..... *****	4, 7, 30. *****	*****
153.3725 *****	....do..... *****	30..... *****	*****
153.3875 *****	....do..... *****	30..... *****	*****
153.4025 *****	....do..... *****	30..... *****	*****
153.4175 *****	....do..... *****	30..... *****	IW *****
153.4325 *****	....do..... *****	30, 80. *****	IP, IW *****
153.4475 *****	....do..... *****	30, 80. *****	IP, IW *****
153.4625 *****	....do..... *****	30, 80. *****	IP, IW *****

153.4775 *****	....do..... *****	30..... *****	IW *****
153.4925 *****	....do..... *****	30, 80. *****	IP, IW *****
153.5075 *****	....do..... *****	30, 80. *****	IP, IW *****
153.5225 *****	....do..... *****	30, 80. *****	IP, IW *****
153.5375 *****	....do..... *****	30..... *****	IW *****
153.5525 153.560 153.5675 *****	....do..... ....do..... ....do..... *****	30, 80. 30, 80. 30, 80. *****	IP, IW IP, IW IP, IW *****
153.5825 *****	....do..... *****	30, 80. *****	IP, IW *****
153.5975 *****	....do..... *****	30..... *****	IW *****
153.6125 *****	....do..... *****	30, 80. *****	IP, IW *****
153.6275 *****	....do..... *****	30, 80. *****	IP, IW *****
153.6425 *****	....do..... *****	30, 80. *****	IP, IW *****
153.6575 *****	....do..... *****	30, 80. *****	IW *****
153.6725 *****	....do..... *****	30, 80. *****	IP, IW *****
153.6875 *****	....do..... *****	30, 80. *****	IP, IW *****
153.7025 *****	....do..... *****	30..... *****	IW *****

153.7175 *****	....do..... *****	30..... *****	IW *****
153.7325 *****	....do..... *****	30..... *****	IW *****
154.4825 *****	Base or Mobile *****	30..... *****	*****
154.4975 154.505 *****	....do..... ....do..... *****	30..... 30..... *****	*****
154.5275 *****	Mobile *****	10, 30, 34. *****	*****
154.5475 *****	....do..... *****	30..... *****	*****
154.640 *****	...Base..... *****	30, 36, 37, 48. *****	*****
157.4775 *****	....do..... *****	12, 30. *****	LA *****
157.4925 *****	....do..... *****	12, 30. *****	LA *****
157.5075 *****	....do..... *****	12, 30. *****	LA *****
157.5225 *****	....do..... *****	12, 30. *****	LA *****
157.5375 *****	....do..... *****	6, 30. *****	*****
157.5525 *****	....do..... *****	6, 30. *****	*****
157.5675 *****	....do..... *****	6, 30. *****	*****
157.5825 *****	....do..... *****	6, 30.. *****	*****
157.5975 *****	....do..... *****	6, 30.. *****	*****

157.6125 *****	....do..... *****	6, 30.. *****	*****
157.6275 *****	....do..... *****	6, 30.. *****	*****
157.6425 *****	....do..... *****	6, 30.. *****	*****
157.6575 *****	....do..... *****	6, 30.. *****	*****
157.6725 *****	....do..... *****	6, 30.. *****	*****
157.6875 *****	....do..... *****	6, 30.. *****	*****
157.7025 *****	....do..... *****	6, 30.. *****	*****
157.7175 *****	....do..... *****	6, 30.. *****	*****
158.1375 *****	....do..... *****	30..... *****	IW *****
158.1525 *****	....do..... *****	30..... *****	IP, IW *****
158.1675 *****	....do..... *****	30..... *****	IP, IW *****
158.1825 *****	....do..... *****	30, 81. *****	IP, IW *****
158.1975 *****	....do..... *****	30..... *****	IW *****
158.2125 *****	....do..... *****	30, 81. *****	IP, IW *****
158.2275 *****	....do..... *****	30, 81. *****	IP, IW *****
158.2425 *****	....do..... *****	30, 81. *****	IP, IW *****

158.2575 *****	...do..... *****	30..... *****	IW *****
158.2725 *****	...do..... *****	30, 81. *****	IP, IW *****
158.2875 *****	...do..... *****	30..... *****	IP *****
158.3025 *****	...do..... *****	30..... *****	IP *****
158.3175 *****	...do..... *****	4, 7, 30. *****	IP *****
158.3325 *****	...do..... *****	30..... *****	IP *****
158.3475 *****	...do..... *****	30..... *****	*****
158.3625 *****	...do..... *****	30..... *****	IP *****
158.3775 *****	...do..... *****	4, 7, 30. *****	IP *****
158.3925 *****	...do..... *****	30..... *****	*****
158.4075 *****	...do..... *****	17, 30. *****	*****
158.4225 *****	...do..... *****	30..... *****	IP *****
158.4375 *****	...do..... *****	4, 7, 30. *****	IP *****
159.4875 *****	...do..... *****	8, 30. *****	IP *****
159.5025 *****	...do..... *****	30..... *****	*****
159.5175 *****	...do..... *****	30..... *****	*****

159.5325 *****	...do..... *****	30..... *****	*****
159.5475 *****	...do..... *****	30..... *****	*****
159.5625 *****	...do..... *****	30..... *****	*****
159.5775 *****	...do..... *****	30..... *****	*****
159.5925 *****	...do..... *****	30..... *****	*****
159.6075 *****	...do..... *****	30..... *****	*****
159.6225 *****	...do..... *****	30..... *****	*****
159.6375 *****	...do..... *****	30..... *****	*****
159.6525 *****	...do..... *****	30..... *****	*****
159.6675 *****	...do..... *****	30..... *****	*****
159.6825 *****	...do..... *****	30..... *****	*****
159.6975 *****	...do..... *****	30..... *****	*****
159.7125 *****	...do..... *****	30..... *****	*****
159.7275 *****	...do..... *****	30..... *****	*****
159.7425 *****	...do..... *****	30..... *****	*****
159.7575 *****	...do..... *****	30..... *****	*****

159.7725 *****	...do..... *****	30..... *****	*****
159.7875 *****	...do..... *****	30..... *****	*****
159.8025 *****	...do..... *****	30..... *****	*****
159.8175 *****	...do..... *****	30..... *****	*****
159.8325 *****	...do..... *****	30..... *****	*****
159.8475 *****	...do..... *****	30..... *****	*****
159.8625 *****	...do..... *****	30..... *****	*****
159.8775 *****	...do..... *****	30..... *****	*****
159.8925 *****	...do..... *****	30..... *****	*****
159.9075 *****	...do..... *****	30..... *****	*****
159.9225 *****	...do..... *****	30..... *****	*****
159.9375 *****	...do..... *****	30..... *****	*****
159.9525 *****	...do..... *****	30..... *****	*****
159.9675 *****	...do..... *****	30..... *****	*****
159.9825 *****	...do..... *****	30..... *****	*****

159.9975 *****	...do..... *****	30..... *****	*****
160.0125 *****	...do..... *****	30..... *****	*****
160.0275 *****	...do..... *****	30..... *****	*****
160.0425 *****	...do..... *****	30..... *****	*****
160.0575 *****	...do..... *****	30..... *****	*****
160.0725 *****	...do..... *****	30..... *****	*****
160.0875 *****	...do..... *****	30..... *****	*****
160.1025 *****	...do..... *****	30..... *****	*****
160.1175 *****	...do..... *****	30..... *****	*****
160.1325 *****	...do..... *****	30..... *****	*****
160.1475 *****	...do..... *****	30..... *****	*****
160.1625 *****	...do..... *****	30..... *****	*****
160.1775 *****	...do..... *****	30..... *****	*****
160.1925 *****	...do..... *****	30..... *****	*****
160.2075 *****	...do..... *****	30..... *****	*****
160.2225 *****	...do..... *****	30, 50. *****	LR *****
160.2375 *****	...do..... *****	30, 50. *****	LR *****

160.2525 *****	....do..... *****	30, 50. *****	LR *****
160.2675 *****	....do..... *****	30, 50. *****	LR *****
160.2825 *****	....do..... *****	30, 50. *****	LR *****
160.2975 *****	....do..... *****	30, 50. *****	LR *****
160.3125 *****	....do..... *****	30, 50. *****	LR *****
160.3275 *****	....do..... *****	30, 50. *****	LR *****
160.3425 *****	....do..... *****	30, 50. *****	LR *****
160.3575 *****	....do..... *****	30, 50. *****	LR *****
160.3725 *****	....do..... *****	30, 50. *****	LR *****
160.3875 *****	....do..... *****	30, 50. *****	LR *****
160.4025 *****	....do..... *****	30, 50. *****	LR *****
160.4175 *****	....do..... *****	30, 50, 52. *****	LR *****
160.4325 *****	....do..... *****	30, 50, 52. *****	LR *****
160.4475 *****	....do..... *****	30, 50, 52. *****	LR *****
160.4625 *****	....do..... *****	30, 50, 52. *****	LR *****
160.4775 *****	....do..... *****	30, 50, 52. *****	LR *****

160.4925 *****	....do..... *****	30, 50, 52. *****	LR *****
160.5075 *****	....do..... *****	30, 50, 52. *****	LR *****
160.5225 *****	....do..... *****	30, 50, 52. *****	LR *****
160.5375 *****	....do..... *****	30, 50, 52. *****	LR *****
160.5525 *****	....do..... *****	30, 50, 52. *****	LR *****
160.5675 *****	....do..... *****	30, 50, 52. *****	LR *****
160.5825 *****	....do..... *****	30, 50, 52. *****	LR *****
160.5975 *****	....do..... *****	30, 50, 52. *****	LR *****
160.6125 *****	....do..... *****	30, 50, 52. *****	LR *****
160.6275 *****	....do..... *****	30, 50. *****	LR *****
160.6425 *****	....do..... *****	30, 50. *****	LR *****
160.6575 *****	....do..... *****	30, 50. *****	LR *****
160.6725 *****	....do..... *****	30, 50. *****	LR *****
160.6875 *****	....do..... *****	30, 50. *****	LR *****
160.7025 *****	....do..... *****	30, 50. *****	LR *****
160.7175 *****	....do..... *****	30, 50. *****	LR *****

160.7325 *****	....do..... *****	30, 50. *****	LR *****
160.7475 *****	....do..... *****	30, 50. *****	LR *****
160.7625 *****	....do..... *****	30, 50. *****	LR *****
160.7775 *****	....do..... *****	30, 50. *****	LR *****
160.7925 *****	....do..... *****	30, 50. *****	LR *****
160.8075 *****	....do..... *****	30, 50. *****	LR *****
160.8225 *****	....do..... *****	30, 50. *****	LR *****
160.8375 *****	....do..... *****	30, 50. *****	LR *****
160.8525 *****	....do..... *****	30, 50. *****	LR *****
160.8675 *****	....do..... *****	30, 50, 51. *****	LR *****
160.8825 *****	....do..... *****	30, 50, 51. *****	LR *****
160.8975 *****	....do..... *****	30, 50, 51. *****	LR *****
160.9125 *****	....do..... *****	30, 50, 51. *****	LR *****
160.9275 *****	....do..... *****	30, 50, 51. *****	LR *****
160.9425 *****	....do..... *****	30, 50, 51. *****	LR *****
160.9575 *****	....do..... *****	30, 50, 51. *****	LR *****

160.9725 *****	....do..... *****	30, 50, 51. *****	LR *****
160.9875 *****	....do..... *****	30, 50, 51. *****	LR *****
161.0025 *****	....do..... *****	30, 50, 51. *****	LR *****
161.0175 *****	....do..... *****	30, 50, 51. *****	LR *****
161.0475 *****	....do..... *****	30, 50, 51. *****	LR *****
161.0625 *****	....do..... *****	30, 50, 51. *****	LR *****
161.0775 *****	....do..... *****	30, 50, 51. *****	LR *****
161.0925 *****	....do..... *****	30, 50, 51. *****	LR *****
161.1075 *****	....do..... *****	30, 50, 51. *****	LR *****
161.1225 *****	....do..... *****	30, 50, 51. *****	LR *****
161.1375 *****	....do..... *****	30, 50, 51. *****	LR *****
161.1525 *****	....do..... *****	30, 50, 51. *****	LR *****
161.1675 *****	....do..... *****	30, 50, 51. *****	LR *****
161.1825 *****	....do..... *****	30, 50, 51. *****	LR *****
161.1975 *****	....do..... *****	30, 50, 51. *****	LR *****
161.2125 *****	....do..... *****	30, 50, 51. *****	LR *****

161.2275 *****	....do..... *****	30, 50, 51. *****	LR *****
161.2425 *****	....do..... *****	30, 50, 51. *****	LR *****
161.2575 *****	....do..... *****	30, 50, 51. *****	LR *****
161.2725 *****	....do..... *****	30, 50, 51. *****	LR *****
161.2875 *****	....do..... *****	30, 50, 51. *****	LR *****
161.3025 *****	....do..... *****	30, 50, 51. *****	LR *****
161.3175 *****	....do..... *****	30, 50, 51. *****	LR *****
161.3325 *****	....do..... *****	30, 50, 51. *****	LR *****
161.3475 *****	....do..... *****	30, 50, 51. *****	LR *****
161.3625 *****	....do..... *****	30, 50, 51. *****	LR *****
161.3775 *****	....do..... *****	30, 50, 51. *****	LR *****
161.3925 *****	....do..... *****	30, 50, 52. *****	LR *****
161.4075 *****	....do..... *****	30, 50, 52. *****	LR *****
161.4225 *****	....do..... *****	30, 50, 52. *****	LR *****
161.4375 *****	....do..... *****	30, 50, 52. *****	LR *****
161.4525 *****	....do..... *****	30, 50, 52. *****	LR *****

161.4675 *****	....do..... *****	30, 50, 52. *****	LR *****
161.4825 *****	....do..... *****	30, 50, 52. *****	LR *****
161.4975 *****	....do..... *****	30, 50, 52. *****	LR *****
161.5125 *****	....do..... *****	30, 50, 52. *****	LR *****
161.5275 *****	....do..... *****	30, 50, 52. *****	LR *****
161.5425 *****	....do..... *****	30, 50, 52. *****	LR *****
161.5575 *****	....do..... *****	30, 50, 52. *****	LR *****

(c) *****

(29) This frequency will be authorized a channel bandwidth of 25 kHz. Except when limited elsewhere, one-way paging transmitters on this frequency may operate with an output power of 350 watts.

(30) This frequency will be assigned with an authorized bandwidth not to exceed 11.25 kHz. In the 450-470 MHz band, secondary telemetry operations pursuant to § 90.238(e) will be authorized on this frequency.

4. Section 90.203 is amended by redesignating current paragraphs (j)(6)-(10) as (j)(7)-(11), adding new paragraphs (j)(4)(iii), (j)(4)(iv), (j)(6), (j)(6)(i), (j)(6)(ii), and (j)(6)(iii), and revising paragraphs (j)(4)(ii), (j)(8) [as redesignated], and (j)(11) [as redesignated] to read as follows:

§ 90.203 Certification required.

(j) *****

(2) Applications for certification received on or after February 14, 1997 but before January 1, 2005 will only be granted for equipment with the following channel bandwidths:

(3) Applications for part 90 certification of transmitters designed to operate on frequencies in the 150-174 MHz and/or 421-512 MHz bands, received on or after February 14, 1997, but before January 1, 2005, must include a certification that the equipment meets a spectrum efficiency standard of one voice channel per 12.5 kHz of channel bandwidth. Additionally, if the equipment is capable of transmitting data, has transmitter output power greater than 500 mW, and has a channel bandwidth of more than 6.25 kHz, the equipment must be capable of supporting a minimum data rate of 4800 bits per second per 6.25

kHz of channel bandwidth.

* * * * *

(4) * * * * *

(ii) 12.5 kHz for multi-bandwidth mode equipment with a maximum channel bandwidth of 12.5 kHz if it is capable of operating on channels of 6.25 kHz or less;

(iii) 25 kHz for multi-bandwidth mode equipment with a maximum channel bandwidth of 25 kHz if it is capable of operating on channels of 6.25 kHz or less; and

(iv) Up to 25 kHz if the equipment meets the efficiency standard of paragraph (j)(5) of this section.

* * * * *

(6) Applications for certification received on or after January 1, 2011, except for hand-held transmitters with an output power of two watts or less, will only be granted for equipment with the following channel bandwidths:

(i) 6.25 kHz or less for single bandwidth mode equipment;

(ii) 12.5 kHz for multi-bandwidth mode equipment with a maximum channel bandwidth of 12.5 kHz if it is capable of operating on channels of 6.25 kHz or less; and

(iii) Up to 25 kHz if the equipment meets the efficiency standard of paragraph (j)(5) of this section.

* * * * *

(8) Transmitters designed only for one-way paging operations may b

* * * * *

(11) Except as provided below, single-mode and multi-mode transmitters designed to operate in the 150-174 MHz and 421-512 MHz bands that operate with a maximum channel bandwidth greater than 12.5 kHz shall not be manufactured in, or imported into, the United States after January 1, 2011, except as noted below:

(a) to the extent that the equipment meets the efficiency standard of paragraph (j)(3) of this section, or

(b) where operation with a bandwidth greater than 12.5 kHz is specified elsewhere.

* * * * *

5. Section 90.209 is amended by revising footnote 3 in the table in paragraph (b)(5) and revising paragraph (b)(6) to read as follows:

§ 90.209 Bandwidth limitation.

* * * * *

(b) * * * * *

(5) * * * * *

/3/ Operations using equipment using a 25 kHz bandwidth will be authorized a 20 kHz bandwidth. Operations using equipment designed to operate with a 12.5 kHz channel bandwidth will be authorized an 11.25 kHz bandwidth. Operations using equipment designed to operate with a 6.25 kHz channel bandwidth will be authorized a 6 kHz bandwidth. All stations 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 section 90.203(j)(3) of this chapter, or unless specified elsewhere.

* * * * *

(6)(i) Beginning January 1, 2011, no new applications for the 150-174 MHz and/or 421-512 MHz bands will be acceptable for filing if the applicant utilizes channels with an authorized bandwidth exceeding 11.25 kHz, unless specified elsewhere or the operations meet the efficiency standards of

section 90.203(j)(3) of this chapter.

(ii) Beginning January 1, 2011, no modification applications for stations in the 150-174 MHz and/or 421-512 MHz bands that increase the station's authorized interference contour, will be acceptable for filing if the applicant utilizes channels with an authorized bandwidth exceeding 11.25 kHz, unless specified elsewhere or the operations meet the efficiency standards of section 90.203(j)(3) of this chapter. See § 90.187(b)(2)(iii) and (iv) of this chapter for interference contour designations and calculations. Applications submitted pursuant to this paragraph must comply with frequency coordination requirements of § 90.175 of this chapter.

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APPENDIX C – SUPPLEMENTAL FINAL REGULATORY FLEXIBILITY ANALYSIS

As required by the Regulatory Flexibility Act (RFA),¹³⁸ a Final Regulatory Flexibility Analysis (RFA) was incorporated in the *Second Report and Order and Second Further Notice of Proposed Rule Making (Second R&O and Second Further Notice)*¹³⁹ in WT Docket 99-87. The Commission sought written public comment on the proposals in the 2nd FNPRM. In view of the fact that we have adopted further rule amendments in this *Third Memorandum Opinion and Order*, we have included this Supplemental Final Regulatory Flexibility Analysis (SFRFA). This Supplemental Final Regulatory Flexibility Analysis (SFRFA) conforms to the RFA.¹⁴⁰

Reason for, and Objectives of, the *Third Memorandum Opinion and Order*:

The *Third Memorandum Opinion and Order (Third MO&O)* adopts rules to promote the transition to narrowband technology in bands 150-174 MHz and 421-512 MHz. Specifically, we amend our rules to impose a deadline for migration to 12.5 kHz technology for both Public Safety Radio Pool and Industrial/Business Radio Pool licensees operating Private Land Mobile Radio Service (PLMRS) systems on those bands, beginning January 1, 2013. In addition, we amend our rules to prohibit the certification of any equipment capable of operating at one voice path per 25 kHz of spectrum, *i.e.*, multi-mode equipment that includes a 25 kHz mode, beginning January 1, 2011. We also prohibit the manufacture and importation of 25 kHz equipment (including multi-mode equipment that can operate on a 25 kHz bandwidth) beginning January 1, 2011. We will permit all licensees operating on these bands to modify existing systems, including modifications that expand coverage area, with 25 kHz equipment until January 1, 2011. No later than December 31, 2009 the Commission will issue a Public Notice of the impending January 1, 2011 deadline for filing new applications and modifications of any systems utilizing 25 kHz channels. This notice will also inform the public of the frequency coordinators cutoff date for accepting said applications. The Public Notice will also serve as a reminder that all Public Safety Radio Pool and Industrial/Business Radio Pool licensees are required to migrate to 12.5 kHz by January 1, 2013. These actions will effect a transition to a narrowband channel plan. The resulting gain in efficiency will ease congestion on the PLMRS channels in these bands.

Summary of Significant Issues Raised by Public Comments in Response to the FRFA:

No comments or reply comments were filed in direct response to the FRFA. The Commission has, however, reviewed the general comments that may impact small businesses. Much of the potential impact on small businesses arises from the mandatory migration to 12.5 kHz technology beginning on January 1, 2011, the ban on importation and manufacture of 25 kHz equipment after January 1, 2011 and the freeze on new 25 kHz applications. The costs associated with replacement of current

¹³⁸ See 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).

¹³⁹ 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; Establishment of Public Service Radio Pool in the Private Mobile Frequencies Below 800 MHz; Petition for Rule Making of the American Mobile Telecommunications Association, *Report and Order and Further Notice of Proposed Rule Making*, WT Docket No. 99-87, RM-9332, RM-9405, RM-9705, 15 FCC Rcd 22709 (1999) (“*R&O and FNPRM*”).

¹⁴⁰ See 5 U.S.C. § 604.

systems were cited in opposition to mandatory conversion proposals.

Description and Estimate of the Number of Small Entities to Which the Rules Apply:

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. The RFA generally defines the term “small entity” as having the same meaning as the terms “small business,” “small organization,” and “small governmental jurisdiction.”¹⁴¹ In addition, the term “small business” has the same meaning as the term “small business concern” under the Small Business Act.¹⁴² 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).¹⁴³ A small organization is generally “any not-for-profit enterprise which is independently owned and operated and is not dominant in its field.”¹⁴⁴ Nationwide, as of 1992, there were approximately 275,801 small organizations.¹⁴⁵

The rule changes effectuated by this 3rd MO&O apply to licensees and applicants of private land mobile frequencies in the 150-174 MHz and 421-512 MHz bands, and to manufactures of radio equipment.

Private Land Mobile Radio (PLMR). PLMR systems serve an essential role in a vast range of industrial, business, land transportation and public service activities. These radios are used by companies of all sizes that operate in all U.S. business categories. Because of the vast array of PLMR users, the Commission had not developed, nor would it be possible to develop, a definition of small entities specifically applicable to PLMR users. For the purpose of determining whether a licensee is a small business as defined by the Small Business Administration (SBA), each licensee would need to be evaluated within its own business area. The Commission’s fiscal year 1994 annual report indicates that, at the end of fiscal year 1994, there were 1,087,276 licensees operating 12,481,989 transmitters in the PLMR bands below 512 MHz.¹⁴⁶ Further, because any entity engaged in a commercial activity is eligible to hold a PLMR license, these rules could potentially impact every small business in the U.S.

Public Safety. Public Safety Radio Pool services include police, fire, local governments, forestry conservation, highway maintenance, and emergency medical services.¹⁴⁷ The SBA rules contain a

¹⁴¹ See 5 U.S.C. § 601(6).

¹⁴² 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 which are appropriate to the activities of the agency and publishes such definition(s) in the Federal Register.

¹⁴³ Small Business Act, 5 U.S.C. § 632 (1996).

¹⁴⁴ 5 U.S.C. § 601(4).

¹⁴⁵ 1992 Economic Census, U.S. Bureau of the Census, Table 6 (special tabulation of data under contract to the Office of Advocacy of the Small Business Administration).

¹⁴⁶ See Federal Communications Commission, 60th Annual Report, Fiscal Year 1994 at 120-121.

¹⁴⁷ With the exception of the special emergency service, these services are governed by Subpart B of Part 90 of the Commission's rules. 47 C.F.R. §§ 90.15 through 90.27. The police service includes 26,608 licensees that serve (continued...)

definition for small radiotelephone (wireless) companies, which encompass business entities engaged in radiotelephone communications employing no more than 1,500 persons.¹⁴⁸ There are a total of approximately 127,540 licensees within these services. Governmental entities as well as private businesses comprise the licensees for these services. The RFA also includes small governmental entities as a part of the regulatory flexibility analysis.¹⁴⁹ “Small governmental jurisdiction” generally means “governments of cities, counties, towns, townships, villages, school districts, or special districts, with a population of less than 50,000.”¹⁵⁰ As of 1992, there were approximately 85,006 such jurisdictions in the United States.¹⁵¹ This number includes 38,978 counties, cities and towns; of these, 37,566, or 96 percent, have populations of fewer than 50,000.¹⁵² The Census Bureau estimates that this ratio is approximately accurate for all governmental entities. Thus, of the 85,006 governmental entities, the Commission estimates that 81,600 (96 percent) are small entities.

Equipment Manufacturers. We anticipate that at least six radio equipment manufacturers will be affected by our decisions in this proceeding. According to the SBA's regulations, a radio and television broadcasting and communications equipment manufacturer must have 750 or fewer employees in order to qualify as a small business concern.¹⁵³ Census Bureau data indicate that there are 858 U.S. firms that manufacture radio and television broadcasting and communications equipment, and that 778 of these firms have fewer than 750 employees and would therefore be classified as small entities.¹⁵⁴

Description of Projected Reporting, Recordkeeping and Other Compliance Requirements:

(Continued from previous page) _____

state, county and municipal enforcement through telephony (voice), telegraphy (code) and teletype and facsimile (printed material). The fire radio service includes 22,677 licensees comprised of private volunteer or professional fire companies as well as units under governmental control. The local government service that is presently comprised of 40,512 licensees that are state, county or municipal entities that use the radio for official purposes not covered by other public safety services. There are 7,325 licensees within the forestry service which is comprised of licensees from state departments of conservation and private forest organizations who set up communications networks among fire lookout towers and ground crews. The 9,480 state and local governments are licensed to highway maintenance service provide emergency and routine communications to aid other public safety services to keep main roads safe for vehicular traffic. The 1,460 licensees in the Emergency Medical Radio Service (EMRS) use the 39 channels allocated to this service for emergency medical service communications related to the actual delivery of emergency medical treatment. 47 C.F.R. §§ 90.15 through 90.27. The 19,478 licensees in the special emergency service include medical services, rescue organizations, veterinarians, handicapped persons, disaster relief organizations, school buses, beach patrols, establishments in isolated areas, communications standby facilities and emergency repair of public communication facilities. 47 C.F.R. §§ 90.33 through 90.55.

¹⁴⁸ See 13 C.F.R. § 121.201 (NAICS Codes 513321, 513322, 513330).

¹⁴⁹ See 5 U.S.C. § 601(5) (including cities, counties, towns, townships, villages, school districts, or special districts).

¹⁵⁰ 5 U.S.C. § 601(5).

¹⁵¹ U.S. Dept. of Commerce, Bureau of the Census, "1992 Census of Governments."

¹⁵² *Id.*

¹⁵³ 13 C.F.R. § 121.201, Standard Industrial Code (SIC) 3663.

¹⁵⁴ U.S. Dept. of Commerce, *1992 Census of Transportation, Communications and Utilities* (issued May 1995), SIC 3663.

This *Third MO&O* adopts rules to promote the transition to narrowband technology for private land mobile licensees, in the 150-174 MHz and 421-512 MHz bands. In particular, applications for operations on 25 kHz equipment will be accepted until January 1, 2011. We will permit all licensees operating on these bands to modify existing systems, including modifications that expand coverage area, with 25 kHz equipment until January 1, 2011. No later than December 31, 2009 the Commission will issue a Public Notice of the impending January 1, 2011 deadline for filing new applications and modifications of any systems utilizing 25 kHz channels. This notice will also inform the public of the frequency coordinators cutoff date for accepting said applications. The Public Notice will also serve as a reminder that all Public Safety Radio Pool and Industrial/Business Radio Pool licensees are required to migrate to 12.5 kHz by January 1, 2013. Further, this *Third MO&O* amends our current rules to prohibit the importation or manufacture of 25 kHz-only equipment beginning on January 1, 2011. All equipment utilized on or after January 1, 2013 must utilize a maximum channel bandwidth of 12.5 kHz, or meet the narrowband efficiency standard of one channel per 6.25 kHz (voice) or 4800 bits per second per 6.25 kHz (data).

Steps Taken to Minimize Significant Economic Impact on Small Entities and Significant Alternatives Considered:

The FRFA requires an agency to describe any significant alternatives that it has considered in reaching its proposed 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 or reporting requirements under the rule for 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 small entities.¹⁵⁵

The Commission adopted rules in this *Third MO&O* upon consideration of the economic burden on small businesses. For instance, many commenters supported adoption of rules that would require conversion of Industrial/Business Radio Pool licensees to 12.5 kHz equipment as early as January 1, 2008. Such a proposal fails to give any consideration to the amortization and life-span of current equipment and the resources available to small entities. Rather than require small business licensees to convert its system to 12.5 kHz or equivalent technology beginning on January 1, 2008, we retain our current rules governing mandatory migration to 12.5 kHz or equivalent technology until January 1, 2013 for Industrial/Business Radio Pool systems. Likewise, for Public Safety Radio Pool systems, many commenters supported adoption of rules that would require conversion of Public Safety Radio Pool systems to 12.5 kHz equipment as early as January 1, 2013. In recognizing the need for clarity and uniformity in a single final migration date, and in consideration of the development and readiness of public safety operators in general, we amend our rules to accelerate the mandatory migration to 12.5 kHz or equivalent technology to January 1, 2013 for INDUSTRIAL/Business Radio Pool PLMR systems. We rejected a phased approach that would have burdened licensees to determine which market and which date applied to them. We also rejected an approach that would assign different migration dates based on definitional concepts of urban or rural. Although we employ intermediary steps to promote migration to 12.5 kHz equipment, we believe that delaying the effective dates of these interim measures closer to the final migration date adopted herein will best facilitate a complete and seamless migration to 12.5 kHz narrowband equipment. We declined to initiate a plan at this time to mandate a further migration to narrowband equipment based on a 6.25 kHz standard as premature. Exemption from coverage of the rule changes for small businesses would frustrate the purpose of the rule, *i.e.*, migration to more efficient spectrum use, and facilitate

¹⁵⁵ See 5 U.S.C. § 603(c).

continued inefficient use of spectrum.

Report to Congress:

The Commission will send a copy of this *Third Memorandum Opinion and Order, Third Further Notice of Proposed Rule Making and Order*, including this SFRFA, in a report to be sent to Congress pursuant to the Small Business Regulatory Enforcement Fairness Act of 1996, *see* 5 U.S.C. § 801(a)(1) (A). In addition, the Commission will send a copy of the *Third Memorandum Opinion and Order, Third Further Notice of Proposed Rule Making and Order*, including this SFRFA, to the Chief Counsel for Advocacy of the Small Business Administration. A copy of the *Third Memorandum Opinion and Order, Third Further Notice of Proposed Rule Making and Order* and SFRFA (or summaries thereof) will also be published in the Federal Register. *See* 5 U.S.C. § 604(b).

APPENDIX D – INITIAL REGULATORY FLEXIBILITY ANALYSIS

As required by the Regulatory Flexibility Act (“RFA”),¹⁵⁶ the Commission has prepared this present Initial Regulatory Flexibility Analysis (“IRFA”) of the possible significant economic impact on small entities by the policies and rules proposed in this *Third Further Notice of Proposed Rule Making* (“*Third Further Notice*”). Written public comments are requested on this IRFA. Comments must be identified as responses to the IRFA and must be filed by the deadlines for comments on this Further Notice provided above in paras. 52-55, *supra*. The Commission will send a copy of the *Third Further Notice*, including this IRFA, to the Chief Counsel for Advocacy of the Small Business Administration (“SBA”).¹⁵⁷ In addition, the *Third Further Notice* and IRFA (or summaries thereof) will be published in the Federal Register.¹⁵⁸

Need for, and Objectives of, the Proposed Rules:

The purpose of this *Third Further Notice* is to determine whether it would be in the public interest, convenience, and necessity to amend our rules governing private land mobile radio licensees in the 150-174 MHz and 421-512 MHz bands to modify or eliminate the requirement in Section 90.203(j)(5) of our Rules that require applications for certification of equipment received on or after January 1, 2005 operating with a 25 kHz bandwidth only to the extent that the equipment meets the spectrum efficiency standard of one channel per 6.25 kHz of channel bandwidth (voice) or 4800 bits per second per 6.25 kHz (data).

Legal Basis:

Authority for issuance of this *Third Further Notice* is contained in Sections 4(i), 303(r), and 332(a)(2) of the Communications Act of 1934, as amended.¹⁵⁹

Description and Estimate of the Number of Small Entities to Which the Proposed Rules Will Apply:

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.¹⁶⁰ Under the RFA, small entities may include small organizations, small businesses, and small governmental jurisdictions.¹⁶¹ The RFA generally defines the term “small business” as having the same meaning as the term “small business concern” under the Small Business Act.¹⁶² 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

¹⁵⁶ 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).

¹⁵⁷ See 5 U.S.C. § 603(a).

¹⁵⁸ See *id.*

¹⁵⁹ 47 U.S.C. §§ 154(i), 303(r), 332(a)(2).

¹⁶⁰ See 5 U.S.C. § 603(b)(3).

¹⁶¹ See 5 U.S.C. § 601(6).

¹⁶² Compare 5 U.S.C. § 601(3) (RFA) with 15 U.S.C. § 632 (SBA).

additional criteria established by the SBA.¹⁶³ A small organization is generally “any not-for-profit enterprise which is independently owned and operated and is not dominant in its field.”¹⁶⁴ Nationwide, as of 1992, there were approximately 275,801 small organizations.¹⁶⁵

The proposed rule amendments may affect users of Public Safety Radio Pool services and private radio licensees that are regulated under Part 90 of the Commission’s rules, and may also affect manufacturers of radio equipment. An analysis of the number of small entities affected follows.

Public safety services and Governmental entities. Public safety radio services include police, fire, local governments, forestry conservation, highway maintenance, and emergency medical services.¹⁶⁶ The SBA rules contain a definition for small radiotelephone (wireless) companies that encompass business entities engaged in radiotelephone communications employing no more than 1,500 persons.¹⁶⁷ There are a total of approximately 127,540 licensees within these services. Governmental entities as well as private businesses comprise the licensees for these services. The RFA also includes small governmental entities as a part of the regulatory flexibility analysis.¹⁶⁸ “Small governmental jurisdiction” generally means “governments of cities, counties, towns, townships, villages, school districts, or special districts, with a population of less than 50,000.”¹⁶⁹ As of 1992, there were approximately 85,006 such jurisdictions in the United States.¹⁷⁰ This number includes 38,978 counties, cities and towns; of these, 37,566, or 96 percent, have populations of fewer than

¹⁶³ Small Business Act, 5 U.S.C. § 632 (1996).

¹⁶⁴ 5 U.S.C. § 601(4).

¹⁶⁵ 1992 Economic Census, U.S. Bureau of the Census, Table 6 (special tabulation of data under contract to the Office of Advocacy of the Small Business Administration).

¹⁶⁶ With the exception of the special emergency service, these services are governed by Subpart B of Part 90 of the Commission's rules. 47 C.F.R. §§ 90.15 through 90.27. The police service includes 26,608 licensees that serve state, county and municipal enforcement through telephony (voice), telegraphy (code) and teletype and facsimile (printed material). The fire radio service includes 22,677 licensees comprised of private volunteer or professional fire companies as well as units under governmental control. The local government service that is presently comprised of 40,512 licensees that are state, county or municipal entities that use the radio for official purposes not covered by other public safety services. There are 7,325 licensees within the forestry service which is comprised of licensees from state departments of conservation and private forest organizations who set up communications networks among fire lookout towers and ground crews. The 9,480 state and local governments are licensed to highway maintenance service provide emergency and routine communications to aid other public safety services to keep main roads safe for vehicular traffic. The 1,460 licensees in the Emergency Medical Radio Service (EMRS) use the 39 channels allocated to this service for emergency medical service communications related to the actual delivery of emergency medical treatment. 47 C.F.R. §§ 90.15 through 90.27. The 19,478 licensees in the special emergency service include medical services, rescue organizations, veterinarians, handicapped persons, disaster relief organizations, school buses, beach patrols, establishments in isolated areas, communications standby facilities and emergency repair of public communication facilities. 47 C.F.R. §§ 90.33 through 90.55.

¹⁶⁷ See 13 C.F.R. § 121.201 (SIC Code 4812).

¹⁶⁸ See 5 U.S.C. § 601(5) (including cities, counties, towns, townships, villages, school districts, or special districts).

¹⁶⁹ 5 U.S.C. § 601(5).

¹⁷⁰ U.S. Dept. of Commerce, Bureau of the Census, "1992 Census of Governments."

50,000.¹⁷¹ The Census Bureau estimates that this ratio is approximately accurate for all governmental entities. Thus, of the 85,006 governmental entities, the Commission estimates that 81,600 (96 percent) are small entities.

Estimates for PLMR Licensees. Private land mobile radio 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 definition of small entities specifically applicable to PLMR users, nor has the SBA developed any such definition. The SBA rules do, however, contain a definition for small radiotelephone (wireless) companies.¹⁷² Included in this definition are business entities engaged in radiotelephone communications employing no more than 1,500 persons.¹⁷³ Entities engaged in telegraph and other message communications with no more than \$5 million in annual receipts also qualify as small business concerns.¹⁷⁴ According to the Bureau of the Census, only twelve radiotelephone firms of a total of 1,178 such firms which operated during 1992 had 1,000 or more employees. For the purpose of determining whether a licensee is a small business as defined by the SBA, each licensee would need to be evaluated within its own business area. The Commission's fiscal year 1994 annual report indicates that, at the end of fiscal year 1994, there were 1,101,711 licensees operating 12,882,623 transmitters in the PLMR bands below 512 MHz.¹⁷⁵

Equipment Manufacturers. We anticipate that at least six radio equipment manufacturers will be affected by our decisions in this proceeding. According to the SBA's regulations, a radio and television broadcasting and communications equipment manufacturer must have 750 or fewer employees in order to qualify as a small business concern.¹⁷⁶ Census Bureau data indicate that there are 858 U.S. firms that manufacture radio and television broadcasting and communications equipment, and that 778 of these firms have fewer than 750 employees and would therefore be classified as small entities.¹⁷⁷

Description of Projected Reporting, Recordkeeping and Other Compliance Requirements:

This *Third Further Notice* stays the January 1, 2005 date in Section 90.203(j)(5) pending resolution of the issues presented in the *Second Further Notice* and the Petition to Defer. Therefore, the *Third Further Notice* removes any administrative or recordkeeping burdens associated with the requirement that applications for certification of equipment received on or after January 1, 2005 operating with a 25 kHz bandwidth will be permitted only to the extent that the equipment meets the spectrum efficiency standard of one channel per 6.25 kHz of channel bandwidth (voice) or 4800 bits per second per 6.25 kHz (data) pursuant to Section 90.203 (j)(5) of the Commission's Rules.

¹⁷¹ *Id.*

¹⁷² See 13 C.F.R. § 121.201 (SIC Code 4812).

¹⁷³ *Id.*

¹⁷⁴ *Id.* (SIC Code 4822).

¹⁷⁵ See Federal Communications Commission, 60th Annual Report, Fiscal Year 1994 at 120-121.

¹⁷⁶ 13 C.F.R. § 121.201, Standard Industrial Code (SIC) 3663.

¹⁷⁷ U.S. Dept. of Commerce, *1992 Census of Transportation, Communications and Utilities* (issued May 1995), SIC 3663.

Steps Taken to Minimize Significant Economic Impact on Small Entities, and Significant Alternatives Considered:

The RFA requires an agency to describe any significant alternatives that it has considered in reaching its proposed 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 or reporting requirements under the rule for 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 small entities.¹⁷⁸

The objective in the *Refarming* proceeding was to provide a means to transition licensees to 6.25 kHz technology. Migration to 12.5 kHz technology was viewed as a stepping stone to operation at 6.25 kHz technology, *see id.* However, requiring the use of 6.25 kHz technology by a date certain could impact some small entities requiring them to upgrade their communications systems before they would otherwise do so. An alternative would be to maintain the current rules, which are intended to foster migration to narrowband technology by way of progressively more stringent type certification requirements. We issue this *Third Further Notice* to stay the effectiveness of Section 90.203(j)(5) and thereby ensure that a January 1, 2005 deadline would not injure any party while we consider whether a change in the Rules would benefit small entities and other PLMR licensees.

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

None.

¹⁷⁸ See 5 U.S.C. §603(c).