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

In the Matter of	)	
	)	
High Tech Communications Services, Inc.	)	File No. 0000788717
	)	
Request for Waiver of the Commission's	)	
Short-Spacing Rules to Operate	)	
Call Sign WPLM234 on Offset Channels	)	

ORDER

Adopted: February 25, 2003 **Released: February 26, 2003**

By the Chief, Policy and Rules Branch, Commercial Wireless Division, Wireless Telecommunications Bureau:

I. INTRODUCTION

1. On February 27, 2002, High Tech Communications Services, Inc. (High Tech) filed the above-captioned modification application requesting a waiver (Waiver Request) of the co-channel separation requirements of Section 90.621(b) of the Commission's rules.[1] High Tech is the 800 MHz Specialized Mobile Radio (SMR) geographic area licensee authorized to operate on Channel Block A (channels 401-420, 861.0000-861.5000 MHz) in Economic Area (EA) 174, Puerto Rico. In its Waiver Request, High Tech asks for blanket authority to use a propagation model traditionally used in the 470-512 MHz band to determine permissible separation distances between co-channel stations operating in the 800 MHz SMR bands. For the reasons explained below, we deny High Tech's Waiver Request.

II. BACKGROUND

2. Section 90.621(b) of the Commission's rules provides incumbent licensees operating in the 800 MHz bands protection from interference based on fixed distance separation criteria. Under the rule, the minimum distance allowed between co-channel systems licensed on Channel Block A is 113 kilometers (70 miles).[2] Section 90.621(b)(4) permits applicants to locate co-channel stations at fixed distances between 113 kilometers (70 miles) and 88 kilometers (55 miles) from an existing station if the applicant reduces its transmitter power and antenna height to levels set forth in the Short-Spacing Separation Table included in the rule section.[3] The fixed distances in the Short-Spacing Separation Table are based on criteria that assumes a desired signal level of 40 dBu at the edge of an existing station's service area and permits an undesired, or interfering, signal level of 22 dBu from the proposed station at the 40 dBu contour (40/22 dBu desired-to-undesired signal ratio).[4] The distances associated with the 40

[1] Request for a Waiver to Operate on 12.5 kHz Offset Channels filed by High Tech Communications, Inc. (Feb. 27, 2002).

[2] 47 C.F.R. § 90.621(b).

[3] 47 C.F.R. § 90.621(b)(4), Short-Spacing Separation Table, n.2.

[4] In the Matter of Co-Channel Protection Criteria for Part 90, Subpart S Stations Operating Above 800 MHz, *Report and Order*, 8 FCC Rcd 7293, 7294, ¶¶ 5 and 7 (1993) (*Part 90 Co-Channel Protection R&O*). At these signal

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dBu service area contours and the 22 dBu interference contours are derived from the Commission-sponsored R-6602 propagation model for 800 MHz channels.[5] Section 90.621(b)(4) also provides a process for seeking waiver from the Commission of the separation standards if an applicant elects to locate its station at a distance within 88 kilometers (55 miles) of an existing co-channel station. Finally, Section 90.621(b)(5) permits separation between co-channel systems to be less than 113 kilometers (70 miles) if the applicant obtains consent from any affected incumbent co-channel licensee indicating that the incumbent licensee will accept any interference resulting from the short-spacing.[6]

3. Pursuant to Sections 1.3 and 1.925 of the Commission's rules, High Tech seeks waiver of several rule sections pertaining to EA and site-specific license operations on Channel Block A in the 800 MHz SMR bands.[7] Section 1.3 permits waiver of Commission rules for good cause shown.[8] Under Section 1.925, the Commission may grant a waiver request if it is shown that: (1) the underlying purpose of the rule would not be served or would be frustrated by application to the instant case, and that a grant of the requested waiver would be in the public interest; or (2) in view of unique or unusual factual circumstances of the instant case, application of the rule would be inequitable, unduly burdensome or contrary to the public interest, or the applicant has no reasonable alternative.[9]

4. High Tech first seeks a blanket waiver of Section 90.621(b) of the Commission's rules.[10] High Tech claims that it "would be nearly impossible" to meet the distances allowed under the Short-Spacing Separation Table in Section 90.621(b) because of Puerto Rico's small size. High Tech instead proposes to use the TSB-88 propagation model, rather than R-6602, to calculate distances between transmitter locations.[11] Under its proposal, High Tech states that it would select transmitter locations on each of its 800 MHz channels using TSB-88 propagation curves without increasing interference to incumbent licensee service areas "by more than five percent."[12] Because High Tech also proposes to operate on offset channels, High Tech asks whether it needs waivers of Section 90.613 of the Commission's rules pertaining to channel assignments,[13] and Section 90.691 outlining the Commission's emission mask rules.

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levels, an interference protection of 18 dBu is provided to a mobile operating at the edge of the existing station's service area. *Id*. at ¶ 5.

[5] *Part 90 Co-Channel Protection R&O*, 8 FCC Rcd at 7294, ¶ 7.

[6] 47 C.F.R. § 90.621(b)(5).

[7] The SMR Category consists of 280 25 kHz channels in the 800 MHz band. *See* 47 C.F.R. § 90.617(d). Commission rules also provide that these channels are available for EA licensees providing SMR category service on Channel Blocks A through V. 47 C.F.R. § 90.681.

[8] 47 C.F.R. § 1.3.

[9] 47 C.F.R. § 1.925.

[10] Waiver Request at 5-7. High Tech specifically states in its Waiver Request that it would operate under a blanket waiver in lieu of seeking channel-by-channel, site-by-site waivers under Section 90.621(b)(4). *Id*. at 6.

[11] Waiver Request at 2. As High Tech explains, the Telecommunications Industry Association, a frequency coordinator, adopted TSB-88 for calculating offset channel interference in the 470-512 MHz band. *Id*. at 2, n.1. Frequencies available on the 470-512 MHz band are used by land mobile stations and television broadcast stations on a geographically shared basis. 47 C.F.R. § 90.301.

[12] Waiver Request at 2-3.

[13] High Tech also asks whether its proposal implicates Section 90.645(g) of the Commission's rules pertaining to permissible bandwidth in the 800 MHz bands.

III. DISCUSSION

A. High Tech Fails to Meet the Standard for a Blanket Waiver of Section 90.621(b) of the Commission's Rules

5. We reject High Tech's Waiver Request because High Tech has failed to show that it has no reasonable alternative.[14] High Tech has not provided any information on why it cannot meet the distances permitted under the Short-Spacing Separation Table, the waiver requirements of Section 90.621(b)(4), or the consent requirements of Section 90.621(b)(5). These rule sections describe in detail the requirements for establishing short-spaced sites,[15] and offer High Tech alternative approaches to locating transmitters under its license in Puerto Rico. We particularly note that Section 90.621(b)(4) requires an applicant seeking waiver of the separation requirements to serve affected incumbent licensees with a copy of the entire application. Those incumbent licensees then have 30 days to oppose the application and waiver request.[16] In the absence of an explanation as to why it cannot reasonably seek relief through the procedures set forth under Section 90.621(b)(4) or 90.621(b)(5), we will not grant High Tech a blanket waiver.

6. In addition, High Tech has failed to demonstrate any unusual or unique circumstances that would lead us to grant its Waiver Request. High Tech argues that Puerto Rico's mountainous terrain "militates use of propagation models that adequately take the effects of terrain shielding into account." High Tech also contends that because Puerto Rico is an island, actions taken to solve problems on the island "do not have general applicability to other areas of the United States."[17] We disagree. We note that terrain is often at issue when licensees seek waiver of the co-channel separation requirements on a case-by-case basis under Section 90.621(b)(4) of the Commission's rules, and that High Tech was free to submit waiver requests using these procedures. Moreover, while we recognize that Puerto Rico is an island surrounded by ocean waters, all EA licenses are limited to bordered market areas and those EA licensees are limited in their ability to provide service outside those areas.[18]

7. Moreover, we find High Tech's argument that we should grant the Waiver Request because High Tech has encountered difficulty relocating incumbent licensees operating on its channels in its market fails to rise to the level of unique or unusual circumstances. High Tech states that at least one incumbent licensee is operating on each of its twenty channels and that the cost of providing comparable

[14] Waiver Request at 6. High Tech states that the only alternative to its blanket Waiver Request would be to modify the protected contour levels specified in Section 90.621. High Tech concludes that changing the contour levels of Section 90.621 is an unproven method for determining whether incumbents would be provided adequate interference protection. *Id*.

[15] *See* In the Matter of 21st Century Wireless Group, Inc, *Order on Reconsideration*, 17 FCC Rcd 8260, 8261, ¶ 4 (PSPWD 2002) 28 (discussing the requirements for short-spacing existing sites under Section 90.621(b)(4)); *Nextel License Holdings 4, Inc*., 17 FCC Rcd at 7037, ¶ (same).

[16] 47 C.F.R. § 90.621(b)(4). Under Section 90.621(b)(4) of the Commission's rules, "[a]pplicants seeking a waiver must submit with their application a certificate of service indicating that concurrent with the submission of the application to the Commission or a [frequency] coordinator, all co-channel licensees within the applicable area were served with a copy of the application and all attachments thereto. Licensees thus served may file an opposition to the application within 30 days from the date the application is filed with the Commission." *Id*.

[17] Waiver Request at 7.

[18] Section 90.689(b) of the Commission's rules limits the field strength at any location on the border of an EA-based service area, unless all bordering EA licensees agree to a higher field strength. 47 C.F.R. § 90.689(b). In addition, to the extent the standard established in Section 90.689 conflicts with the EA licensee's obligation to provide co-channel interference protection to incumbent licensees under Section 90.621(b), the requirements of Section 90.621(b) shall prevail. *Id*.

facilities along with the scarcity of alternative channels in Puerto Rico makes relocation impossible.[19] This argument does not justify the grant of a waiver in this case because High Tech had notice of these circumstances.[20] Prior to the auction in which High Tech won its license, the Commission reminded all potential bidders that a substantial number of incumbent licensees were operating on frequencies that would be subject to the auction, and these incumbents must be protected from harmful interference in accordance with the Commission's rules.[21] Potential bidders were also reminded that these limitations may restrict the ability of the geographic area licensees to use certain portions of the electromagnetic spectrum or provide service to certain areas in their geographic license area.[22] Finally, potential bidders were reminded that they were solely responsible for investigating and evaluating the degree to which incumbents are licensed and operating in areas where they may seek EA licenses.[23] Thus, High Tech was on notice that it had an obligation to perform proper due diligence so that it would be aware of the existence of the incumbent licensees prior to participating in the auction.

8. We also find that, based on the information High Tech has provided in its Waiver Request, granting High Tech blanket authority to use the TSB-88 propagation model to operate closer to incumbent licensees than is currently allowed under Commission rules is not in the public interest. High Tech generally asserts that TSB-88 is appropriate because it uses a propagation model that takes more terrain into account than R-6602 and includes procedures that take into account the effects of offsetting frequencies in predicting interference to incumbent licensees.[24] Even if High Tech's assertions about the TSB-88 propagation model are correct, TSB-88 has never been used in the 800 MHz band and High Tech does not explain how the TSB-88 propagation model would affect the interference protection afforded incumbent licensees under Commission rules.

9. In fact, High Tech acknowledges that its proposal will increase the risk of interference to incumbent licensees, but does not explain why the increase would be acceptable. Specifically, we find wholly inadequate High Tech's assurance that interference to an incumbent's service area will not be increased by more than five percent. We similarly reject High Tech's promise that if initiating service at a location causes interference to the incumbent and the actual interference cannot be corrected, it will stop operations "on the offending channel(s)."[25] Section 90.621(b)(4) requires that all incumbent licensees must be afforded equal or greater interference protection than that provided by 40/22 dBu protection criteria based on the distances derived from the R-6602 propagation model if the proposed station is located within 113 kilometers (70 miles) of an existing station.[26] The Commission adopted this standard

[19] Waiver Request at 2.

[20] *See* 800 MHz SMR Auction Closes: Winning Bidders in the Auction of 525 Specialized Mobile Radio Licenses, *Public Notice*, 12 FCC Rcd 20417 (1997) (Auction 16).

[21] *See* Auction of 800 MHz Specialized Mobile Radio Service Licenses: Auction Notice and Filing Requirements for 525 Licenses in the Upper 200 Channels Scheduled for October 28, 1997, *Public Notice*, DA 97-1672 (Aug. 6, 1997).

[22] *Id.*

[23] *Id.*

[24] Waiver Request at 2. High Tech asserts that TSB-88 is appropriate because it uses a propagation model "that encompasses use of terrain profiling well beyond the 16 km limit of R-6602" and includes procedures that take into account "the effects of modulation and frequency offset in predicting interference." *Id*.

[25] Waiver Request at 3, 8.

[26] *Part 90 Co-Channel Protection R&O*, 8 FCC Rcd at 7294, ¶ 9. Section 90.683(a)(1) of the Commission's rules requires geographic area licensees to afford interference protection to all previously authorized co-channel stations in accordance with Section 90.621(b). 47 C.F.R. § 90.683(a)(1); s*ee Nextel License Holdings 4, Inc*., 17 FCC Rcd at 7037, ¶ 26 (citing 47 C.F.R. § 90.683(a)(1)); In the Matter of Amendment of Part 90 of the Commission's Rules to Facilitate Future Development of SMR Systems in the 800 MHz Frequency Band, *First Report and Order, Eighth* (continued....)

to provide reasonable protection to incumbent licensees from co-channel interference and, at the same time, provide for efficient use of valuable spectrum.[27] Accordingly, we will not waive a requirement that could increase interference levels up to five percent. In addition, a blanket waiver that depends in part on a promise to correct any actual interference after-the-fact would clearly undermine the intent of the Commission's rules prohibiting harmful interference to incumbent licensees. We believe that the existing rules offer ample flexibility for EA licensees to operate adequately while protecting incumbent licensees from harmful interference.

B. High Tech's Proposal to Operate in Offset Channels

10. While we deny High Tech's Waiver Request, we confirm that Commission rules already permit High Tech to operate on offset channels within its authorized spectrum block. High Tech asks for authority to operate on channels offset by 12.5 kHz from those center channels designated for frequencies available for assignment in the 806-824/851-869 MHz and 896-901/935-940 MHz bands under Section 90.613 of the Commission's rules.[28] Two Commission rules specifically provide 800 MHz SMR EA licensees with the flexibility to operate in an area offset from the center of each channel listed in Section 90.613 of the Commission's rules. Section 90.683(a)(1) of the Commission's rules provides that EA licensees in the 806-821/851-866 MHz band may use any base station frequencies identified in their spectrum block anywhere within their authorized EA as long as the EA licensee affords incumbent licensees interference protection in accordance with the co-channel separation requirements of Section 90.621 of the Commission's rules.[29] Section 90.691 of the Commission's rules allows EA licensees to operate anywhere within their licensed spectrum as long as they meet emission mask roll-off requirements that protect adjacent-channel systems from interference.[30] Thus, as an EA licensee, High Tech does not need additional authority to operate on offset channels within its authorized spectrum block.[31]

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Report and Order, and Second Further Notice of Proposed Rulemaking, 11 FCC Rcd 1463, 1516, ¶ 92 (1995) (*800 MHz SMR First Report and Order*)).

[27] *Part 90 Co-Channel Protection R&O*, 8 FCC Rcd at 7294, ¶ 7.

[28] Waiver Request at 2; 47 C.F.R. § 90.613. The term "offset channels" refers to licensees operating on channels centered between regularly assignable channels. *See* In the Matter of State of Florida Request for Waiver of the Commission's Rules to Permit Licensing of Stations in 800 MHz General Category on Non-Standard Channel Centers, *Memorandum Opinion and Order*, 16 FCC Rcd 2174, 2174, ¶ 1, n.1 (2001) (citing In the Matter of Request for Waiver of Part 90 of the Commission's Rules by the County of San Bernadino to Operate a County-Wide Public Safety Communication System in the 800 MHz Band, *Memorandum Opinion and Order*, 14 FCC Rcd 3830, 3831 n.3 (1989)). Because the generally assignable channels are spaced 25 kHz apart for the 800MHz SMR channels, the offset channels are spaced 12.5 kHz away from the regularly assignable channels. *See id*.

[29] 47 C.F.R. § 90.683(a)(1). Section 90.683(a)(1) provides that "(a) EA-based licensees authorized in the 806-821/851-866 MHz band pursuant to § 90.681 may construct and operate base stations using any of the base station frequencies identified in their spectrum block anywhere within their authorized EA, provided that: (1) The EA licensee affords protection, in accordance with § 90.621(b), to all previously authorized co-channel stations that are not associated with another EA licensee." *Id*.; *see* In the Matter of Nextel License Holdings 4, Inc., *Order*, 17 FCC Rcd 7028, 7034, ¶ 18 (CWD 2002) (stating that "Section 90.683(a)(1) permits a geographic area licensee to add or modify a site anywhere within its authorized EA (Economic Area) without having to seek the Commission's approval or having to file a notification, so long as the geographic area licensee provides co-channel separation protection to existing incumbent licensees.") (*Nextel License Holdings 4, Inc.*).

[30] 47 C.F.R. § 90.691.

[31] High Tech also suggests that Section 90.645(g) of the Commission's rules allows licensees to use offset channels. Waiver Request at 4-5. Section 90.645(g) provides that an applicant or licensee is limited to five contiguous 806-821/851-866 MHz band channels for a system requiring more than the normal single channel bandwidth. 47 C.F.R. § 90.645(g); Wireless Telecommunications Bureau Seeks Comment on Request for Waiver by the State of Florida to
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11. We reject, however, High Tech's assertion that offset channels are not considered co-channel for purposes of interference protection.[32] We make this finding because operations on offset and primary channels at close distances greatly increase the chances of interference between stations.[33] We find that High Tech has failed to explain why it cannot comply with Section 90.621(b) of the Commission's rules, as required by Section 90.683(a)(1). Accordingly, we deny High Tech's Waiver Request.

12. Finally, as we explained above, under Section 90.691, EA licensees may operate on any available channel within their frequency blocks as long as they meet the Commission's out-of-band emission mask requirements for providing interference protection to adjacent EA licensees on the "outer" channels and interference protection to adjacent-channel incumbent licensees on "interior" channels.[34] Because High Tech acknowledges that if it uses offset channels, it cannot provide the interference protection in the manner contemplated in Section 90.691,[35] it appears that High Tech needs a waiver of that rule section if it uses offset channels.

IV. ORDERING CLAUSE

13. Accordingly, IT IS ORDERED that, pursuant to Sections 4(i) and 303(r) of the Communications Act, as amended, 47 U.S.C. §§ 154(i), 303(r), and Sections 0.331, 1.3 and 1.925 of the Commission's rules, 47 C.F.R. §§ 0.331, 1.3, 1.925, the Request for Waiver to Operate on 12.5 kHz Offset Channels filed by High Tech Communications, Inc. on February 27, 2002, IS DENIED.

FEDERAL COMMUNICATIONS COMMISSION

Paul D'Ari
Chief, Policy and Rules Branch
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Allow Use of General Category Offset Channels, *Public Notice*, 15 FCC Rcd 15828 (2000). While we note that the rule is generally irrelevant to licensees already authorized on contiguous channel blocks, we do not address this issue because we have already found that High Tech may operate in an offset manner in its spectrum block.

[32] Waiver Request at 5. High Tech contends that the effect of operating in this offset manner would increase an incumbent licensee's protected service contour. First, High Tech explains that the signal strength of its stations using offset channels and 25.0 kHz modulation, even without geographic separation, would be 16.8 dB lower than any incumbent signal strength. *Id*. at 2. Similarly, according to High Tech, if it reduced its bandwidth to 12.5 kHz, its signal strength would be 32.7 dB lower than any incumbent signal strength. *Id*. at 2-3. High Tech then explains that adding the 16.8 dB protection from using offset channels to an incumbent licensee's existing 40 dBuV/m protected service contour would mean High Tech's proposed station interference contour would not overlap the incumbent's 56.8 dBuV/m contour for 25.0 kHz modulation. *Id*. at 5. High Tech also contends that an incumbent's protected contour would increase by 32.7 dB to 72.7 dBuV/m for 12.5 kHz modulation. *Id*. at 6.

[33] We note that the Commission adopted rules to require applications for stations located adjacent to the U.S./Mexico border that request frequencies in certain 800 MHz bands to consider existing stations that operate on offset frequencies and to comply with the co-channel separation requirements of Section 90.621(b). *Part 90 Co-Channel Protection R&O*, 8 FCC Rcd at 7298, ¶ 26; 47 C.F.R. § 90.621(b)(7).

[34] *See* 47 C.F.R. § 90.691; *800 MHz SMR First Report and Order*, 11 FCC Rcd at 1498, ¶ 52, 1519, ¶ 101, *aff'd and modified*, *Memorandum Opinion and* Order, 12 FCC Rcd 9972, 9995, ¶ 74 (1997), *aff'd and modified*, *Second Report and Order*, 12 FCC Rcd 19079, 19108-09, ¶ 79 (1997).

[35] Waiver Request at 3-4.