

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

In the Matter of
County of Genesee, New York
and
Nextel Communications, Inc.
WT Docket 02-55
Mediation No. TAM-43102

MEMORANDUM OPINION AND ORDER

Adopted: September 18, 2012

Released: September 18, 2012

By the Deputy Chief, Policy and Licensing Division, Public Safety and Homeland Security Bureau:

I. INTRODUCTION

1. On August 7, 2012 Nextel Communications, Inc. a wholly owned subsidiary of Sprint Nextel Corporation (Sprint) requested temporary waiver of Section 90.210 of the Commission’s rules1 to allow the County of Genesee, New York (Genesee) to operate its mobile and portable radios using 5 kilohertz frequency deviation in the NPSPAC segment of the 800 MHz band, i.e., 806-809/851-854 MHz.2 Originally, Genesee was to transition to the NPSPAC band by “rebanding in place,” i.e., remaining on its original channels and reducing the frequency deviation of its base station and mobile and portable radios from 5 kilohertz to 4 kilohertz, thereby to comply with the emission mask specified in Section 90.210 of the Commission’s rules. Genesee, however, operates 2 of its 7 NPSPAC channels using FRED3 encryption, a technology that, to operate satisfactorily with mobile and portable units, requires more than 4 kilohertz of maximum deviation and thus does not conform to the NPSPAC band emission mask. Accordingly, Sprint has requested a waiver to permit Genesee’s mobile and portable radios to continue operating with a maximum of 5 kilohertz frequency deviation in the NPSPAC band.4 Sprint notes,

1 47 C.F.R. § 90.210. This rule provision defines the emission mask which must be complied with in the National Public Safety Planning Advisory Committee (NPSPAC) band, 806-809/851-854 MHz. Conformity to the emission mask requires that the frequency deviation of the radio be no greater than 4 kilohertz.

2 Petition for Temporary Waiver, Aug. 7, 2012 (Waiver Request).

3 Four-level Recovery for Extended Distance.

4 As noted in the Waiver Request, 6 of Genesee’s channels would remain on their current frequencies, the 7th channel, 806.0125/851.0125 MHz, would both change to NPSPAC operation and change in frequency to 806.2875/851.2875 MHz. Waiver Request at 4. This 7th channel currently operates in the conventional mode but may be converted to trunked operation in the future. There are no existing systems adjacent to this 7th Genesee channel in the area.

however, that a waiver for Genesee's base station transmitters is not required because they operate properly on the FRED channels with a maximum frequency deviation of 4 kilohertz, thus conforming to the Section 90.210 emission mask and minimizing potential interference to any adjacent channel NPSPAC stations.⁵

2. In order to assess the feasibility of operating Genesee's mobile and portable radios with 5 kilohertz frequency deviation, Genesee's consulting engineering firm, Pericle Communications, Inc. studied the 5 kilohertz deviation proposal together with technical experts from the 800 MHz Transition Administrator (TA), and produced a study that Sprint appended to its waiver request. The study demonstrates that "all twelve channels adjacent to Genesee's six trunked channels are unoccupied."⁶ Hence, any concern about the 5 kilohertz deviation proposal causing adjacent channel interference relates only to the possible future use of the adjacent channels by other licensees. The report also concludes that, as to future use of the channels, the effect of the 5 kilohertz proposal would be to "push the interference contour out",⁷ *i.e.*, that in considering proposals for new facilities adjacent to Genesee's channels, the Region 55 Regional Planning Committee (RPC) should use interference contours slightly larger than normal to ensure against adjacent channel interference.⁸

3. Sprint emphasizes in its Waiver Request that the requested waiver is temporary in nature – to remain in effect only until Genesee ceases to use FRED technology⁹ which, Sprint notes, is no longer supported by its manufacturer, Motorola.¹⁰ At such time as FRED is discontinued by Genesee, its mobile and portable radios will be adjusted to operate with 4 kilohertz frequency deviation.¹¹

4. On August 10, 2012, the Public Safety and Homeland Security Bureau issued a *Public Notice* soliciting comment on the Sprint proposal to allow Genesee mobile and portable units to use 5 kilohertz frequency deviation until FRED operation was discontinued by Genesee.¹² Comments were filed on August 21, 2012 by the Region 55 Regional Planning Committee (Region 55).¹³

5. Region 55 points out that its responsibilities extend to the "Canadian Treaty impact zone where U.S. primary channels are in high demand," and that it endeavors to assure maximum reuse of limited 800 MHz spectrum.¹⁴ It claims that operating Genesee's portable and mobile units in the

⁵ Waiver Request at 3.

⁶ *Id.* Exhibit I at 2.

⁷ *Id.* at 3-4.

⁸ *Id.* at 4, Table 2.

⁹ Waiver Request at 6.

¹⁰ *Id.* at 2.

¹¹ *Id.* at 7.

¹² See Public Safety and Homeland Security Bureau Seeks Comment On Nextel Communications, Inc. Request For Temporary Waiver of Section 90.210 Of The Commission's Rules In Connection With Stations WPQF924 And WNMD429 Licensed To Genesee County, New York, *Public Notice*, DA-12-1307 (Aug 2012).

¹³ Comments of Region 55, Aug. 21, 2012 (Region 55 Comments). Sprint filed an *ex parte* letter on August 27, 2012 responding to the Region 55 comments. Because the Public Notice, *supra* n.11, did not authorize reply filings, we have not considered Sprint's letter in our analysis.

¹⁴ *Id.* at 1.

NPSPAC band with 5 kHz frequency deviation would result in a “significant increase in required bandwidth and sideband splatter on adjacent frequencies.”¹⁵ Region 55 also submits that operating Genesee’s base stations with 4 kilohertz deviation may not comply with the emission mask requirements in Section 90.210 of the Commission’s rules¹⁶ or the frequency stability requirements of Section 90.213 of the Commission’s rules.¹⁷ If the waiver is granted, Region 55 contends, it will have to amend its regional plan and receive approval of the amended plan from adjacent regions. It fears that grant of the waiver would result in a “ripple effect” whereby other licensees would seek to operate with 5 kHz frequency deviation in the NPSPAC band, thereby complicating the coordination process in Region 55 and other regions.¹⁸ Region 55 also objects to the waiver being requested for an indefinite period of time, and urges that some other solution be found to maintaining FRED capability in Genesee’s system.¹⁹

II. DECISION

6. To obtain a waiver of the Commission’s rules, the waiver proponent must show that: (i) The underlying purpose of the rule(s) 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 (ii) In view of unique or unusual factual circumstances of the instant case, application of the rule(s) would be inequitable, unduly burdensome or contrary to the public interest, or the applicant has no reasonable alternative.²⁰

7. We find that Genesee has encountered unusual and, in our experience, unique factual circumstances with its FRED encryption system. Although there may be an alternative solution to the problem encountered with the FRED system, *i.e.*, replacing it with a more modern system that accomplishes encryption within the limitations of the NPSPAC emission mask, we question whether such an alternative is reasonable under the circumstances. The study by Genesee’s consulting engineer and the 800 MHz Transition Administrator shows that implementation of the Sprint proposal would have a very limited effect on the availability of spectrum on channels adjacent to Genesee’s.²¹ Moreover, the requested waiver has a limited duration, and grant of the waiver would allow Genesee to reband its system at minimum necessary cost. As to this latter point, the Bureau is mindful of the Commission’s direction that “Sprint should not propose to pay and the TA should not approve payment of higher costs when a lower-cost alternative is clearly available that would provide the licensee with comparable facilities as defined by the Commission’s orders in this proceeding and would effectuate a smooth and timely transition.”²² With grant of the requested waiver, Genesee would be provided with comparable

¹⁵ *Id.*

¹⁶ 47 C.F.R. § 90.210.

¹⁷ Region 55 Comments at 2. 47 C.F.R. § 90.213.

¹⁸ Region 55 Comments at 2.

¹⁹ *Id.*

²⁰ 47 C.F.R. § 1.925.

²¹ Waiver Request, Exhibit 1.

²² Improving Public Safety Communications in the 800 MHz Band, *Memorandum Opinion and Order*, 22 FCC Rcd 9818, 9821 (2007); Illinois Public Safety Agency Network and Nextel Communications, Inc., *Memorandum Opinion and Order*, 26 FCC Rcd 10668, 10675 n.63 (PSHSB 2011); State of Indiana and Sprint Nextel Corp., *Memorandum Opinion and Order*, 26 FCC Rcd 5067, 5071 (PSHSB 2011).

facilities,²³ *i.e.*, it would retain the functionality of its existing system including the encryption capability afforded by the FRED technology. Compared to the complete replacement of Genesee's system, the temporary waiver can be readily, timely, and economically implemented inasmuch as Genesee's mobile and portable radios will retain their current 5 kilohertz frequency deviation and only Genesee's base station transmitters will have to be adjusted to reduce their frequency deviation to 4 kilohertz. We have granted analogous waivers in the past.²⁴ Therefore, we find that requiring Genesee to comply with the NPSPAC emission mask for its mobile and portable radios would be contrary to the public's interest in timely completion of 800 MHz rebanding. The requested waiver, by comparison, will provide Genesee with comparable facilities at minimum necessary cost.

8. In regard to the region's comments, Region 55 addresses two aspects of the waiver request – operation of Genesee's base stations with 4 kilohertz frequency deviation and operation of Genesee's portable and mobile units with 5 kilohertz frequency deviation. Region 55's concerns about the base stations' compliance with Sections 90.210 and 90.213 of the Commission's rules are well taken. Base stations are the predominant sources of interference in 800 MHz systems and compliance with the applicable emission mask and frequency stability requirements is essential to avoid the problems posited by Region 55, *i.e.*, excessive bandwidth and spurious emissions. Accordingly, we will condition any waiver on Genesee's base stations' compliance with Sections 90.210 and 90.213 of the Commission's rules.

9. We are less concerned, however, about the effects of operating Genesee's portable and mobile units with 5 kilohertz frequency deviation. As an initial matter, the interference potential of portable and mobile units is much less than that for base stations. Portable and mobile units operate at significantly lower power and antenna height, thus interference, should it exist, is confined to a relatively small geographic area. Region 55 does not attempt to quantify its concern about increased bandwidth. We note, however, that with reference to Carson's rule,²⁵ that operation with 5 kilohertz frequency deviation versus 4 kHz frequency deviation results in only a 14 percent increase in bandwidth.²⁶ Region 55 neither defines nor quantifies, "sideband splatter," and we are unable to discern from Region 55's comments, if and to what degree, the claimed "splatter" would be worse with 5 kilohertz frequency deviation than with 4 kilohertz frequency deviation.

²³ "Comparable facilities are those that will provide the same level of service as the incumbent's existing facilities, with transition to the new facilities as transparent as possible to the end user. Specifically, (1) equivalent channel capacity; (2) equivalent signaling capability, baud rate and access time; (3) coextensive geographic coverage; and (4) operating costs." *Improving Public Safety Communications in the 800 MHz Band, Report and Order, Fifth Report and Order, Fourth Memorandum Opinion and Order*, 19 FCC Rcd 19651, 15077 ¶ 201 (2004)(footnotes omitted).

²⁴ *Cf.* City of Emeryville, Calif., *Order on Reconsideration*, 122 FCC Rcd 1778, 1780 (PSHSB 2007)(Licensee granted temporary waiver to allow use of equipment that conformed to emission mask G instead of emission mask H, thereby to permit higher speed data transmission.); County of York, S. Car., *Order*, 21 FCC Rcd 9526, 9527 (WTB 2006)(Licensee granted temporary waiver to operate in the "old" NPSPAC band with equipment conforming to emission mask G instead of emission mask H, thereby to integrate channel into high-speed data transmission system.).

²⁵ J.R. Carson, *Notes on the Theory of Modulation*, Proc. IRE, vol. 10, no. 1 (Feb. 1922), pp. 57-64.

²⁶ Under Carson's rule, bandwidth is defined as $B_T=2(\Delta F+W)$ where B_T is the total significant (98%) bandwidth, ΔF is the frequency deviation, and W is the highest modulating frequency, typically 3 kilohertz in land mobile systems. Thus, for 4 kHz frequency deviation, $B_T=2(4+3)=14$ kilohertz and for 5 kilohertz frequency deviation $B_T=2(5+3)=16$ kilohertz.

10. Assuming, as Region 55 contends, that grant of the requested waiver would necessitate amendment of its Regional Plan, we note that the Regional Plan must be amended, in any event, to accommodate the rebanding frequency plan and that an amendment, if necessary, to accommodate the waiver, could be made at the same time. We question Region 55's claim that accommodation of the waiver would require Region 55 to obtain concurrence from other regions. Genesee County is at least 90 kilometers from the border of any adjoining region and it is unlikely to the point of certitude that spurious adjacent channel signal components from a portable or mobile radio in Genesee County could cause interference to a receiver 90 kilometers distant.

11. While Region 55 correctly notes that the requested waiver is for an indefinite term – it expires when Genesee decommissions its FRED encryption system – the term is not infinite: FRED technology is no longer supported by its manufacturer, and thus has a limited useful lifetime.

12. Although we traditionally afford deference to the recommendations of Regional Planning Committees, we have carefully evaluated the comments submitted by Region 55, and find that they neither quantify nor technically justify their claims of interference. Moreover, Region 55 has not countered the technical showing prepared by Genesee's consulting engineer and the TA that the requested waiver can be accomplished with only *de minimis* effect on the 800 MHz NPSPAC channel availability environment in Genesee County.

III. ORDERING CLAUSES

13. Accordingly IT IS ORDERED that the Petition for Temporary Waiver, filed August 7, 2012 by Nextel Communications, Inc. IS GRANTED.

14. IT IS FURTHER ORDERED that, at such time as the County of Genesee, New York decommissions its FRED encryption system, this waiver SHALL EXPIRE and the County of Genesee shall operate its NPSPAC facilities in conformity with the Commission's rules.

15. IT IS FURTHER ORDERED that base station equipment operated by the County of Genesee, New York, shall conform to all Commission rules applicable to private land mobile radio stations operating in the band segment 806-809/851-854 MHz, including, without limitation, Sections 90.210 and 90.213 of the Commission's rules.

16. This action is taken under delegated authority pursuant to Sections 0.191 and 0.392 of the Commission's rules, 47 C.F.R. §§ 0.191, 0.392.

FEDERAL COMMUNICATIONS COMMISSION

Michael J. Wilhelm
Deputy Chief - Policy and Licensing Division
Public Safety and Homeland Security Bureau