

**Before the
Federal Communications Commission
Washington, DC 20554**

In the Matter of)	
)	
Improving Public Safety Communications in the)	
800 MHz Band)	
)	WT Docket No. 02-55
Consolidating the 800 MHz Industrial/Land)	
Transportation and Business Pool Channels)	

To: The Commission

**REPLY COMMENTS OF
AMERICAN ELECTRIC POWER COMPANY, INC.**

After reviewing the comments filed in the above captioned proceeding, American Electric Power Company, Inc (“AEP”) respectfully submits the following reply comments on behalf of itself and its affiliates.

Looking at the large number and differing opinions of comments filed, the record shows that there is no clear solution to the problem of interference to public safety communications in the 800 MHz band. Most comments in the proceeding indicate that rebanding alone will not solve the problem, and yet the process would be extremely disruptive and costly to all parties involved. While AEP agrees with the Commission that the interference issue is serious and must be dealt with in an expeditious fashion, AEP feels that trying to quickly devise a regulatory solution to the problem at this time may cause more harm than good.

The record in this proceeding supports AEP's position that technical solutions, like those described in the *Best Practices Guide*, should continue to be the primary means of dealing with interference in the near term future. According to the Project 39 database, the individual cases of interference number about 100 at this time. AEP feels that no amount of interference to public safety radio system is trivial, but this level of interference can continue to be managed on a case-by-base basis. The continued use of technical solutions at this time would allow the Commission to explore solutions that are more manageable for all parties involved: Public Safety, Business/ILT users, and CMRS licensees.

AEP believes that a technical approach can minimize interference in the near term. Supporting this contention, according to their comments, SouthernLinc has successfully built an iDEN system with little or no interference to Public Safety 800 MHz systems. Furthermore, other comments have indicated that the use of higher "Q" (e.g. cavity-type) transmitter combiners significantly cut the out-of-band emissions and significantly reduce the interference problem.

AEP would also like to point out that in spite of Nextel's pledge of \$500-million to help relocate Public Safety to 800 MHz spectrum, many Public Safety entities have commented that they are not interested in such a move. These entities recognize that they would incur significant costs and disruptions above and beyond those that would be covered by the Nextel relocation funds.

AEP is astonished at Nextel's continued failure to recognize the critical role that Business and Industrial radio systems play in the protection of life and property. Nextel

has been quick to offer B/ILT spectrum to public safety without fully considering the adverse impact to private industry's ability to restore critical infrastructure and safely operate complex manufacturing facilities. Public Safety entities do not operate in a vacuum; they rely on these industrial licensees to maintain their infrastructure in working order at all times. Furthermore, reallocating B/ILT spectrum to Public Safety would be short sighted as many Public Safety entities share radio systems with B/ILT Licensees¹. These Public Safety entities would ultimately incur higher costs as they would be forced to relocate with the B/ILT Licensee or purchase sub-optimal services from commercial service providers. The Nextel plan ignores these Public Safety entities and leaves them to fund their own relocation.

AEP is also puzzled by Nextel's assertion that 700 MHz is not suitable for use by public safety or CMRS providers, but perfectly suitable for B/ILT licensees. In its comments, Nextel states:

“Proposals in the 700 MHz band ignore the fact that this band will likely be heavily encumbered by incumbent broadcast television stations for many years to come, making it unusable for public safety systems.”²

Later their comments say:

“As discussed above, UHF television incumbency until 2007 renders the 700 MHz band unsuitable as a replacement home for 800 MHz public safety systems. Public Safety systems are typically designed to cover large areas and therefore are most likely to be precluded by existing broadcast UHF television facilities. In contrast, site-licensed B/ILT and high-site SMRs may be the only existing licensees that can use 700 MHz today in areas without UHF stations. Many B/ILT and traditional SMR

¹ e.g.: American Electric Power currently shares its 800 MHz radio system with MedFlight of Ohio, a non-profit medical transportation entity serving the State of Ohio. Other B/ILT entities such as the Lower Colorado River Authority and Nevada Power have similar sharing arrangements with Public Safety Entities.

² See Comments of Nextel Communications, Inc, WT Docket No. 02-55, p. 31

systems operate discrete, standalone systems that are not part of wide-area or regional networks.”³

While many B/ILT systems are standalone systems, many systems (like the radio system AEP operates) are not standalone and cover vast portions of the United States. In fact, AEP’s system is likely larger, in geographic coverage, than any public safety system in the country. Utilities and transportation entities build land mobile radio systems that offer coverage to areas as large as (or larger than) the typical Public Safety radio system. While acknowledging this fact in a footnote, Nextel’s comments fail to address how these entities, critical to the well being to the nation, could be relocated to the 700 MHz band.⁴ The fact is that 700 MHz would be just as useless to a large portion of B/ILT licensees as it would be to public safety.

Even if enough suitable 700 MHz and 900 MHz spectrum were available for relocation of B/ILT licensees, the costs of doing so would be staggering. In its comments, Nextel recognizes the staggering cost of relocating public safety to 700MHz:

“In addition, relocation 800 MHz public safety systems to 700 MHz band would impose enormous costs on public safety systems. These systems would need to acquire completely new equipment to operate in a new band. The resources and planning that have been invested in developing the 800 MHz public safety systems would be wasted.”⁵

Everything stated above for public safety entities also holds true of B/ILT licensees.

According to Motorola, the probable cost of relocating B/ILT licensees out of 800 MHz would be in the range of \$1.7-Billion to \$2.4-Billion.⁶ AEP questions why Nextel feels that such a cost to public safety is unacceptable but perfectly suitable for private

³ Id, p. 46

⁴ Id, Footnote 124, p. 46

⁵ Id., p. 31

⁶ Comments of Motorola, Inc., WT Docket No 02-55, p. 24

industry to absorb. Many of the B/ILT entities affected by such relocation are quasi-public agencies or regulated entities that would be forced to shift their costs to the public immediately. In other cases, these costs would be shifted to the general public through higher prices for vital goods and services. The costs to the American public of a rapid relocation of existing licensees are drastic compared to the relatively miniscule benefit to be gained over continuing to address interference to public safety and B/ILT systems with technical solutions on a case-by-case basis.

While AEP strongly believes that technical solutions should continue to be the method by which interference to public safety 800 MHz radio systems should be addressed, it is recognized that a long term solution to the problem needs to be devised. AEP believes that Nextel should be moved to a different band. The spectrum that would be freed up at 800 MHz could then be used to address public safety's needs or the additional needs of the B/ILT licensees.

The one thing that almost all commenters agree on is that merely rebanding of 800 MHz *will not solve all interference problems*. Public Safety entities like APCO, the City of New York, the City of Portland, Oregon, and many others question the extent to which rebanding will help. Even commercial carriers and trade associations, such as Verizon Wireless and CTIA, expect only minimal reductions in interference with rebanding. DelMarva Power and Light makes an excellent point in commenting that the band should not be reallocated to solve one entity's problem. In finding a solution, the Commission must focus on who is causing the interference and the likelihood that a given solution will provide a permanent solution to the problem.

To the extent that the interference mechanisms are currently known, one major problem appears to be intermodulation in the public safety receivers, a condition caused by the receiver covering from 851 to 869 MHz. Rebanding does nothing to narrow such receivers or make them less susceptible to intermodulation interference. This fact alone makes merely rebanding of 800 MHz spectrum risky, as best. Millions of dollars could be invested in rebanding with no improvement upon completion. The Commission should only be receptive to solutions that will positively work, like moving Nextel to another band.

Along with moving Nextel out of the 800 MHz band, it is equally important that no new Nextel-like systems be allowed back in the 800 MHz band. The Commission should adopt a standard that would prevent the creation of any new multi-site systems that could recreate the Nextel problem. Systems that have extremely dense frequency reuse patterns and produce high on-street field strengths through the use of low-HAAT antenna systems should be prohibited. The Commission should also examine its emission mask requirements and tighten them, as necessary, to limit interference from transmitter sideband emissions. Similarly, the Commission should consider applying Adjacent Channel Coupled Power (ACCP) requirements similar to those that are now in place for 700 MHz.

AEP also urges the Commission to look closely at statements from people close to the Nextel operation. As AEP pointed out in its previous comments, Mr. Robert Foosaner assured the Commission that Nextel would handle interference problems itself, as a basis of receiving the original waivers for Fleet Call. This guarantee should not be swept under the rug and forgotten. AEP remains concerned about the interference being

experienced by public safety systems, but AEP believes very strongly that any solution must be permanent and effective. That will not happen with rebanding within 800 MHz because the basic interference mechanisms will remain in place. Thus, the optimal solution is to move Nextel to another band, well outside the front-end pass bands of public safety receivers.

In addition to the question of whether rebanding will work from a technical standpoint, the transition issues are overwhelming. Clearly, not all stations in the band could change channels overnight. During any transition period, some entities would change channels before others. This would lead to new and old users trying to coexist on the same channels, perhaps rendering communications on both systems impossible. As pointed out in our comments and the comments of others, duplicate infrastructure would have to be built during the transition to maintain communications with the entire fleet. The interference problems generated during the transition period could be so severe that they would outweigh the meager benefits that might accrue at the end of the transition.

Even if it were felt that rebanding would help or eliminate the interference problem, wholesale, mandatory rebanding should be dismissed because of the chaos that would be created during the transition. No one has come up with a viable transition plan because graceful transition is impossible. This is perhaps the strongest and most compelling reason to choose moving Nextel out of the band. In that case, only one entity is affected, there are no transition issues, and the problem is permanently cured. This achieves all of the Commission's goals with the least impact on incumbent users.

AEP recognizes that its position to move Nextel to 700 MHz may not be entirely feasible and some industry consensus is forming to allow Nextel to remain in the "Upper

200” SMR channels. If such a plan is considered, AEP feels the following points should be included:

- Existing proportion and quantity of radio channel allocations will be maintained in the Canadian and Mexican border areas.
- B/ILT users’ eligibility for all channels in the current Business and I/LT pools should remain unencumbered, regardless of any relocation plan for licenses Nextel holds for channels in those pools. B/ILT users must maintain their ability to modify and expand their radio systems. Allowing Public Safety exclusive access to the B/ILT channels for five years or longer will seriously hinder B/ILT licensees’ ability to adequately support their systems.
- B/ILT users should not be required to participate in Public Safety relocation funding mechanisms.
- Technical specifications should be defined for what constitutes “cellularized” systems and regulations prohibiting such systems within the 850-861 MHz portion of the band should be created.

Given that commenters will not be able to adequately review any compromise proposals before the end of the reply comment period, AEP urges the Commission to issue a second NPRM to give interested parties a chance to comment on the actual proposed rule changes that will emerge from this proceeding.

AEP urges the Commission to strongly consider moving Nextel out of the 800 MHz band. As supported by the majority of the commenters, merely rebanding of the 800 MHz band will not solve all interference issues, will be costly, and will be extremely

disruptive. The only solution, other than continued case-by-case resolution, is moving Nextel out of the front-end pass bands of public safety receivers.

Respectfully submitted,

David B. Trego,
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