

BEFORE THE  
Federal Communications Commission  
WASHINGTON, D.C. 20554

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FEDERAL COMMUNICATIONS COMMISSION  
OFFICE OF THE SECRETARY

In the Matter of )  
)  
Improving Public Safety )  
Communications in the 800 MHz Band )  
)  
Consolidating the 900 MHz Industrial/ )  
Land Transportation and Business Pool )  
Channels )

WT Docket No. 02-55

To: The Commission

COMMENTS OF CINERGY CORPORATION

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## EXECUTIVE SUMMARY

Cinergy Corporation, a multi-state gas and electric utility licensed in the 800 MHz band, agrees that interference-free operations are extremely important to entities engaged in protecting the public but believes that a realignment of the 800 MHz band is not necessary to accomplish that goal. Instead of a realignment, Cinergy recommends the adoption of a market-based approach to resolving harmful interference to Public Safety communications on a case-by-case basis without adversely affecting the operations of 800 MHz licensees that neither cause nor receive interference.

Before undertaking a disruptive and costly realignment of the 800 MHz band, the FCC should conduct a thorough investigation into the scope and source of the Public Safety interference problem. While industry reports have begun to probe the causes and extent of Public Safety interference, not enough evidence exists to enable the FCC to tailor a remedy to these problems.

A market-based approach would provide the most efficient means of eliminating Public Safety interference. Under such an approach, the FCC would establish rules to (1) facilitate the identification of facilities likely to cause interference to Public Safety systems; (2) clarify the responsibilities of each party to resolve the interference; (3) establish timeframes to ensure prompt resolution; (4) provide a range of options to resolve interference; and (5) set forth procedures for third-party arbitration of disputes to minimize the FCC's involvement. Through negotiation and arbitration, a market-based approach would allow licensees to pursue the most inexpensive and effective solutions to the problem without implicating uninvolved licensees. Thus, the FCC should provide a forum

for licensees to solve their interference problems privately before considering a total band realignment.

Although the FCC outlined three proposals in the *NPRM*, each would impose needless disruption and expense on incumbent licensees. The Nextel proposal is an overly broad, complicated, and expensive method of resolving Public Safety interference. Although Nextel would require virtually every licensee in the band to relocate, including licensees that neither cause nor receive interference, it only agrees to pay a fraction of the relocation expenses of Public Safety licensees and would require other incumbent licensees to absorb all costs of relocating themselves as well as some portion of Public Safety relocation expenses. The Nextel proposal thus ignores the FCC's market-based policies that impose relocation costs on the entity causing the move. The Nextel proposal also fails to provide adequate and comparable replacement spectrum, thus threatening to foreclose many utility operations essential to maintaining and protecting the nation's critical gas and electric infrastructure.

The NAM and FCC proposals would also unduly burden incumbent licensees in the 800 MHz band by creating unnecessary disruption and expense without any discernable benefits. Although these proposals impose substantial relocation costs on 800 MHz licensees, they fail to offer any logistical details on the funding or cost allocation associated with such a massive relocation. The FCC proposal also neglects to discuss the impact of such a relocation on General Category assignments or Public Safety licensees operating on the NPSPAC channels. Because of these deficiencies, the NAM and FCC proposals do not provide a viable approach to reducing Public Safety interference.

The FCC should also decline to consolidate the Business and I/LT Pools in the 800 MHz and 900 MHz bands. Consolidation would essentially eliminate the remaining I/LT spectrum in these bands, denying critical infrastructure entities access to spectrum and endangering the efficient operation of their public safety/public service communications systems.

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Cinergy Corporation ("Cinergy"), through its undersigned counsel, submits these Comments on the *Notice of Proposed Rule Making* in the above-captioned matter pursuant to Section 1.415 of the Federal Communications Commission's ("FCC" or "Commission") rules.<sup>1</sup> In this proceeding, the FCC requested comments on methods by which it could mitigate harmful interference to 800 MHz Public Safety systems, while limiting disruption to incumbent licensees. Cinergy shares the FCC's concern about interference to Public Safety land mobile systems and supports solutions to resolve these problems with minimal cost and disruption to all potentially affected parties.

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<sup>1</sup> In re Improving Public Safety Communications in the 800 MHz Band; Consolidating the 900 MHz Industrial/Land Transportation and Business Pool Channels; WT Docket No. 02-55, *Notice of Proposed Rule Making*, 17 F.C.C. Rcd. 4873 (2002) [hereinafter *NPRM*]. The *NPRM* was published in the Federal Register on April 5, 2002. 67 Fed. Reg. 16351 (Apr. 5, 2002).

## I. INTRODUCTION

### A. Background

In the *NPRM*, the FCC asserts that numerous Public Safety licensees have reported harmful interference to their 800 MHz land mobile radio systems in recent years.<sup>2</sup> To identify the extent and source of this interference, the FCC created the Commercial/Public Safety Interference Task Force in April 2000, comprised of representatives of Public Safety licensees, cellular carriers, Nextel, and Motorola. In November 2000, the Task Force published a set of thirty-six survey responses, generally indicating that some Public Safety users have experienced higher than expected levels of interference in the immediate vicinity (*e.g.*, within 3/4 mile) of certain cell sites at which Nextel and/or cellular carriers have 800 MHz transmitting equipment.<sup>3</sup> To combat this interference problem, the Task Force issued a *Best Practices Guide* to provide a broad overview on methods of identifying and alleviating interference in December 2000.<sup>4</sup>

On November 21, 2001, Nextel Communications, Inc. ("Nextel") filed a proposal with the FCC, which it claimed would reduce interference to 800 MHz Public Safety radio systems. In this *White Paper*, Nextel admitted that it was responsible for the interference problem but, nevertheless, proposed that the FCC: (1) assign it 10 MHz of additional, contiguous spectrum in the 2 GHz band for its own operations; (2) remove Business and Industrial/Land Transportation ("I/LT") systems from the 800 MHz band; (3) realign the 800 MHz channel plan; (4) reallocate additional spectrum to Public Safety licensees; and (5) require all non-Public Safety users of the

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<sup>2</sup> *NPRM*, 17 F.C.C. Rcd. 4873 ¶ 14.

<sup>3</sup> Public Safety Wireless Network, Special Assignment Technical Report: 800 MHz Interference Survey Response (Nov. 2000).

800 MHz band to reimburse Public Safety's relocation costs, including Business and I/LT licensees that do not interfere with Public Safety operations.<sup>5</sup>

In response to this anecdotal information regarding Public Safety interference, the FCC initiated the present rulemaking to investigate solutions to the problem. Cinergy supports the FCC's goal of promptly eliminating the cause(s) of Public Safety interference. As explained below, Cinergy relies on its private land mobile radio system to support critical utility operations affecting virtually every resident and business in its operating territory and frequently interacts with Public Safety agencies. Because of Cinergy's reliance on 800 MHz private land mobile radio to protect life, health, and property, the FCC must ensure that the mechanisms used to resolve Public Safety interference do not adversely affect it.

#### **B. Cinergy's Interest in the Proceeding**

Cinergy is one of the largest diversified energy companies in the United States and is the parent company of Cincinnati Gas & Electric ("CG&E") and PSI Energy, Inc. ("PSI Energy"). These operating companies serve a combined total of 1.5 million electric and 455,000 gas customers in Ohio, Indiana, and Kentucky. While CG&E provides service in a 3,000 square mile service area surrounding metropolitan Cincinnati, PSI Energy's service territory covers 22,000 square miles, or approximately two-thirds, of Indiana.

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<sup>4</sup> Avoiding Interference between Public Safety Wireless Communications Systems and Commercial Wireless Communications Systems at 800 MHz: A Best Practices Guide (Dec. 2000) [hereinafter *Best Practices Guide*].

<sup>5</sup> Nextel Communications, Inc., Promoting Public Safety Communications – Realigning the 800 MHz Land Mobile Radio Band to Rectify Commercial Mobile Radio – Public Safety Interference and Allocate Additional Spectrum to Meet Critical Public Safety Needs 9, 15-16 (Nov. 21, 2001) [hereinafter *Nextel White Paper*].

To facilitate their internal communications, and to monitor their power generation and distribution systems, in these vast service territories, CG&E and PSI Energy operate extensive private land mobile and microwave communications systems. With respect to its 800 MHz land mobile operations, CG&E holds four conventional 800 MHz radio licenses, consisting of two I/LT frequencies, and two trunked radio licenses, consisting of fifteen I/LT frequencies. CG&E also holds one 2 GHz point-to-point microwave license in the 2165-2200 MHz MSS band. CG&E has constructed 24 base stations and 37 control stations to operate its 800 MHz system for use with its more than 1,500 mobile units. PSI Energy also operates a conventional system in the 800 MHz band, consisting of 63 base stations and 850 mobile units. While PSI Energy's conventional system uses twelve discrete General Category frequencies, it also licensed sixty-three Business or I/LT frequencies for a new wide-area trunked system in 2001.

These wireless communications systems are fundamental to Cinergy's utility operations. Cinergy and other power utilities supply the core resources – gas and electricity – that permit modern society to function. Because industrial, business, and domestic operations depend on the availability of electric and gas power, Cinergy's utility services impact the lives of virtually everyone within its service territory. In addition to these customers, Cinergy is also responsible for providing electricity and gas to hospitals and other critical facilities throughout its service territory. Simultaneously, Cinergy must ensure the safety of the work crews maintaining its infrastructure and delivering the electricity and gas safely and efficiently to its customers. Cinergy's internal communications system is essential to protect the safety of its employees who must work around high-voltage electric lines. It also permits Cinergy to keep its systems functioning on a 24 hour a day, 7 day a week basis to avoid power outages that could deprive large areas and populations of electricity and gas services. Thus, while safety is a concern for all

800 MHz licensees, power utilities and other critical infrastructure industries have demonstrably more crucial requirements for reliable, interference-free communications.

Because any realignment of the 800 MHz band would affect the use of the wireless systems operated by CG&E and PSI Energy, Cinergy is vitally interested in this *NPRM*.

## **II. THE FCC SHOULD CONDUCT AN INDEPENDENT INVESTIGATION INTO INTERFERENCE SUFFERED BY PUBLIC SAFETY SYSTEMS**

As a threshold matter, Cinergy notes that the sporadic reports of interference reveal only anecdotal information about the scope and source of the Public Safety interference problem.<sup>6</sup> Cinergy recognizes that Public Safety agencies rely on land mobile communications to support their mission-critical functions. However, several proposals that have surfaced in the context of this proceeding assume that the problem is much larger and better understood than suggested by the evidence. They also fail to explain adequately how these proposals would successfully address Public Safety interference problems and clearly would have devastating consequences for Cinergy and other 800 MHz licensees.

Because of the wide-ranging repercussions of the proposals advanced in this proceeding, the FCC must compile significantly more empirical evidence at the outset to define the precise nature and scope of the problem. Without discounting the importance of even isolated incidents of interference to Public Safety systems, Cinergy believes that the FCC could craft a far less drastic approach to safeguard Public Safety communications systems.

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<sup>6</sup> At this time, the Commercial/Public Safety Interference Task Force has received approximately 90 responses to its survey.

**A. The FCC Should Thoroughly Study the Cause and Extent of Public Safety Interference Before Imposing a Band-Wide Solution**

Before taking any action that would significantly affect an entire band, the FCC typically conducts a thorough study of the band in question. For example, when the FCC proposed to reallocate spectrum to the Emerging Technologies, it directed the Office of Engineering and Technology ("OET") to research several possible spectrum homes for these operations and for incumbents impacted by such a reallocation.<sup>7</sup> In addition, to find spectrum suitable for advanced wireless services, the FCC examined several different bands, issuing an *Interim Report* in November 2000 and a *Final Report* in March 2001.<sup>8</sup> Thus, the FCC has repeatedly declined to reallocate spectrum without having the OET carefully investigate the possible repercussions of such an action.

Because of the myriad interests involved, a thorough study is particularly appropriate prior to any realignment of the 800 MHz band. Using empirical evidence obtained through such a study, Cinergy believes the FCC could narrowly tailor a solution to the Public Safety interference problem that would not require a relocation of every licensee on the band. Even considering the limited information that parties have developed so far, the incidents of Public Safety interference appear to involve a variety of technical issues. Thus, significantly more

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<sup>7</sup> Office of Engineering and Technology, Creating New Technology Bands for Emerging Telecommunications Technology, FCC/OET TS92-1 (Jan. 1992), *available at* [http://gullfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native\\_or\\_pdf=pdf&id\\_document=1008300002](http://gullfoss2.fcc.gov/prod/ecfs/retrieve.cgi?native_or_pdf=pdf&id_document=1008300002).

<sup>8</sup> Office of Engineering and Technology, et al., Spectrum Study of the 2500-2690 MHz Band: The Potential for Accommodating Third Generation Wireless Systems, ET Docket No. 00-258, *Final Report* (rel. Mar. 2001); Office of Engineering and Technology, et al., Spectrum Study of the 2500-2690 MHz Band: The Potential for Accommodating Third Generation Wireless Systems, ET Docket No. 00-232, *Interim Report*, 15 F.C.C. Rcd. 22310 (2000).

information is necessary to justify the massive changes that Nextel and others have proposed in this proceeding.

**B. Industry Reports Provide Limited Information and Guidance on the Scope and Source of the Public Safety Interference Problem**

Although Public Safety and Commercial Mobile Radio Service ("CMRS") licensees have shared the 800 MHz band on an interleaved basis since 1982,<sup>9</sup> the FCC did not receive any complaints of harmful interference until November 1998.<sup>10</sup> In an effort to determine the scope and source of this interference, industry representatives have released reports analyzing the isolated occurrences of interference. Despite the limited number of reported incidents, industry representatives have preliminarily ascribed this interference to three factors: (1) the differences between high-site analog systems and low-site digital systems; (2) the lack of frequency selectivity; and (3) the interleaved channels.

As noted in the *NPRM*, analog Public Safety systems typically provide extensive coverage with a single transmitter or a relatively small number of transmitters, using high-site base stations and only minimal frequency reuse.<sup>11</sup> Because of this system design, the signal picked up by Public Safety mobile units is strongest when they are near the transmitter and becomes weaker the farther they get from it.<sup>12</sup>

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<sup>9</sup> *NPRM*, 17 F.C.C. Rcd. 4873 ¶ 7.

<sup>10</sup> Joe Kuran, Timeline of Events Relating to Harmful Interference (Dec. 19, 2001), *in* APCO, Project 39: Interference to Public Safety 800 MHz Radio Systems, Interim Report to the FCC (Dec. 24, 2001), *available at* [http://www.apco911.org/afc/project\\_39/interim\\_report.pdf](http://www.apco911.org/afc/project_39/interim_report.pdf) [hereinafter *Project 39 Interim Report*].

<sup>11</sup> *NPRM*, 17 F.C.C. Rcd. 4873 ¶ 11.

<sup>12</sup> *Best Practices Guide*, *supra* note 4, at 6-7.

In contrast, Nextel's digital system typically uses many low site base stations to blanket geographical areas with strong signals and employs a high number of frequencies at each site.<sup>13</sup> Unlike the Public Safety systems, Nextel's use of multiple low-site base stations creates relatively strong signals throughout its service area.<sup>14</sup>

These different system designs could create a "near-far" problem for licensees in certain situations. When Public Safety mobile units are a significant distance from their base stations (and especially when they are on the fringes of their systems' coverage areas), but are close to a Nextel base station, the relatively weak Public Safety signals must compete with strong Nextel signals.<sup>15</sup> This competition results in the stronger Nextel signals interfering with the weaker Public Safety communications.

In addition, the *Best Practices Guide* states that interference may occur because Public Safety licensees receive broadly across the 800 MHz band. While this lack of frequency selectivity makes Public Safety receivers more affordable, giving licensees the flexibility to use a single radio for multiple systems that operate on different frequencies, it exposes a receiver to far more sideband noise, intermodulation products, and receiver overload problems.<sup>16</sup> When Public Safety mobile units operate in areas with high signal levels from low-site digital systems, the open-ended nature of the Public Safety receivers significantly increases the likelihood of interference.<sup>17</sup>

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<sup>13</sup> *Id.* at 7.

<sup>14</sup> *Id.*

<sup>15</sup> *Id.* at 6-7; *NPRM*, 17 F.C.C. Rcd. 4873 ¶ 15.

<sup>16</sup> *Best Practices Guide*, *supra* note 4, at 8-9.

<sup>17</sup> *Id.* at 7-8.

The *Best Practices Guide* also identifies the close proximity of 800 MHz Public Safety channels to CMRS channels as a source of interference.<sup>18</sup> Nevertheless, even though the FCC has permitted 800 MHz Public Safety and CMRS licensees to share the 800 MHz band since 1974, and to operate on interleaved channels since 1982, no significant problems were reported until 1998.<sup>19</sup> Thus, while frequency proximity might contribute to Public Safety interference, Cinergy believes that the FCC could resolve this problem through technical solutions without reallocating the entire band.

Based on the limited information available, the industry reports also indicate that a variety of reasons could explain the occurrence of radio interference at 800 MHz, including intermodulation, transmitter sideband noise, and receiver overload. These industry reports conclude that the affected licensees could apply a number of techniques on a case-by-case basis to analyze and resolve these situations.

### **III. THE FCC SHOULD USE A MARKET-BASED APPROACH TO ADDRESS HARMFUL INTERFERENCE TO PUBLIC SAFETY SYSTEMS**

Cinergy agrees with other commenters who believe that a market-based solution would protect Public Safety from harmful interference, permit flexibility in accommodating disparate radio systems in the 800 MHz band, and minimize, if not eliminate, detrimental impacts to other users of the band. Although Nextel would reap considerable competitive advantages by requiring Business and I/LT users to vacate the 800 MHz band, and Public Safety would no doubt prefer additional spectrum allocations and a funding mechanism for new radio systems, the FCC initiated this proceeding for the limited purpose of resolving allegations of interference

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<sup>18</sup> *Id.*

<sup>19</sup> *Id.* at 6.

between Nextel's low-site digital transmitters and existing Public Safety systems. The injection of additional issues related to Public Safety allocations or Nextel's entitlement to additional spectrum would likely delay the ultimate resolution of the more critical interference issues raised by the Public Safety community. Cinergy therefore urges the FCC to adopt a well-measured response to the problem at hand.

**A. Elements That The FCC Should Use to Craft Public Safety Interference-Reducing Rules**

Cinergy proposes that the FCC consider the following basic principles in crafting a new regulatory environment to address Public Safety's interference problems. Specifically, the rules should (1) define harmful interference and the events that would trigger a resolution procedure; (2) clarify the rights and responsibilities of each party; (3) avoid limiting or mandating possible remedies; (4) ensure prompt resolution of Public Safety interference complaints with only minimal FCC involvement; and (5) avoid impacting licensees not directly involved in the interference problem.

**1. Definitions of Harmful Interference and Triggering Events**

For purposes of resolving conflicts between stations licensed under Part 90, the FCC defines "harmful interference" as "any emission, radiation, or induction which specifically degrades, obstructs, or interrupts the service provided by such stations."<sup>20</sup> This functional definition does not depend on any arbitrary signal levels or carrier/interference ratios. While such standards would provide additional certainty, they are not necessary to resolve complaints between licensees. Rather, the first step is to define triggering events that would establish the

responsibility of the digital system licensee to cooperate with the Public Safety licensee in resolving the interference.

## 2. Rights and Responsibilities of Each Party

In the 800 MHz band, resolution of interference problems is the responsibility of the specific licensees causing and receiving the interference. Under Section 90.173(b) of the FCC's rules, "all applicants and licensees shall cooperate in the selection and use of frequencies in order to reduce interference" through mutually satisfactory arrangements.<sup>21</sup> If the licensees are unable to reach an agreement, however, the FCC "may impose restrictions[,] including specifying the transmitter power, antenna height, or area or hours of operation of the stations concerned."<sup>22</sup> Section 90.403(e) contains a similar rule on interference mitigation, requiring all licensees to "take reasonable precautions to avoid causing harmful interference."<sup>23</sup> As a last resort, the FCC noted that it may relocate the interfering licensee.<sup>24</sup>

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<sup>20</sup> 47 C.F. R. § 90.7 (2001).

<sup>21</sup> *Id.* § 90.173(b). The *Best Practices Guide* also counsels commercial licensees and public safety agencies to collaborate and share responsibility for avoiding interference. *Best Practices Guide*, *supra* note 4, *passim*.

<sup>22</sup> 47 C.F.R. § 90.173(b). In some instances under Part 90, the FCC has announced that it would employ a "first-in-time" principle under which the last licensee to commence operations would have to resolve any interference. See *In re Amendment of Parts 2, 22, and 90 of the Commission's Rules to Allocate Spectrum in the 928-941 MHz and to Establish Other Rules, Policies, and Procedures for One-Way Paging Stations in the Domestic Public Land Mobile Service and the Private Land Mobile Radio Services*, GEN Docket No. 80-183, RM-2365, RM-3047, RM-3068, *Second Report and Order*, 91 F.C.C.2d 1214, 1223 ¶ 32 (1982).

<sup>23</sup> 47 C.F.R. § 90.403(e).

<sup>24</sup> *In re Application of American Television of Utah, Inc. Salt Lake City, Utah; For a Television Construction Permit*, File No. BPCT-790822KE, *Memorandum Opinion and Order*, 1984 FCC LEXIS 1530, \*5 (1984) ("Generally, channel changes are used as a last resort where there is, or a petitioner has established a reasonable likelihood of interference, and where all efforts to filter out such interference fails.").

Thus, in the 800 MHz band, the interfering party has the primary responsibility to prevent the occurrence of harmful interference. If interference does occur, however, the FCC's rules set forth the appropriate order of interference mitigation techniques: (1) mutual agreement between the affected licensees; (2) imposition of technical restrictions on the affected licensees; and (3) relocation of the interfering licensee. Neither Section 90.173(b) nor Section 90.403(e) requires third-party licensees to participate in any interference mitigation.

Nextel's status as the primary source of interference in the 800 MHz band is well documented in reports by Public Safety agencies as well as in anecdotal evidence. For example, in its *Project 39 Interim Report*, APCO found that thirty of the forty-five Public Safety agencies reporting 800 MHz interference identified Nextel as the source.<sup>25</sup> Any rules that the FCC adopts in this proceeding should restrict participation in interference mitigation to the parties causing or receiving the interference.

### **3. No Limits on Possible Remedies**

Since the CMRS/Public Safety problem first arose in 1998, significant effort has gone into determining technical solutions. The *Best Practices Guide* and Motorola's *Interference Technical Appendix (Issue 1.41)* contain numerous technical solutions that could either alleviate to an acceptable level or even completely eliminate interference in specific situations. The following sections summarize the technical solutions that could resolve each type of interference problem.

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<sup>25</sup> See *Project 39 Interim Report*, *supra* note 10, *passim*.

**Intermodulation.** In the *Project 39 Interim Report*, APCO reported that intermodulation is the predominant cause of interference to Public Safety entities in the 800 MHz band.<sup>26</sup> If intermodulation is the source of the problem, digital system licensees and Public Safety entities could implement several steps that, taken alone, could significantly alleviate or eliminate interference.

Equipment that operates outside of its specifications may cause or exacerbate interference. To resolve this problem, Motorola found that a digital licensee may simply need to sweep a transmitter's antenna system or check the tuning on the combiners to ensure that they comply with specifications.<sup>27</sup> In addition, a digital licensee could decrease the power at which it transmits its signal, thus reducing the strength of the intermodulation product and making it less likely to overpower the Public Safety signal.<sup>28</sup> Digital licensees could also attempt to avoid transmitting on frequencies known to result in harmful intermodulation products,<sup>29</sup> especially when multiple carriers collocate at a site. Collocated carriers could coordinate their operations to avoid creating harmful intermodulation products.

In addition to these efforts by digital licensees, Public Safety licensees could take steps to increase their resistance to intermodulation interference dramatically. For example, a Public Safety licensee could increase the strength of its signal, thus making it less susceptible to being overpowered by an intermodulation product.<sup>30</sup> A Public Safety licensee could also use receivers

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<sup>26</sup> *Id.* at 3.

<sup>27</sup> Motorola, *Interference Technical Appendix*, Issue 1.41 44 (Feb. 2002), available at [http://www.motorola.com/cgiss/docs/Interference\\_Technical\\_Appendix.pdf](http://www.motorola.com/cgiss/docs/Interference_Technical_Appendix.pdf) [hereinafter *Interference Technical Appendix*].

<sup>28</sup> *Id.*; *Best Practices Guide*, *supra* note 4, at 12.

<sup>29</sup> *Interference Technical Appendix*, *supra* note 27, at 44.

<sup>30</sup> *Id.*

that have intermodulation specifications of 74 dBs or higher, which are much more immune to interference caused by intermodulation than receivers with less than 74 dBs.<sup>31</sup> Using receivers that receive a narrow range of frequencies, instead of receivers that lack frequency selectivity and receive much of the 800 MHz band, would decrease the likelihood of intermodulation products dropping into them. Additionally, changing receiver antennas could reduce the antenna gain and thus alleviate intermodulation interference.

**Transmitter Sideband Noise.** Digital licensees could undertake several technical solutions to alleviate or eliminate interference caused by transmitter sideband noise. As with intermodulation interference, they could ensure that their equipment operates in accordance with specifications<sup>32</sup> and, if necessary, decrease the power at which they transmit their signals.<sup>33</sup> They could also undertake modifications of their transmit antennas, such as increasing the center of radiation in order to increase local site isolation.<sup>34</sup> A similar effort would be to change the antenna in some manner, including changing the antenna pattern or eliminating down-tilt, in order to reduce the signal level in the immediate area of a site.<sup>35</sup> Digital licensees may also reduce the amount of sideband energy through additional filtering of the transmitter.<sup>36</sup>

In some situations, digital licensees could alleviate or eliminate transmitter sideband interference by using cavity combiners instead of hybrid combiners to reduce the amount of

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<sup>31</sup> *Id.*

<sup>32</sup> *Id.* at 43.

<sup>33</sup> *Id.*

<sup>34</sup> *Id.*

<sup>35</sup> *Id.*

<sup>36</sup> *Best Practices Guide, supra* note 4, at 13.

sideband energy.<sup>37</sup> In fact, Frontier Radio Communications, a company that designs, sells, installs, and services digital wireless communications equipment, recently stated that it "[does] not allow systems with hybrid combining at our sites because they don't protect other users."<sup>38</sup> Frontier Radio stated that it recently resolved an 800 MHz interference problem caused by Nextel's hybrid combiner at the Las Vegas Convention Center.<sup>39</sup> In an effort to reduce the interference, Nextel replaced the hybrid combiner with "a newer type of combiner," which reduced the interference to an acceptable level.<sup>40</sup>

Public Safety licensees, for their part, could alleviate or eliminate transmitter sideband interference by increasing the strength of their signals, thus making them less vulnerable to being overpowered by sideband energy.<sup>41</sup>

In terms of potential regulatory action, the FCC already limits the permissible amount of sideband emissions.<sup>42</sup> In the *NPRM*, however, it recognized the potential value of tightening those limits, stating its belief that "improvements in the 800 MHz Public Safety band could result if we imposed more stringent limits on the out-of-band emissions of CMRS transmitters potentially affecting satisfactory reception of Public Safety communications."<sup>43</sup> Because digital systems are a primary source of transmitter sideband interference to Public Safety entities, the

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<sup>37</sup> *Interference Technical Appendix*, *supra* note 27, at 43-44.

<sup>38</sup> Roger Combs, *Nextel Interference: A Transmitter-Filtering Issue?*, RADIORESOURCE MAGAZINE, Apr. 2002, at 10 (Letter to the Editor).

<sup>39</sup> *Id.*

<sup>40</sup> *Id.*

<sup>41</sup> *Interference Technical Appendix*, *supra* note 27, at 43.

<sup>42</sup> 47 C.F.R. § 90.210.

<sup>43</sup> *NPRM*, 17 F.C.C. Rcd. 4873 ¶ 75.

FCC should further limit these emissions by licensees operating digital systems in the 800 MHz band.

**Receiver Overload.** Although the *Best Practices Guide* reports that receiver overload rarely occurs in modern receivers, digital carriers could alleviate or eliminate interference caused by receiver overload by decreasing the power at which they transmit their signals, thus making the signal less likely to be over-amplified in the Public Safety receiver.<sup>44</sup> A digital licensee could also reduce its signal level by virtue of the local antenna pattern by increasing the height of its antenna site, altering its antenna radiation pattern, and utilizing antennas with tighter beam-width.<sup>45</sup>

In short, the *Best Practices Guide* and Motorola's *Interference Technical Appendix (Issue 1.41)* have already identified a number of technical solutions to resolve this interference, and the FCC's rules should not mandate or prohibit any particular interference-reducing measures.

#### **4. Prompt Resolution of Public Safety Interference Complaints with Resort to FCC Only in Extreme Situations**

Due to limited FCC resources, a framework for resolving interference complaints should minimize the need for FCC involvement to the extent possible. A market-based solution should create the opportunity and incentive for parties to eliminate harmful interference, with recourse to the FCC only in the most egregious situations.

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<sup>44</sup> *Best Practices Guide*, *supra* note 4, at 9, 12.

<sup>45</sup> *Id.* at 12.

## 5. **Avoid Impact on Licensees Not Directly Involved in the Interference Problem**

In the *White Paper*, Nextel claims that "[i]ncident-by-incident, after-the-fact interference remediation will inevitably fail to protect fully [Public Safety officials] and fail to keep pace with the evolving communications needs of both Public Safety and commercial communications providers."<sup>46</sup> Nextel also contends that relying on technical solutions would result in an "ongoing burden" and "spectral constraints" on commercial carriers, although it describes neither the alleged burden nor the constraints in any detail.<sup>47</sup> The Nextel *White Paper*, however, is unclear whether technical approaches would remedy the interference problem. Nextel represents that it has considered a variety of alternatives to reallocation as means of resolving interference, reaching the following conclusion:

None of these alternatives effectively achieves the essential public interest objective of correcting the fundamental cause of CMRS – public safety interference at 800 MHz *while making a significant amount of near-term spectrum available for enhanced and expanded public safety communications networks.*<sup>48</sup>

Apparently, Nextel rejected the use of alternatives to reallocation because they do not also involve additional spectrum for Public Safety. As noted above, the FCC should not let the issue of allocating additional spectrum to Public Safety cloud the issue of Public Safety interference that should drive this proceeding.

Resolution of Public Safety interference does not necessarily require disruption to other licensees in the 800 MHz band. Thus, the FCC should limit the impact of its rules to those entities that cause or experience interference.

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<sup>46</sup> *Nextel White Paper*, *supra* note 5, at 23.

<sup>47</sup> *Id.* at 24.

## B. Recommendations

Based on these principles, Cinergy recommends the adoption of the following market-based approach.

### 1. **The FCC Should Establish Threshold Parameters to Facilitate the Identification of Facilities That Might Cause Interference to Public Safety Systems**

One of the challenges facing an entity experiencing interference is identifying the potential source(s) of the interference. This is particularly problematic in the case of systems such as Nextel's, because the licensee may not individually license its transmitter locations, thus preventing the identification of the interfering sites in the FCC's licensing database.

The primary indicator of interference potential appears to be a high field strength in the immediate vicinity of a digital transmitter. Such high field strengths typically appear to be associated with digital transmitter sites having relatively low antennas and multiple transmit frequencies. Therefore, the FCC could help Public Safety entities identify potential interference sources by requiring all 800 MHz digital system licensees to register in a national database the locations of all transmit locations with antenna heights less than 200 feet AGL.<sup>48</sup> Cinergy recommends that all licensees of 800 MHz digital systems register low sites in this database because interference might not be limited to CMRS licensees. Because digital licensees would not use this database for frequency coordination *per se*, they would only have to provide (1) licensee name; (2) licensee contact information; and (3) geographic coordinates of the antenna

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<sup>48</sup> *Id.* at 31 (emphasis added).

<sup>49</sup> Alternatively, the FCC could develop a database of sites at which a calculated or measured field strength exceeds certain levels within a fixed distance from the antenna structure. However, the FCC would encounter difficulty administering or enforcing this alternative approach to identifying potential interference sources.

structure. Further, to ensure that entities would only use the database for interference resolution, a neutral third party should host it. To compel compliance, the FCC should impose penalties for failure to register a covered site within 30 days of activation.

To establish basic responsibilities for interference resolution, the FCC's rules could impose an obligation on any licensee of a digital 800 MHz system with a low-site transmitter (*i.e.*, less than 200 feet AGL) that is located within one mile of the place at which interference occurs to eliminate that interference or demonstrate that it is not the source of the interference. In this manner, a Public Safety licensee could more readily identify potential interference sources and could compel the cooperation of these licensees in resolving the situation.

**2. Clarify Responsibility of Interfering Licensee(s) to Eliminate Interference to Public Safety Systems**

Once the potential sources of interference to a Public Safety system are identified, the rules should establish the responsibility of a licensee determined to be causing harmful interference to a Public Safety system to take steps to eliminate the interference. At the same time, the Public Safety licensee should have a corresponding obligation to cooperate with the interferor in implementing the most cost-effective solution that will resolve the problem. Such a corresponding obligation is necessary to eliminate the potential for an interference case to be used as an opportunity to compel system "upgrades" or additional benefits that go beyond what is necessary to resolve the interference.

**3. Establish Timeframes to Ensure Prompt Resolution**

Interference to a Public Safety radio system should be corrected promptly. To ensure prompt resolution of interference cases, Cinergy recommends that the FCC establish specific timeframes within which parties must respond to complaints. For example, to ensure prompt

initiation of discussions, the rules could provide that a licensee which is identified by a Public Safety licensee as a potential source of harmful interference must communicate with the Public Safety complainant within ten business days of receiving a written notice from the Public Safety licensee which generally describes the nature of the interference, the location in which the interference is received, and a point of contact within the Public Safety organization. Within this ten-day period, the respondent licensee would be required to identify personnel who will be responsible for working with the Public Safety licensee to analyze the situation and, if necessary, to implement corrective measures. To the extent the parties work cooperatively toward a solution, arbitration would not be necessary. However, the availability of this option will give either party a right to seek a final resolution of the issue if the voluntary negotiations do not proceed at a suitable pace.

Further, to ensure that the parties work promptly toward a solution, the rules should provide that either party may initiate binding arbitration, as described below, if an agreement is not reached within 60 days after the Public Safety licensee's written notice of interference.

Although ten- and sixty-day periods would apply in most situations, the rules should provide for an expedited interference resolution procedure for immediate threats to public safety. In emergency situations where severe interference poses an immediate threat to safety of life, a digital system licensee receiving notice that it is a potential source of interference should have a duty to respond immediately and to assist in resolving the interference situation as quickly as possible.

#### 4. **Allow Parties to Use a Range of Options to Resolve Interference**

As noted above, a number of different techniques have been identified to resolve Public Safety interference at 800 MHz. Moreover, as more experience is gained in analyzing these cases, additional solutions will undoubtedly be found. Therefore, the rules should not arbitrarily limit the types of solutions that parties may employ in resolving these cases, but should allow a range of options.

For example, parties should be free to install new or modified equipment at the site of the interference-causing transmitter or in the Public Safety complainant's radio system. Parties should be free to alter signal ratios, such as by reducing the interfering signal in the interference area or increasing the Public Safety signal in the area (such as through an increase in transmitter power or installation of a narrowband signal booster). As a last resort, the interfering licensee must terminate operation on the offending frequencies.

To the extent a change of frequency would mitigate the interference, the parties should be permitted to enter a voluntary agreement providing for relocation of the Public Safety licensee's radio system to other frequencies in the 800 MHz band or another band.<sup>50</sup> The FCC should liberally waive the eligibility rules to permit relicensing of digital systems in the NPSPAC channels as part of a voluntary frequency swap with a Public Safety licensee to resolve an interference case.<sup>51</sup> Voluntary frequency swaps with non-Public Safety licensees should also be permitted to resolve Public Safety interference disputes. However, it should also be made clear

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<sup>50</sup> Voluntary relocation to Public Safety allocations at 700 MHz would appear to be an ideal solution.

<sup>51</sup> Waiver of eligibility should be limited to resolving a *bona fide* interference case, and not for a wholesale reallocation of channels.

that these licensees, who are not party to the interference dispute, are under no obligation to negotiate or to engage in arbitration.

**5. Adopt Procedures for Third-Party Arbitration of Disputes to Minimize FCC Involvement**

Cinergy believes that alternative dispute resolution procedures, such as arbitration, could resolve any interference disputes efficiently. The FCC has previously found that the use of alternative dispute resolution procedures help resolve disputes in a timely fashion if negotiations between the parties fail.<sup>52</sup> The FCC has even adopted a Policy Statement that supports and encourages the use of alternative dispute resolution procedures in its administrative proceedings.<sup>53</sup> Congress has also strongly supported the use of alternative dispute resolution procedures to resolve administrative proceedings.<sup>54</sup> The FCC has previously used arbitration to resolve disputes concerning the price of home-run wiring<sup>55</sup> and a competitive local exchange carrier's requests for interconnection, services, and network elements.<sup>56</sup>

Arbitration is an efficient and effective method for resolving disputes without overburdening the FCC's resources. The FCC could tailor procedural rules to promote quick

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<sup>52</sup> In re Part 90 of the Commission's Rules to Facilitate Future Development of SMR Systems in the 800 MHz Frequency Band; Implementation of Sections 3(n) and 332 of the Communications Act -- Regulatory Treatment of Mobile Services; Implementation of Sections 309(j) and 332 of the Communications Act -- Competitive Bidding, PR Docket No. 93-144; GN Docket No. 93-252; PP Docket No. 93-253; RM-8117; RM-8030; RM-8029, *Second Report and Order*, 12 FCC Rcd 19080, 19125 (1997).

<sup>53</sup> 47 C.F.R. § 1.18; In re Use of Alternative Dispute Resolution Procedures in Commission Proceedings in which the Commission is a Party, GC Docket No. 91-119, *Initial Policy Statement and Order*, 6 FCC Rcd 5669 (1997).

<sup>54</sup> Pub. L. 101-552, 104 Stat. 2739 (Nov. 15, 1990), reauthorized under Pub. L. 104-320, 110 Stat. 3870 (Oct. 19, 1996) (codified as amended at 5 U.S.C. §§ 571-583).

<sup>55</sup> 47 C.F.R. § 76.804(a).

<sup>56</sup> *Id.* § 51.807.

resolution by experts with an understanding of the specific issues associated with interference resolution. For example, the arbitration rules for the pricing of home-run wiring require parties to select an arbitrator within seven days.<sup>57</sup> Similar deadlines in this context could permit the prompt resolution of interference disputes.

Arbitration would encourage parties to resolve their differences through negotiation. The prospect of arbitration will provide an incentive for the parties to explore the circumstances surrounding the cause of interference within a definite period of time. This process is also likely to promote settlements, as the parties examine the basis for their claim. To provide an additional opportunity for settlement, the FCC could also establish a negotiation period after the hearing by requiring the arbitrator to withhold decision of the matter for a predetermined period of time.<sup>58</sup>

Arbitration would also conserve the resources of the parties and the FCC. Parties would save time and money if the FCC adopted arbitration procedures that are more compact than the existing procedures. For many disputes, an arbitrator could limit his or her review to the parties' documentation and, if necessary, field tests. This streamlined approach is particularly important to Public Safety licensees, which often have very limited budgets. In addition, arbitration would conserve the FCC's resources. The FCC would establish rules to ensure that the arbitration proceeds efficiently, including rules governing (1) how an arbitrator is selected; (2) how the arbitration hearing is conducted; (3) when the decision will be issued; and (4) how parties that fail to participate in good faith will be sanctioned. After promulgating these arbitration guidelines, the FCC could limit its role to the appeal process.

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<sup>57</sup> *Id.* § 76.804(a)(3).

<sup>58</sup> *See, e.g., id.* § 51.807(d)(3) (stating that the arbitrator is not permitted to issue a decision for fifteen days).

#### **IV. BAND REALIGNMENT IS NOT THE SOLUTION TO PUBLIC SAFETY INTERFERENCE**

##### **A. Evidence Suggests That Realignment Would Not Alleviate Intermodulation**

The FCC lacks the empirical evidence necessary to mandate a realignment of the bands allocated to Business and I/LT licensees as a solution to the problem of Public Safety interference. As noted above, intermodulation appears to be a primary source of the interference to public safety operations.<sup>59</sup> As the FCC notes in the *NPRM*, however, a significant question exists concerning whether a realignment of the 800 MHz band would remedy this problem.<sup>60</sup> Because realignment would cause pervasive disruption and impose substantial monetary and intangible costs, which are discussed more fully below, the FCC should not entertain the possibility of realignment unless the record definitively shows that this avenue would adequately remedy interference to Public Safety users.

##### **B. Realignment Would Severely Disrupt Cinergy and Other Incumbent Licensees**

A realignment of the 800 MHz band would have extraordinary consequences for Cinergy and other licensees currently using that band.

###### **1. 800 MHz Users Generally**

Realignment would disrupt the operations of Business and I/LT licensees in the 800 MHz band and impose substantial costs. A complete relocation of these incumbent licensees out of the 800 MHz band, as Nextel proposes, would require them to undertake costly, labor-intensive modifications to their systems and purchase new equipment, the availability of which is unclear

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<sup>59</sup> *Nextel White Paper*, *supra* note 5, at 21.

with regard to the 700 MHz band. A relocation to 900 MHz would likely require the construction of numerous additional sites to account for the different propagation characteristics of that band. Even an in-band relocation, such as those proposed by the NAM and the FCC, would impose significant costs and disruption. Most users would have to modify each of their transmitter sites and recall their vehicular and portable units from the field in order to retune or replace them. This relocation would render hundreds of millions of dollars worth of equipment useless. Because licensees could not operate their systems at full strength during this transition, the relocation would also disrupt their ongoing business operations.

## **2. Realignment Would be Particularly Disruptive to Cinergy and Other Public Service Utilities**

In comparison to most Business and I/LT licensees, utilities would suffer greatly magnified hardships. The hard-currency financial implications of such a change for a utility with an extensive wide-area system would be extraordinary. Utilities operate extensive systems that track their service territory. Cinergy believes that utilities likely comprise the largest class of Business and I/LT licensees in the 800 MHz band and that their typical operating territories are larger than most other Business and I/LT licensees. Utilities require the construction of a large number of sites and the acquisition and use of large numbers of vehicular and portable units. Furthermore, the internal resources required in terms of utility man-hours and system downtime would add considerably to the overall cost of both an out-of-band and an in-band relocation.

Although the exact costs of relocation are difficult to quantify at this time, Cinergy estimates that its operating companies would have to spend approximately \$50 million to relocate their systems to other frequencies in the 800 MHz band or to replacement spectrum in

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<sup>60</sup> *NPRM*, 17 F.C.C. Rcd. 4873 ¶ 27.

another band. Because CG&E and PSI Energy use older technology, any relocation would require them to replace, rather than retune, their entire systems.

Retuning is not an economically feasible option for CG&E or PSI Energy. For example, to retune its equipment, PSI Energy would have to changeout crystals in approximately thirty percent of its system. Because of the older technology involved, these crystals are no longer available. To obtain the necessary equipment, PSI Energy would face the daunting task of having to locate a company with the capability of manufacturing these outdated crystals. Because PSI Energy would only require a relatively small supply of these crystals, it would undoubtedly encounter difficulty finding a manufacturer willing to devote its finite resources to satisfy this order while charging a reasonable price.

Even if the equipment were readily available and reasonably priced, retuning would impose an onerous burden on PSI Energy and CG&E. To illustrate the magnitude of the retuning process, the companies have estimated some of the time intervals that would be required in a retuning. The following estimates are premised on the assumption that all of the companies' mobile radios can be retuned and that their existing base stations can be recrystallized. Even before the actual retuning process, each company would need approximately 24 weeks to prepare license modification applications, secure frequency coordination, and await FCC approval of the license modification applications.

It is further estimated that each company would be required to assign 2-3 technicians on a full-time basis, to visit each site and make the requisite equipment modifications. PSI Energy, for example, has 38 field offices, spread throughout its 22,000 square mile service territory, that would have to be visited. At each field office, technicians would have to replace or reprogram the local office's base station, replace or reprogram that office's mobile and portable radios

(typically 10-30 units per office), and train the mobile users on the new channels to be selected for each area. Additional delays are likely to be introduced due to the need to coordinate between the field office and the system control center, and the possibility that other problems will be uncovered during the system overhaul (e.g., mobile radios that cannot be repaired, or vehicular antenna and coax problems). It is estimated that this process could extend over 35-40 weeks after the system licenses are modified, thus requiring at least one year to complete a retuning.

Similar challenges will face CG&E, which has ten locations and more than 1,500 mobile units used in providing coverage over its 3,000 square mile service territory. However, CG&E's simulcast radio system creates additional complications. Because control channels will be changed and the combiners retuned, the mobile radios would have to be reprogrammed before the mobile radio will work again. CG&E will not be able to turn-up these changes on a site-to-site basis due the use of simulcast. Therefore, CG&E would face the prospect of a significant outage of the radio system.

In addition to the \$50 million required to replace the system, CG&E and PSI Energy would encounter additional difficulties if required to relocate to replacement spectrum in another band. To relocate to the 700 MHz or 900 MHz band, PSI Energy estimates that it would need one year to re-engineer its system for the different frequency band, one year to acquire frequency coordination and prepare the appropriate license applications, one year to select and acquire the replacement equipment, and one year to install and test its base station and mobile facilities. Although some of these time periods undoubtedly overlap, relocation would still require an enormous investment in man-hours and resources.

CG&E and PSI Energy also anticipates difficulty operating on the 700 MHz and 900 MHz bands because of other practical and technical problems. Because CG&E and PSI Energy would logically seek to upgrade to digital systems if they must relocate to another spectrum band, they would encounter difficulty because digital equipment is currently unavailable for the 700 MHz band. The 700 MHz band is also problematic because broadcasters will remain on the spectrum until at least December 31, 2006 and because of the restrictions on the use of the Guard Band. In addition, CG&E notes that the 900 MHz band is unsuitable because incumbent paging operations would create harmful interference for its voice communications. Finally, operating different systems in the 700 MHz and 900 MHz bands is not an option for CG&E and PSI Energy because Cinergy could not have a single radio platform for all of its operations.

The \$50 million estimate quoted above covers only the replacement of the CG&E and PSI Energy 800 MHz systems. This amount does not reflect CG&E and PSI Energy's stranded investment in their current systems or the time and money PSI Energy would have wasted to acquire spectrum for an up-to-date digital system in 2001. CG&E and PSI Energy have spent a combined \$24 million to implement their 800 MHz systems, not including intangible costs such as man-hours. While relocation would not necessarily render their entire investment worthless, it would cost Cinergy millions of dollars that it could otherwise spend improving its critical utility services.

In addition to these financial hardships, mandatory relocation would potentially disrupt vital utility operations. As the suppliers of electricity and other energy products and services to the public, utilities have a unique role in the functioning of modern society. Virtually every aspect of modern life depends upon the ability of utilities to carry out their functions in a safe

and efficient manner. The FCC is well aware of the vital role that land mobile communications play in utility functions. Congress has also recognized the importance of utility communications:

In managing spectrum, the FCC . . . first should attempt to meet the requirements of those radio users which render important services to large groups of the American public, such as governmental entities and utilities, rather than the requirements of those users which would render benefits to relatively small groups.<sup>61</sup>

More recently, Congress has taken specific steps to protect utilities from the disruption, cost, and uncertainty associated with spectrum auctions. The 1997 Balanced Budget Act amended Section 309(j) of the Communications Act to require the Commission to award mutually exclusive applications for initial licenses or permits using competitive bidding procedures.<sup>62</sup> Despite this competitive bidding requirement, the Balanced Budget Act included the following exemption:

(2) EXEMPTIONS—The competitive bidding authority granted by this subsection shall not apply to licenses or construction permits issued by the Commission—

(A) for public safety radio services, *including private internal radio services used by State and local governments and non-government entities* and including emergency road services provided by not-for-profit organizations, that—

(i) are used to protect the safety of life, health, or property; and

(ii) are not made commercially available to the public;<sup>63</sup>

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<sup>61</sup> S. Rep. No. 191, 97th Cong., 2d Sess. (1982), *reprinted in* 1982 U.S.C.C.A.N. 2237, 2250.

<sup>62</sup> Balanced Budget Act, § 3001, 47 U.S.C. § 309(j).

<sup>63</sup> *Id.* § 309(j)(2) (emphasis added).

The House Conference Report to the 1997 Budget Act stated that “the exemption from competitive bidding authority for ‘public safety radio services’ includes ‘private internal radio services’ used by *utilities*, railroads, metropolitan transit systems, pipelines, private ambulances, and volunteer fire departments.”<sup>64</sup> Thus, Congress clearly recognizes that utilities must have access to spectrum to promote Public Safety.

Utility communications systems are important to national security as well. For example, the 2001 Department of Commerce Appropriations Act required the NTIA to report to Congress on the current and future use of spectrum by energy, water, and railroad service providers to protect and maintain the Nation’s critical infrastructure.<sup>65</sup> In its Report, the NTIA concluded that utilities provide essential public services and are vital components of the Nation’s critical infrastructure.<sup>66</sup> Any “system disruptions that are not quickly restored pose potential threats not only to Public Safety, but also to the Nation’s economic security.”<sup>67</sup> By way of example, the NTIA Report cautioned that a disruption in a power generating station’s control computer could be “just as devastating” to the Nation’s economy as the September 11, 2001 terrorist attacks.<sup>68</sup> Furthermore, the President’s Commission on Critical Infrastructure Protection was established because certain critical infrastructures, such as electrical power systems, are “so vital that their

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<sup>64</sup> House Conf. Rep. No. 105-217, 105th Cong., 1st Sess., at 572 (1997), *reprinted in* 1997 U.S.C.C.A.N. 176, 192.

<sup>65</sup> Federal Funding, Fiscal Year 2001, Pub. L. No. 106-553, 114 Stat. 2762, 2762A-73 (2000).

<sup>66</sup> Marshall W. Ross and Jeng F. Mao, Current and Future Spectrum Use by the Energy, Water, and Railroad Industries, Response to Title II of the Departments of Commerce, Justice, and State, the Judiciary, and Related Agencies Appropriations Act, 2001 Pub. L. 106-553, U.S. Department of Commerce, National Telecommunications and Information Administration 3-3 (Jan. 30, 2002).

<sup>67</sup> *Id.*

<sup>68</sup> *Id.*

incapacity or destruction would have a debilitating impact.”<sup>69</sup> Our Nation’s “economic prosperity, and quality of life have long depended on the essential services” provided by utilities.<sup>70</sup>

The need to protect utility communications systems from disruption after the events of September 11th is particularly important. In Afghanistan, the United States discovered that terrorists had diagrams of American nuclear power plants and public water facilities.<sup>71</sup> Although these diagrams did not reveal any specific plans to attack a utility, the fact that terrorists had this information clearly indicates that utilities are an inviting target. If the unthinkable occurred, large segments of the population could be put at risk and the economy could be devastated.<sup>72</sup>

In light of these factors, the FCC should be particularly circumspect in connection with any measures that could impose unnecessary costs or disruption on utilities’ communications systems.

**C. The FCC Should Not Reallocate an Entire Band to Resolve a Problem That Is Primarily Caused by One Entity**

There is no dispute that the interference described in Nextel’s *White Paper* is overwhelmingly the result of Nextel’s operations. However, Nextel would enjoy unique benefits under its proposal, including access to significant additional, contiguous spectrum. In contrast,

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<sup>69</sup> Exec. Order No. 13,010, 61 Fed. Reg. 37,347 (July 17, 1996).

<sup>70</sup> President’s Commission on Critical Infrastructure Protections, *Critical Foundations – Protecting America’s Infrastructures* ix (Oct. 1997).

<sup>71</sup> David Johnston and James Risen, *Seized Afghan Files Show Intent, Not Plans*, N.Y. TIMES, Feb. 1, 2002, at A13.

<sup>72</sup> A recent column in the *Washington Times* by Robert Charles, counsel and staff director to the U.S. House National Security Subcommittee from 1995 to 1999, discussed the likelihood of utilities being “the next primary terrorist target” and the potential effects of terrorist attacks on utilities. Robert Charles, *Priority Required for Protecting Utilities*, WASHINGTON TIMES, Mar. 4, 2002, at A17.

the numerous remaining users of the 800 MHz band, who have no demonstrated involvement in the interference to Public Safety operators, would suffer severe hardship. Based on this extraordinary imbalance in the relative impact on the interested parties, the FCC should view Nextel's proposal as a highly suspect "remedy" to the asserted problem.

**V. THE REALLOCATION PROPOSALS OUTLINED IN THE *NPRM* WOULD CAUSE NEEDLESS DISRUPTION AND EXPENSE**

The *NPRM* outlined three 800 MHz realignment proposals: one from Nextel, one from the National Association of Manufacturers ("NAM"), and one from the FCC itself. As explained below, none of these realignment proposals would provide sufficient public benefit to justify the tremendous disruption and expense they would cause.

**A. The Nextel Plan Is Overly Broad, Complicated, and Expensive**

Under the Nextel Plan, the FCC would relocate most of the incumbent licensees in the 800 MHz band, allocating 20 MHz of contiguous spectrum at the lower end of the 800 MHz band for Public Safety licensees, placing Digital SMR systems at the upper portion of the band, and moving Business, I/LT, and analog SMR completely out of the band.<sup>73</sup> Nextel would relinquish its spectrum in the 700 MHz Guard Band and the 900 MHz band as replacement spectrum for these displaced Business, I/LT, and analog SMR licensees, but Nextel would receive compensation in the form of 10 MHz of 2 GHz spectrum in the current MSS allocation.<sup>74</sup> While Nextel offered to contribute up to \$500 million for the relocation of Public Safety

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<sup>73</sup> *Nextel White Paper*, *supra* note 5, at 28-30.

<sup>74</sup> *Id.* at 29.