

**BEFORE THE
FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON, DC 20554**

In the Matter of)	
)	
Unlicensed Operation in the Band 3650-3700 MHz)	ET Docket No. 04-151
)	
Additional Spectrum for Unlicensed Devices Below 900 MHz and in the 3 GHz Band)	ET Docket No. 02-380
)	
Amendment to the Commission's Rules With Regard to the 3650-3700 MHz Government Transfer Band)	ET Docket No. 98-237
)	

To: The Federal Communications Commission

**COMMENTS
OF THE
AMERICAN PETROLEUM INSTITUTE**

The American Petroleum Institute (“API”), by its attorneys, is pleased to submit these Comments to the Federal Communications Commission (“FCC” or “Commission”) in response to the Notice of Proposed Rule Making (“NPRM”) released on April 23, 2004.¹ The NPRM looks toward the amendment of the Commission’s rules to allow additional unlicensed and/or licensed terrestrial services in the 3650-3700 MHz (“3650 MHz”) band.

I. PRELIMINARY STATEMENT

1. API is a national trade association representing approximately 400 companies involved in all phases of the petroleum and natural gas industries, including the exploration,

¹ 69 Fed. Reg. 26790 (May 14, 2004).

production, refining, marketing and transportation of petroleum, petroleum products and natural gas. The API Telecommunications Committee is one of the standing committees of the organization's General Committee on Information Management & Technology. The Telecommunications Committee evaluates and develops responses to state and federal proposals affecting telecommunications facilities used in the petroleum and natural gas industries.

2. API's Telecommunications Committee is supported and sustained by companies that are authorized by the Commission to operate telecommunications systems in various of the licensed radio services. For instance, API's members utilize facilities in the Private Land Mobile Radio Services ("PLMRS"), licensed under Part 90 of the FCC's rules, to support the search for and production of oil and natural gas, to ensure the safe pipeline transmission of natural gas, crude oil and refined petroleum products, to process and refine these energy sources and to facilitate their ultimate delivery to industrial, commercial and residential customers. Many API member companies also utilize facilities authorized in the Private Operational-Fixed Microwave Services ("POFS") pursuant to Part 101 to serve a variety of vital telecommunications functions (*e.g.*, communications with remote oil and gas exploration and production sites for voice and data applications, communications with refineries, the extension of circuits to remote pipeline pump and compressor stations, and supervisory control and data acquisition systems ("SCADA") that remotely monitor and control oil and gas wells, and pipelines). Additionally, some API member companies operate ship and private coast radio facilities (authorized under Part 80) and aviation radio facilities (governed by Part 87).

3. As a supplement to the aforementioned licensed radio systems, many API member companies operate unlicensed "spread spectrum" systems in the 902-928 MHz, 2.4 GHz and 5.8 GHz bands for both point-to-point and point-to-multipoint communications systems.

These systems (like the licensed systems discussed above) are used for a variety of voice, as well as data, services for monitoring and control functions that help petroleum and natural gas companies conduct their day-to-day operations in a safe and efficient manner.

4. The continued operation of the licensed and unlicensed private radio systems employed by petroleum and natural gas companies is absolutely essential to protecting lives, health and property, both in support of the day-to-day operations of these companies, as well as during responses to emergency incidents. These systems are integral to the provision of our nation's energy resources to the public. Due to the critical importance of such systems to the operations of its members, API has been an active participant in all of the Commission's major rule making proceedings that have addressed the use of spectrum in the private (licensed) radio services and the availability of spectrum for unlicensed applications such as spread spectrum devices.

II. COMMENTS

5. In its NPRM, the Commission proposes to amend its rules to allow unlicensed devices to operate in the 3650 MHz band at higher power levels than is usually permitted for unlicensed services. The Commission also seeks comment on options that would allow for the introduction of licensed terrestrial operations in this band. For the reasons discussed below, API believes that the utility of this spectrum would be maximized by dedicating it exclusively (or at least primarily) for licensed operations.

A. API Supports a Substantial Licensed Allocation in the 3650 MHz Band

6. API filed comments in response to the Commission's Notice of Inquiry ("NOI")

in ET Docket No. 02-380² (a precursor to the instant NPRM) that, among other things, urged the Commission to continue to pursue the potential use of the 3650 MHz band for additional unlicensed operations, but to recognize that new unlicensed spectrum allocations will not eliminate the need for future allocations for licensed systems. While API still believes that the 3650 MHz band could be an appropriate home for higher powered unlicensed devices, API also believes that -- if the Commission is seeking to maximize the utility of the band and the services that can be provided in this spectrum -- a licensed approach is highly preferable.

7. API applauds and supports the Commission's goal of making more spectrum available for higher power, longer range types of applications that can be used to provide internet and other broadband services to consumers in rural areas of the United States.³ However, API believes that this goal, as well as other potential uses for this spectrum, can more effectively be realized by dedicating all or most of the 3650 MHz band for licensed use. Even with improvements in technology and interference avoidance techniques, it remains the case that licensed devices (subject to prior frequency coordination) are capable of operating at higher power levels and of transmitting across greater distances than unlicensed devices. In practice, the maximum amount of both coverage and reliability can be achieved when high power transmissions can be made over a clear channel. With longer range system designs, it becomes increasingly difficult for unlicensed devices to maintain the degree of geographic separation needed for clear channel usage. Receiver selectivity and antenna directivity remain the strongest tools for interference avoidance, and these tools are most effective in a licensed arena.

8. The experience of some API member companies with *unlicensed* operations

² See In the Matter of Additional Spectrum for Unlicensed Devices Below 900 MHz and in the 3 GHz Band, ET Docket No. 02-380, *Notice of Inquiry* (rel. Dec. 20, 2002).

³ See, e.g., NPRM at ¶ 2.

highlights the importance of and continued need for *licensed* spectrum allocations. As API discussed in its comments filed in response to the Commission’s NOI in ET Docket No. 02-380,⁴ some API member companies have been using unlicensed Internet Protocol (“IP”) based telecommunications systems to improve and modernize their SCADA and remote data access systems. The benefits (often safety-related) of such an approach include faster response time, greater monitoring capacity, and the ability to: have information available in many locations simultaneously, make multiple use of a single communications facility, make use of (and interface to) standard software, interact effectively with large data houses in the field, and modify software remotely. Unlicensed Wireless Ethernet Radio equipment (both point- to-point and point-to-multipoint) has been a cost-effective tool to get IP-type connectivity “pushed out” to many remote locations. Experience has shown, however, that the potential for interference with unlicensed devices is substantial and that the actual distance that can be covered with unlicensed devices is often far less than what the equipment specifications suggest could be accomplished without interference. Perhaps for this reason, many countries have concluded that there is a need for a coordinated/licensed version of wireless IP delivery systems for critical infrastructure companies, private businesses, municipalities and Wireless ISP’s to use for the reliable delivery of IP-based services.

9. In view of the foregoing, API and the United Telecom Council (“UTC”) filed joint comments last year in the Commission’s ongoing proceeding regarding the Big LEO spectrum allocations in the 1.6 GHz and 2.4 GHz bands (ET Docket No. 02-364) that urged the Commission to designate any returned Big LEO spectrum in the 2.4 GHz band for a licensed critical infrastructure industry allocation to be used for IP delivery systems and other potential

⁴ See note 2, *supra*.

applications.⁵ API and UTC explained that the 2.4 GHz band spectrum would be of great use to critical infrastructure entities seeking to move to more advanced technology to control the infrastructure they use to provide basic services more efficiently and safely. The Commission recently determined, however, that the 2.4 GHz band spectrum at issue will be used for other purposes, including for the relocation of Multipoint Distribution Service licensees from other spectrum.⁶ Accordingly, there remains an acute need for spectrum for the type of licensed IP delivery systems described above. This important need -- as well as many others -- could be satisfied with a licensed allocation in the 3650 MHz band.

B. The Contemplated Licensed Allocation in the 3650 MHz Band Should be Assigned Using a Site-by-Site Licensing or Band Manager Approach

10. The Commission states in its NPRM that, if it decides to license fixed and mobile services in the 3650 MHz band, one possible licensing approach would be to employ site-by-site licensing.⁷ API agrees with the Commission that such an approach would have the advantage of “allow[ing] access to the spectrum and entry into the market at a relatively low upfront cost.”⁸ API also notes that site-by-site licensing has historically worked well for private internal licensees -- including critical infrastructure entities such as API member companies -- because it enables these entities to license precisely the amount of spectrum that they need to cover their specific geographic areas of operation. Accordingly, for these companies, site-specific licensing

⁵ See Review of the Spectrum Sharing Plan Among Non-Geostationary Satellite Orbit Mobile Satellite Service Systems In the 1.6/2.4 GHz Bands, ET Docket No. 02-364, *Notice of Proposed Rule Making* (rel. Feb. 10, 2003) (“2.4 GHz NPRM”). In this 2.4 GHz NPRM, the Commission had asked whether any returned Big LEO spectrum in the 2.4 GHz band should be allocated “for site-based or critical infrastructure licensees.” 2.4 GHz NPRM at ¶ 272.

⁶ See Review of the Spectrum Sharing Plan Among Non-Geostationary Satellite Orbit Mobile Satellite Service Systems In the 1.6/2.4 GHz Bands, ET Docket No. 02-364, *Report and Order, Fourth Report and Order and Further Notice of Proposed Rulemaking*, at ¶¶ 66-71 (rel. July 16, 2004).

⁷ NPRM at ¶ 94.

⁸ *Id.*

is typically more spectrum efficient than geographic area licensing. API also notes that critical infrastructure entities are exempt from spectrum auctions pursuant to the Balanced Budget Act of 1997.⁹ In light of the foregoing, API recommends a site-by-site licensing approach for any spectrum in the 3650 MHz band to be made available for private, internal use by critical infrastructure companies. Given the important, safety-related functions that would be served in this spectrum, API further recommends that the Commission adopt an exclusive (rather than shared) use approach, pursuant to which applications for use of the spectrum would be subject to prior frequency coordination, and licensees would be protected against interference from other later-in-time licensees.

11. To the extent that the Commission considers it appropriate or advisable to assign some or all of any licensed allocation in the 3650 MHz band on a geographic area basis by competitive bidding, API believes that a Band Manager approach could be utilized here. Such an approach should make it possible for both site-by-site and geographic area licensing needs to be satisfied on this spectrum.

III. CONCLUSION

12. While API appreciates the Commission's interest in identifying new spectrum for unlicensed operations, it urges the Commission to recognize the advantages that can be gained from a licensed allocation in the 3650 MHz band. Such advantages include the ability to achieve both greater coverage and enhanced reliability. Further, a licensed allocation in the 3650 MHz band would help meet the need of API member companies and others for spectrum to be used for the long-range, reliable delivery of IP-based services. API believes that such spectrum would most efficiently be assigned through a site-by-site licensing and/or Band Manager approach.

⁹ See 47 U.S.C. § 309(j)(2)(A).

WHEREFORE, THE PREMISES CONSIDERED, the American Petroleum Institute respectfully submits the foregoing Comments and urges the Federal Communications Commission to act in a manner consistent with the views expressed herein.

Respectfully submitted,

**THE AMERICAN PETROLEUM
INSTITUTE**

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