BEFORE THE
FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON, DC 20554

In the Matter of	)	
	)	
Wireless Strategies, Inc.	)	WTB Docket No. 07-121
	)	
Request for Declaratory Ruling	)	
On Compliance of Fixed Microwave	)	
Antennas Having Distributed	)	
Radiating Elements	)	

To: The Wireless Telecommunications Bureau

REPLY COMMENTS
OF THE
AMERICAN PETROLEUM INSTITUTE

The American Petroleum Institute ("API"), by its attorneys, submits these Reply Comments to the Federal Communications Commission ("Commission") strongly supporting the opposition by many other commenters to Wireless Strategies, Inc.'s ("WSI's") Petition for Declaratory Ruling ("Petition") which seeks authorization to employ "Concurrent Coordination" under Part 101 of the Commission's Rules. WSI's proposal does not comply with Part 101 of the Commission's Rules, generally, and the frequency coordination requirements of Section 101.103, specifically. Further, the proposal would result in a substantial loss of spectrum allocated for point-to-point microwave use. Although grant of WSI's Petition is ill-advised, the Petition does serve to highlight the shortage of spectrum allocated for point-to-multipoint use, which API urges the Commission to remedy.

I. Preliminary Statement

API is a national trade association representing approximately 400 companies involved in all phases of the petroleum and natural gas industries, including the exploration, production, refining, marketing and transportation of petroleum, petroleum products and natural gas. API's Telecommunications Committee is supported and sustained by companies that are authorized by the Commission to operate telecommunications systems in various licensed radio services. API member companies 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).

These systems are integral to the provision of our nation's energy resources to the public. The continued operation of the private radio systems employed by petroleum and natural gas companies is 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.

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. API is participating in this waiver matter due to concerns that WSI's proposed operations could imperil important API member company operations in the POFS bands.

II. The Commission Should Deny WSI's Petition

A. WSI's Proposed Operations Do Not Comply with the Requirements of Part 101

Although WSI characterizes its vague proposal in terms of a new coordination procedure dubbed "Concurrent Coordination," it is clear that WSI actually seeks a dramatically different type of service that is not authorized by or even contemplated under Part 101 of the Commission's Rules.

Section 101(d)(2) of the Commission's Rules requires that frequency coordination consist of two elements: notification and response. In the notification phase, the proponent of a new point-to-point system must provide other licensees with certain information necessary to allow for independent evaluation of the interference potential of the proposed station. This information includes transmitting and receiving station coordinates, transmitting and receiving antenna type(s), model, gain, and, if required, a radiation pattern provided or certified by the manufacturer, transmitting and receiving antenna center line height(s) above ground level and ground elevation above mean sea level, and path azimuth and distance.[1] The Commission's Rules are clear that this information must be provided

[1] 47 C.F.R. § 101(d)(2)(ii).

for each transmitting station.[2] As WSI seems to argue that each "Distributed Radiating Element" ("DRE") is incorporated into a single "Smart Antenna" and is not an independent transmitting station, it proposes not to provide the information required by Section 101(d)(2) for each individual DRE.[3]

Of course, this is a fiction. The DREs contemplated by WSI are not actually a component of some kind of "Smart Antenna" but are independent transmit/receive stations.[4] Based on the limited information provided by WSI, the operation of these side lobe stations appears irrelevant to the point-to-point link established by the main lobe of the transmitter. Instead, the primary -- if not only -- purpose of the side lobe stations appears to be to facilitate communication between the remote site of the WSI customer where the side lobe station is located and the main transmitter operated by WSI.

Although WSI's business model is unclear, it would appear that the point-to-point link established by the antenna's main lobe is merely incidental to the station's operation, and, perhaps, exists only to allow WSI to pigeonhole its

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[2] It is not necessary for the Commission to decide whether transmit/receive stations located in the side lobe of transmitter in a point-to-point link may be independently licensed and coordinated to permit communications with said transmitter as WSI's proposal does not entail identification of side lobe stations in the coordination process.

[3] WSI's response that DREs need not be identified during coordination because they do not increase the overall interference potential of a particular station is irrelevant to its Petition. The Rules specifically provide for coordination consisting of notification and response. It is not permissible under the Commission's Rules for the proponent of a new station to independently conclude that its operation will not present interference to other licensees.

[4] Indeed, it is difficult to envision how an antenna with DREs located some distance away could satisfy the equipment authorization requirements of Section 101.139 of the Commission's Rules.

proposed service into Part 101. In fact, the proposed operations bear little or no resemblance to the operations contemplated under Part 101.

Section 101.1 defines the Fixed Service as "A radio communications service between *specified* fixed points." WSI, however, does not seek to *specify* the location of the DREs.

Section 101.115 of the Commission's Rules also states that, "unless otherwise authorized upon specific request by the applicant, each station authorized under the rules of this part must employ a directional antenna adjusted with the center of the major lobe of radiation in the horizontal plane directed toward *the receiving station with which it communicates*." While WSI apparently will employ a directional antenna, and the main lobe of that directional antenna will be directed toward a receive station, the antenna also will communicate with various side lobe stations towards which the main lobe is not directed.

Contrary to WSI's claim that its proposed operations are permitted under the current rules, it is clear that the rules either outright prohibit such operations or, at the very least, do not contemplate operations of the type WSI proposes. In either case, a Petition for Declaratory Ruling is not the proper vehicle by which to authorize these types of new and novel operations.

B. WSI's Proposed Operations Would Drastically Reduce Available Spectrum

As several commenters note, WSI's specified operations call for the use of the highest EIRP[5] permitted under the Rules and minimum side lobe suppression in an obvious attempt to maximize side lobe coverage without regard to the function of the main point-to-point link. It is this aspect of WSI's proposal that troubles API the most. As discussed in Section III below, the Commission should seek to expand options for point-to-multipoint applications, but not by authorizing operations that would severely impair point-to-point services. WSI appears to seek to use Part 101 to provide a form of commercial WiFi or WiMAX service and touts its service as "the next big thing in wireless." If WSI's new service is as significant as its marketing states, it has the potential to completely eviscerate microwave operations across the U.S., particularly given that WSI's proposal is not limited to any particular band but could conceivably apply across the entire range of Part 101 spectrum.

It is truly difficult to conceive of a more disastrous decision than one which would, *de facto*, allocate all point-to-point microwave spectrum for wide area WiMAX use. Spectrum suitable for private microwave operations is already in short supply. Over the years, private microwave operators have been required to vacate various bands in order to accommodate other services, including the 1850-1990 MHz band to accommodate new Personal Communications Services, portions of the 2 GHz band to accommodate new Advanced Wireless Services, and the 12.2-

[5] Section 101.113 of the Commission's Rules requires that the average power delivered to an antenna in Part 101 must be the minimum amount of power necessary to carry out the communications desired. It would appear that WSI has requested power levels designed to produce the largest possible service area without necessarily associating power with any particular communications path.

12.7 GHz band to accommodate the introduction of Direct Broadcast Satellite Services. While the loss of those bands is regrettable, it pales in comparison to the loss that would be suffered if WSI's Petition is granted.

III. The Commission Should Seek Other Options for Point-To-Multipoint Services

While the means that WSI seeks to employ are clearly inconsistent with the Commission's Rules and contrary to the Public Interest, and its Petition must be denied, the goal that WSI seeks to achieve -- additional spectrum for point-to-multipoint use -- is meritorious. There is an acute shortage of spectrum allocated for point-to-multipoint use, particularly spectrum that is suitable for broadband applications and not subject to auction. The Commission must address this issue in the near future.

While API understands that the Commission has placed a large amount of faith in auctions and geographic area licenses, these mechanisms do not serve private industry. Chief among many reasons, geographic area licenses are generally centered around population centers which, while directly correlated to the markets of commercial service providers, often bear little similarity to the areas that the oil and natural gas industry seeks to cover. An oil and natural gas company has little to no ability to acquire spectrum for communications at a Los Angeles based refinery, for example, by competing at auction against commercial service providers for the rights to a Los Angeles Economic Area license. To confirm this point, one need only review recent Commission auction records to see the almost complete lack of licenses awarded to non-commercial carriers.

While resort to the secondary markets is, in theory, a potential solution, in practice the Commission's leasing, assignment and spectrum dissagregation/partitioning rules and policies are rarely feasible options. Without a common Commission-supported spectrum clearinghouse, there are significant and nearly insurmountable search/transaction costs involved in identifying available spectrum, contacting willing lessors, and negotiating a spectrum lease. Large commercial providers have little or nothing to gain by "carving up" licensed spectrum, the single most important asset of their businesses, and the Commission's Rules do not incentivize them to do so.

As a result of the lack of options for licensed spectrum, private industry has been forced to rely on the unlicensed bands to satisfy requirements for higher bandwidth point-to-multipoint applications -- including SCADA systems that ensure effective oil and natural gas industry operations and are critical to safety of life and the protection of property and the environment. It is almost inconceivable, as a public policy matter, that Critical Infrastructure Industry[6] communications are literally forced to share spectrum with baby monitors and cordless phones but that is where the industry is today.

While the existence of the unlicensed bands, combined with the willingness of private industry to migrate operations to unlicensed spectrum, has allowed the Commission some leeway to allocate more spectrum for auctioned services, predictable problems associated with such a spectrum management scheme are

[6] The Commission has long recognized the role that CII entities, including oil and natural gas companies, serve to protect safety of life, health, and property. *See* 47 C.F.R. § 90.7.

coming home to roost. Entrepreneurial Wireless Internet Service Providers have recently expanded license-exempt operations and, as evidenced by the Commission's ongoing Spectrum Etiquette proceeding, the crowding in the unlicensed bands, and the incompatibility of certain equipment operating in the bands, threatens to upset the already fragile balance in place.[7]

These types of problems highlight the need for non-auctioned spectrum alternatives for point-to-multipoint services. While WSI's Petition takes the wrong approach and should be denied, ultimately, the goal of additional point-to-multipoint spectrum is one that the Commission must address in the near future.

IV. Conclusion

API respectfully submits the foregoing Reply Comments and urges the Commission to act in a manner consistent with the views expressed herein.

Respectfully submitted,

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[7] *See* Modification of Parts 2 and 15 of the Commission's Rules for Unlicensed Devices and Equipment Approval, *Memorandum Opinion and Order and Further Notice of Proposed Rule Making*, ET Docket No. 03-201, FCC 07-117 (rel. June 22, 2007).

Its Attorneys

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