



utilities and pipelines are members of UTC, ranging in size from small electric cooperatives and water districts serving only a few thousand customers, to large combination electric-gas-water utilities serving millions of customers. All utilities and pipelines depend on reliable and secure communications facilities to carry out their public service operations, and many have installed, or plan to install, spread spectrum point-to-point transmitting equipment certified under Section 15.247 of the Commission's Rules. Accordingly, UTC has an interest in this proceeding.

In its Petition, WMC notes that after June 22, 1994, Section 15.37 of the Commission's Rules will prohibit the manufacture or importation of unlicensed radio equipment which does not comply with the current technical standards of Part 15. Under Section 15.247(b), unlicensed spread spectrum systems employing antennas of directional gain greater than 6 dBi must reduce transmitter output power by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

WMC points out that this restriction will severely limit the effective operation of unlicensed point-to-point systems that have been developed for operation in the 2400-2483.5 and 5725-5850 MHz bands. WMC argues that directional systems in these bands "should not be penalized

with a transmitter power requirement lower than the transmitter power allowed for less spectrum efficient systems using omnidirectional antennas."<sup>2/</sup>

UTC strongly supports WMC's Petition for Rule Making, and urges the Commission to promptly initiate a rulemaking proceeding on this issue. Spread spectrum point-to-point systems developed pursuant to the former provisions of Part 15 have proven very beneficial to UTC's member companies, with no discernible adverse effects. UTC's member companies report that they rely on this equipment for many diverse applications:

- o Low density spurs off of microwave or fiber optic backbone systems to serve remote field offices and service centers.
- o Extensions of local area networks (LANs) among corporate office buildings.
- o Transmission of supervisory control and data acquisition (SCADA) circuits and seismic monitoring equipment.
- o To link VHF land mobile base stations with dispatch control points.
- o To link 800 MHz trunked repeater sites, used for voice and data transmissions, to wide area controllers.
- o Remote control of a mobile stacker reclaimer in a power plant control yard.
- o Temporary emergency restoration links to be used until permanent links can be installed or repaired.

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<sup>2/</sup> WMC Petition, p. 2.

In summary, equipment developed under these rules has been found to be very effective in establishing inexpensive, short-hop T1 links.

UTC agrees with WMC that the reduction in transmitter gain, which will become effective for newly manufactured or imported equipment, is actually counterproductive. If users are no longer able to secure the equipment as currently designed, they may be forced to use licensed radio spectrum for these relatively low density, short-range links. Moreover, the unlicensed nature of this equipment makes it ideal as a means of temporary or emergency communications for utility or pipeline use. Reducing the output power in relation to antenna gain will limit the effective range of the equipment, and severely curtail its usefulness to these industries.

Among UTC's member companies which have reported using this equipment, only one company has experienced harmful interference. However, the interference source was believed to be from maritime radar operated on board ships in a channel over which the point-to-point link was established. UTC's informal survey on this issue disclosed no instances of interference with this equipment that could be attributed to the output power or gain of the spread spectrum systems themselves.

UTC notes that Section 15.247(b) provides no limit on the size or beamwidth of "directional" antennas used in spread spectrum systems. Even with a limit of 6 dBi in gain, use of wide beamwidth antennas could create a greater interference potential, particularly if the system is used for only short-range applications. Use of more highly directionalized antennas (e.g., 4 foot or greater, 25 dBi minimum) antennas would tend to reduce the interference potential of these systems by better concentrating the energy along the desired frequency path.

UTC also notes that Section 15.15 of the Commission's Rules currently provides, among other things, that "the parties responsible for equipment compliance are encouraged to employ the minimum field strength necessary for communications." Under this provision, equipment operated under Part 15 should be installed and operated so as to limit the transmitted power to the minimum necessary to achieve viable communications. Indeed, EIRP should be reduced on short paths to avoid overloading the receiver and thereby degrading performance. Thus, permitting use of higher gain antennas will not necessarily mean that all systems will be operating at the maximum 1 watt output power. However, for longer path distances, the higher gain is essential.

In conclusion, UTC urges the Commission to promptly grant the WMC Petition and to initiate a rulemaking proceeding to consider revisions in Section 15.247(b) to permit use of higher gain directional antennas in unlicensed spread spectrum radio systems operating in the 2.4 and 5.8 GHz bands.

Respectfully submitted,

**UTILITIES TELECOMMUNICATIONS  
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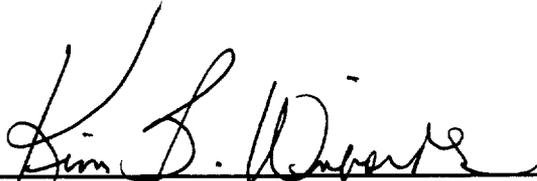
CERTIFICATE OF SERVICE

I, Kim B. Winborne, a secretary with the Utilities Telecommunications Council, hereby certify that I have caused to be sent, by first class mail, postage prepaid, this 18th day of March, 1994, a copy of the foregoing "Comments of the Utilities Telecommunications Council," to each of the following:

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