

future, five-year reviews may be required at Nansemond if other remedies are selected that leave waste on site above levels that allow for unlimited use and unrestricted exposure.

While EPA does not believe that any future response actions will be needed for the soil in the Impregnation Kit Area, if future conditions warrant such action, the proposed deletion area remains eligible for future response actions. Furthermore, this partial deletion does not alter the status of any other areas at Nansemond that are not proposed for deletion and remain on the NPL, including, but not limited to, the ground water beneath the Impregnation Kit Area.

EPA, together with Corps and with concurrence from the Commonwealth of Virginia, has determined that all appropriate CERCLA response actions have been completed for the soil in the Impregnation Kit Area and protection of human health and the environment has been achieved in these areas. Therefore, EPA makes this proposal to delete the soil in the Impregnation Kit Area of Nansemond site from the NPL.

Dated: January 9, 2003.

**Thomas Voltaggio,**

*Acting Regional Administrator, Region III.*

[FR Doc. 03-1144 Filed 1-17-03; 8:45 am]

**BILLING CODE 6560-50-P**

## FEDERAL COMMUNICATIONS COMMISSION

### 47 CFR Part 15

[ET Docket No. 02-380; FCC 02-328]

#### Spectrum for Unlicensed Devices

**AGENCY:** Federal Communications Commission.

**ACTION:** Proposed rule; notice of inquiry.

**SUMMARY:** This document requests comments from the public on the possibility of permitting unlicensed devices to operate in additional frequency bands. Specifically, the Commission seeks comments on the feasibility of allowing unlicensed devices to operate in TV broadcast spectrum at locations and times when spectrum is not being used, and on the technical requirements that would be necessary to ensure that such devices do not cause interference to authorized services operating within the TV broadcast bands. The Commission also seeks comment on the feasibility of permitting unlicensed devices to operate in other bands, such as the 3650-3700 MHz band at power levels

significantly higher than the maximum permitted for unlicensed devices in other frequency bands, with only the minimal technical requirements necessary to avoid interference to licensed and incumbent services. The Commission believes that these actions could have significant benefits to the economy, businesses and consumers by allowing the development of new and innovative types of unlicensed devices.

**DATES:** Written comments are due April 7, 2003, and reply comments are due May 6, 2003.

**ADDRESSES:** Office of the Secretary, Federal Communications Commission, 445 12th Street, SW., TW-A325, Washington, DC 20554.

**FOR FURTHER INFORMATION CONTACT:**

Hugh L. Van Tuyl, Office of Engineering and Technology, (202) 418-7506, TTY (202) 418-2989, e-mail: [hvantuyl@fcc.gov](mailto:hvantuyl@fcc.gov).

**SUPPLEMENTARY INFORMATION:** This is a summary of the Commission's *Notice of Inquiry*, ET Docket 02-380, FCC 02-328, adopted December 11, 2002, and released December 20, 2002. The full text of this document is available for inspection and copying during regular business hours in the FCC Reference Center (Room CY-A257), 445 12th Street, SW., Washington, DC 20554. The complete text of this document also may be purchased from the Commission's copy contractor, Qualex International, 445 12th Street, SW., Room, CY-B402, Washington, DC 20554. The full text may also be downloaded at: <http://www.fcc.gov>. Alternative formats are available to persons with disabilities by contacting Brian Millin at (202) 418-7426 or TTY (202) 418-7365.

Pursuant to §§ 1.415 and 1.419 of the Commission's rules, 47 CFR 1.415, 1.419, interested parties may file comments on or before April 7, 2003, and reply comments on or before May 6, 2003. Comments may be filed using the Commission's Electronic Comment Filing System (ECFS) or by filing paper copies. See *Electronic Filing of Documents in Rulemaking Proceedings*, 63 FR 24121, May 1, 1998. Comments filed through the ECFS can be sent as an electronic file via the Internet to <http://www.fcc.gov/e-file/ecfs.html>. Generally, only one copy of an electronic submission must be filed. If multiple docket or rulemaking numbers appear in the caption of this proceeding, however, commenters must transmit one electronic copy of the comments to each docket or rulemaking number referenced in the caption. In completing the transmittal screen, commenters should include their full name, U.S. Postal Service mailing address, and the

applicable docket or rulemaking number. Parties may also submit an electronic comment by Internet e-mail. To get filing instructions for e-mail comments, commenters should send an e-mail to [ecfs@fcc.gov](mailto:ecfs@fcc.gov), and should include the following words in the body of the message, "get form <your e-mail address.>" A sample form and directions will be sent in reply. Parties who choose to file by paper must file an original and four copies of each filing. If more than one docket or rulemaking number appear in the caption of this proceeding, commenters must submit two additional copies for each additional docket or rulemaking number.

All filings must be addressed to the Commission's Secretary, Office of the Secretary, Federal Communications Commission. Filings can be sent by hand or messenger delivery, by commercial overnight courier, or by first-class or overnight U.S. Postal Service mail (although we continue to experience delays in receiving U.S. Postal Service mail). The Commission's contractor, Vistrionix, Inc., will receive hand-delivered or messenger-delivered paper filings for the Commission's Secretary at 236 Massachusetts Avenue, NE., Suite 110, Washington, DC 20002. The filing hours at this location are 8 a.m. to 7 p.m. All hand deliveries must be held together with rubber bands or fasteners. Any envelopes must be disposed of before entering the building. Commercial overnight mail (other than U.S. Postal Service Express Mail and Priority Mail) must be sent to 9300 East Hampton Drive, Capitol Heights, MD 20743. U.S. Postal Service first-class mail, Express Mail, and Priority Mail should be addressed to 445 12th Street, SW., Washington, DC 20554.

#### Summary of Notice of Inquiry

1. The Commission initiated this *Notice of Inquiry* ("NOI") to obtain comments from the public on the possibility of permitting unlicensed devices to operate in additional frequency bands. Specifically, we seek comments on the feasibility of allowing unlicensed devices to operate in TV broadcast spectrum at locations and times when spectrum is not being used, and on the technical requirements that would be necessary to ensure that such devices do not cause interference to authorized services operating within the TV broadcast bands. The Commission also seeks comment on the feasibility of permitting unlicensed devices to operate in other bands, such as the 3650-3700 MHz band at power levels significantly higher than the maximum permitted for unlicensed devices in other frequency bands, with only the

minimal technical requirements necessary to avoid interference to licensed and incumbent services. We believe that these actions could have significant benefits to the economy, businesses and consumers by allowing the development of new and innovative types of unlicensed devices.

2. Unlicensed transmitters may be operated under the provisions of part 15 of the Commission's rules. Part 15 transmitters generally operate on frequencies shared with authorized services and at relatively low power. Operation of a part 15 transmitter is subject to the conditions that the device not cause interference to authorized services, and that the device must accept any interference received. The Commission made two significant changes to part 15 in the 1980's that enabled the development of new types of unlicensed devices and led to increased use of these devices.

3. The first significant change, in 1985, was to permit spread spectrum transmitters to operate on an unlicensed basis in certain bands allocated for Industrial, Scientific and Medical (ISM) equipment. Specifically, such transmitters are permitted to operate in the 902–928 MHz, 2400–2483.5 MHz and 5725–5850 MHz bands. Spread spectrum transmitters spread their energy over a wide bandwidth, which increases resistance to interference and can allow multiple transmitters to share the same spectrum. Such transmitters are permitted to operate with a power of up to one watt, which is considerably higher than the maximum power permitted for other part 15 devices. This allows for significantly greater transmission range than other part 15 devices. In addition, the relatively wide bandwidth permitted for spread spectrum transmitters makes them useful for applications such as high speed data transmission. There are no limitations in the rules on the types of applications for which spread spectrum devices can be used, provided they comply with the technical requirements. The adoption of the spread spectrum rules was a major step in providing increased flexibility for unlicensed transmitters. Subsequent changes to these rules permit increased data speeds and higher gain antennas to allow greater transmission range, and apply to a broader range of spread spectrum transmitters.

4. The second significant change to part 15 was a major revision in 1989. Under this revision, unlicensed transmitters are permitted to operate on almost any frequency, provided they meet relatively tight emission limits. They are not permitted to operate in

certain designated "restricted bands," and are generally prohibited from operating in the TV broadcast bands, except for remote control devices and medical telemetry transmitters. Specific types of unlicensed transmitters can operate in certain frequency bands. In addition to spread spectrum transmitters in the ISM bands, non-spread spectrum transmitters can operate in the ISM bands for any type of application at lower power levels than spread spectrum transmitters. The 1985 and 1989 revisions of part 15 have provided substantially increased flexibility in the types of unlicensed devices that can be developed, and led to the large numbers of unlicensed devices currently available today.

5. The Commission's Spectrum Policy Task Force conducted a comprehensive review of spectrum policy which included a public notice seeking comment on, among other issues, whether additional spectrum should be made available for unlicensed use. In addition, the Task Force held a public workshop on unlicensed spectrum use. In response to the public notice, a significant number of parties stated that additional spectrum should be made available for unlicensed use. Further, these parties indicated a general perception that the creation of unlicensed bands has been very successful in allowing the introduction of new technology and that additional unlicensed bands would create more such opportunities.

6. We believe that we should consider permitting additional flexibility to help enable the development of new and innovative types of unlicensed devices, such as power levels greater than the one watt maximum currently permitted for Part 15 devices and/or high gain antennas to enable greater transmission range. We have identified two possible candidate bands for such expanded unlicensed operation: the television broadcast bands and the 3650–3700 MHz band.

#### TV Broadcast Bands

7. The unused portions of the TV spectrum appear to be a suitable choice for expanded unlicensed operation for several reasons. There is significant bandwidth available because each TV channel is 6 MHz wide, and multiple vacant channels are generally available in an area to provide greater bandwidth. Allowing unlicensed devices to operate on TV channels that are not being used in a particular area would be a more efficient use of the spectrum. Unlicensed use of this spectrum as opposed to licensed use appears to be appropriate because the operating

power levels of unlicensed devices are generally lower than the power levels used in commercial mobile radio services, making it easier for unlicensed devices to identify and operate on unused frequencies without causing interference to authorized services. Further, the frequencies and amount of unused TV spectrum vary from location to location and could change over time as TV stations or other authorized services are added or change frequency, potentially complicating the licensing of commercial services in unused TV spectrum. We note also that the unlicensed uses we identify in this *NOI* are not intended to limit future licensed use or to guarantee spectrum access rights for this band. We seek comment on the following questions concerning the use of the TV broadcast bands by unlicensed devices.

- Should new unlicensed devices be permitted to operate within any portions of the TV bands, and if so, which portions? Are there any other bands where new unlicensed devices could be permitted to operate?

- Should the use of certain channels by unlicensed device not be permitted? For example, channel 37 is allocated for radio astronomy operations and the Wireless Medical Telemetry Service, and unlicensed operations on this channel may not be appropriate because of special interference concerns associated with the sensitive nature of radio astronomy reception and the critical safety function of medical telemetry equipment. In addition, there are concerns about possible interference to channels 2, 3 and 4 because they are used for, or are adjacent to, the output channels of VCRs and other set-top boxes. Further, spectrum currently allocated to channels 52–69 (698–806 MHz) has been reallocated and has been or will be licensed for new services. Should unlicensed operations be permitted in the reclaimed spectrum?

- Should there be geographic restrictions on where unlicensed operation in the TV bands is permitted, such as in areas where co-channel or adjacent channel television, Private Land Mobile Radio Service (PLMRS) or Commercial Mobile Radio Service (CMRS) is present, or in the border areas near Canada and Mexico?

- What restrictions, if any, should be placed on the applications or numbers of unlicensed devices that would be permitted in the TV broadcast bands, and why would such restrictions be needed? For example, should applications be limited to fixed uses?

- Are any special, temporary restrictions needed to ensure that unlicensed devices do not impact the

transition of television from analog to digital service? For example, as part of the transition process, television stations may be switching channels and modifying their service area. How can we ensure that unlicensed operation does not cause interference when stations make such changes or when new DTV stations commence operation?

- How would new unlicensed devices affect the ability of broadcasters to provide ancillary services such as data after the digital transition?

8. The part 15 rules require unlicensed transmitters to meet technical requirements to ensure that they will not cause interference to authorized users. The types of requirements that must be met typically include in-band and out-of-band power or field strength limits, and may include other requirements such as bandwidth, power spectral density, frequency stability, and antenna gain. As noted above, there are several authorized users of the TV bands that must be protected from interference from unlicensed devices. Analog and digital TV stations must be protected from interference. Low power TV and TV translator stations have defined protected service contours. Low power auxiliary stations such as wireless microphones and wireless assist video devices on TV channels do not have defined protected contours, but unlicensed devices are not permitted to cause interference to them. PLMRS and CMRS base stations are assigned within 50 miles of the center of the cities where they are permitted to operate in the 470–512 MHz band, and mobile units must be operated within 30 miles of their associated base station or stations. In addition to these authorized users, unlicensed medical telemetry transmitters are permitted to operate on channels 7–46, although the Commission has allocated bands where such transmitters can operate with protection from interference. The Commission seek comment on the following questions concerning the necessary technical requirements for unlicensed transmitters to prevent interference to TV reception and other authorized services within the TV bands.

- What power and/or field strength limits are necessary for unlicensed transmitters within the TV bands to prevent interference to TV reception? Could unlicensed devices operate in TV bands with a power greater than the 1 watt maximum permitted for part 15 devices in the ISM bands or power greater than the general part 15 limit?

- What separation distances or D/U ratios should be established between unlicensed devices and the service of

analog, digital, Class A and low power TV and TV translator stations? What assumptions should be used to determine these protection criteria? Should TV stations be protected only within their grade B or noise limited service contours, or should unlicensed devices be required to protect TV reception from interference regardless of the received TV signal strength? Is protection necessary only for co-channel and adjacent channel stations? What special requirements, if any, are necessary to protect TV reception in areas where a station's signal is weak? Would minimum performance standards for receivers facilitate the sharing of TV spectrum with unlicensed devices?

- What technical requirements are necessary to protect other operations in the TV bands, including the PLMRS and CMRS in the areas where they operate on TV channels and low power auxiliary stations such as wireless microphones and wireless assist video devices? Could technical requirements be developed that would allow unlicensed devices to co-exist with new licensed services on former TV channels 52–69? Should unlicensed transmitters be required to protect unlicensed medical telemetry transmitters operating on TV channels 7–46 from interference?

- What requirements, if any, are necessary to prevent interference to coaxial cable or other multi-channel video service providers using the TV bands or to prevent interference to TVs, VCRs and set-top boxes caused by direct pickup of signals from unlicensed devices?
- Should any antenna requirements be imposed? Can technologies such as “smart antennas”, which automatically change their directivity as necessary, assist unlicensed devices in sharing the TV bands? Should unlicensed devices be required to use an integrated transmitting antenna and be prevented from using external amplifiers and antennas?

9. In addition to meeting power and/or field strength limits, we believe that an unlicensed device operating in the TV band should have certain capabilities to avoid causing interference to licensed services. Specifically, an unlicensed device should be able identify unused frequency bands before it can transmit. One possible approach would be for a device to monitor portions of the spectrum where it could operate, identify a frequency band that is not being used, and then transmit in the frequency band identified. A device should also have to be able to avoid tying up a frequency in the event a

licensed user wishes to commence transmissions. We seek comment on the following questions concerning the capabilities that unlicensed devices operating in the TV broadcast bands should have.

- What are the specific capabilities that an unlicensed transmitter should have to successfully share spectrum with licensed operations in the TV broadcast band without interference? Are there transmission protocols that could enable efficient sharing of spectrum?

- Could GPS or other location techniques be incorporated into an unlicensed device so it could determine its precise location and identify licensed users in its vicinity by accessing a database? Would such an approach be reliable, and could it be combined with other methods to prevent interference to licensed services? What specific methods could be used to protect low power auxiliary stations such as wireless microphones that are not listed in a database?

- Once an unlicensed device commences transmissions on an open frequency, how can it ensure that interference will not be caused to a licensed user of that frequency who wishes to commence transmissions? Is there a mechanism that can avoid such “collisions” or mitigate their effect? For example, should these devices have limited “duty cycles” in a given frequency band?

- Is frequency agile equipment, as well as the protocols to enable efficient frequency sharing, feasible in the near-term?

- How could the Commission enforce any rules that may be adopted for unlicensed devices to ensure that such devices do not cause interference to authorized users of the TV bands?

- Is it necessary to establish any standards to allow sharing between unlicensed users of the TV bands? If so, how do we arrive at standards and what process should be put in place to make certain that the standards remain current and support innovation?

#### **Unlicensed Operation in the 3650–3700 MHz Band**

10. Another possible candidate band we have identified for expanded unlicensed operation is the 3650–3700 MHz band (“3650 MHz band”). The 3600–3700 MHz band was previously allocated for use by the Federal Government on a primary basis for radiolocation services, and for non-government use in the Fixed Satellite Service (FSS), limited to space-to-Earth transmissions in international inter-continental systems.” Pursuant to the

Omnibus Budget Reconciliation Act of 1993 ("OBRA-93"), the National Telecommunications and Information Administration ("NTIA") identified the 3650-3700 MHz portion of this band for transfer, effective January 1999, from a Government/non-Government shared use status to a mixed-use status. A condition of the transfer allows Government radiolocation stations to continue to operate indefinitely in the 3650 MHz band at three locations with a "radius of operation" of 80 kilometers (49.7 miles).

11. Unlicensed operation in the 3650 MHz band, which is part of the 3600-4400 MHz band used for Federal Government and satellite operations, has been prohibited. However, the change in allocation status of the 3650 MHz band from Government/non-Government shared use to mixed use provides an opportunity for us to revisit this prohibition. The 3650 MHz band appears to be well suited for unlicensed operations for a number of reasons. First, it is a contiguous 50 MHz block of spectrum, so there is sufficient spectrum available to permit wide bandwidth applications such as high speed data transmissions. Also, it is not heavily used in most parts of the country because it is recently vacated government spectrum, and no licenses have been issued for new non-government services in the band. The only operations in this band that need to be protected from interference at this time are the FSS sites and three grandfathered government sites, and these are fixed operations at known geographic coordinates, making it easier to avoid interference to them. Given that the proposed terrestrial uses of this band involve operations from fixed sites, it would appear that unlicensed operations could be compatible with future licensed uses. For these reasons, it may be possible to permit unlicensed devices to operate in this band with minimal restrictions except those necessary to avoid interference to licensed users in the band. For example, it may be possible to permit wideband operation with high gain antennas at power levels greater than the 1 watt maximum permitted for other unlicensed devices. If unlicensed devices are permitted to operate in this band, they may have to have capabilities such as frequency agility to avoid causing interference to any fixed service operations licensed in the band.

12. Allowing unlicensed operation with very minimal technical requirements could potentially permit the development of new and innovative types of unlicensed devices that could not be operated under the current rules.

Higher power limits and high gain antennas would substantially increase the operational range of devices and could permit the development of new types of wireless data networks. We seek comment on the following questions concerning permitting unlicensed operation in the 3650 MHz band with minimal requirements.

- What are the potential benefits and drawbacks of permitting unlicensed operation in this band subject to only the minimum rules necessary to avoid interference to licensed users?
- Is it viable to license fixed operations in this spectrum as proposed and permit operation of part 15 devices in unused portions on a non-interference basis?
- Could power levels greater than 1 watt be permitted for such operations without causing interference to authorized users within the band? If so, what is the maximum power level that could be permitted? Would any restrictions on antenna gain or directivity be necessary?
- What other requirements are necessary to protect FSS and Federal Government operations in the 3650 MHz band from interference? Are geographic restrictions on where an unlicensed device could operate necessary, and how could these be enforced? Could GPS be incorporated into a device so it could determine its precise location and distance from licensed users? Would such an approach be necessary or reliable?
- What other requirements would be necessary to prevent interference to other authorized services, such as out-of-band emission limits? What types of licensed services could share the 3650 MHz band with unlicensed devices?
- Is it necessary to establish any standards to allow sharing between unlicensed users of the 3650 MHz band? If so, how do we arrive at standards?
- Are there any other bands where unlicensed operation with minimal rules could be permitted without causing interference to authorized services? What other bands should we consider? What are the advantages of each?

#### Ordering Clause

13. Pursuant to Sections 4(i), 302, 303(e), 303(f), 303(r) and 307 of the Communications Act of 1934, as amended, 47 U.S.C. Sections 154(i), 302, 303(e), 303(f), 303(r) and 307, this Notice of Inquiry *is hereby adopted*.

Federal Communications Commission.

**Marlene H. Dortch,**  
*Secretary.*

[FR Doc. 03-1206 Filed 1-17-03; 8:45 am]

BILLING CODE 6712-01-P

## FEDERAL COMMUNICATIONS COMMISSION

### 47 CFR Part 73

[DA 02-3568; MB Docket No. 02-387; RM-10623]

### Radio Broadcasting Services; Lahaina and Waianae, HI

**AGENCY:** Federal Communications Commission.

**ACTION:** Proposed rule.

**SUMMARY:** This document requests comments on a petition for rule making filed by Pacific Radio Group, licensee of Station KLHI(FM), Channel 266C, Lahaina, Hawaii. The petition proposes to change Station KLHI(FM)'s community of license from Lahaina to Waianae, Hawaii and provide Waianae with its first local aural transmission service. The coordinates for requested Channel 266C at Waianae, Hawaii are 21-23-51 NL and 158-06-01 WL, with a site restriction of 10.7 kilometers (6.6 miles) southeast of Waianae.

Petitioner's reallocation proposal complies with the provisions of Section 1.420(i) of the Commission's Rules, and therefore, the Commission will not accept competing expressions of interest in the use of Channel 266C at Waianae, Hawaii or require the petitioner to demonstrate the availability of an additional equivalent class channel.

**DATES:** Comments must be filed on or before February 14, 2003, and reply comments on or before March 3, 2003.

**ADDRESSES:** Secretary, Federal Communications Commission, 445 12th Street, SW., Room TW-A325, Washington, DC 20554. In addition to filing comments with the FCC, interested parties should serve the petitioners' counsel, as follows: Mark N. Lipp, Esq. and J. Thomas Nolan, Esq., Shook, Hardy & Bacon, LLP.; 600 14th Street, NW., Suite 800; Washington, DC 20005-2004.

**FOR FURTHER INFORMATION CONTACT:** R. Barthen Gorman, Media Bureau, (202) 418-2180.

**SUPPLEMENTARY INFORMATION:** This is a synopsis of the Commission's Notice of Proposed Rule Making, MB Docket No. 02-387, adopted December 20, 2002, and released December 24, 2002. The full text of this Commission decision is available for inspection and copying