APCO REPORTS

ASSOCIATION OF PUBLIC-SAFETY COMMUNICATIONS OFFICIALS INTERNATIONAL, INC.

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FCC's PCS Text

Basic Requirement Reiterated: PCS Must Protect Existing Microwave Facilities

The Commission, in its text of its Personal Communications Services (PCS) decision acting on 67 different petitions for reconsideration in Gen. Docket 90-314, generally reiterated the basic requirement that PCS must protect existing microwave facilities from harmful interference.

Also, the Commission has reduced the total amount of spectrum to be allocated for PCS by 20 megahertz, and it consolidated PCS in the 1850-1990 MHz band. Those close to the action said the spectrum reduction came at the expense of the unlicensed PCS users, in particular Apple and other proponents of nomadic unlicensed devices such as links between noted computers. Previously, unlicensed PCS had been allocated 40 megahertz, from 1890-1930 MHz. Unlicensed PCS is now limited to the 1910-1930 MHz band, which will accommodate both nomadic and non-nomadic PCS devices. Observers report that Apple may be looking to expand into other unspecified spectrum which is less encumbered by existing users.

In the Commission's text of its PCS decision, the Commission discusses protection of fixed microwave operations:

"In the Second Report and Order, the Commission stated that a principal concern in the authorization of PCS in the 2 GHz band is that existing fixed microwave operations be protected (Second Report and Order at ¶141). It adopted the following approach for providing such protection:

> 1) Required PCS licensees to provide the same level of protection to microwave operations that they currently provide under Part 94 of our Rules and through the use of EIA/TIA Bulletin TSB10-E criteria and methodology (Cf. 47 C.F.R. § 94.63). We also stated that, as under Part 94 of our rules, other acceptable industry-developed interference procedures, such as those developed by the EIA, the Institute of Electrical and Electronics Engineers (IEEE) and the ANSI, may be used in performing interference analyses. See

Section 24.237(d) of the Commission's Rules.

2) Specified antenna height and power limits for PCS;

3) Adopted requirements for PCS licensees to coordinate with fixed microwave operators; and,

4) Provided methods for calculating interference from PCS to incumbent microwave operations (see Second Report and Order at ¶ 141-145, 163-174).

Specifically, in the Second Report and Order, we adopted carrier-to-interference criteria for protection of short and medium-length microwave links of 25 km (about 15 miles) or less. For path lengths longer than 25 km, where reliability is more dependent on the relative noise threshold and faded signal level, we limited the level of an interfering signal to that which would cause a one decibel (dB) degradation in the signal-to-noise ratio for analog systems or which would cause an increase in bit-error-rate (BER) from 10^{-6} to 10^{-5} for digital systems. Finally, we endorsed procedures for calculating interference to microwave operations. (The procedure for calculating the level of PCS signals at microwave receivers requires that the PCS licensee compute the sum of the transmitters' powers from proposed PCS base stations and all portable and mobiles associated with the base stations at each microwave receiver within the coordination distance of the base stations. See Second Report and Order. Appendix D.).

Petitioners' Requests.

Ten parties request reconsideration of issues relating to protection of microwave operations. (The parties requesting reconsideration of these matters include: Alcatel, APC, API, Ameritech, Bell Atlantic, Blooston, Motorola, TIA, PCIA and UTC).

Several parties request reconsideration of our decision to use Bulletin TSB10-E. These parties request that the Commission adopt newly developed industry standards for protection of fixed microwave stations from PCS. Specifically, Alcatel, APC, API, Ameritech, Motorola, TIA and PCIA recommend using EIA/TIA Bulletin TSB10-F when it is completed, instead of the procedures in Appendix D of the Second Report and Order.

Benchmark Industry Standard For Determining Interference

TIA argues that Bulletin TSB10-F, when adopted, will likely be the benchmark industry standard for determining PCS-microwave interference.

API supports using TSB10-F as the only method, and states that allowing a number of calculation methods is unwise and will create needless uncertainty.

Alcatel, Motorola, PCIA and TIS also request that we clarify the rules to indicate that other appropriate interference procedures developed by the industry may be used.

A number of the petitioners also suggest specific changes to the procedures in Appendix D of the Second Report and Order.

Motorola, TIA and PCIA object to the use of the Longley-Rice propagation model that was stipulated for interference calculations at Appendix D of the Second Report and Order.

TIA states that there are technical problems with the use of "urban correction factors" with the Longley-Rice model, as adopted by the Commission. Instead, they recommend that an appropriate model accepted by industry be used. For example, Motorola and PCIA argue that the propagation model in TSB10-F represents the efforts of all affected groups and should be adopted.

Bell Atlantic suggests that we adopt rules to eliminate "excess margin" in microwave systems. (Microwave systems are typically designed with additional power or signal strength, called margin, to provide for attenuation of the signal due to changes in propagation or weather conditions that may occur). It argues that such excess fade margin is not needed for reliable microwave communications and reduces the amount of available spectrum to PCS operators.

Bell Atlantic also recommends that we require microwave licensees to upgrade their systems when the change will reduce interference and when the PCS operator is willing to pay for the upgrade.

Current PCS Rules Called Contradictory

UTC asserts that the current PCS rules are contradictory. It notes that the rules provide for blanket licensing of all transmitters in a service area and at the same time require an engineering analysis before filing an application for a new or modified facility.

UTC suggests that Section 24.11 be clarified to state that despite receiving a blanket license, licensees will need separate applications and authorizations for each station to assure that the proposed facility will not cause interference to existing microwave stations.

UTC also recommends that we adopt coordination procedures based on Part 21 of our Rules and that all coordination requests be in writing. API recommends that we require formal coordination by a third party.

Request Made for Specific Sanctions For Causing Microwave Interference

API requests that we specify sanctions for PCS licensees that cause interference to incumbent fixed microwave operations. Specifically, API recommends that we require PCS entities to cease operation upon notification of interference by a microwave licensee, establish a scale of significant fines and/or forfeitures to deter violations, and make available expedited procedures to ensure that complaints are resolved quickly.

Blooston argues that the PCS rules fail to protect common carrier microwave operations in the adjacent 1990-2110 MHz band and should, therefore, be reworked to extend this protection.

Responses.

The responding parties generally support the use of EIA/TIA Bulletin TSB10-F and recommend that we adopt this standard when it is completed.

TDS states that although Appendix D may initially be used, improvements involving propagation modeling and urban correction factors need to be addressed.

UTC supports giving equal consideration to either the interference standard found in Appendix D or a standard developed by a recognized authority.

AAR states that it supports TIA's proposal that we adopt an

industry consensus with Bulletin 10-F, provided that fixed microwave licensees are provided the same level of protection as under the current standard, Bulletin 10-E.

PacBell states that we should adopt the Okumura-Hata propagation model, arguing that this model provides more realistic estimates.

PCIA concurs that the Longley-Rice model should not be the only propagation model permitted if the industry can agree on the use of other models.

Some parties support UTC and API's recommendation that we adopt prior coordination procedures, arguing that this would ensure that all potential issues of interference are resolved prior to licensing and deployment.

MCI opposed API's proposal for a formal third-party coordination requirement, arguing that such a requirement would create delays in implementing PCS.

Support Shown for Upgrading If Upgrading Will Reduce Interference

Several commenters support Bell Atlantic's proposal to require microwave licensees to upgrade their system when it is shown that an upgrade will reduce interference and the PCS operator is willing to pay for the upgrade. API disagrees with those parties that argue that interference protection margins used for microwave systems are excessive.

Alcatel does not oppose elimination of "excess margins" but asserts that neither the Commission nor an industry standards group should define what constitutes an excess margin. It states that instead, these objectives should be determined by individual users through interaction with appropriate frequency coordinators and potentially affected users.

UTC supports API's proposal for penalties to deter creation of objectionable interference to microwave users. It argues that such penalties would cause PCS proponents to use caution and would therefore help to avoid interference situations.

MCI opposes API's request for sanctions on PCS licensees causing interference. It argues that API's proposal would give microwave licensees undue power to shut down PCS operations merely by notifying the licensee that it has detected objectionable interference.

Decision.

In the Second Report and Order, we state that with certain modifications, the level of protection provided under Part 94 of our Rules and through applications of TSB10-E criteria and methodology is appropriate and will provide adequate protection to microwave users from PCS operations.

We also stated that we would accept the new TSB10-F procedures, when adopted by EIA/TIA, for use in demonstrating compliance with our technical standards for PCS to fixed microwave interference.

(TSB10-F was adopted on May 31, 1994; TIA Telecommunications Systems Bulletin Number 10-F, Interference Criteria for Microwave Systems, May 1994. On June 1, 1994, TIA submitted a Supplement to Petition for Reconsideration to report that TSB10-F is now a standard adopted by an ANSI-accepted body).

Although many parties request that operators be required to use TSB10-F exclusively instead of that set out at Appendix D of the Second Report and Order, we cannot adopt this standard as the only acceptable method for determining interference to microwave operations from PCS operations until we have had a chance to evaluate its merits and provide it to the public for comment.

Therefore, we will maintain the procedures adopted in the Second Report and Order with some modifications. While we continue to believe the procedures adopted in the Second Report and Order are accurate and reliable, parties may use other methods such as TSB10-F as alternative methods. As indicated in the Second Report and Order, if both the PCS entity and the incumbent microwave entity agree to an alternative criteria for interference protection, then that criterion may be used. (See Second Report and Order at n. 118). We continue to believe that this flexibility is desirable, in light of the varied technologies that may be used for PCS.

We concur that a prior coordination procedure is necessary to ensure that potential issues of interference are resolved before deployment of PCS systems. We note that we recently adopted Part 21 coordination procedures in the Emerging Technologies proceeding for 2 GHz microwave facilities that will be relocated to higher bands. (See Second Report and Order, ET Docket No. 92-9 at ¶60). We believe that the Part 21 coordination requirements are appropriate for coordination of PCS and microwave facilities.

Commission: Coordination Procedures Are Sufficient to Address Potential Interference

These coordination procedures are generally familiar to the parties involved and are sufficient to address potential interference problems. Accordingly, we will amend the PCS rules to include coordination procedures similar to those contained in Part 21. We note that coordination under Part 21 does not require written notification. We find no reason to require that the PCS-to-microwave coordination be treated differently.

We agree with Bell Atlantic that permitting PCS entities to pay for an upgrade incumbent microwave operation, such as providing better antennas or filters that would prevent interference, would facilitate the implementation of PCS. Specifically it would provide more choices and opportunity for sharing between the two services. However, we believe that mandating such upgrades of the incumbents' facilities would be difficult to regulate. Therefore, we will allow for such upgrades when all parties agree but will not mandate them.

Excess Fade Margins Will Inhibit Ability Of PCS-Microwave to Share Spectrum

We share Bell Atlantic's concern that excess fade margins in incumbent systems will inhibit the ability of PCS entities and microwave operations to share spectrum. However, we also recognize that microwave systems vary in size, complexity and degree of reliability needed. Therefore, we see no way of adopting general rules mandating an acceptable fade margin that would apply fairly in all cases.

Accordingly we will not set limits on the amount of allowable fade margin in a microwave system. We suggest, however, that incumbent licensees limit the fade margin in their systems to only that necessary for reliable service so as to help facilitate the implementation of PCS.

Regarding Blooston's assertion that Section 24.233 does not provide protection to common carrier point-to-point microwave radio service (PPMRS) operations in the 2110-2130 MHz and 2160-2180 MHz bands, we note that our Rules contain out-of-band radiation limits that must be met by PCS entities. We also note that under our revised allocation PCS is only allocated spectrum in the 1850-1990 MHz band, so there is 120 MHz of separation between PCS and PPMRS operations.

With regard to Blooston's request that we require PCS licensees to protect common carrier microwave operations in the adjacent 1990-2110 MHz band, we note that the current PCS rules provide for strict out-of-band emission limits (see Section 24.234 of the Commission's Rules). We believe that these limits are sufficient to protect microwave operations in adjacent bands and, therefore, will not adopt any additional coordination or protection requirements for PCS operations.

Idea for Separation Applications And Authorizations Is Rejected

We disagree with UTC that PCS licensees should be required to submit separate applications and obtain separate authorizations for each transmitter in their system. The information that would be submitted on these applications is unnecessary to the Commission, and its filing would be overly burdensome for PCS licensees. We believe that UTC's concerns are adequately addressed through our requirements for coordination.

Finally, we deny API's request for a rule automatically imposing penalties on PCS operations that interfere with fixed microwave users. We believe that such penalties are unnecessary and inappropriate.

As we state in the Second Report and Order, a principal concern in the authorization of PCS in the 2 GHz band is that existing fixed microwave operations be protected (see Second Report and Order at ¶ 141).

If interference were to occur, we would expect the PCS licensee to take appropriate action to resolve that interference. In cases where the PCS licensee did not take appropriate action, we believe our current remedies, either forfeitures or revocation of licenses, are sufficient. ■

A copy of the Commission's "Broadband PCS Band Plan" Is Included With This APCO Reports

It was issued June 9, 1994, and shows the "old" and "new" plans for the 1850-220 MHz range. Notably, the plan decreases the amount of spectrum for unlicensed PCS from 40 megahertz to 20 megahertz.

2 Women Are Sworn In As FCC Commissioners

Two new FCC commissioners have been sworn in. Rachelle B. Chong was sworn in May 23 to fill the vacancy left by Sherrie Marshall. Ms. Chong's term ends June 30, 1997.

Ms. Chong had been a partner for seven years in San Francisco with Graham and James, an international law firm, practicing telecommunications law before the California Public Utilities Commission on behalf of cellular telephone and radio common carriers, and developers of innovative telecommunications devices.

From 1984-86, she was with a now-defunct Washington, D.C., law firm, representing mass media clients and cellular license applicants before the FCC. She is a 1984 graduate of Hastings College of Law in San Francisco.

Susan Ness was also sworn in on May 23 to fill the seat vacated by Ervin Duggan and will continue for a full five-year term.

A communications attorney, Ms. Ness has served as senior leader, and then a group head in the Communications Industries Division of American Security Bank, a regional financial institution based in Washington, D.C. Prior to that, she served as assistant counsel to the House Committee on Banking, Currency and Housing. She earned a Juris Doctor degree, cum laude, from Boston College Law School.

LAPD to Upgrade, Replace MDT System; Call for RFP

The Los Angeles Police Department is seeking contractors to undertake a major upgrade and replacement of its MDT communications system.

The contract will include engineering, system integration, supply of radio equipment and acquisition of 10 duplex radio channels. The RFP will be released soon.

For information, contact:
Los Angeles Police Department
ECCCS Division, Attention J. D'Amico
(213) 847-4730

U.S., Spain APCO Officials Create APCO Institute Spain

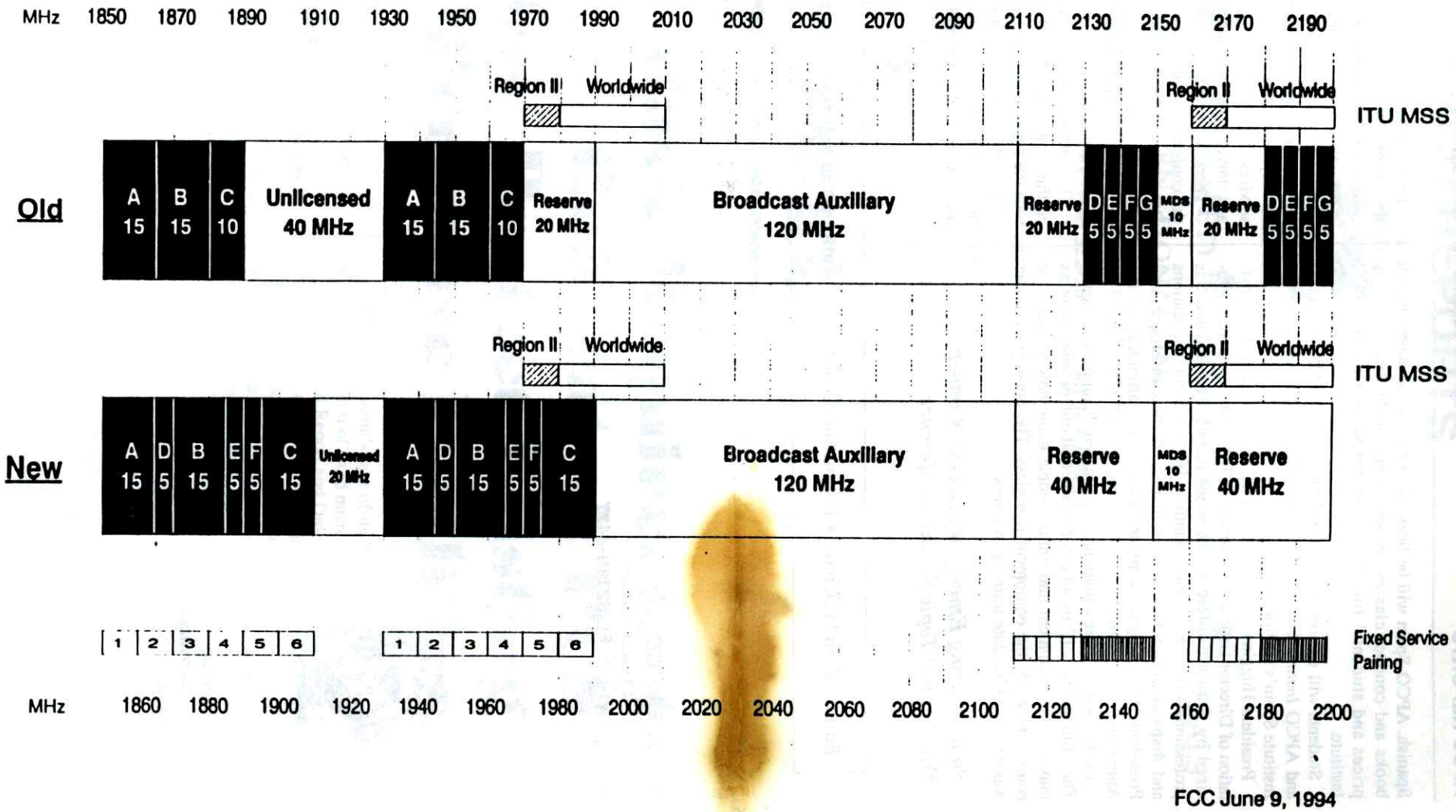
APCO officials in the United States and Spain have signed an agreement creating APCO Institute Spain to assist in the training of Spain's telecommunicators.

APCO Institute Director Kevin Duffy said APCO Institute Spain will be able to provide definitive operator and supervisor training when Spain implements a countrywide, one-number emergency telephone system. The agreement was signed by APCO President Frank L. Huggins Jr., APCO Spain President Josu de Isuzu Gutierrez, APCO Spain Executive Director D. Amando Garcia and Duffy.

The APCO Institute will provide its materials to APCO Spain for adaptation to local and Spanish protocols and for translation to

Appendix D

Broadband PCS Band Plan



Spanish. APCO Spain will be licensed to print those materials, sell books and conduct classes. A percentage of the books' selling prices and students' tuition will be turned over to the APCO Institute.

Students will receive a joint certificate from the APCO Institute and APCO *Institut Espana*. The Canary Islands are part of APCO Institute Spain's territory.

President Huggins and Director Duffy were in Spain at the invitation of Director Garcia to attend the SERPA '94 Conference organized by Garcia. Conference attendees included communications professionals from European countries. High-tech communications and dispatch equipment was on display at the conference, and President Huggins gave a presentation to the attendees on the American 9-1-1 systems.

Duffy gave two presentations, one entitled "Communications – The Human Factor" in which he talked about people being as important as equipment and unless people know how to make the equipment work, the equipment is useless. The other presentation was an APCO Institute training overview.

Standardizing Emergency Access Number Was Central Topic for the Conference

Duffy said the central topic for the conference was standardizing the emergency access number for the country. Presently, each community has a different three-digit emergency number, and many communities have several numbers, each providing access to a different type of emergency service.

"When a person travels around the country," Duffy said, "there is no easy, standardized method that can be used to access emergency services. However, there is a drive under way to use the digits 1-1-2 as a universal access number for all emergency services."

There were many high-ranking Spanish government officials at the conference, Duffy said, including the Minister of the Interior Department. Director Garcia and other APCO Spain officials met with the Interior Minister, and APCO Spain was asked to prepare a "white paper" on the feasibility, makeup and costs of a 1-1-2 system for the country.

"This action is very significant because the government requested this study from APCO Spain, recognizing it as an organization with the expertise to provide this type of information," Duffy said.

"In conjunction with this project, I am preparing a full description of 9-1-1 service in the United States for Amando (Garcia) to use as a source document for this study," Duffy said. ■

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