

**REPORT OF THE RF SAFETY COMMITTEE
TO THE
ARRL BOARD OF DIRECTORS**

January 2005

The RF Safety Committee has participated in the following areas over the past six months:

1. RF Safety Committee Activities.
2. Monitoring recent scientific studies regarding RF Safety.
3. Participation in the scientific RF Safety community.
4. Administrative issues.
5. Future Plans.

1 RF Safety Committee Activities

- 1.1 The Committee was invited to comment on the need for a chapter on RF Safety in a book that is planned on RFID. The consensus was that discussion of such a topic is unnecessary since the power levels used are so low.
- 1.2 The Committee was invited to vote on a new standard that is being proposed by the IEEE. This proposed standard is entitled: "PC95.7 - Recommended Practice for Radio Frequency Safety Programs, 3 kHz to 300 GHz." The Committee noted that there was nothing objectionable to ham radio operators in the proposed standard but did not care to participate in the voting.
- 1.3 The Committee was invited to vote on a new standard that is being proposed by the IEEE. This proposed standard is entitled: "P1528a: Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques - Amendment 1: CAD file for Head Model (SAM)." The Committee concluded that this topic, which applies mainly to pre-market testing of cellular telephones, does not apply to the work of the RFSC and decided not to participate in the voting.
- 1.4 The Committee was asked to comment on the RF Safety implications of an article that was accepted for publication in the December 2004 issue of QST, entitled "Surviving Suburbia." The article discussed indoor antenna solutions for those who live at locations that are not large enough for, or have prohibitions against, antennas outside. The article included a short sidebar by the editor that reminded readers to be aware of RF Safety and referenced the related TIS page on the ARRL Website and the ARRL Book "RF Safety and You." The Committee concluded that the sidebar and the author's description of his antenna as being designed for use with QRP were sufficient with regard to RF Safety.

2 Monitoring Scientific Studies

- 2.1 A report appeared in the popular press about a retrospective epidemiological study in Korea that concluded that there is a 29% increase in leukemia deaths among those living near AM radio broadcast towers compared to those that did not live near these transmitters. The committee was skeptical of this conclusion, since an effect of that magnitude would have been noticed by the public long before a group of scientists performed a study. The paper describing this study is not yet available so it is not possible to comment on it specifically.
- 2.2 The Committee discussed an article about John Kanzius, K3TUP, who is applying for a patent in support of his invention of an RF device that he hopes will “cure” cancer. Several committee members described their own experiences with the use of RF energy to heat cancer cells in the body in order to kill them. One member noted that the first known reference to this technique dates back to the 19th century and there has been considerable work performed on the subject in the past few decades.
- 2.3 A paper in the Mayo Clinic Proceedings reported that PDA devices equipped with wireless LAN hardware were tested in the presence of various implantable cardiac pacemakers and defibrillators. The study concluded that there is no interference to these devices from the wireless PDAs.
- 2.4 The FCC imposed forfeiture penalties of \$10,000 on each of three broadcasters from the crowded Mount Wilson transmitting site near Los Angeles, CA. These three broadcasters were each determined to have generated more than 5% of the total RF power density in public areas that exceeded the RF Safety limits.
- 2.5 The Committee discussed Russian RF Safety limits, which, in some cases, are orders of magnitude lower than those set in the Western Hemisphere. One theory is that under the Russian system, pay rates were tied to the hazard level of a given job and that the Russian RF Safety limits were set artificially low by the workers in that field so they would be able to claim higher salaries. Dr. Guy, who participated in an exchange program in Russia, had unofficially heard of fringe benefits associated with those who had hazardous duty relating to microwave exposure. Such benefits included longer vacations and trips to spas and resorts. However, he believed that the disparity between the Russian and Western safety standards was mainly due to the lack of scientific dosimetric methodologies associated with research in the former USSR. He noted that the USSR standards were very conservative for frequencies near resonance for exposed laboratory mice or rats but were actually greater than ours for magnetic field frequencies far below resonance of the exposed animals.

3 Participation in the Scientific RF Safety Community.

- 3.1 Dr. Lapin was re-nominated for a fourth three-year term as a member of the IEEE Committee on Man and Radiation (COMAR).
- 3.2 Mr. Hare and Dr. Guy continue to serve on the IEEE Standards Coordinating Committee 28 on Non-Ionizing Radiation, which develops the standards for human exposure to RF energy. Mr. Hare maintains a list server for communications among members of this committee, and occasionally cross-pollinates pertinent issues between the RFSC and SCC-28 list servers.

4 Administrative Issues

- 4.1 The committee has received a request from an amateur who would like to participate in the work of the committee. It is being reviewed.

5 Future Plans

- 5.1 The committee is considering if there is a need to revise the RF Safety text used in ARRL publications.

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