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

January 2013

The RF Safety Committee 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.

1 RF Safety Committee Activities

1.1 The Committee discussed a Washington Post article about a Government Accountability Office (GAO) report that concluded the FCC RF exposure regulations were out of date and should be reexamined. The Committee's first conclusion was that the Washington Post reporter placed her own bias on her description of the report in order to conclude that the FCC was not sufficiently protecting the public. Upon examining the actual GAO report, the Committee felt its conclusions were much more reasonable. In short, the GAO correctly noted the FCC RF exposure regulations were based mainly on the 1981 NCRP Report 67, and to a lesser extent on the 1992 ANSI/IEEE C95.1 exposure standard. They surveyed the research on biological effects of RF published since those dates and concluded the FCC should consider new information in determining if its regulations should be changed. A response to the GAO report by Julius Knapp (Chief, FCC OET) explained that although the FCC regulations have not been changed since they were originally adopted, there have been NOIs and NPRMs that addressed the issue with conclusions that no changes were necessary. The GAO's conclusions were that the FCC Chairman should: "formally reassess the current RF energy exposure limit, including its effects on human health, the costs and benefits associated with keeping the current limit, and the opinions of relevant health and safety agencies, and change the limit if determined appropriate, and reassess whether mobile phone testing requirements result in the identification of maximum RF energy exposure in likely usage configurations, particularly when mobile phones are held against the body, and update testing requirements as appropriate." See Section 4.3 of this report.

1.2 The Committee discussed an article about a New Mexico legal case in which a man sued his next-door neighbor for $1 million for having electromagnetic energy emitting devices that exposed him to radiation. The plaintiff claimed he suffered from electromagnetic sensitivity (EMS) and demanded his neighbor stop using devices such as cellular telephones and wireless routers. The judge ruled that the plaintiff "failed to carry his burden of proof that the evidence he seeks to admit is scientifically reliable" and that reliable studies, including one from the World Health Organization, "have failed to provide clear support for a causal relationship between electromagnetic fields and complaints of EMS." The defendant commented, "It took three years to arrive at what common sense would have easily dictated. … May the right of the individual to use everyday technology in the privacy of his home always prevail against attacks of activists who wish to force

their agenda on the rest of the world." The defense attorneys believe this case will stand as a precedent for future lawsuits of this kind.

1.3 Dr. Siwiak has been responding to misinformation about RF exposure that was related to a Technical Correspondence article he published about the RF safety implications of loop antennas (QST, March 2012, "An Antenna Idea for Antenna Restricted Communities"). One ham likened exposure to a large loop antenna to time spent in a CT scanner, a conclusion promptly corrected by Dr. Siwiak.

2 Monitoring Scientific Studies

2.1 The Committee reviewed an article about a study that claimed to link cellular telephone exposure to Attention Deficit and Hyperactivity Disorder (ADHD) in children. The laboratory study at Yale University claimed to expose pregnant mice to a 1.6 W/kg dose of 800 MHz and 1900 MHz cellular telephone energy for the duration of their pregnancy. The study examined brain electrical activity of adult mice exposed to radiation as fetuses and conducted a battery of psychological and behavioral tests. The study concluded the mice that were exposed to radiation tended to be more hyperactive and had reduced memory capacity. The committee felt this study had many weaknesses, including the use of actual cell phones to produce the exposure rather than controlled RF sources, the assertion that the exposure dose to the mouse was based on the cell phone manufacturer's modeling for human use, the fact that mice are pregnant for 19 days, rather than the 9 months that a human fetus is *in utero*, and that the exposure was continuous for the entire gestation period. Exposure limits are based on both energy absorption and exposure time and the 1.6 W/kg limit is based on human exposure, which takes into account the ability of human physiology to remove the heat generated by the exposure. It is also questionable whether "mouse psychological tests" have any relationship to humans. We will wait to see if a better-performed study tries to replicate these results.

3 Participation in the Scientific RF Safety Community

3.1 Mr. Hare continues to serve on the ICES (IEEE) SCC-28 RF Safety Standards Committee. He generally shares the voting ballots for changes to the standards with the Committee prior to voting on them.

3.2 Dr. Lapin continues to testify about RF safety at zoning board hearings when cellular tower placement is being considered.

3.3 Dr. Lapin continues to serve as a member of the IEEE Committee on Man and Radiation, COMAR.

4 Administrative Issues

4.1 Members of the Committee continue to review articles submitted to QST, looking for potential RF safety issues that should be dealt with prior to publication.

4.2 A new description of the RF Safety Committee has been developed for the ARRL Handbook. The RFSC is described in a sidebar in the Safety Chapter as a group of radio amateurs with appropriate scientific and medical knowledge to be able to make sense of the wealth of information related to biological effects of RF energy.

4.3 FCC Chairman Genachowski has announced the FCC will implement the recommendations of the GAO report, described in Section 1.1 of this report. The RF Safety Committee has volunteered to serve as a resource to the individual in the FCC Office of Engineering and Technology who will be performing the reanalysis of the FCC's RF Safety regulations.

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