DEPARTMENT OF THE NAVY
NAVAL MEDICAL RESEARCH AND DEVELOPMENT COMMAND
NAVAL MEDICAL COMMAND, NATIONAL CAPITAL REGION
BETHESDA, MD 20814

IN REPLY REFER TO
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Ms. Ruth Moriarty
25 Harvard Street
Holyoke, Mass 01040

Dear Ms. Moriarty:

I hope that I will be able to answer your questions posed in your letter of 9 September 1983 to your satisfaction.

Microwaves are a part of the electromagnetic spectrum. The spectrum is divided into many parts for convenience. The Low Frequencies include 60 cycle (Hertz) electric power. As one increases in the number of cycles or Frequency you arrive at the radiofrequency portion. This includes AM, FM radios, TV Signals and Radar, above these frequencies are the infrared, visual light and ultraviolet. Above ultraviolet the frequencies include X-Rays, Gamma Rays, and Cosmic Rays.

The term "Microwaves" is used for that portion of the spectrum that includes FM Radio, Television and Radar signals. (See enclosure 1).

The body generates a small amount of "microwaves" itself. In using energy the body generates heat which radiates off the body at various frequencies. Most of the excess body heat is irradiated in the infrared region, but some is given off at frequencies which are in the microwave region.

Today there are no accurate tests that will tell if a person has been exposed to microwaves. At high levels of exposure it causes generalized body heating. While there are many reports in the literature reporting specific changes seen in animals, there are no consistent changes noted. For example, one study will show a elevation in blood pressure, another similar study will show a decrease in blood pressure and yet a third study will report no change in blood pressure. These studies normally use high levels of irradiation that are not found in the normal environment. In the vast majority of studies once the radiation stops all abnormal findings return to normal in the animals. Thus a few weeks after the exposure one cannot tell which animals were exposed and which were not.

Exposure to microwaves in this testing has gone on for OVER 20 yrs. All my family (except me) have high blood pressure...

To date we have been unable to find any specific test that can tell if someone has been exposed to microwaves in the past. A few individuals have been followed, some for several years, who were exposed to extremely high levels of microwaves and all the studies have been normal.

Small levels of microwave radiation, even if it was emitted from the body, would not interfere with X-Rays, CAT Scan or Nuclear Magnetic Resonance results. In fact Nuclear Magnetic Resonance used fairly stong levels of microwaves plus magnetic fields to create it images.

Very strong microwaves or other types of electromagnetic radiation can interfere with electromagnetic equipment. The type and degree of interference depends on many factors such as the frequency, power, and type of equipment etc. For example, static on the radio is interference from some source, like high power electric power lines. If the interference source is powerful enough or if the equipment is very sensitive it can burn out the piece of equipment. This is not unique for microwaves but it is common for the entire radio frequency spectrum.

I have looked for books that would not be too technical yet provide you with general accurate information concerning electromagnetic fields - Unfortunately, there is no single book that completely meets these requirements. One book that may be obtained from a library is "Electromagetism, Man and the Environment" by Joseph H. Battocletti, Published by Westview Press, 1976. Its Library of Congress number is ISBN 0-89158-612-1.

I hope this information will be of value.

Sincerely yours,

Paul E Tyler

Paul E. TYLER
CAPT MSC USN

Enclosure