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ELF, VDTs, Health and Safety: Apple's Official Policy

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TOPIC -----

What is Apple's policy regarding VDTs, electromagnetic emissions, and health?

DISCUSSION -----

Apple Computer, Inc.
Corporate Statement on Video Display Health Issues
May 29, 1990

Apple's Corporate Position

Apple Computer is committed to making products safe. That's why we meet or exceed every safety standard, not because we have to, but because we want to. Based on the prevailing opinion of the scientific community, Apple believes that computer monitors are safe. However, with any scientific issue there is a diversity of opinion. We are open-minded to new scientific evidence and in fact encourage research in this area.

Apple's Monitoring Activity

Apple's products are constantly tested and compared against existing and proposed international standards. We continuously follow scientific developments in the field of computer health and safety. Members of Apple's Environmental Health and Safety group as well as representatives within Product Development, Product Marketing and Engineering Services keep track of new findings.

Apple is also a board member of the Center for Office Technology (contact is O. Bruce Dickerson 212-560-1298), a clearing house for more information related to health issues and office automation equipment. In addition, Apple is currently setting up a program to sponsor dedicated academic research in the low-frequency radiation field.

Scientific Opinion

The low level of intensity of the fields emitted from VDTs is not considered harmful by the American Medical Association, the American College of Obstetricians and Gynecologists, the National Institute for Occupational Safety and Health and the World Health Organization, among others.

Recently, the issue of the possible effects of prolonged exposure to extremely low frequency electromagnetic emissions has been raised. The U.S. Environmental Protection Agency has said (see New York Times 5/23/90) that the evidence on the issue is so far inconclusive. The EPA's office of health and environmental assessment has suggested further study on the ELF issue. Apple also supports additional research so that we can continue to act responsibly, ensuring the health and safety of our customers and employees.

Question and Answers

- What is Apple's position on the VDT-emission health issue?

Apple is committed to making products as safe as can be. Based on the prevailing opinion of the scientific community Apple believes that televisions and computers are safe. However with any scientific issue there is a diversity of opinion. We are open-minded to new scientific evidence and in fact encourage it.

- What are the health concerns regarding VDTs?

A number of studies link intensive computer use to health problems such as musculoskeletal disorders, eyestrain, fatigue, and headaches. These problems are well understood and medical experts have suggested effective methods for preventing them.

There is also a growing public concern throughout the world about potential health risks related to the low-frequency electromagnetic fields emitted by VDTs and other electric products, which all operate at the AC line frequency of 50 and 60 Hz such as electric blankets, televisions, and power lines.

Although most scientists and computer experts maintain that low-frequency electromagnetic emissions are harmless, others assert that not enough is known to say with certainty that they are safe. Most everyone agrees that more research is necessary before any conclusions can be made.

- What are the government regulations for VDT emissions?

X-ray emissions are strictly regulated by international law. In the US, this law is administered by the FDA's Dept. of Health and Human Services. All Apple displays are designed and tested to emit well below the level permitted.

Radio frequency emissions can interfere with radio and TV transmissions and are also regulated internationally. In the US, limits are mandated by the

Federal Communications Commission.

In Sweden government-industry cooperatives have set limits for VLF radiation from VDTs. These limits do not appear to be based on data from health studies, but rather are based on general, achievable guidelines for reducing emissions.

No government regulations exist in any country limiting ELF emissions.

- What is Apple doing to follow and participate in research in the VDT health field?

Apple's products are constantly tested and compared against existing and proposed international standards.

We continuously follow scientific developments in the field of VDT health and safety. Members of Apple's Environmental Health and Safety group as well as representatives within Product Development, Product Marketing and Engineering Services keep track of new findings.

Apple is a board member of the Center for Office Technology, a clearinghouse for information related to health issues and office automation equipment.

In addition, Apple is currently setting up a program to sponsor dedicated academic research in the low-frequency emissions field.

- How does Apple respond to increasing government legislative activity concerning VDT's?

We welcome government's inquiry into the safety of VDT's, and support the adoption of standards once generally agreed upon limits and a testing methodology emerge from research.

Product Issues

- Will Apple take steps to lower VLF and ELF emissions in its products?

Based on the prevailing opinion of the scientific community, we do not believe it is necessary to lower the ELF emissions of our computer monitors. In fact, scientific research so far has not been able to establish guidelines for emission levels. However Apple is closely following the issue so that we may continue to ensure the health and safety of our customers and employees.

- How might this radiation be reduced?

Currently emissions can be reduced through a combination of circuit board design, component selection, field cancellation coils, metallic shielding and surface coatings.

- Will you comment on IBM's announcement to lower emissions in its monitors?

IBM announced it will offer monitors which feature reduced VLF emissions. (See Wall Street Journal 11/22/89) They have clearly positioned these products as a response to market demand, rather than to health and safety concern. IBM's products are not currently shielded for ELF radiation.

- What are the levels of ELF and VLF emissions by Apple's VDTs?

Apple feels that it would be inappropriate to make these figures public because there is currently no standardized testing methodology or established guidelines by which to make comparisons.

- What is Apple's comment on the MacWorld article?

Regarding the Article: The MacWorld article calls for industry to address the VDT emission issue. Apple encourages further research on low-frequency emissions.

- Regarding the Measurements:

We do not believe it is appropriate to comment on the measurements of the Macintosh monitors that were published in the July 1990 issue because there is currently no standardized testing methodology or established guidelines by which to make comparisons.

- Regarding the Health Conclusions:

With any scientific issue there is a diversity of opinion. The MacWorld article excluded a large body of studies that discount a link between VDT use and a biological effect--for example: The University of Calgary, Alberta, Canada, 1989 Epidemiological Study on VDT Use and Spontaneous Abortion Risk; The University of Toronto, 1989 Rodent Reproductive Study; the Institute of Research for the Health and Safety of Workers, Montreal, Quebec 1984 Survey on VDTs and Pregnancy; and the 1985 Finnish Case Reference Study - Birth Defects and Exposure to VDTs During Pregnancy. The specific studies referenced by MacWorld raise valid questions but do not conclude a health risk for the computer user. We encourage further scientific research.

Background on VDT Radiation

- What is radiation?

Are there different kinds? Radiation involves a transfer of energy by waves or particles. There are two types of radiation. Ionizing radiation, such as X-rays, has proven to be damaging to living cells. Non-ionizing radiation is far less potent, and includes visible light, radio waves, and low frequency electromagnetic emissions.

- What kind of radiation do VDTs emit?

Like television sets, VDTs may emit X-rays (ionizing radiation) at or near naturally occurring background levels. VDTs also give off non-ionizing

radiation in the form of infrared light (heat), visible light, radio waves, and low frequency electromagnetic emissions. Apple's displays do not give off ultraviolet or microwave radiation in appreciable levels.

- What is ELF and VLF radiation?

Low-frequency radiation, a form of non-ionizing radiation, is generally divided into two groups: very low frequency (VLF) and extremely low frequency (ELF). VLF radiation falls into the frequency bandwidth between 30 and 150kHz, while ELF radiation refers to frequencies below 30 kHz. The intensity level of this radiation emitted by VDTs is comparable to that emitted by household electrical appliances.

- Is VLF or ELF radiation dangerous?

The prevailing opinion of the scientific community is that exposure to low frequency emissions does not pose a significant health risk. Available data indicate the human body absorbs only a minimal amount of radiation below 200 kHz. The low level of intensity of the fields emitted from VDTs is not considered harmful by the American Medical Association, the American College of Obstetricians and Gynecologists, the National Institute for Occupational Safety and Health (NIOSH) and the World Health Organization, among others.

However, with any scientific issue there is a diversity of opinion. There are several studies which suggest that long-term exposure to pulsed ELF fields (such as those emitted by VDTs) can result in biological changes to cells.

Because valid questions have been raised, Apple encourages further research on low frequency radiation. In fact, we are currently setting up a program to sponsor dedicated academic research in the low-frequency radiation field. We intend to continue monitoring the results of this research so that we can act responsibly to ensure the health and safety of our customers and employees.

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