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IOWA STATE UNIVERSITY
OF SCIENCE AND TECHNOLOGY
Electric Power Research Center

111 Coover Hall
Ames, Iowa 50011-1045
515 294-8057

May 18, 1992

Miss Mattie Olson
Director of Communications
National Rural Electric Cooperative Association
1800 Massachusetts Avenue, N.W.
Washington, D.C. 20036-1883

RE: Testing of Pest-A-Cator Rodent Control Device

Dear Miss Olson:

Marty Gordon and Al Bierbaum of the Iowa Association of Electric Cooperatives both contacted me with regard to the above mentioned device produced by Global Instruments of Ames, Iowa. Glenn Hillesland, Adjunct Professor, and I contacted Gary Lutz, President, and Chuck Patterson, Vice President, of Global Instruments. Global was quite helpful and cooperative. They provided two of the devices for our testing. They also provided the name of another faculty member, Bob Weber, who had previously assisted them with regard to testing the device.

We tested the device using a commercial magnetic field measurement device originally developed by the Electric Power Research Institute (EPRI). A series of tests were performed, a summary of which is described in the following paragraph. A telephone call with Marty included a request for a letter to you, which is the purpose of this letter.

Iowa State University, through its Electric Power Research Center, performed a series of tests on the Pest-A-Cator. The 60-Hertz magnetic field next to an operating Pest-A-Cator varied from 300 to 700 milligauss. An electric shaver would produce 6 to 820 milligauss (typical value around 600 milligauss) under the same operating conditions. The Pest-A-Cator imposes a higher frequency waveform on the 60-Hertz waveform. Thus, similar measurements would be expected against the wiring elsewhere in the home. this was verified using an extension cord and taking measurements along the extension cord. One foot away from the device or the wiring, the magnetic fields dropped to 12 to 18 milligauss. Two feet away, the values were in the background noise levels (unable to distinguish levels.) The background levels were approximately 2 milligauss.

Although we do not claim to be experts in rodent response to electronic pulsing in various forms and intensities, we suspect that regularly changing the imposed high frequency waveform on the 60 Hertz waveform is offensive to them. Propagation of this high frequency energy is not clearly understood, but it apparently emanates from the point of origin, the Pest-A-Cator, out over the low voltage electrical circuitry. Since rodents normally occupy the dead space between walls where the wiring is located, their sensory apparatus responds to this electronic signal. Humans are not equipped with the same sensory capability and are normally located much further away from the electrical wiring so are not affected.

We have also suggested some alternative wording to Global Instruments to replace references to magnetic fields with "electronic signals."

Also attached is a brochure on electric and magnetic fields that we have produced. I hope that this information is helpful. Please contact me if you have question. My telephone number is (515)294-3600.

Sincerely,

John Wm. Lamont
Director

JWL/srk

Attachment

cc: Marty Gordon
Al Bierbaum
Glenn Hillesland
Global Instruments