



SAFETY PRODUCTS LTD.

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12/2/93

Office of the Secretary
Federal Communications Commission
Washington, D.C. 20554

Subject: Notice of Proposed Rule Making
ET Docket #93-62
Guidelines for Evaluating the Environmental
Effects of Radiofrequency Radiation

REPLY COMMENT RECEIVED

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This is in response to the comments from Loral Microwave-Narda Corporation, manufacturer of Radiation Monitors, namely the NardAlert Personal Monitor.

Concerning two issues herein: 1) Loral's statement that the Magnetic (H) Field is as much as 60dB higher than the energy content of the Electric (E) Field, and the true reason that the NardAlert detects only H-Fields, and 2) Loral's comment on the ineffectiveness of Protective Clothing against magnetic fields.

Regarding (1) above, the EPA report cited in Loral's comments is a theoretical analysis written by Richard Tell in about 1980, and Mr. Strickland failed to mention that this analysis pertained to frequencies from AM emitters as well, where the Magnetic Field MPE just happens to be significantly relaxed per IEEE/ANSI C95.1-1992. The frequency range at which this "60dB" excess of energy becomes apparent in the H-Field is the same area which the proposed standard reflects an MPE on the order of WATTS per square centimeter of equivalent power density. At frequencies in the VHF and FM bands, the H-Field component is significantly lower, where the standard reflects an MPE more in line with that of the E-Field. It is due to the fact that the H-Field does not couple well to the body, that the 1992 standard reflects an H-Field MPE which is much higher than that of the E-Field, even well into the ranges where Vertical E-Field body resonance occurs.

Mr. Strickland's comment that the NardAlert is designed to detect H-Fields because the H-Fields "dominate in many broadcast environments" is therefore erroneous in that this statement is only true for AM Broadcast. Also, there are no broadcast frequencies typically found between 2 MHz and 50 MHz. And the NardAlert does not detect AM frequency radiation.

The NardAlert is designed to exclusively detect H-Fields up to 200 MHz because accurate measurement of E-Fields is not consistent when in close proximity to the human body or metallic objects, *not because the Magnetic field is the critical field (See their published literature). If the Magnetic Field was the critical one, then the 1992 standard would not have relaxed the MPE at the lower frequencies!* The true reason is due to measurement inconsistency. The frequency range of 30 to 300 MHz (and actually is moreso between 40 MHz and 100 MHz) is one at which body resonance will occur, and the Electric Field is the one which produces the SAR. In our opinion, detection of only the H-field in this critical area of body resonance is not a sufficient method to ascertain the hazard.

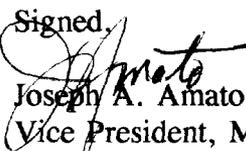
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List A B C D E

As for the effectiveness of Protective Clothing (issue (2)), note Paragraph 4.2.1, entitled Controlled Environment, of C95.1-1992, which states in effect that...the MPE in controlled environments for electromagnetic field strengths may be exceeded if: (a) the exposure conditions can be shown by appropriate techniques to produce ...peak SARs not exceeding 20 w/kg, as averaged, and (b)the induced currents in the body conform to the MPE in table 1, part b... .

This exclusion applies to the use of Naptex Protective Clothing, and the application has been proven and documented (see our NPRM comments and addenda) at the Naval Aerospace Medical Research Laboratory by Dr. Richard Olsen in his paper to be published in *Health Physics Journal*. The rationale of Naptex's ability to reduce the SAR is substantiated by the fact that *it is the Electric (E) Field which is the primary causative factor of SAR*, be it whole-body or otherwise. ***AT FREQUENCIES ABOVE APPROXIMATELY 30 MHZ, IT IS THE ELECTRIC FIELD WHICH IS OF TRUE CONSEQUENCE IN THE DETERMINATION OF SAR EFFECTS WITHIN THE BODY!***

Moreover, as it is also a fact that current density at a particular point is directly proportional to the SAR measured at that point, it is also true that induced current is directly related to the current density. The analysis of Naptex additionally shows that with the required overshoes worn at current-inducing frequencies, the induced current is substantially mitigated.

We submit that *protection* is the only certainty to compliance, since at this time *detection* methods are not completely sufficient. It is possible to offer the choice to use both methods, wherein the user may wear the monitor inside the Naptex suit, but he should also be made aware that false alarms will invariably occur at frequencies below 200 MHz.

Signed,

Joseph A. Amato
Vice President, Marketing

-End Reply Comment-