



UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

MAR 10 1994

Joseph Leon, Manager
Nuclear Division
Merlin Gerin, Inc.
Suite 150
5000 Highlands Parkway
Smyrna, GA 30082

Dear Mr. Leon:

This letter concerns your electronic personnel dosimeters (EPDs).

My Branch is responsible for following up on information indicating that there may be a generic problem in radiation protection at nuclear power plants. If a problem does exist, we take action to correct or mitigate the problem, including communication of the problem and our associated actions to industry.

As you know, there is considerable interest in the use of EPDs for the determination of the "dose of record" for individual workers. The security and accuracy of the individual dosimeter's dose data is, of course, vital to the performance of this function with the EPD. Unlike passive dosimeters, such as film badges and thermoluminescence dosimeters, EPDs can, under certain circumstances, be deactivated so as to not register dose data. This may provide the wearer with the opportunity to negate the ability of the EPD to accurately record dose data and to provide cumulative dose and dose rate alarms.

Because of the above concerns with all EPDs, we are writing to you concerning the accuracy and security of the Merlin Gerin dosimeter's dose data and the degree to which it may be subject to compromise by the individual wearer of the device. It is our understanding that the wearer may turn the unit "off" and "on" by moving a small magnet over a magnetic switch on one side of the dosimeter. Further, we understand that subsequent readout of the dosimeter will not reveal that the device's ability to detect and record dose data has been interrupted. The implications of this seem obvious: An individual may, if he or she desires, avoid the recording of dose data by the EPD, and therefore cause that individual's recorded dose to be less than his or her actual dose. Further, should a worker be using the EPD as a high dose or high dose rate alarm, he or she could exercise the option of turning the device "off" to avoid "annoying" alarms or interruptions in work activities which could result in the worker being overexposed.

If your EPD is to be used by an NRC licensee for the purpose of determining a worker's dose of record, it would seem appropriate for the licensee to have a means for assuring that the personnel dose determined with the use of your EPD is, in fact, accurate and complete.

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We need to know whether your EPD possesses the above-described feature and, if so, whether this feature may be utilized in the manner described, and what method, if any, may be used to assure that the personnel dose determined with the use of your EPD is accurate and complete.

If you have any questions or would like to discuss this matter before responding in writing, please feel free to call me at 301-504-1086 or James E. Wigginton at 301-504-1059.

Sincerely,

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LeMoine J. Cunningham, Chief
Radiation Protection Branch
Division of Radiation Safety
and Safeguards
Office of Nuclear Reactor Regulation

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