



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555-0001

NOV 09 1993

Mr. Clyde E. Pearce
NC Systems, Inc.
5171 Eldorado Springs Drive
Boulder, Colorado 80303

Dear Mr. Pearce:

This letter is in response to your inquiry to Dr. John Glenn, regarding use of electronic dosimeters for personnel monitoring. Your first question was whether the Nuclear Regulatory Commission will accept the electronic personnel dosimeter (EPD) as a suitable replacement for film and thermoluminescent dosimeters (TLD). The answer is in the affirmative: there is nothing in the regulations to preclude such use, with the exception of regulations that explicitly require the use of film or TLD, such as 10 CFR Part 34, Licenses for Radiography and Radiation Safety Requirements for Radiographic Operations, and 10 CFR Part 39, Licenses and Radiation Safety Requirements for Well Logging. As mentioned in the letter from NRC's Office of Nuclear Regulatory Research to Siemens on June 10, 1992 (see enclosure), licensees involved in radiography or well logging who wish to use EPDs may submit a petition for rulemaking to change these restrictions to permit use of EPDs.

You also enquired as to whether acceptance of the use of EPDs is contingent on the licensee's implementation of certain procedures. Acceptance is not contingent on any specific procedures to be implemented by the licensee. The only requirement for use of EPDs is that the licensee follow the procedures and good practices normally observed when using radiation detection instruments to obtain important, safety-related measurements, such as proper maintenance and calibration, awareness of the instrument's limitations, training in its proper use, a good quality assurance program, accurate and secure data collection and storage, and so on. Licensees who choose to use EPDs must be prepared to implement such a program at their facilities.

You also expressed concern that removal of the processor from the personnel dosimetry function removes third party involvement and therefore presents opportunities for altering the data. Although that possibility has always existed, we feel that it is the licensee's responsibility to ensure the security of the data. The methods used to attain the desired level of security would be reviewed within the context of NRC's licensing and inspection activities. It should also be pointed out that many NRC licensees, particularly nuclear power stations, receive NVLAP (National Voluntary Laboratory Accreditation Program) accreditation for their on-site dosimetry facilities and process their own dosimeters, thus eliminating third party involvement. No serious problems pertaining to data security have been encountered to date.

In conclusion, we would like to note that the NRC is aware of the potential problems involved in the use of EPDs as dosimeters of record. However, it was concluded that EPDs could serve this purpose if the normal precautions mentioned above are observed.

Mr. Clyde E. Pearce

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Recognizing that there is no standard for EPDs comparable to that used in NVLAP accreditation, the NRC is developing a position paper outlining the appropriate practices and precautions to be observed when using EPDs. The NRC is also proposing the development of a performance standard for EPDs comparable to that used in NVLAP.

We hope that we have addressed all your questions and concerns regarding use of EPDs, and we wish to thank you for bringing these concerns to our attention.

Sincerely,

Original signed by

Frederick C. Combs, Chief
Operations Branch
Division of Industrial and
Medical Nuclear Safety
Office of Nuclear Materials Safety
and Safeguards

Enclosure:

Letter from the NRC to Siemens Inc.

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