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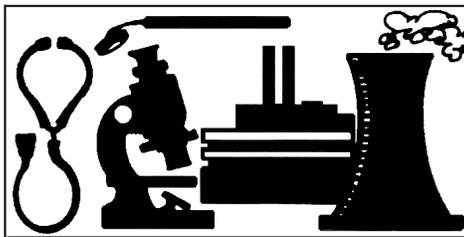
Your link with current trends in radiation dosimetry

IMPORTANT INFORMATION ABOUT RADIATION MONITORING BADGES AND RECORDS

A revealing interview with Robert L. Zimmerman, CHP

Nexus: Mr. Zimmerman, have personnel monitoring badges attained a high degree of sensitivity and effectiveness?

Mr. Z: Definitely. We've gone a long way. Although primitive forms of radiation detection and recording badges were first used early in this century, it wasn't until the Manhattan Project (during World War II) that personnel monitoring started to become sophisticated. Since that time, improvement has been dramatic. Today's programs are more highly structured and badges have reached a high degree of reliability.



Nexus: Where is personnel monitoring used today?

Mr. Z: There's a wide variety of medical, industrial and security applications. You'll find people wearing badges in hospitals, dental offices, at airports, in R&D labs and many industrial locations, including, of course, nuclear power plants.

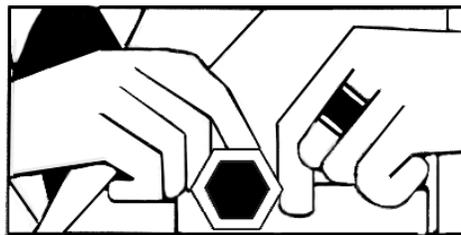


Nexus: What determines who has to be monitored?

Mr. Z: Employers are guided by state and federal regulations and current radiation protection standards. Anyone who may be occupationally exposed to at least 10% of the applicable radiation dose limits specified in the regulation must be monitored.

Nexus: That brings us to a very basic question. What does a monitoring badge accomplish?

Mr. Z: Personnel monitoring minimizes health risks. It does this by regularly measuring the radiation exposure of each employee and maintaining a cumulative exposure history as required by law. As a result, the employer can be notified as soon as a potentially hazardous condition is detected. This leads to a correction of the problem or an adjustment of the work situation.



Nexus: Do badges themselves become radioactive?

Mr. Z: No, they do not.

Nexus: Are there work situations that require wearing more than one badge?

Mr. Z: Yes. The standard employee wears one badge at

some appropriate point on his body. But anyone who receives a significantly higher dose of radiation at an extremity - hands or forearms, for example - may also be required to wear a finger ring badge.

Nexus: What about pregnant women?

Mr. Z: If she works in a medical environment, the potentially pregnant female who already wears a leaded apron should wear a second badge at waist level under the apron. This is to provide special monitoring for the fetus.

Nexus: Should the occasionally exposed employee wear a badge?

Mr. Z: Yes, when he or she is potentially exposed to ionizing radiation.

Nexus: What happens to lab findings?

Mr. Z: Every time an employee's badge is sent in and checked by the lab, the noted radiation amount is added to the previously recorded dosage. Each employee's

dosage level is continually compared with predetermined limits.

Nexus: How can an employer know the reporting company is qualified?

Mr. Z: In many ways. The leading companies have proved to be very reliable. Their employees are highly trained. Their reporting systems are incredibly thorough and geared to report important findings very quickly. And they're extremely careful. For example, they package a control badge in every batch of badges they ship. This measures any radiation that might occur in transit and prevents distorted readings later on. And now, companies can be tested and

accredited by the National Institute of Standards and Technology through NVLAP. Also, any company or institution subscribing to such a service is free to visit and check out the operation for itself.

Nexus: Is it possible for one employee to be incorrectly credited with the radiation findings of another employee because of a badge mix-up?

Mr. Z: At Landauer, the badge of each employee is pre-coded with a specific binary number which is later identified in the lab by a computer system.

Nexus: How should I, as an employee, take care of my badge to assure the proper monitoring?

Mr. Z: First of all, you should

wear your badge throughout the work shift every day - and wear it in the designated location on your clothing. Don't separate it from yourself by putting it on a jacket you're going to take off and leave in a work area while you go somewhere else. You don't want it to indicate radiation you haven't been exposed to. Turn it in whenever and wherever you're supposed to. Normal handling during the work period shouldn't have any adverse effect.

Nexus: Mr. Zimmerman, who has the responsibility for supplying monitoring devices to the employee?

Mr. Z: The employer does, and with the cooperation of everyone involved, personnel monitoring programs are quite successful - to the benefit of everyone concerned!

Robert L. Zimmerman carries exceptional credentials in the field of health physics. Holding an advanced degree from Georgia Institute of Technology, he was initially trained at the Oak Ridge National Laboratory in 1951-52. His over 30 years of in-depth experience include important positions in health physics safety services with E.I. duPont, Republic Aviation and the Georgia Institute of Technology.

Mr. Zimmerman headed the Phoenix Technology Corporation which provides radiological health and safety consultation programs for industrial and medical users of ionizing radiation. Mr. Zimmerman has been certified by the American Board of Health Physics and cited in *Who's Who in Technology Today*.

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