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# PUBLIC SUBMISSION

**Docket:** NRC-2016-0182

Individual Monitoring Devices for Industrial Radiographic Personnel

**Comment On:** NRC-2016-0182-0002

Individual Monitoring Devices for Industrial Radiographic Personnel; Notice of Docketing and Request for Comment

**Document:** NRC-2016-0182-DRAFT-0011

Comment on FR Doc # N/A

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## Submitter Information

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## General Comment

See attached file(s)

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## Attachments

PRM-34-7\_Landauer\_Response

**NUCLEAR REGULATORY COMMISSION:**  
**Individual Monitoring Devices for Industrial Radiographic Personnel,**  
**(PRM-34-7)**

**LANDAUER® Response**

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**A. Introduction and LANDAUER Background**

LANDAUER is pleased to submit this response to the Nuclear Regulatory Commission (NRC) on its Advance Notice of Proposed Rulemaking with comments regarding Individual Monitoring Devices for Industrial Radiographic Personnel. We appreciate the opportunity to respond on behalf of our stakeholders who represent the majority of U.S. based Radiographers and non-destructive testing facilities and businesses.

For more than 60 years, LANDAUER has served these organizations as a radiation safety partner with occupational radiation monitoring and with accurate data and analytics to optimize the health and safety of workers.

LANDAUER appreciates the opportunity to comment on the request to modify NRC regulations concerning individual monitoring of industrial radiographic personnel, 10 CFR Part 34. The petitioned request is for the NRC to amend its regulations to authorize use of improved electronic personnel monitoring dosimeters and dual-function alarming rate meters and electronic dosimeters. The petitioners state that dual function digital dosimeters are adequate to protect health and minimize the danger to workers and the public.

The NRC is seeking comment on three questions:

1. How the use of a dual- function device could achieve the current safety purpose of using independent devices, or if that requirement should be changed?
2. Should changes similar to those proposed in the petition be applied to other radiation protection regulatory requirements, such as 10 CFR Parts 36 and 39?
3. What experiences or challenges users have encountered in the use of these types of devices?

**B. Response**

It is LANDAUER's position that revisions to the NRC regulations be modified to allow the use of improved electronic personnel monitoring dosimeters where these devices demonstrate the following characteristics:

1. Passive integrating dose response,

2. Fail Safe capabilities to accurately record radiation exposure even when the electronic device loses primary power,
3. Transfer of measurement data to an accredited processing laboratory for analysis, report generation and historical data archival, and
4. Accreditation by the National Voluntary Laboratory Accreditation Program (NVLAP) for ionizing radiation dosimetry.

It is LANDAUER's recommendation that dosimetry regulations should set minimum performance requirements for the regulated activity, and these requirements should be independent of the technology used to meet the requirements. This practice would allow for the inclusion of new technologies as they are developed and can demonstrate compliance to the regulatory requirements. NUREG documents should provide guidelines on the implementation of specific technologies to meet the published regulator performance requirements.

Current implementation guidelines in NUREG 1556 Vol 2, "Program-Specific Guidance about Industrial Radiography Licenses" recommends the use of multiple redundant individual devices to insure adequate monitoring of employee exposure (pocket ion chamber, alarming dosimeter and passive integrating dosimeter). This implementation guidance was dictated by then- available dosimetry technology. Primarily, the processing and analysis delay inherently associated with processing film, TLD or OSL integrating dosimeters and the operational need for timely dose evaluations. It is possible for a single advanced electronic device to fulfill both operational needs of timely dose evaluations and integrated dose reporting, improving dosimetry monitoring of the individual and management of the entire radiological program. Electronic transfer of dosimeter data utilizing the internet and wireless communication will improve data integrity and compliance compared to hand recording and data transfer. Advanced digital electronic devices can include additional features to determine irradiation conditions (e.g. geometry and motion) and compliance (e.g. was the dosimeter worn?). These additional features should be considered in any evaluation concerning the modification of any regulations or guidelines.

NVLAP accreditation of any dosimetry processing program is crucial to the quality assurance of dosimetry measurement, program management and record keeping. Compliance to a nationally recognized standard insures the harmonization of dosimetry results and program management for all NRC licensees.