

DOCKET NUMBER  
PROPOSED RULE **PR 34, 36+39**

STATE OF ILLINOIS (65FR63750)

# DEPARTMENT OF NUCLEAR SAFETY

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George H. Ryan  
Governor

Thomas W. Ortziger  
Director

December 4, 2000

Secretary  
Rulemaking and Adjudications Staff  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555-0001

Re: Direct Final Rule for 10 CFR 34, 36 and 39 Allowing Use of Optically Stimulated Luminescent (OSL) Dosimetry.

Dear Secretary Vietti - Cook:

The Department supports the NRC's efforts to allow the use of any dosimetry that can be processed by a vendor accredited under the National Voluntary Laboratory Accreditation Program (NVLAP). We became aware of this technology for use in personnel dosimetry in the fall of 1998 through discussions with Landauer, Inc. (an Illinois licensee), the National Institute of Standards and Technology (NIST) and the Department's own environmental monitoring program. In these discussions, it was determined that similar technology had been tested under various conditions, particularly in environmental dose assessment for quite some time, with excellent consistency and accuracy over extended intervals of exchange.

With this in mind, the Department issued an emergency rule in February of 1999 allowing the use of OSL dosimetry in our Parts 350 (10 CFR 34) and 351 (10 CFR 39). We intend to include similar language in our draft Part 336 (10 CFR 36).

We appreciate the opportunity to comment on these rule changes. The Department is in full agreement with them and applauds NRC's efforts to make OSL dosimetry available to their licensees. If we may be of any further assistance, feel free to contact me at (217) 785-9947.

Sincerely,

*Joseph G. Klinger*  
Joseph G. Klinger, Chief  
Division of Radioactive Materials



CGV:lab

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TO: APPEL, ALLEN, EASTVOLD, HALL, WRIGHT

DATE: 10/27/00

<BODY><PRE>[Federal Register: October 24, 2000 (Volume 65, Number 206)  
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[Rules and Regulations]

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Part IV

Nuclear Regulatory Commission

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10 CFR Parts 34, 36, and 39

New Dosimetry Technology; Final Rule and Proposed Rule

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NUCLEAR REGULATORY COMMISSION

10 CFR Parts 34, 36, and 39

RIN 3150-AG21

New Dosimetry Technology

AGENCY: Nuclear Regulatory Commission.

ACTION: Direct final rule.

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SUMMARY: The Nuclear Regulatory Commission (NRC) is amending its regulations that govern radiological safety to allow licensees to use any type of personnel dosimeter that requires processing to determine the radiation dose, provided that the processor of the dosimeter is accredited to process this type of dosimeter under the National Voluntary Laboratory Accreditation Program (NVLAP), operated by the National Institute of Standards and Technology (NIST).

DATES: The final rule is effective January 8, 2001 unless significant adverse comments are received by November 24, 2000. If the effective date is delayed, timely notice will be published in the Federal Register.

ADDRESSES: Mail comments to Secretary, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, Attention: Rulemaking and Adjudications Staff.

Hand deliver comments to 11555 Rockville Pike, Maryland, between 7.30 am and 4.15 p.m. on Federal workdays.

You may also provide comments via the NRC's interactive rulemaking

website (<<http://frwebgate.access.gpo.gov/cgi-bin/leaving.cgi?from=leavingFR.html&log=linklog&to=http://ruleforum.llnl.gov>><http://frwebgate.access.gpo.gov/cgi-bin/leaving.cgi?from=leavingFR.html&log=linklog&to=http://ruleforum.llnl.gov></A>). This site provides the capability

to upload comments as files (any format), if your web browser supports

that function. For information about the interactive rulemaking site, contact Ms. Carol Gallagher, (301) 415-5905, e-mail <[CAG@nrc.gov](mailto:CAG@nrc.gov)>.

For more information, contact the NRC Public Document Room (PDR)

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Reference staff at 1-800-397-4209, 301-415-4737 or by email to  
<[A href="mailto:pdr@nrc.gov">pdr@nrc.gov</A>](mailto:pdr@nrc.gov)>.

FOR FURTHER INFORMATION CONTACT: Betty Ann Torres, Office of Nuclear  
Material Safety and Safeguards, U.S. Nuclear Regulatory Commission,  
Washington, DC 20555-0001, telephone, (301) 415-0191, email:  
<[A href="mailto:BAT@nrc.gov">BAT@nrc.gov</A>](mailto:BAT@nrc.gov)>.

#### SUPPLEMENTARY INFORMATION:

##### Background

NRC regulations at 10 CFR Part 20, Subpart F--Surveys and  
Monitoring, Sec. 20.1501 (c) ``General'' specify that whole body  
personnel dosimeters that require processing to determine the radiatio  
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dose must be processed and evaluated by a processor holding current  
personnel dosimetry accreditation under the NVLAP. In addition, the  
dosimetry processor must be approved in this accreditation process for

the types of radiation that most closely approximate the types of  
radiation for which the individual wearing the dosimeter is monitored.

Although there is no specification in Sec. 20.1501, ``General'' on

the type of NVLAP accredited dosimeters that are acceptable, other  
parts of the NRC regulations, namely Part 34, ``Licenses for Industria  
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Radiography and Radiation Safety Requirements for Industrial  
Radiographic Operations;'' Part 36, ``Licenses and Radiation Safety  
Requirements for Irradiators;'' and Part 39, `` Licenses and Radiation

Safety Requirements for Well Logging'' specify the use of either a fil  
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badge or a thermoluminescent dosimeter (TLD). At the time that these  
rules were adopted, film badges and TLDs were the only available  
dosimeters that required processing to determine the radiation dose.

##### Discussion

Modern developments in personnel dosimetry have produced dosimeter  
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that have higher sensitivities to radiation than either film badges or

TLDs, and require processing to determine the radiation dose. For  
example, the Optically Stimulated Luminescent Dosimeter involves the  
use of optical lasers for processing, unlike the processing for a film

badge that requires photographic development or the TLD that is

processed using heat. New dosimeter technologies and other processing techniques are likely to appear in the near future. Therefore, the specific references to film badges or TLDs in 10 CFR 34.47, ``Personnel Monitoring;'' Sec. 36.55, ``Personnel Monitoring;'' and Sec. 39.65, ``Personnel Monitoring'' should be removed to allow the use of dosimeters that require alternative processing techniques. This rule is intended to remove the specific requirements and to allow the use of any dosimeter that requires processing to determine the radiation dose, provided that the processor of the dosimeter holds appropriate NVLAP accreditation.

#### Discussion of Amendments by Section

##### Section 34.47 Personnel Monitoring

This section is amended to delete the limitation to the use of film badges and TLDs and to allow the use of any personnel dosimeter that requires processing to determine the radiation dose, provided that the processor of the dosimeter holds appropriate NVLAP accreditation. The replacement of dosimeters specified in this section is also revised to conform to the language used in paragraph (a) of this section.

##### Section 34.83 Records of Personnel Monitoring Procedures

In paragraphs (c) and (d), the existing requirement to retain exposure records of lost or damaged film badges or TLDs until license termination is modified to use conforming terminology of ``personnel dosimeter'' in place of ``film badges or TLDs'.

##### Section 36.55 Personnel Monitoring

This section is amended to allow irradiator operators to wear any personnel dosimeter requiring processing to determine radiation dose, provided that the dosimeter is processed and evaluated by an accredited NVLAP processor. Processing intervals specified in this paragraph are also revised to incorporate conforming language.

##### Section 36.81 Records and Retention Periods

This section is modified to use conforming terminology of ``personnel dosimeter'' in place of ``film badges and TLDs''.

## Section 39.65 Personnel Monitoring

This section is revised to remove the limitation to the use of film badges and TLDs, and to permit the use of a personnel dosimeter that is processed by an accredited NVLAP processor. The frequency of processing dosimeters specified in this paragraph and the record retention requirement are revised to incorporate conforming language.

### Procedural Background

Because NRC considers this action to be noncontroversial and routine, the NRC is using the direct final rule procedure for this rule. This action will become effective January 8, 2001. However, if the NRC receives significant adverse comments on the associated proposed rule published concurrently in the proposed rules section of this Federal Register, by November 24, 2000, then the NRC will publish

a document that withdraws this action and will address the comments received in response to the proposed amendments. These comments will be addressed in a subsequent final rule. Absent significant modifications to the proposed changes requiring republication, the NRC will not initiate a second comment period on this action.

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### Agreement State Compatibility

Under the ``Policy Statement on Adequacy and Compatibility of Agreement State Programs'' approved by the Commission on June 30, 1997, and published in the Federal Register on September 3, 1997, (62 FR 46517), this direct final rule will be a matter of compatibility between the NRC and the Agreement States, thereby providing consistency among Agreement State and NRC requirements. A Compatibility Category ``C'' designation means an NRC program element, the essential objectives of which Agreement States should adopt to avoid conflicts, duplication, or gaps in the regulation of agreement material on a nationwide basis and that, if not adopted, would result in an undesirable consequence. The manner in which the essential objectives are addressed need not be the same as NRC provided the essential objectives are met. A Compatibility Category ``D'' designation means a

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NRC program element which does not need to be adopted by Agreement States for purposes of compatibility.

The revisions to Sec. 34.47 and Sec. 34.83 are classified as Category C, and the revisions to Sec. 36.55 and Sec. 36.81 are classified as Category D. The revisions to Sec. 39.65 are classified as Category C for paragraph (a) and Category D for paragraph (c). Although these sections are subject to varying degrees of compatibility with regard to the Agreement States, this direct final rule is not expected to affect the compatibility of the Agreement State regulations.

#### Plain Language

The Presidential Memorandum dated June 1, 1998, entitled, "Plain Language in Government Writing" directed that the Government's writing be in plain language. The NRC requests comments on this direct final rule specifically with respect to the clarity and effectiveness of the language used. Comments should be sent to the address listed under the heading ADDRESSES above.

#### Voluntary Consensus Standards

The National Technology Transfer Act of 1995, (Pub. L. 104-113), requires that Federal agencies use technical standards that are developed or adopted by voluntary consensus standards bodies unless the use of such a standard is inconsistent with applicable law or otherwise impractical. In this direct final rule, the NRC would revise 10 CFR 34.47, 10 CFR 36.55, and 10 CFR 39.65 to allow the use of any dosimeter that requires processing to determine the radiation dose, provided that the processor of the dosimeter holds appropriate NVLAP accreditation. This action does not constitute the establishment of a standard that establishes generally-applicable requirements.

#### Environmental Impact: Categorical Exclusion

The Commission has determined that this direct final rule is the type of action described in categorical exclusion 10 CFR 51.22(c)(2). Therefore, neither an environmental impact statement nor an

environmental assessment has been prepared for this direct final rule.

#### Paperwork Reduction Act Statement

This direct final rule does not contain a new or amended information collection requirement subject to the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.). Existing requirements were approved by the Office of Management and Budget, Approval Number 3150-0007 for 10 CFR Part 34, Approval Number 3150-0158 for 10 CFR Part 36, and Approval Number 3150-0130 for 10 CFR Part 39.

#### Public Protection Notification

If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

#### Regulatory Analysis

A regulatory analysis has not been prepared for this direct final rule because this rule is considered a minor, nonsubstantive amendment that has no economic impact on NRC licensees or the public.

#### Small Business Regulatory Enforcement Fairness Act

In accordance with the Small Business Regulatory Enforcement Fairness Act of 1966, the NRC has determined that this action is not a major rule and has verified this determination with the Office of Information and Regulatory Affairs, Office of Management and Budget.

#### Regulatory Flexibility Certification

In accordance with the Regulatory Flexibility Act of 1980, 5 U.S.C. 605(b), the NRC certifies that this rule will not, if promulgated, have a significant economic impact on a substantial number of small entities. This direct final rule simply amends present regulations to allow use of any dosimeter that requires processing to determine the radiation dose, provided that the processor of the dosimeter holds appropriate NVLAP accreditation. The use of this new technology is optional and will have no significant impact on small entities because

use of the new technology is optional and no changes are being made to affect the use of the technology currently available.

#### Backfit Analysis

The NRC has determined that the backfit rules (10 CFR 50.109, 72.62, or 76.76) do not apply to this direct final rule because these amendments do not involve any provisions that would impose backfits as defined. Therefore a backfit analysis is not required.

#### List of Subjects

##### 10 CFR Part 34

Criminal penalties, Packaging and containers, Radiation protection, Radiography, Reporting and recordkeeping requirements, Scientific equipment, Security measures.

##### 10 CFR Part 36

Byproduct material, Criminal penalties, Nuclear materials, Reporting and recordkeeping requirements, Scientific equipment, Security measures.

##### 10 CFR Part 39

Byproduct material, Criminal penalties, Nuclear material, Oil and gas exploration--well logging, Reporting and recordkeeping requirements, Scientific equipment, Security measures, Source material, Special nuclear material.

For reasons set out in the preamble and under the authority of the Atomic Energy Act of 1954, as amended; the Energy Reorganization Act of 1974, as amended; and 5 U.S.C. 553; the NRC is adopting the following amendments to 10 CFR Parts 34, 36, and 39.

#### PART 34--LICENSES FOR RADIOGRAPHY AND RADIATION SAFETY REQUIREMENTS FOR RADIOGRAPHIC OPERATIONS

1. The authority citation for Part 34 continues to read as follows :

Authority: Secs. 81, 161, 182, 183, 68 Stat. 935, 948, 953, 954, as amended (42 U.S.C. 2111, 2201, 2232, 2233); sec.201, 88 Stat. 1242, as amended (42 U.S.C. 5841). Section 34.45 also issued under sec. 206. as Stat. 1246 (42 U.S.C. 5846).

2. In Sec. 34.47, the introductory text of paragraph (a), and paragraphs (a)(2), (a)(3), (a)(4), (d), (e), and (f) are revised to read as follows:

Sec. 34.47 Personnel monitoring.

(a) The licensee may not permit any individual to act as a radiographer or a

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radiographer's assistant unless, at all times during radiographic operations, each individual wears, on the trunk of the body, a direct reading dosimeter, an operating alarm ratemeter, and a personnel dosimeter that is processed and evaluated by an accredited National Voluntary Laboratory Accreditation Program (NVLAP) processor. At permanent radiography installations where other appropriate alarming or warning devices are in routine use, the wearing of an alarming ratemeter is not required.

\* \* \* \* \*

(2) Each personnel dosimeter must be assigned to and worn only by one individual.

(3) Film badges must be replaced at periods not to exceed one month and other personnel dosimeters processed and evaluated by an accredited NVLAP processor must be replaced at periods not to exceed three months.

(4) After replacement, each personnel dosimeter must be processed as soon as possible.

\* \* \* \* \*

(d) If an individual's pocket chamber is found to be off-scale, or if his or her electronic personal dosimeter reads greater than 2 millisieverts (200 millirems), and the possibility of radiation exposure cannot be ruled out as the cause, the individual's personnel dosimeter must be sent for processing within 24 hours. In addition, the individual may not resume work associated with licensed material use

until a determination of the individual's radiation exposure has been made. This determination must be made by the RSO or the RSO's designee

The results of this determination must be included in the records maintained in accordance with Sec. 34.83.

(e) If the personnel dosimeter that is required by paragraph (a) of this section is lost or damaged, the worker shall cease work immediately until a replacement personnel dosimeter meeting the requirements in paragraph (a) is provided and the exposure is calculated for the time period from issuance to loss or damage of the personnel dosimeter. The results of the calculated exposure and the time period for which the personnel dosimeter was lost or damaged must be included in the records maintained in accordance with Sec. 34.83.

(f) Dosimetry reports received from the accredited NVLAP personnel dosimeter processor must be retained in accordance with Sec. 34.83.

\* \* \* \* \*

3. In Sec. 34.83, paragraphs (c) and (d) are revised to read as follows:

Sec. 34.83 Records of personnel monitoring procedures

\* \* \* \* \*

(c) Personnel dosimeter results received from the accredited NVLAP processor until the Commission terminates the license.

(d) Records of estimates of exposures as a result of: off-scale personal direct reading dosimeters, or lost or damaged personnel dosimeters until the Commission terminates the license.

PART 36--LICENSES AND RADIATION SAFETY REQUIREMENTS FOR IRRADIATORS

4. The authority citation for Part 36 continues to read as follows :

Authority: Secs 81, 82, 161, 182, 183, 186, 68 Stat. 935, 948, 953, 954, 955, as amended, sec. 234, 83 Stat. 444, as amended (42 U.S.C. 2111, 2112, 2201, 2232, 2233, 2282); secs. 201, as amended, 202, 206, 88 Stat.1242, as amended 1244, 1246 (42 U.S.C. 5841, 5842, 5846).

5. In Sec. 36.55, paragraph (a) is revised to read as follows:

Sec. 36.55 Personnel monitoring.

(a) Irradiator operators shall wear a personnel dosimeter that is processed and evaluated by an accredited National Voluntary Laboratory

Accreditation Program (NVLAP) processor while operating a panoramic irradiator or while in the area around the pool of an underwater irradiator. The personnel dosimeter processor must be accredited for high energy photons in the normal and accident dose ranges (see 10 CFR

20.1501(c)). Each personnel dosimeter must be assigned to and worn by only one individual. Film badges must be processed at least monthly, and other personnel dosimeters must be processed at least quarterly.

\* \* \* \* \*

6. In Sec. 36.81, paragraph (e) is revised to read as follows:

Sec. 36.81 Records and retention periods.

\* \* \* \* \*

(e) Evaluations of personnel dosimeters required by Sec. 36.55 until the Commission terminates the license.

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PART 39--LICENSES AND RADIATION SAFETY REQUIREMENTS FOR WELL LOGGING

7. The authority citation for Part 39 continues to read as follows :

Authority: Secs. 53, 57, 62, 63, 65, 69, 81, 82, 161, 182, 183, 68 Stat. 929, 930, 932, 933, 934, 935, 948, 953, 954, 955, as amended, sec. 234, 83 Stat. 444, as amended (42 U.S.C. 2073, 2077, 2092, 2093, 2095, 2099, 2111, 2112, 2201, 2232, 2233, 2236, 2282); secs. 201, as amended, 202, 206, 88 Stat.1242, as amended, 1244, 1246 (42 U.S.C. 5841, 5842, 5846).

8. In Sec. 39.65, paragraphs (a) and (c) are revised to read as follows:

Sec. 39.65 Personnel monitoring.

(a) The licensee may not permit an individual to act as a logging supervisor or logging assistant unless that person wears, at all times

during the handling of licensed radioactive materials, a personnel dosimeter that is processed and evaluated by an accredited National

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Voluntary Laboratory Accreditation Program (NVLAP) processor. Each personnel dosimeter must be assigned to and worn by only one individual. Film badges must be replaced at least monthly and other personnel dosimeters replaced at least quarterly. After replacement, each personnel dosimeter must be promptly processed.

\* \* \* \* \*

(c) The licensee shall retain records of personnel dosimeters required by paragraph (a) of this section and bioassay results for inspection until the Commission authorizes disposition of the records.

Dated at Rockville, Maryland, this 27th day of September, 2000.

For the Nuclear Regulatory Commission.

William D. Travers,

Executive Director for Operations.

[FR Doc. 00-26988 Filed 10-23-00; 8:45 am]

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