



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

January 4, 2019

SECRETARY

COMMISSION VOTING RECORD

DECISION ITEM: SECY-18-0112

TITLE: PETITION FOR RULEMAKING AND RULEMAKING PLAN ON
INDIVIDUAL MONITORING DEVICES FOR INDUSTRIAL
RADIOGRAPHIC PERSONNEL (PRM-34-7; NRC-2016-0182)

The Commission acted on the subject paper as recorded in the Staff Requirements Memorandum (SRM) of January 4, 2019.

This Record contains a summary of voting on this matter together with the individual vote sheets, views and comments of the Commission.

A handwritten signature in black ink, appearing to read "Annette L. Vietti-Cook", is written over a horizontal line.

Annette L. Vietti-Cook
Secretary of the Commission

Enclosures:

1. Voting Summary
2. Commissioner Vote Sheets

cc: Chairman Svinicki
Commissioner Baran
Commissioner Burns
Commissioner Caputo
Commissioner Wright
OGC
EDO
PDR

VOTING SUMMARY – SECY-18-0112

RECORDED VOTES

	<u>APPROVED</u>	<u>DISAPPROVED</u>	<u>ABSTAIN</u>	<u>NOT</u> <u>PARTICIPATING</u>	<u>COMMENTS</u>	<u>DATE</u>
Chrm. Svinicki	X				X	12/28/18
Cmr. Baran	X	X			X	12/16/18
Cmr. Burns	X				X	11/16/18
Cmr. Caputo	X				X	12/28/18
Cmr. Wright	X				X	12/28/18

RESPONSE SHEET

TO: Annette Vietti-Cook, Secretary

FROM: CHAIRMAN SVINICKI

SUBJECT: SECY-18-0112: Petition for Rulemaking and Rulemaking Plan on Individual Monitoring Devices for Industrial Radiographic Personnel (PRM-34-7; NRC-2016-0182)

Approved XX Disapproved Abstain Not Participating

Comments: Below XX Attached XX None

I approve closure of the petition PRM-34-7 docket by accepting the petition in part and denying it in part, as proposed by the staff. I approve the initiation of the development of a direct final rule to amend 10 CFR Parts 34, 36, and 39, as proposed by the staff, and the approval of a direct final rule by the Executive Director for Operations, in light of the limited scope of the proposal, its generally noncontroversial nature, and the anticipated absence of significant adverse comment. I approve publication of the draft *Federal Register* notice (Enclosure 1 to SECY-18-0112), subject to the attached edits.



SIGNATURE

12 / 28 / 2018

DATE

Entered on "STARS" Yes ✓ No

NUCLEAR REGULATORY COMMISSION

10 CFR Parts 34, 36, and 39

[Docket No. PRM-34-7; NRC-2016-0182]

Individual Monitoring Devices for Industrial Radiographic Personnel

AGENCY: Nuclear Regulatory Commission.

ACTION: Petition for rulemaking; partial consideration in the rulemaking process.

SUMMARY: The U.S. Nuclear Regulatory Commission (NRC) will consider in its rulemaking process one issue raised in a petition for rulemaking (PRM), PRM-34-7, submitted by the American Society for Nondestructive Testing (ASNT) and the Nondestructive Testing Management Association (NDTMA), and is denying one aspect of PRM-34-7. The petitioners request that the NRC amend its regulations to authorize the use of “improved” individual monitoring devices for industrial radiographic personnel.

DATES: The docket for the petition for rulemaking, PRM-34-7, is closed on **[INSERT DATE OF PUBLICATION IN THE *FEDERAL REGISTER*]**.

ADDRESSES: Please refer to Docket ID NRC-2016-0182 when contacting the NRC about the availability of information for this petition. You may obtain publicly-available information related to this action by any of the following methods:

SUPPLEMENTARY INFORMATION:

I. The Petition

The NRC received and docketed a petition for rulemaking (ADAMS Accession No. ML16228A045) dated July 14, 2016, filed by Dr. Arny Bereson of ASNT and Mr. Walt Cofer of NDTMA.¹ On November 9, 2016 (81 FR 78732), the NRC published a notice of docketing and requested public comment on the petition.

The NRC identified two issues in the petition, as follows:

Issue 1: The petitioners request that the NRC amend its regulations to authorize the use of digital output personnel dosimeters to satisfy the requirements in § 34.47(a) in Title 10 of the *Code of Federal Regulations* (10 CFR).

Issue 2: The petitioners request that the NRC amend its regulations to authorize the use of dual-function electronic alarming dosimeters (EADs) to satisfy the requirements in § 34.47(a).

The petitioners interchangeably use the terms “improved individual monitoring devices,” “electronic personnel monitoring dosimeters,” “electronic dosimeters,” and “digital personnel dosimeters” to describe “improved” personnel dosimetry. This document uses the term “digital output personnel dosimetry” in place of these terms, and clarifies that digital output personnel dosimetry[#] is a specific type of personnel dosimetry used to demonstrate compliance with the occupational dose limits in § 20.1201. The petitioners use the terms “dual-function alarm ratemeter/electronic dosimeter” and “dual-function electronic dosimeter/alarm ratemeter” to describe devices that combine the

¹ The November 2016 *Federal Register* notice ~~incorrectly~~ identified each petitioner’s organization ~~incorrectly~~. ~~The correct associations are Dr. Arny Bereson, ASNT, and Mr. Walt Cofer, NDTMA.~~

personnel dosimetry used to meet the requirements in these parts must be processed as described in § 20.1501(d). In evaluating the issues raised in this petition, the NRC reviewed the technical specifications of currently available digital output personnel dosimeters to determine whether the use of this personnel dosimetry design would meet the NRC's health and safety objectives. The NRC determined that these dosimeters meet or exceed the environmental requirements (e.g., temperature, humidity) and dose range, and have the quality control necessary for use in industrial radiographic, irradiator, and well logging operations. From a literature search of technical journals, the NRC did not find any articles that highlighted generic performance problems with the use of these dosimeters. Digital output personnel dosimeters have been used successfully by NRC licensees in other operational areas, by several Agreement State licensees in all areas including industrial radiography, and internationally in multiple applications. Based on these findings, the NRC determined that rulemaking should be initiated to allow the use of digital output personnel dosimeters to satisfy the personnel dosimetry requirements in 10 CFR Parts 34, 36, and 39.

IV. Reasons for Denial

The NRC is denying Issue 2 raised by the petitioners.

Since the promulgation of 10 CFR Part 34, there have been several technological advances in dosimetry for personnel monitoring during industrial radiographic operations. On September 19, 2017, the NRC issued ~~Regulatory Issue Summary (RIS)~~ 2017-06, "NRC Policy on Use of Combination Dosimetry Devices during Industrial Radiographic Operations" (ADAMS Accession No. ML16137A077), clarifying that licensees may use dual-function EADs (also referred to as combination dosimetry devices in the RIS) for meeting the direct reading dosimeter and the alarm ratemeter

RESPONSE SHEET

TO: Annette Vietti-Cook, Secretary

FROM: Commissioner Baran

SUBJECT: SECY-18-0112: Petition for Rulemaking and Rulemaking Plan on Individual Monitoring Devices for Industrial Radiographic Personnel (PRM-34-7; NRC-2016-0182)

Approved X Disapproved X Abstain Not Participating

COMMENTS: Below X Attached X None

NRC's current regulations require certain licensees to use personnel dosimetry that is processed by accredited facilities. However, in the time since these requirements were established, dosimetry technology has advanced considerably and digital output personnel dosimeters can now provide instantaneous dose readings. This allows for more timely determinations of a potential dose to an individual. The NRC staff recommends proceeding with a direct final rule to allow the use of digital output personnel dosimetry in industrial radiographic operations, irradiator operations, and well logging operations. This approach would involve granting a related petition for rulemaking in part and denying it in part.

I agree with the staff that it makes sense to revise our regulations to account for technological advances in this area. Many Agreement States already allow for the use of digital output personnel dosimeters. Because the rulemaking is unlikely to be controversial, I approve the staff's recommendation to use the direct final rule process. However, rather than delegating approval of the rulemaking package to the Executive Director for Operations, I believe that the Commission should review and vote on the draft direct final rule. I also approve closure of the petition for rulemaking docket and the issuance of the draft *Federal Register* notice announcing the agency's decision on the petition for rulemaking, subject to the attached edits.

Entered in "STARS"

Yes X
No


SIGNATURE

12/6/15
DATE

| JMB edits

NUCLEAR REGULATORY COMMISSION

10 CFR Parts 34, 36, and 39

[Docket No. PRM-34-7; NRC-2016-0182]

Individual Monitoring Devices for Industrial Radiographic Personnel

AGENCY: Nuclear Regulatory Commission.

ACTION: Petition for rulemaking; partial consideration in the rulemaking process.

SUMMARY: The U.S. Nuclear Regulatory Commission (NRC) will consider in its rulemaking process one issue raised in a petition for rulemaking (PRM), PRM-34-7, submitted by the American Society for Nondestructive Testing (ASNT) and the Nondestructive Testing Management Association (NDTMA), and is denying one aspect of PRM-34-7. The petitioners request that the NRC amend its regulations to authorize the use of "improved" individual monitoring devices for industrial radiographic personnel.

DATES: The docket for the petition for rulemaking, PRM-34-7, is closed on **[INSERT DATE OF PUBLICATION IN THE *FEDERAL REGISTER*]**.

ADDRESSES: Please refer to Docket ID NRC-2016-0182 when contacting the NRC about the availability of information for this petition. You may obtain publicly-available information related to this action by any of the following methods:

dosimeters to licensees licensed under 10 CFR Parts 34, 36, and 39 and not impede the current use of the dosimetry by Agreement State licensees, including reciprocity activities in NRC jurisdictions.

~~Currently, several Agreement States allow the use of digital output personnel dosimeters to meet the monitoring requirements for industrial radiography and other areas. Agreement State regulations for individual monitoring of occupational dose do not have to be identical to NRC regulations, but need to meet the NRC's health and safety objectives. For the most efficient regulation of activities conducted in different jurisdictions under reciprocity, personnel dosimetry standards should be similar for both NRC and Agreement State licensees.~~

Area 3: What experiences or challenges have users encountered in the use of digital output personnel dosimeters?

Comment: During incidents and emergency situations, current monitoring badges must be returned to the processor for emergency evaluation. This requires that the individual be suspended from operations until the results of the processing are received, resulting in potential lost wages. Projects may also be put on hold awaiting results, resulting in down time, lost revenue, and additional cost and time to complete projects. With the new digital dosimeters, readings can be immediately downloaded (even at the jobsite), allowing the radiographer to potentially return to work and saving time and cost. Required reports to the appropriate agency are also provided within a much quicker time frame (sometimes as soon as the next day), allowing for the issue to be resolved in a much shorter timeframe than with the current technology.

(Commenters 1, 2, 7, and 10)

NRC Response: The NRC acknowledges that digital output personnel dosimeters may provide enhanced capabilities that allow for expedited dosage

device requirements specified in § 34.47(a). The RIS explained that dual-function EADs have been used routinely and reliably for over 25 years as a secondary dosimeter in the operating environment of nuclear power reactors with no subsequent degradation in personnel safety. This determination was based on the NRC staff not finding any evidence of generic performance problems with EADs in an industrial setting in a review of the recent literature and NRC documents, or in discussions with NRC, military, and industry health physicists with EAD experience. Further, the NRC staff did not identify any adverse trends that would preclude using EADs as a dual-function device in industrial radiography operations to meet the requirements in § 34.47(a). The many years of operational experience in the reactor arena have demonstrated that EADs are effective for monitoring dose and dose rate, as well as for providing visual/audible alarms for preset thresholds. Therefore, the NRC determined, as stated in the RIS, that licensees may use dual-function EADs for meeting the direct reading dosimeter and the alarm ratemeter device requirements specified in § 34.47(a).

The NRC determined that RIS 2017-06 provides clarification regarding the ~~assertion made~~issue raised by the petitioners with respect to the use of dual-function EADs and, therefore, rulemaking is not necessary to address this petition request.

V. Conclusion

For the reasons cited in this document, the NRC is denying the petitioners' request to amend the NRC's regulations to authorize the use of dual-function EADs to satisfy the requirements in § 34.47(a) (Issue 2); the NRC finds that rulemaking is not

RESPONSE SHEET

TO: Annette Vietti-Cook, Secretary
FROM: Commissioner Burns
SUBJECT: SECY-18-0112: Petition for Rulemaking and Rulemaking Plan on Individual Monitoring Devices for Industrial Radiographic Personnel (PRM-34-7; NRC-2016-0182)

Approved X Disapproved Abstain Not Participating

Comments: Below X Attached None

I approve the staff's recommendation to initiate rulemaking to allow the use of digital output personnel dosimetry by radiography licensees, irradiator licensees, and well-logging licensees. I also approve the staff's proposed disposition of the petition for rulemaking submitted by Dr. Bereson of the American Society for Nondestructive Testing and Mr. Cofer of the Nondestructive Testing Management Association.

Entered in STARS

Yes

No



SIGNATURE
16 November 2018

DATE

RESPONSE SHEET

TO: Annette Vietti-Cook, Secretary

FROM: Commissioner Caputo

SUBJECT: SECY-18-0112: Petition for Rulemaking and Rulemaking Plan on Individual Monitoring Devices for Industrial Radiographic Personnel (PRM-34-7; NRC-2016-0182)

Approved X Disapproved Abstain Not Participating


Comments: Below X Attached X None

Approved, with attached edits.

Entered in STARS

Yes X

No



SIGNATURE
12/28/18

DATE

AXC Comments:

I commend the staff for a well-constructed recommendation related to the petition to authorize use of digital output personnel dosimeters. I also commend the staff for the expansion of the proposed rulemaking to other parts of the Commission regulations where use of the new technology would maintain or enhance the protection of workers. The staff's due diligence on this matter has permitted the staff to conclude that the proposed dosimeters meet or exceed the technical specifications for use in radiographic operations. From a literature search of technical journals, the staff did not find any articles that highlighted generic performance problems with the use of these dosimeters. The staff has also concluded that the digital output personnel dosimeters have been successfully used by other NRC licensees in other operations areas, by several Agreement State licensees in multiple areas including industrial radiography, and in multiple applications internationally.

Based on the reasons provided by the staff, I approve both the staff recommendation to initiate and publish under the signature of the EDO a direct final rulemaking to modify NRC regulations to authorize use of digital output devices to satisfy requirements in 34.47(a) and the staff recommendation to not proceed to rulemaking related to use of dual-function electronic alarming devices. The staff has accepted use of dual-function electronic alarming devices as documented in RIS 2017-06, and therefore rulemaking is not necessary. I also approve the staff resolution of the PRM submitted by Dr. Amy Berenson of the American Society for Nondestructive Testing and Mr. Walt Cofer of the Nondestructive Testing Management Association.

[7590-01-P]

NUCLEAR REGULATORY COMMISSION

10 CFR Parts 34, 36, and 39

[Docket No. PRM-34-7; NRC-2016-0182]

Individual Monitoring Devices for Industrial Radiographic Personnel

AGENCY: Nuclear Regulatory Commission.

ACTION: Petition for rulemaking; partial consideration in the rulemaking process.

SUMMARY: The U.S. Nuclear Regulatory Commission (NRC) will consider in its rulemaking process one issue raised in a petition for rulemaking (PRM), PRM-34-7, submitted by the American Society for Nondestructive Testing (ASNT) and the Nondestructive Testing Management Association (NDTMA), and is denying one aspect of PRM-34-7. The petitioners request that the NRC amend its regulations to authorize the use of "improved" individual monitoring devices for industrial radiographic personnel.

DATES: The docket for the petition for rulemaking, PRM-34-7, is closed on **[INSERT DATE OF PUBLICATION IN THE *FEDERAL REGISTER*]**.

ADDRESSES: Please refer to Docket ID NRC-2016-0182 when contacting the NRC about the availability of information for this petition. You may obtain publicly-available information related to this action by any of the following methods:

SUPPLEMENTARY INFORMATION:

I. The Petition

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The NRC identified two issues in the petition, as follows:

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The petitioners interchangeably use the terms “improved individual monitoring devices,” “electronic personnel monitoring dosimeters,” “electronic dosimeters,” and “digital personnel dosimeters” to describe “improved” personnel dosimetry. This document uses the term “digital output personnel dosimetry” in place of these terms, and clarifies it is a specific type of personnel dosimetry used to demonstrate compliance with the occupational dose limits in § 20.1201. The petitioners use the terms “dual-function alarm ratemeter/electronic dosimeter” and “dual-function electronic dosimeter/alarm ratemeter” to describe devices that combine the functions of the alarm ratemeter and

¹ The November 2016 *Federal Register* notice incorrectly identified each petitioner’s organization. The correct associations are Dr. Army Bereson, ASNT, and Mr. Walt Cofer, NDTMA.

Comment: How long can a multimeter be trusted to function within the required ranges? (Commenter 6)

NRC Response: The NRC interprets this comment to mean the commenter was concerned that dual-function EADs (multimeters) will not stay in calibrated ranges for the period between calibrations. The NRC disagrees with the comment. In a memorandum dated April 4, 2017 (ADAMS Accession No. ML17095A319), the NRC concluded that dual-function EADs were reliable and had a proven track record at nuclear power plants. All aspects of the use of dual-function EADs, including calibration, were reviewed and no issues were identified.

Area 2: Should changes similar to those proposed in the petition be applied to other radiation protection regulatory requirements, such as those in 10 CFR Parts 36 and 39?

Comment: While the PRM focuses on 10 CFR Part 34, emerging monitoring technologies can be adopted by other licensees that will also benefit from revised rule language and related guidance. Therefore, in principle, we support the PRM and recommend that the NRC revise rule language and related guidance to allow a more performance-based approach that recognizes the use of emerging personnel monitoring technology to demonstrate regulatory compliance. (Commenter 8)

NRC Response: The NRC agrees with the comment. Amending the requirements for personnel dosimetry at 10 CFR Parts 36 and 39 would provide other licensees the same benefit of access to modern dosimetry as requested for Part 34 by the petitioners. When appropriate, NRC develops regulations and guidance that are performance-based.

Comment: While PRM-34-7 was submitted for NRC consideration with industrial radiography stakeholders in mind, the American College of Radiology believes the spirit

RESPONSE SHEET

TO: Annette Vietti-Cook, Secretary

FROM: Commissioner Wright

SUBJECT: SECY-18-0112: Petition for Rulemaking and Rulemaking Plan on Individual Monitoring Devices for Industrial Radiographic Personnel (PRM-34-7; NRC-2016-0182)

Approved X Disapproved Abstain Not Participating

Comments: Below X Attached X None

I approve the staff's recommendation to close the petition for rulemaking (PRM) docket by granting in part and denying in part PRM-34-7 concerning individual monitoring devices for industrial radiographic personnel. In particular, I approve the staff's initiation and publication of a direct final rule with signature authority delegated to the Executive Director for Operations that would amend 10 CFR Parts 34, 36, and 39 to allow the use of digital output personnel dosimeters in industrial radiographic, irradiator, and well logging operations. The proposed action would make the personnel dosimetry options allowed under 10 CFR 20.1501(d) available to 10 CFR Part 34, 36, and 39 licensees, eliminate exemption requests for use of digital output personnel dosimetry, provide consistency between NRC and Agreement State regulations, and make modern dosimetry technology available to the industry in a timely manner.

I also approve the staff's recommendation to deny the portion of the petitioner's request related to revising 10 CFR Part 34 to allow the use of dual-function electronic alarming dosimeters to meet the direct reading dosimeter and the alarm ratemeter device requirements specified in 10 CFR 34.47(a). I agree with the staff that rulemaking is unnecessary since the use of dual-function electronic alarming dosimeters is already allowed under current regulations, as clarified in Regulatory Issue Summary 2017-06, "NRC Policy on Use of Combination Dosimetry Devices during Industrial Radiographic Operations."

Finally, I approve the draft notice regarding the disposition of PRM-34-7 for publication in the *Federal Register*, subject to the attached edits.

Entered in STARS

Yes V

No


SIGNATURE

12/28/2018
DATE

NUCLEAR REGULATORY COMMISSION

10 CFR Parts 34, 36, and 39

[Docket No. PRM-34-7; NRC-2016-0182]

Individual Monitoring Devices for Industrial Radiographic Personnel

AGENCY: Nuclear Regulatory Commission.

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DATES: The docket for the petition for rulemaking, PRM-34-7, is closed on **[INSERT DATE OF PUBLICATION IN THE *FEDERAL REGISTER*]**.

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I. The Petition

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Comment: While the PRM focuses on 10 CFR Part 34, emerging monitoring technologies can be adopted by other licensees that will also benefit from revised rule language and related guidance. Therefore, in principle, we support the PRM and recommend that the NRC revise rule language and related guidance to allow a more performance-based approach that recognizes the use of emerging personnel monitoring technology to demonstrate regulatory compliance. (Commenter 8)

NRC Response: The NRC agrees with the comment. Amending the requirements for personnel dosimetry at 10 CFR Parts 36 and 39 would provide other licensees the same benefit of access to modern dosimetry as requested for ~~p~~Part 34 by the petitioners. When appropriate, NRC develops regulations and guidance that are performance-based.

Comment: While PRM-34-7 was submitted for NRC consideration with industrial radiography stakeholders in mind, the American College of Radiology believes the spirit