

First edition
2002-04-01

Nuclear energy — Radioprotection — Procedure for radiation protection monitoring in nuclear installations for external exposure to weakly penetrating radiation, especially to beta radiation

*Énergie nucléaire — Radioprotection — Procédure de surveillance
dosimétrique de radioprotection dans les installations nucléaires pour
l'exposition externe aux rayonnements faiblement pénétrants, en particulier
au rayonnement bêta*



Reference number
ISO 15382:2002(E)

© ISO 2002

This is a preview of "ISO 15382:2002". [Click here to purchase the full version from the ANSI store.](#)

PDF disclaimer

This PDF file may contain embedded typefaces. In accordance with Adobe's licensing policy, this file may be printed or viewed but shall not be edited unless the typefaces which are embedded are licensed to and installed on the computer performing the editing. In downloading this file, parties accept therein the responsibility of not infringing Adobe's licensing policy. The ISO Central Secretariat accepts no liability in this area.

Adobe is a trademark of Adobe Systems Incorporated.

Details of the software products used to create this PDF file can be found in the General Info relative to the file; the PDF-creation parameters were optimized for printing. Every care has been taken to ensure that the file is suitable for use by ISO member bodies. In the unlikely event that a problem relating to it is found, please inform the Central Secretariat at the address given below.

© ISO 2002

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.ch
Web www.iso.ch

Printed in Switzerland

This is a preview of "ISO 15382:2002". [Click here to purchase the full version from the ANSI store.](#)

Contents		Page
Foreword		iv
Introduction		v
1 Scope		1
2 Normative reference		1
3 Terms and definitions		1
4 Radiation protection planning		5
5 Characterization of radiation fields		6
6 Area dose-equivalent rate measurements		7
7 Personal dosimetry		10
8 Special cases		14
9 Assessment of partial-body doses		18
10 Documentation of partial-body doses		18
Annex A (informative) Investigation levels in national regulations		20
Annex B (informative) Examples of radionuclides emitting beta radiation of low maximum energy		21
Annex C (informative) Examples of equivalent dose-rate factors for skin contamination		22
Bibliography		23

This is a preview of "ISO 15382:2002". [Click here to purchase the full version from the ANSI store.](#)

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 15382 was prepared by Technical Committee ISO/TC 85, *Nuclear energy*, Subcommittee SC 2, *Radiation protection*.

Annexes A to C of this International Standard are for information only.

This is a preview of "ISO 15382:2002". [Click here to purchase the full version from the ANSI store.](#)

Introduction

A high percentage of weakly penetrating radiation, mainly beta radiation, has to be expected in nuclear power plants, especially during maintenance work. Special rules need to be respected and particular protection procedures are required for external exposure to this radiation. Dosimetry methods usually applied in radiation protection monitoring of strongly penetrating radiation cannot be directly applied to weakly penetrating radiation.

Exposures of persons to weakly penetrating radiation are mainly caused by unshielded open radioactive sources. This type of exposure may occur, in particular, in connection with contamination. Nuclear installations may involve large-area contamination with locally different nuclide composition, which can vary with time. In addition, the activity per unit area may assume high values. Exposure to weakly penetrating radiation from radioactive noble gases in room air has also to be considered. Particular attention has to be paid to work performed on heavily contaminated parts at close proximity. This requires special rules and procedures for the nuclear power plants, some of which may be applicable to the handling of radioactive sources in other disciplines.

In order to achieve and maintain high radiation protection standards, it is necessary to utilize a special standard dedicated to the particular concern pertaining to protection against, and monitoring of, external exposures to weakly penetrating radiation.