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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

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Foreword

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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.

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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.

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.