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Radiological protection — Monitoring and dosimetry for internal exposures due to wound contamination with radionuclides

Radioprotection — Surveillance et dosimétrie en cas d'exposition interne due à la contamination d'une plaie par radionucléides

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Foreword

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This document was prepared by Technical Committee ISO/TC 85, *Nuclear energy, nuclear technologies, and radiological protection*, Subcommittee SC 2, *Radiological protection*.

Introduction

In the course of their employment, radiation workers may be exposed to radioactive materials that could be incorporated into the body. Intakes of radionuclides need to be monitored to determine that any exposures are at expected levels. Internal doses resulting from intakes of radionuclides cannot be measured directly. Estimating the dose requires decisions to be made about the monitoring techniques and frequencies along with methodologies for dose assessment. The criteria governing the regimes of such a monitoring programme or for the selection of methods and frequencies of monitoring usually depends upon regulations, the purpose of the radiation protection programme, the probabilities of potential radionuclide intakes, and the characteristics of the materials handled.

For these reasons, ISO standards for monitoring programmes (ISO 20553[1]), laboratory requirements (ISO 28218), and dose assessment (ISO 27048[2]) have been developed and can be applied to many workplaces where internal contamination may occur. Their application for internal exposures due to wound contamination with radionuclides requires account to be taken of special aspects resulting from the type of wound and the associated specific biokinetics of radionuclides at the origin of contamination.

This document offers guidance for the design of a special monitoring programme and for dose assessment in the case of wound contamination with radionuclides. Recommendations of international expert bodies and international experience with the practical application of these recommendations in radiological protection programmes have been considered in the development of this document. Its application facilitates the exchange of information between authorities, supervisory institutions and employers.