Preface

The National Council on Radiation Protection and Measurements (NCRP) published Report No. 65 on *Management of Persons Accidentally Contaminated with Radionuclides* in 1980. This Report has served as a major resource for responders to accidents and incidents involving human contamination by radionuclides. During the last three decades a greater understanding has been achieved on the possible health effects in, and strategies for the immediate and late management of, contaminated individuals.

In recent years, the range of situations in which contamination can occur has increased with the growing concern worldwide regarding possible incidents of nuclear and radiological terrorism. At the time of publication of NCRP Report No. 65, the main concern was the possible contamination of individuals working at, or living near, a nuclear-reactor facility and those working at, or living near, the government's nuclear-weapons sites. This concern has now expanded into the broader public domain and involves a greater range of radionuclides than those of greatest concern in an incident involving nuclear-reactor operations, a reactor accident, or an accidental release of radionuclides at a weapons site.

This Report therefore has been significantly extended beyond the set of radionuclides that were considered in Report No. 65, and contains recommendations on the management of persons contaminated by many radionuclides of concern in potential acts of nuclear or radiological terrorism. It also provides information based on advances since the 1970s in methods for decontamination and the decorporation of radionuclides in accidentally or deliberately contaminated persons. For example, the Report includes updated data and biokinetic and dosimetric models of organ doses, total-body and organ retention values, and excretion rates of radionuclides. Publications of the International Commission on Radiological Protection over the past three decades have provided valuable information that is utilized in this Report.

The Report contains five major sections:

1. Part A is an update of the "yellow" section of NCRP Report No. 65 and contains quick reference information needed by an emergency responder to an act of radionuclide contamination;

2. Part B contains a set of recommendations on onsite and prehospital actions that should be taken by responders;
3. Part C contains an extensive discussion of actions that should be taken in the treatment of contaminated patients at a medical facility;
4. Part D contains recommendations on post-treatment follow-up and guidance on contamination control in handling decedents; and
5. Part E provides an in-depth discussion of the scientific and technical bases for the recommended management procedures for individuals contaminated with radionuclides, including detailed discussions of internal dosimetry models for major radionuclides of 24 elements of particular concern.

Parts A, B, C and D are presented separately as a handbook for the convenience of users who might want to have the information readily available at an incident site. Part E is presented in the second volume.

Volume 2 (Sections 16 through 22 and Appendices A to J) of Report No. 161 contains extensive information on the *Scientific and Technical Bases* for the guidance provided in Volume 1. Included are a detailed presentation on the radiobiology of internally-deposited radionuclides, a discussion of sources of potential contamination in both planned (*e.g.*, medical or industrial) and unplanned (*e.g.*, nuclear accidents or acts of terrorism) settings, roles and responsibilities of responders to incidents involving radionuclide contamination, extensive dosimetry and case studies for radionuclides of 24 important chemical elements, and guidance on dose assessment methodologies.

Both volumes of Report No. 161 were prepared by Scientific Committee 4-1. Serving on the Committee were:

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