

# Preface

A major nuclear or radiological incident, caused by an act of terrorism or an accident, could have significant societal consequences, depending on the type and magnitude of the incident and circumstances specific to the local communities affected. Previous large-scale radiological or nuclear incidents, such as occurred at Chernobyl, Ukraine; Fukushima, Japan; and Goiânia, Brazil, have demonstrated the need for guidance on the long-term management of decontamination operations and waste disposition. In addition, large-area contamination could result from a terrorist attack involving a radiological dispersal device (*e.g.*, a dirty bomb) or an improvised nuclear device. Decisions about cleanup will depend on the scale to which society is adversely affected and the degree of stakeholder acceptance of the remediation goals.

The National Council on Radiation Protection and Measurements (NCRP) is providing this Report to offer guidance to those who will be responsible for managing cleanup and community restoration efforts. The Report considers optimization to be an iterative process that can be broken down into a series of steps, all of which involve close cooperation with stakeholders as a necessary element for a community-focused recovery effort. This guidance builds on previous recommendations from NCRP provided in the following reports:

- Report No. 138, *Management of Terrorist Events Involving Radioactive Material* (2001);
- Report No. 141, *Managing Potentially Radioactive Scrap Metal* (2002);
- Report No. 146, *Approaches to Risk Management in Remediation of Radioactively Contaminated Sites* (2004);
- Report No. 154, *Cesium-137 in the Environment: Radioecology and Approaches to Assessment and Management* (2006);
- Report No. 161, *Management of Persons Contaminated With Radionuclides* (2008);
- Report No. 165, *Responding to a Radiological or Nuclear Terrorism Incident: a Guide for Decision Makers* (2010); and
- Report No. 166, *Population Monitoring and Radionuclide Decorporation Following a Radiological or Nuclear Incident* (2010)

NCRP also published the Proceedings of the 1990 Annual Meeting entitled *Health and Ecological Implications of Radioactively Contaminated Environments* (1991).

This Report is intended to provide specific guidance to decision makers and policy setters in dealing with large-area contamination issues resulting from a terrorist attack or an accident, and is aimed particularly at local and regional elected officials rather than at radiation protection professionals. In particular, this Report addresses the following specific issues:

- development of a site-specific framework for optimizing decision making;
- involvement of stakeholders in the decision-making process; and
- management of long-term contamination and waste disposition strategies.

In addition, appendices provide detailed discussion of lesson learned from previous radiological and nuclear incidents, available decontamination techniques, economic analyses of various options, public information and risk communication, and current U.S. national guidance.

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