

Testimony of Dr. Thomas S. Tenforde, President of the National Council on Radiation Protection and Measurements (NCRP) on November 15, 2007, to the Subcommittee on Oversight of Government Management, the Federal Workforce, and the District of Columbia and the Subcommittee on State, Local, and Private Sector Preparedness and Integration at a hearing on “Not a Matter of ‘If’, but of ‘When’: the Status of U. S. Response Following an RDD Attack.”

Senator Pryor and Members of the Subcommittees of the Senate Committee on Homeland Security and Governmental Affairs:

As the President of the National Council on Radiation Protection and Measurements (NCRP) I am pleased to present the views of NCRP on the status of U.S. readiness to prevent and, if necessary, counteract and recover from an act of nuclear or radiological terrorism. I will also briefly describe the recommendations contained in several important NCRP publications on this subject, and new efforts proposed to the Department of Homeland Security (DHS) and other federal agencies that involve the preparation of additional NCRP reports providing recommendations and guidance on counteracting acts of terrorism.

NCRP is a nonprofit organization located in Bethesda, MD, that was founded in 1929 and formally chartered by Congress in 1964 under Public Law 88-376 to serve as a national resource for guidance on radiation health protection and measurements. NCRP has served this role through the preparation of more than 200 publications during the past four decades that address the effects of radiation exposure on human health and the environment. NCRP has also conducted and published the proceedings of 43 annual meetings on subjects of importance to the government and public related to the measurement and assessment of health impacts of radiation exposures in occupational, medical and environmental settings.

NCRP Publications on Radiological Terrorism

Since 2001 NCRP has played an increasingly important role in providing guidance on responding to terrorist actions involving the release of radioactive materials in public areas. One month after the tragic events of September 11, 2001, NCRP issued its landmark Report No. 138 on *Management of Terrorist Events Involving Radioactive Materials*. This document provided a foundation for subsequent planning by the government at both federal and state levels to prepare an efficient defense and to mount effective countermeasures against a possible nuclear or radiological act of terrorism. The report contains guidance on:

- Command and control procedures;
- Consequence management, including protective equipment for responders, decontamination procedures, medical intervention measures, and minimizing psychosocial impacts;

- Communications between responders and with the public;
- Late-phase cleanup and decision making on cleanup and release for public use of contaminated areas;
- Advance preparation, including requirements for equipping and training first responders.

During the six years following Report No. 138, NCRP has issued additional publications of importance in homeland security and the response to nuclear or radiological terrorism incidents. These publications are:

- Commentary No. 19 (2005) on *Key Elements of Preparing Emergency Responders for Nuclear and Radiological Terrorism*; a PowerPoint presentation that summarizes the recommendations of the Commentary is available on the NCRP website at <http://NCRPonline.org>.
- Peer-reviewed articles in the proceedings of the 2004 NCRP Annual Meeting on *Advances in Consequence Management for Radiological Terrorism Events* were published in *Health Physics*, Vol. 89(No. 5), pp. 417-588 (2005);
- Three publications have been issued on operational safety and radiation exposure limitations in new technologies being developed for detection of weapons and nuclear materials:
 - Commentary No. 16 (2003) on *Screening of Humans for Security Purposes Using Ionizing Radiation*,
 - Commentary No. 17 (2003) on *Pulsed Fast Neutron Analysis System Used in Security Surveillance*, and
 - Commentary No. 20 (2007) on *Radiation Protection and Measurement Issues Related to Cargo Scanning with Accelerator Produced High-Energy X Rays*.

NCRP is also in an advanced stage of preparation of two reports that provide recommendations on decontamination and medical management of radioactively contaminated individuals. These reports, which will be issued in 2008, are:

- *Management of Persons Contaminated with Radionuclides*, and
- *Population Monitoring and Decontamination Following a Nuclear or Radiological Incident*.

Perspectives on Needs for Additional Planning and Guidance in Counteracting Radiological Terrorism

Based on analysis of publications such as the National Response Plan that address preparations for, and responses to, acts of terrorism, as well as discussions with planners, emergency responders, and radiological health experts at the local, state and federal levels, it is NCRP's view that there are several primary areas in which further guidance is essential. These include:

- the terrorism scenario of greatest concern is explosion of an IND (device with explosive nuclear materials) because of the potentially large scope of property destruction and the large number of individuals who might be contaminated locally and at a distance from the site of the incident; planning at the federal and state levels has been focused more on an RDD rather than an IND incident, and there is a significant and urgent need to accelerate planning for the latter type of incident;
- clear definition of responsibilities and communications between first responders and between responders and medical receivers of injured responders and members of the public; there is a need for agreements involving local and state responders and radiation control officials with responsible federal agencies on immediate versus longer-term response actions following a radiological terrorist incident;
- additional radiation measurement equipment and training on its use is needed at the local and state levels;
- more health physicists are needed for assistance in mounting a rapid and effective response to a radiological terrorism incident;
- pre-planning and development of protocols for decontamination and optimum use of local health care facilities to treat contaminated, injured responders and members of the public are essential needs, along with specialized training of medical staff;
- communications with the news media and public need to be given an increased emphasis in order to (1) avoid panic reactions and maintain control at the site of a terrorist incident, (2) avoid overwhelming local medical centers with uninjured individuals (the "worried well"), (3) instruct members of the public who self-evacuate on appropriate decontamination procedures at their residences, and (4) minimize the risk of long-term post-traumatic stress effects;
- frequent training is needed for responders and radiation control department staff at local and state levels, including the correct use of radiation measurement equipment;
- more extensive laboratory capabilities are needed to characterize contamination of affected individuals and public areas; and
- recovery and restoration plans for contaminated areas need to be developed, including prioritizing and optimizing the plans to ensure that critical social infrastructure requirements (such as medical facilities) are restored as quickly as possible.

Many efforts are underway at the local, state and federal levels to address these needs and improve readiness and training for response to a potential act of nuclear or radiological terrorism. These efforts can be facilitated in a significant way by recommendations and guidance provided by NCRP, as described below.

NCRP's Plans for New Reports Addressing Key Issues in Counteracting Nuclear or Radiological Terrorism

In assessing the need for additional guidance on mounting effective countermeasures against nuclear and radiological terrorism, it is NCRP's view that there are three primary elements of readiness.

Key Elements of U.S. Readiness for Radiological Terrorism



- 1) Developing and deploying effective methods for detection and deterrence of entry and use of radiological materials for terrorist actions in the United States;
- 2) mounting a rapid and highly effective response to a nuclear or radiological terrorism incident; and

- 3) performing timely and efficient recovery and restoration activities in sites that are radioactively contaminated by acts of terrorism.

The following provides a brief summary of new work by NCRP that is either underway or has been proposed to DHS and other federal agencies.

➤ Information Needed by Decision Makers. An important step toward addressing the national need for guidance on key issues in preparing for, and responding to, acts of nuclear or radiological terrorism, has been taken by NCRP in preparing a report on *Key Decision Points and Information Needed by Decision Makers in the Aftermath of a Nuclear or Radiological Terrorism Incident*. This report, the preparation of which is being funded by DHS, will have two primary components:

- (1) information needed by decision makers at all levels of government to protect the health and safety of emergency responders and the public, and to ensure security of the affected area;
- (2) consolidated recommendations on key decision points, levels of radiation doses or concurrent hazards (fire, chemical release, *etc.*) at which a response must be initiated, and the nature, timing, and extent of the response.

NCRP has submitted proposals to DHS and the U.S. Environmental Protection Agency (EPA) for the preparation of new reports that provide guidance in the primary areas of need described above. The focus of these reports will be as follows.

- Detection and Deterrence. NCRP has proposed to DHS the preparation of a report on *Recommendations on the Performance Requirements and Testing Criteria for Stationary and Mobile Portal Monitors*.
- Response to Terrorist Incident. NCRP has proposed to DHS the preparation of reports on *Protection Against, Mitigation of, and Treatment for Radiation Health Effects Resulting from a Radiological Terrorism Incident* and *Assessment and Treatment of Radioactively Contaminated Wounds in Victims of a Radiological Terrorism Incident*.
- Recovery and Site Restoration Following a Terrorist Incident. NCRP has proposed to EPA the preparation of a report on *Approach to Optimizing Decision Making for Late Phase Recovery from Nuclear or Radiological Terrorism Incidents*. This report will provide detailed recommendations on the optimization process for site recovery and restoration that was described in general terms in the *Protective Action Guides for Radiological Dispersal Device and Improvised Nuclear Device Incidents*. These guidelines were initially prepared by DHS and are currently being finalized by EPA. NCRP has also proposed to DHS the preparation of a report on *Management and Long-Term Safe Containment of Contaminated Materials Generated by Cleanup Following a Nuclear or Radiological Terrorism Incident*.

In concluding this testimony, I wish to again thank the subcommittee members for providing this opportunity to present NCRP's views on actions that must be taken to improve the readiness of the United States for acts of nuclear or radiological terrorism. I want to again stress that NCRP is uniquely qualified to assist in strategic planning as the United States prepares for potential acts of radiological terrorism.