

# Preparing Communities for Recovery Following a Radiological Incident



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## THE IMPORTANCE OF RADIOLOGICAL RESPONSE PREPAREDNESS

Following a radiological incident – such as a radiological dispersal device (RDD) detonation – community leaders would face many challenges, from determining the boundaries of potential radioactive contamination spread to restoring public access to those areas. If communities are to meet these challenges, they must have operational plans that fully describe the process for both radiological emergency response and complete recovery.

In 2017, the Science and Technology Directorate's (S&T's) [National Urban Security Technology Laboratory \(NUSTL\)](#) collaborated with Federal Emergency Management Administration (FEMA) and Department of Energy (DOE) National Nuclear Security Administration (NNSA) to publish "[RDD Response Guidance: Planning for the First 100 Minutes](#)." This guidance for emergency planners and responders focuses on immediate actions needed to conduct lifesaving operations, identify protective actions for the public and responders, and determine the extent of contamination.

In the current project, NUSTL is working with its interagency partners and subject matter experts from FEMA and relying on research and development from DOE Pacific Northwest National Laboratory (PNNL) to support the next phase of response and recovery planning for local communities: providing guidance on characterization, stabilization, waste management, remediation, and reoccupation of areas contaminated by an RDD.

## WHAT TO EXPECT FROM THE RECOVERY GUIDANCE

This comprehensive new document will consolidate existing guidance, best practices, software tools, and information on RDD recovery strategies to help state, local, tribal, and territorial (SLTT) officials navigate the entire recovery process. The recovery guidance will cover a variety of priorities that arise after the first 100 minutes of response, including guidance on how to:

- Characterize and map radiological and other hazards
- Develop a communication strategy that addresses the challenges of communicating with the public from the emergency phase through full recovery

- Protect populations at risk of radiation exposure and those displaced from the incident
- Develop remediation and waste management plans
- Maintain the affected area(s) through long-term remediation efforts
- Restore access to and reoccupy affected areas



A worker tests a technique for conducting radiological decontamination of a building facade.

The new recovery guidance will utilize the same "Mission and Tactics" format that is used in "Planning for the First 100 Minutes" to develop a radiological recovery roadmap for SLTT preparedness, planning, and operational use. An outline of the draft missions and tactics, including the suggested audience for each, is included at the end of this fact sheet.

The guidance will also incorporate additional information regarding public perception of risk and the availability of scientific and technical expertise.

## GUIDANCE WITH END USERS IN MIND

The development team is refining the guidance so it can be implemented effectively by SLTT jurisdictions. This refining work includes conducting pilot sessions with local jurisdictions to evaluate the current draft and directly incorporating feedback from end user communities. Pilot sessions, which occur over two or three days, will cover all 10 tactics found in the guidance. The final schedule and agenda for the pilots are decided in coordination with each participating jurisdiction.



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The development team is also writing training materials to assist planners with implementing and operationalizing the guidance as part of their jurisdiction’s radiological recovery planning process.

## PARTNERSHIPS CRITICAL TO DEVELOPING RAD/NUC GUIDANCE

As with all projects in DHS S&T’s Radiological/Nuclear Response and Recovery (RNRR) Research and Development Program, this work relies heavily on input from first responders, local planners and agencies, federal interagency partners, and FEMA. The research and development associated with this project is being conducted by DOE’s PNNL.



A computer animation of a firefighter measuring radiation contamination with a survey meter.

## OVERVIEW OF PROPOSED MISSIONS AND TACTICS

Mission	Tactic	Description	Relevant Audience/ Expertise
Characterize, Map and Model	1. Survey Radiological Hazards	Complete the preliminary radiation survey, conduct additional surveys to characterize contamination spread, establish contaminated area boundaries, collect samples for laboratory analysis, and set-up long-term monitoring systems.	<ul style="list-style-type: none"> <li>Emergency management</li> <li>Fire/police hazmat</li> <li>Public health</li> <li>Radiation subject matter experts</li> </ul>
	2. Implement Radiation Exposure Mitigation	Conduct exposure pathway and dose assessments, implement dose management procedures for at-risk groups, determine PPE requirements, and implement contamination spread mitigation.	<ul style="list-style-type: none"> <li>Emergency management</li> <li>Fire/police hazmat</li> <li>Public health</li> <li>Radiation subject matter experts</li> <li>Radiation and safety officers</li> </ul>
Communicate	3. Communicate	Provide updated emergency messaging, identify and develop intermediate and late-phase communication strategies, and conduct comprehensive “trusted sources” outreach.	<ul style="list-style-type: none"> <li>Emergency management</li> <li>Public affairs/communications</li> <li>Public health</li> <li>Public/private partnerships</li> </ul>



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Mission	Tactic	Description	Relevant Audience/ Expertise
Monitor and Assist	4. Conduct Phased Evacuation	Implement phased evacuations, conduct search and rescue operations, and canvass evacuated areas for people requiring assistance.	<ul style="list-style-type: none"> <li>Emergency management</li> <li>Fire/police/EMS</li> <li>Public health</li> <li>Transportation</li> </ul>
	5. Provide Basic Needs	Facilitate the impacted community's safe and efficient access to emergency disaster services, such as community reception centers, shelters, and disaster assistance centers. Monitor and stabilize critical resources and infrastructure.	<ul style="list-style-type: none"> <li>Emergency management</li> <li>Fire/police/EMS</li> <li>Human services</li> <li>Public health</li> <li>Transportation</li> </ul>
Restore the Environment	6. Sustain the Area	Implement a process for maintaining critical infrastructure and buildings in the contaminated area to prevent them from degrading during prolonged remediation timelines.	<ul style="list-style-type: none"> <li>Emergency management</li> <li>Civil engineering</li> <li>Utilities/infrastructure</li> <li>Environmental protection</li> </ul>
	7. Remediate	Identify remediation contractors, establish remediation zones and clean-up goals, and prepare the decontamination work plan.	<ul style="list-style-type: none"> <li>Admin/finance</li> <li>Emergency management</li> <li>Environmental protection</li> <li>Public health</li> <li>Public/private partnerships</li> <li>Radiation subject matter expert</li> </ul>
	8. Manage and Dispose of Waste	Stage, consolidate, decontaminate, and/or package waste and materials to be released or transported off-site, including for treatment or long-term disposal.	<ul style="list-style-type: none"> <li>Environmental protection</li> <li>Public health</li> <li>Remediation contractors</li> <li>Transportation</li> </ul>
Reopen and Rebuild	9. Reopen	Assess readiness for reopening of remediated areas, including reviewing habitability of residences and adjustments to land-use. Provide reoccupation assistance to relocated members of the public and businesses.	<ul style="list-style-type: none"> <li>Emergency management</li> <li>Environmental</li> <li>Human services</li> <li>Public health</li> <li>Recovery support functions</li> <li>Urban planning</li> </ul>
	10. Rebuild	Provide assistance to local jurisdictions to strategically rebuild the community and restore local economy toward successful long-term recovery.	<ul style="list-style-type: none"> <li>Admin/finance</li> <li>Economic development</li> <li>Emergency management</li> <li>Human services</li> <li>Public/private</li> <li>Recovery support functions</li> <li>Urban planning</li> </ul>

