Optimizing decision making for late-phase recovery from nuclear or radiological terrorism incidents in the US

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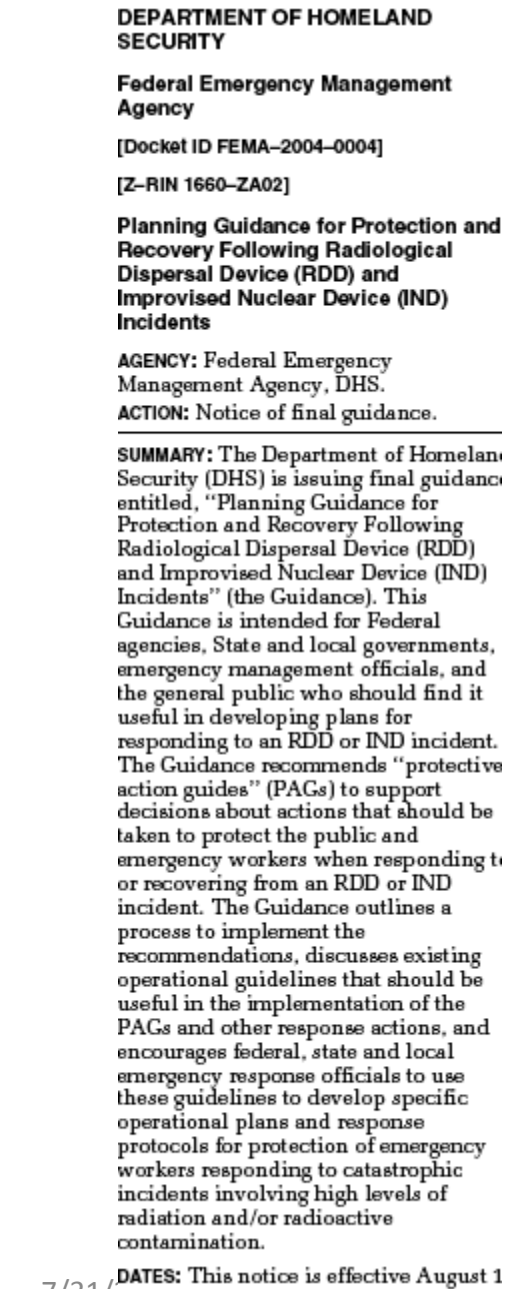

DEPARTMENT OF HOMELAND SECURITY

Federal Emergency Management Agency

[Docket ID FEMA–2004–0004]

[Z–RIN 1660–ZA02]

Planning Guidance for Protection and Recovery Following Radiological Dispersal Device (RDD) and Improvised Nuclear Device (IND) Incidents

AGENCY: Federal Emergency Management Agency, DHS.

ACTION: Notice of final guidance.

SUMMARY: The Department of Homelan Security (DHS) is issuing final guidanc entitled, "Planning Guidance for Protection and Recovery Following Radiological Dispersal Device (RDD) and Improvised Nuclear Device (IND) Incidents" (the Guidance). This Guidance is intended for Federal agencies, State and local governments, emergency management officials, and the general public who should find it useful in developing plans for responding to an RDD or IND incident. The Guidance recommends "protective action guides" (PAGs) to support decisions about actions that should be taken to protect the public and emergency workers when responding t or recovering from an RDD or IND incident. The Guidance outlines a process to implement the recommendations, discusses existing operational guidelines that should be useful in the implementation of the PAGs and other response actions, and encourages federal, state and local emergency response officials to use these guidelines to develop specific operational plans and response protocols for protection of emergency workers responding to catastrophic incidents involving high levels of radiation and/or radioactive contamination.

DATES: This notice is effective August 1 2008

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Rationale

DHS PAG Guidance (2008)

Recommendations:

- explicit actions for early and intermediate phases
- 'optimization' process in lieu of a pre-determined PAG for late-phase recovery

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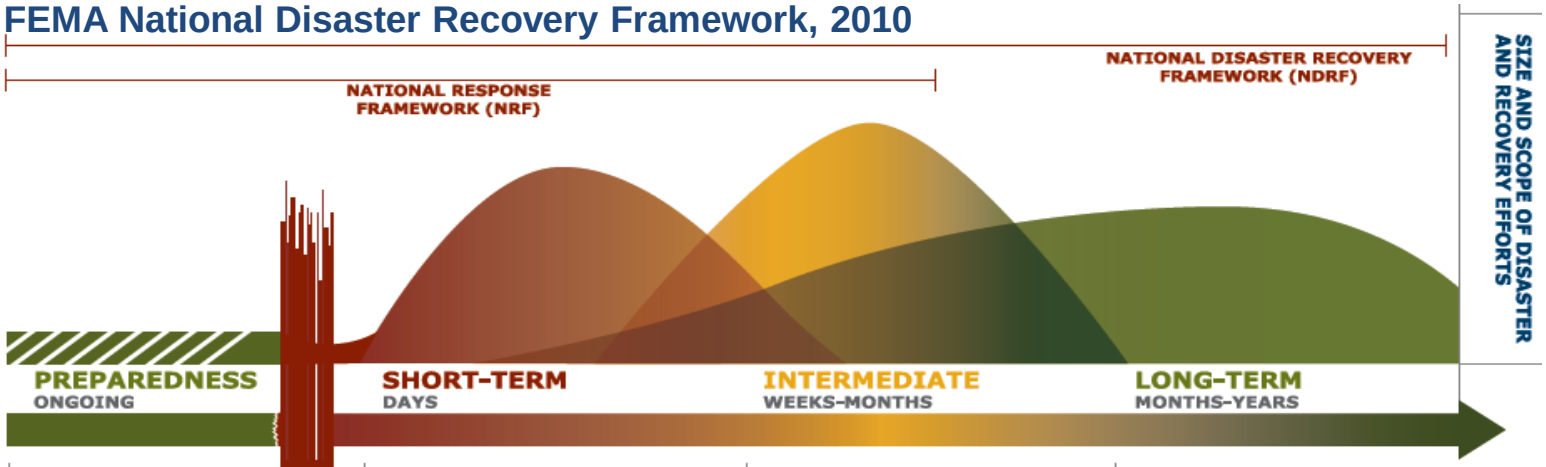
FEMA National Disaster Recovery Framework, 2010



PRE-DISASTER PREPAREDNESS
Examples include:

- Pre-disaster recovery planning
- Mitigation planning and implementation
- Community capacity- and resilience-building
- Conducting disaster preparedness excersises
- Partnership building
- Articulating protocols in disaster plans for services to meet the emotional and health care needs of adults and children

SHORT-TERM RECOVERY
Examples include:

- Mass Care/Sheltering
  - → Provide integrated mass care and emergency services
- Debris
  - → Clear primary transportation routes
- Business
  - → Establish temporary or interim infrastructure to support business reopenings
  - → Reestablish cash flow
- Emotional/Psychological
  - → Identify adults and children who benefit from counseling or behavioral health services and begin treatment
- Public Health and Health Care
  - → Provide emergency and temporary medical care and establish appropriate surveillance protocols
- Mitigation Activities
  - → Assess and understand risks and vulnerabilities

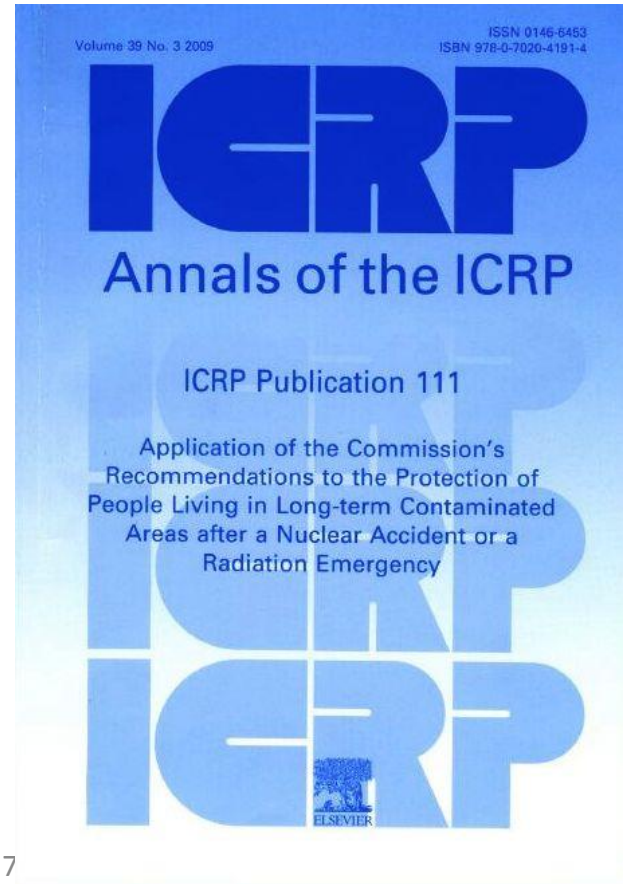
INTERMEDIATE RECOVERY
Examples include:

- Housing
  - → Provide accessible interim housing solutions
- Debris/Infrastructure
  - → Initiate debris removal
  - → Plan immediate infrastructure repair and restoration
- Business
  - → Support reestablishment of businesses where appropriate
  - → Support the establishment of business recovery one-stop centers
- Emotional/Psychological
  - → Engage support networks for ongoing care
- Public Health and Health Care
  - → Ensure continuity of care through temporary facilities
- Mitigation Activities
  - → Inform community members of opportunities to build back stronger

LONG-TERM RECOVERY
Examples include:

- Housing
  - → Develop permanent housing solutions
- Infrastructure
  - → Rebuild infrastructure to meet future community needs
- Business
  - → Implement economic revitalization strategies
  - → Facilitate funding to business rebuilding
- Emotional/Psychological
  - → Follow-up for ongoing counseling, behavioral health, and case management services
- Public Health and Health Care
  - → Reestablishment of disrupted health care facilities
- Mitigation Activities
  - → Implement mitigation strategies

Optimization is the Recommended Approach toward Addressing Late-Phase Recovery Issues



- **Justification** of protection
- **Optimization** of protection '**Existing exposure situations**'
- Establishing reference levels of residual dose for individuals: 1 – 20 mSv/y range, typical value1 mSv/y
- **ALARA** considerations

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For Immediate Release
October 20, 2010

Report by NCRP on "Optimizing Decision Making for Late-Phase Recovery from Nuclear or Radiological Terrorism Incidents"

In March 2008 the U.S. Department of Homeland Security (DHS) issued its final Planning Guidance for Radiological Dispersal Device (RDD) and Improvised Nuclear Device (IND) Incidents (Federal Register 73, No. 149, 45029–45049). This document provides recommendations for protection of public health in the early, intermediate and late phases of response to an RDD or IND, and discusses approaches to implementation of the necessary actions. Although Planning Guidance for the early and intermediate phases of response generally follow U.S. Environmental Protection Agency guidelines, the proposed late-phase Planning Guidance for cleanup and restoration of an affected site is based on an approach termed "optimization." DHS guidelines provide a general description of the goals of the late recovery phase, but they do not describe the complex optimization approach to decision making during the process of achieving these multifaceted goals.

In an effort to more fully define the process and procedures to be used in optimizing the late-phase recovery and site restoration following an RDD or IND incident, DHS has funded NCRP to prepare a comprehensive report that addresses all aspects of an effective optimization process. The preparation of the NCRP report, entitled "Approach to Optimizing Decision Making for Late-Phase Recovery from Nuclear or Radiological Terrorism Incidents," will be a three-year effort by a scientific committee designated as SC 5-1. Members of SC 5-1 will represent a broad range of expertise for addressing the complex issues involved in optimizing decisions on late-phase cleanup and site recovery following an RDD or IND incident, including experts in homeland security, health physics, risk and decision analysis, economics, environmental remediation and radioactive waste management, and communication with public and government organizations. Stakeholders at the local, state and federal levels will hold discussions with members of SC 5-1 during the course of preparing the report. The complexity of the optimization process and the need for a broad range of experience and expertise on the NCRP Committee is underscored in a paper published by S.Y. Chen and T.S. Tenforde in Homeland Security Affairs, **VI**(1), January 2010.

The membership of SC 5-1 is:

S.Y. Chen, *Chairman*	
D.J. Barnett	J.D. Edwards, *Advisor*
B.R. Buddemeier	A.F. Nisbet, *Advisor*
V.T. Covello	D.J. Allard, *Advisor*
K.A. Kiel	J.J. Cardarelli, *Consultant*
J.A. Lipoti	M.A. Noska, *Consultant*
D. McBaugh	J.A. MacKinney, *Consultant*
A. Wallo, III	S.R. Frey, *NCRP Staff Consultant*

The first meeting of SC 5-1 is scheduled for November 3-4, 2010 at the NCRP Headquarters in Bethesda, Maryland.

NCRP SC5-1

- Committee formed in 2010
- Emphasis on optimization in decision making
- Represented by experts in many subject areas
- Provides guidance for long-term recovery
- Completion by 2013

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NCRP Committee SC5-1

The Optimization Process is a Multi-Faceted Effort Requiring Extensive Engagement of Stakeholders

Key Considerations

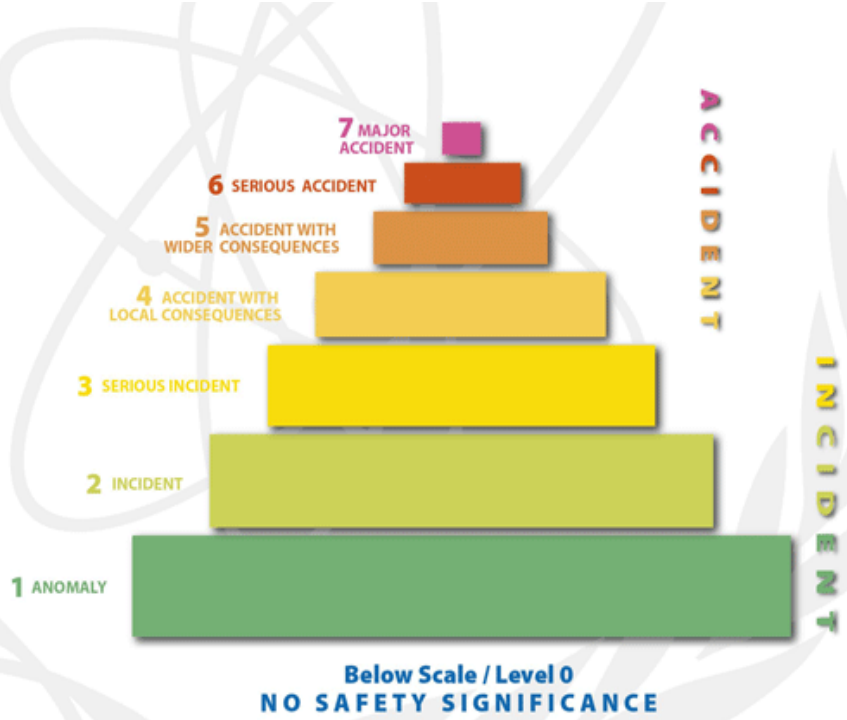
- Pubic health
- Public welfare
- Socioeconomics
- Communication
- Waste generation
- Environmental impact
- Sustainability

Decision Process

- A graded and iterative process
- Qualitative and quantitative assessments
- Evaluation of recovery options
  - Cost-Benefit analysis
  - Technology evaluation
  - Short- and long-term feasibility
  - Land use options

Past Experiences Offer Valuable Lessons

(Chernobyl, Fukushima, Kyshtym, Windscale, Three Mile Island, Goiania, Palomares, Marshall Islands)



- Whole community approach
- Acceptance of a new 'normality'
- Clean up criteria for existing exposure situations may be different to planned exposures
- Pre-event planning needs to be more focused on recovery
- Continue R&D to enhance decontamination technologies
- Combat stigma through education and better communication

Optimisation Reaches far Beyond Health Considerations

- Recent IAEA report on remediation of large contaminated areas by the Fukushima accident:
  - The Japanese authorities are encouraged to "avoid **over-conservatism** …"
- Current statutory cleanup provisions (e.g. Superfund, etc.) must be evaluated for their applicability for incident-related cleanup:
  - **Long-term health effects** is **not** the only consideration
  - **Other priority issues** (e.g., local economy, employment, critical infrastructures, public services, etc.) demand urgent attentions
  - Decisions toward cleanup require careful deliberation through the **optimization process** for competing priorities of the society

The Way Forward

- **Finalizing the NCRP Report**
  - Characterization of late-phase conditions/contamination
  - A decision framework for late phase recovery
  - Key information needed for decision making
  - Principles and approach to optimization
  - Relevant lessons learned from historic events and exercises
  - Example scenarios to illustrate the optimization process
  - Priorities for long-term monitoring
  - Consolidated recommendations for late phase recovery

Timeline for publication

Internal Review:	**July 2012**
Critical Peer Review:	**October 2012**
Council Review:	**December 2012**
Final Publication:	**June 2013**