



NRT Technical Assistance Document: Managing Worker Fatigue during Disaster Operations

Rob Bonack

Regional Safety and Health Manager

OSHA Region V

Region V Regional Response Team Meeting

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Overview:

1. Why create a Technical Assistance Document (TAD)?
2. What are our goals for the TAD?
3. What content is covered in Volume I and Volume II?
4. What recommendations were made?
5. What tools are included?

NRT Extended Work Shift Work Group: EPA, OSHA, NIOSH, FEMA, USACE, CPWR, AIHA EI-SIG, Lippy Group

- **Jan Shubert (EPA)**
- **Tina Jones (OSHA)**
- **Jenn Hornsby-Myers (NIOSH)**
- **Joyce Brewer (FEMA)**
- **Jim Woodey (USACE)**
- **Chris Trahan (CPWR)**
- **Owen Douglass (AIHA EI-SIG)**
- **George Crawford (AIHA EI-SIG)**
- **Frances Walsh (SRA)**

Why create a technical assistance document?

- **Long work shifts/weeks and worker fatigue were recognized as critical issues during recent disasters**
- **Numerous studies show that accident rates increase when shifts exceed 12 hours or work weeks exceed 60 hours**
- **Guidance for recovery workers is limited; only a few NRT agencies have formal policies**

What are our three goals for the document?

1. Recommend practices that:
 - protect workers
 - are based on current research
 - include lessons learned and best practices
2. Encourage NRT Agencies to evaluate and modify their current practices
3. Encourage adoption of the TAD recommendations by key stakeholders beyond the NRT

Volume II is a background document covers research highlights, existing regulations and work practices

- Covers disaster recovery *not* rescue
- Outlines disaster conditions and hazards that impact workers



The literature contained *many* studies showing increased accident rates when shifts exceed 12 hours or work weeks exceed 60 hours

- **12+ hrs/day = 37% increase**
- **60+ hrs/week = 23% increase**
- **8+ hrs/day = 57% increase for construction workers**
- **40+ hours/week = reduced performance, decreased alertness and cognitive function, increased fatigue and injuries**

Volume I outlines how to manage fatigue at two levels, with common elements

Organizational Program

Incident-specific plan

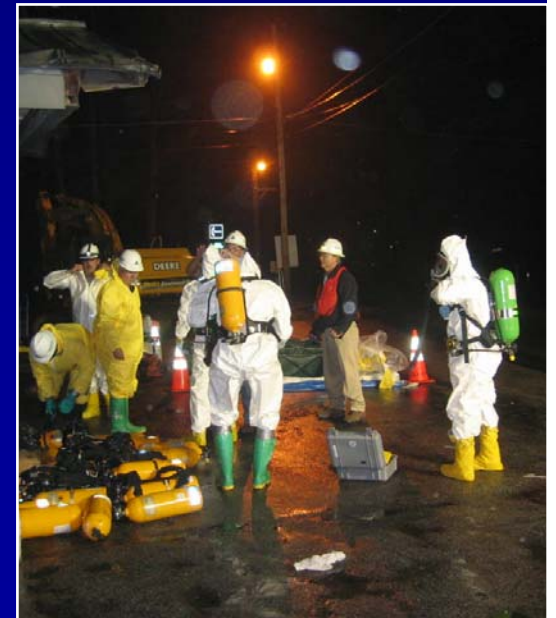
- **Assessment**
- **ID and evaluation of risk factors**
- **Controls**
- **Evaluation**

Organizational Fatigue Management Program is the upper level document

- **Reflects organization's overall disaster recovery experience**
 - nature and conditions of incidents
 - likely operations and challenges
 - lessons learned
- **Broadly describes organization's practices, procedures, and resources**
 - criteria/threshold for use
 - assessment and management components

Incident-specific plan is created for each response based on the larger program

- Identifies incident risk factors
 - Risk Management Tool
 - Risk-based decision making
- Outlines incident controls
 - work hours and rest periods, education, planning, etc.
 - tied to risk factors present
 - combined to offset operational needs - demands of the task and 12-hr shifts



Fatigue Risk Factors

- **Work Hours and Rest Periods**

- Long work hours
- Shift work/rotating shifts/night shifts
- Lack of/limited rest breaks

- **Site Conditions**

- Chemical, biological, and physical hazards

- **Living Conditions**

- Temporary or communal living conditions

Fatigue Management Risk Assessment Tool

Risk Factor or Stressor	Weight Factor	1	2	3	4	Total	Risk #	Corrective Action Plan
A. Time	Long Hours	1	≤ 8 hrs/Day	> 8 < 10 hrs/Day	> 10 < 12 hrs/Day	12 hrs/Day	0-6	No action unless required by assessment of Stressors B-E
	Extended Time/Week	2	≤ 40 hrs/wk	> 40 < 50 hrs/wk	> 50 < 72 hrs/wk	> 72 hrs/wk	7-12	Increase awareness + actions based on assessment of Stressors B-E
	Extended Weeks Without A Full Day Off	3	2 weeks	3 weeks	4 weeks	> 4 weeks	13-18 19-24	Develop fatigue management plan as part of HASP (ARA) + actions based on assessment of Stressors B-E Implement pre-approved fatigue management plan + actions based on assessment of Stressors B-E
A. Totals								
B. Living Conditions	Quarters	1	None	Typical Business Travel	BVs	Makeshift Shelter	0-8	No action unless assessment of Stressors A, C, D or E indicates need
	Food	1	None	Typical Business Travel	Basic Dining Facilities	Improvised	8-12	Increase awareness and monitoring by managers, address in separate ARA or actions based on assessment of Stressors A, C, D or E
	Sanitation	1	None	Typical Business Travel	Basic Washing Facilities	Improvised	12-16	Address in Pre-approved Using Condition Management Plan or actions based on assessment of Stressors A, C, D or E
	Recreational/Letisure Opportunities	1	None	Typical Business Travel	Unlimited	None		
B. Totals								
C. Nature of Work	Phase	2	Demobilization/Repatriation	Recovery	Response	Rescue	0-16	No Action unless assessment of Stressors A, B, D or E indicates need
	Acidity	1	Office Admin	Front Line Admin (HASP)	Field Overnight	Field Worker	17-32	Increase awareness, address in separate ARA or actions based on assessment of Stressors A, B, D or E
	Level of Protection	3	Level B	Modified Level B/C	Level B	Level A		
	Shift/Work	4	Normal Day	Normal Night	Swing	12am-12am; 12pm-12am	33-48	Site Specific Management Plan for nature of work + plan based on assessment of Stressors A, B, D or E
	Familiarity with Area	2	High	Moderate	Slight	None		Address in Pre-approved Management Plan for nature of work + plan
C. Totals								

- **Nature of Work**

- PPE use
- Unfamiliar work environment/work task
- Psychological stressors

- **Management/Administrative Support**

- Access to nutritional meals & recreational or fitness equipment

Examples of Suggested Controls

Educational Topics

- Health Impacts, Signs, and Symptoms of Fatigue
- Common Fatigue Risk Factors during Disaster Recovery
- Strategies for Preventing Fatigue
- Recognizing Operational Fatigue and Stress in Employee (supervisors)

Advance Planning

- Approved list of hotels with fitness facilities and dining facilities;
- Contracts with transportation services for shuttling employees
- Helpful checklists for personal preparedness

Work Hours and Rest Periods

- Criteria for setting a maximum work shift duration or minimum amount of time off during a 24-hour period
- Time off between work rotations
- Rest breaks throughout a work shift to address fatigue, PPE limitations, and/or temperature extremes
- Limiting early morning shift start times

Examples of Suggested Controls

Transportation and Living Conditions

- Transportation service or an assigned staff member as the “designated driver” to shuttle personnel to/from the site
- Food service at staging areas and base camps; storage/cooking utilities for personnel with special diets
- Use of hotels/motels with access to recreational facilities and dining facilities

Recuperation Provisions and Health Care Services

- Subsidized health club memberships at local facilities
- Encourage visits by family members during off-duty hours and time-off.
- EAP and other health services at base camps and staging areas; access to these services during off-hours (in-person or via telephone)

Resources

Appendix B: Federal Agency Operating Practices and Other Standards Addressing Work Hours and Work Rotations

Agency	Background & Applicability	Hour Limitations	Rest Periods & Rotation Length	Source	
Federal Agency Operating Practices Related to Work Hours and Work Rotations for Federal Employees					
U.S. Army Corps of Engineers (USACE)	USACE Employees During Emergency Response Operations	Should not work in excess of 84 hours per week (usually 12 hours per day, 7 days a week, during emergency response)	Employees provided opportunity for 24 hours rest after working 14 days and 48 hours of rest after working 21 days. Employees required to	Duty Schedule defined in EM 385-1-1, App B Par 8	
	Standards and Guidelines that address Work Shift and Work Week Durations for a Regulated/Covered Population of Workers				
Department of Interior (DOI)	National Inter Fire Fighters	DOT recognized the potential hazards of working extended hours and the likely dangerous results of fatigue in commercial truck driving as early as 1939. In April 2003, DOT issued the first revisions to the Hours of Service rule in over 60 years.	11-hour limit on the length of time a long-haul truck driver can drive after 10 consecutive hours off.	<p>May not drive beyond the 14th hour after coming on duty, following 10 consecutive hours off duty.</p> <p>May not drive after 60/70 hours on duty in 7/8 consecutive days.</p> <p>A driver may restart a 7/8 consecutive day period after taking 34 or more consecutive hours off duty.</p>	<p>Department of Transportation Website. www.fmcsa.dot.gov/Home_Files/revised_hos.asp</p>
	Federal Aviation Administration (FAA)	Pilots/Flight Crews	<p>Crew members cannot accept an assignment if they will exceed any of the following:</p> <ul style="list-style-type: none"> • 1,000 hours in any calendar year • 100 hours in a any calendar month • 30 hours in any seven consecutive days • 8 hours between required rest periods. 	<p>Specific rest requirements between flights range from 8-11 hours (based on total flight time during a 24-hour period). Exceptions made to these rules require that flight crew members receive the proper amount of compensatory rest time during the next rest period. Rules do not address the amount of time flight crew members can be on duty (standby time). Airline rules may be even stricter than FAA regulations if the issue is part of a collective bargaining agreement.</p>	<p>Pilot Flight Time and Rest, FAA, Fact Sheet (2006) http://www.faa.gov/news/fact_sheets/news_story.cfm?newsId=6762</p>

Resources

Appendix C: References

Table 1: Association between Working Extended Work Shifts/Work Weeks and Workplace Injury: Summary of Reviewed Literature

This table highlights studies that evaluated the association between hours worked and occupational injury. It presents data from several recent studies where the risk of injury has been quantified and/or modeled. None of the studies highlighted here or in Table 2 evaluate how the implementation of a well-designed and well-managed fatigue management program, such as the one recommended in Section 2.1, would impact the risk of injury. However, it is clear from the studies included in Table 2 that when aspects of such a program, e.g., including breaks throughout a work shift, are implemented, fatigue is reduced and performance is enhanced; the risk of injury may be similarly reduced. These data should be used collectively when designing a work schedule for an incident-specific fatigue management plan. It is “necessary to consider the various features of the schedule in combination with one another, rather than in isolation from one another” (Johnson & Lipscomb, 2006).

Reference	Risk of Injury (as compared with working 8-hr work day, working during the day shift, and working a 40 hr work week)					
	10-hr work shift	12-hour work shift	afternoon work shift	night work shift	successive shifts	> 40-hr work week
S. Vegso, et al, 2007						↑ by 88% for those who worked more than 64 hr during the previous week
Folkard & Lombardi, 2006 (model using results from numerous studies)	↑ by 13%	↑ by 27.5%	↑ by 15.2%	↑ by 27.9%	Night Shifts: ↑ by 6% for 2 nd night worked ↑ by 17% for 3 rd night worked ↑ by 36% for 4 th night worked Day Shifts: ↑ by 2% for 2 nd day worked ↑ by 7% for 3 rd day worked ↑ by 17% for 4 th day worked	Varies based on of length of shift and time of day. For any given work week duration, a long span of short shifts is likely to be safer than a short span of long shifts. 60 hour week – as

Resources

Table 2: Summary of Literature and Bibliography

Author(s)	Title	Publication	Findings/Recommendations
American Conference of Governmental Industrial Hygienists (ACGIH)	Threshold Limit Values (TLVs [®]) for Chemical Substances and Physical Agents and Biological Exposure Indices BEIs [®] (2008)	Published by the ACGIH, available at www.acgih.org	Threshold Limit Value (TLV [®]) occupational exposure guidelines are recommended for more than 700 chemical substances and physical agents. There are more than 50 Biological Exposure Indices (BEIs [®]) that cover more than 80 chemical substances. Chemical Abstract Service (CAS) registry numbers are listed for each chemical. Introductions to each section and appendix provide philosophical bases and practical recommendations for using TLVs [®] and BEIs [®] .
International Agency for Research on Cancer (IARC) Monograph Working Group (A. Blair, et al)	Carcinogenicity of shift work, painting, and firefighting	Lancet Oncology; 8 (12), December 2007	A meeting of 24 international scientists at the IARC in October 2007 to review numerous epidemiological studies concluded that shift work that involves circadian disruption, occupational exposure as a painter, and occupational exposure as a firefighter are possibly carcinogenic to humans.

Resources

Educational Topics

- Health Impacts, Signs, and Symptoms of Fatigue
- Strategies for Preventing Fatigue during Disaster Operations
- Recognizing Operational Fatigue and Stress in Employee (training for supervisors)
- Common Fatigue Risk Factors during Disaster Recovery
- Information on Organization's Employee Assistance Program
- Tips/Checklist on Preparing for Deployment to a Disaster Site – Personnel and Supervisors
- Information for Recovery Workers and their Families on what to expect during deployments

(<http://www.osha.gov/SLTC/emergencypreparedness>)

- Work Zone Safety and Defensive Driving Techniques
- Sleeping Strategies for Night-shift Workers
- Critical Incident Stress Management Team and Employee Assistance Program
- Information on organizations' policies and procedures
- Job Aid providing clearly defined job tasks and duties
- Pre-deployment training, resources, and other tools
- Site orientations, daily briefings, and safety meeting (signs, symptoms, prevention) and reinforce reporting of signs

Advance Planning

- Approved list of hotels that have fitness facilities, conference rooms, etc.
- Contracts with transportation services for shuttling employees
- Helpful checklists of personal preparedness tasks for employees
- Preassembled "go-kits" with PPE and other equipment
- Mobile trailer outfitted as office space for deployment
- Reasonable estimate of resource needs (equipment and personnel) for duration and breadth anticipated
- Information for responders and their families on what to expect

Work Hours and Rest Periods

- Criteria for setting a maximum work shift duration or minimum amount of time off during a 24-hour period (e.g., 10 hours rest time in a 24-hour time period, with as much of that in consecutive hours as possible)
- Consideration for how work shift duration may change based on the use of controls to mitigate fatigue (i.e., use of transportation, etc.)
- Time off between work rotations (e.g., 48 hours off after 14 consecutive days of work.)
- Rest breaks throughout a work shift to address fatigue, PPE limitations, and/or temperature extremes (heat and cold-related illnesses)
- Rotation of personnel during longer shifts requiring strenuous and/or detailed tasks.
- Scheduling day/night shift rotations to reduce fatigue (e.g., clockwise rotation with several days off before new shift assigned.)
- Limiting early morning shift start times (e.g., before 6:00am)
- Procedures for monitoring personnel for fatigue signs/symptoms
- Procedures for enforcing work/rest and rotation schedules for employees and supervisors
- Provisions (e.g., job rotation, extended lunch/breaks, additional time off) for personnel and crews exhibiting signs/symptoms of fatigue
- Mechanism for employees to request additional time off and encouragement to do so when experiencing signs/symptoms of fatigue

Transportation and Living Conditions

- Transportation service or an assigned staff member as the "designated driver" to shuttle personnel to/from the site
- Food service at staging areas and base camps; storage/cooking utilities for personnel with special diets
- Use of hotels/motels with access to recreational facilities and dining facilities
- Separation of day and night shift sleeping areas and provision of areas for socializing in base camps
- Reimbursement for personal calls home during deployment
- Scheduling complex/hazardous tasks for periods of higher alertness
- Lighting for night-shift operations
- Provision of security for base camp and night-time operations
- Encourage family visits during rest periods/off-hours once the affected area is stabilized

Recuperation Provisions and Health Care Services

- Subsidized health club memberships at local facilities
- Encourage visits by family members during off-duty hours and time-off.

Templates and Tools


- Risk Assessment Tool, Instructions, and completed example

Fatigue Management Risk Assessment Tool

Risk Factor or Criterion	Weight Factor	1	2	3	4	Total	Risk #	Corrective Action Plan
A. Time	Long Hours	1	≤ 8 hrs/day	> 8 < 10 hrs/day	> 10 < 12 hrs/day	12 hrs/day	0 - 6	No action (unless required by assessment of Distressors B-E)
	Extended Time/Week	2	≤ 40 hrs/wk	> 40 < 50 hrs/wk	> 50 < 72 hrs/wk	> 72 hrs/wk	7 - 12	Increase awareness + actions based on assessment of Distressors B-E
	Extended Weeks Without A Full Day Off	3	2 weeks	3 weeks	4 weeks	> 4 weeks	13 - 18 19 - 24	Develop fatigue management plan as part of HADP (AHA) + actions based on assessment of Distressors B-E Implement pre-approved fatigue management plan + actions based on assessment of Distressors B-E
A. Totals								
B. Living Conditions	Quarters	1	Home	Typical Business Travel	RVs	Motor/Off-Street	0 - 8	No action unless assessment of Distressors A, C, D or E indicates need
	Food	1	Home	Typical Business Travel	Mass Dining Facilities	Improvised	8 - 12	Increase awareness and monitoring by managers, address in separate AHA or actions based on assessment of Distressors A, C, D or E
	Sanitation	1	Home	Typical Business Travel	Mass Waiting Facilities	Improvised	12 - 16	Address in Pre-approved Living Condition Management Plan or actions based on assessment of Distressors A, C, D or E
	Recreational/Lesure Opportunities	1	Home	Typical Business Travel	Unlimited	None		
B. Totals								
C. Nature of Work	Phase	2	Demobilization/Report/Waiting	Recovery	Response	Rescue	0 - 16	No Action unless assessment of Distressors A, B, D or E indicates need
	Activity	1	Office Admin	Front Line Admin (MASH)	Field Oversight	Field Worker	17 - 32	Increase awareness, address in separate AHA or actions based on assessment of Distressors A, B, D or E
	Level of Protection	3	Level D	Modified Level D/C	Level B	Level A	33 - 48	Site Specific Management Plan for nature of work + plan based on assessment of Distressors A, B, D or E
	Shift/Work	4	Normal Day	Normal night	Swing	12am-12pm; 12pm-12am		
	Familiarity w/In Area	2	High	Moderate	Slight	None		
C. Totals								Address in Pre-approved Management Plan for nature of work + plan

Templates and Tools

Template for an Incident- Specific Fatigue Management Plan



Name of Incident

Location:

IC/UC Personnel:

Description of Event & Site Conditions:

Fatigue Risk Factors Present:

- Work Hours & Rest Periods –
- Living Conditions –
- Nature of Work –
- Management & Administrative Support –
- Emotional Stress –

Controls to Be Implemented:

Evaluation Schedule:

Templates and Tool

Completed
Example



Appendix C: Sample Incident Specific Fatigue Management Plan

Incident Name: New Madrid Earthquake

Location: New Madrid, MO

IC/UC Personnel:

- Incident Commander – Mary Jones
- Deputy Incident Commander – Bob Smith
- Safety Officer – Joe Johnson
- Public Information Officer – Peggy Greene
- Liaison Officer – Larry Brown
- Operations – Ken Jackson
- Planning – Betty Baxter
- Logistics – Joan Black
- Finance – Brian Clark

Description of Event & Site Conditions:

- The incident is a massive earthquake that occurred two weeks ago and affected a 3,000 square mile area in three states, resulting in major destruction to the infrastructure.
- Lifesaving operations have ended, and there is an urgent need to begin rebuilding the destroyed infrastructure.
- Airports and railroad facilities are still inoperable and major highways as well as many smaller roads are still impassible. Recovery work groups will be transported via helicopter wherever roads are inadequate.
- There is major structural damage of buildings, and those that are habitable are being used to care for the injured and homeless. Recovery workers will have to carry in their own shelters.
- There is no potable drinking water, and public waste disposal systems are still inoperable. Drinking water supplies will be carried in, and sanitation needs will likely initially be port-a-jons.
- Communications in the area all have been disrupted.
- Work groups will deploy for 3-week periods.
- Although the response has moved to the recovery phase, workers can expect to see scenes of extreme destruction that may be emotionally disturbing to many.

Fatigue Risk Factors Present:

- Work Hours & Rest Periods –
 - Long work hours – possibility of 12+ hour days initially.

How to Access the Worker Fatigue Technical Assistance Document www.nrt.org

The screenshot shows a Windows Internet Explorer browser window displaying the NRT Home website. The browser's address bar shows the URL <http://www.nrt.org/>. The website header features the NRT logo and the tagline "U.S. National Response Team Working Together to Protect Against Threats to Our Land, Air and Water". A search bar is located in the top right corner. The main content area is divided into several sections: "Welcome to the U.S. National Response Team Website" providing an overview of the site's purpose; "Hot Topics and Current Events" with a "more..." link; "Laws, Regulations & Directives" and "Guidance, Technical Assistance & Planning" sections; "Training, Exercises & Lessons Learned" section; "International Coordination" section; and a "To Report Oil and Chemical Spills, Hazardous Material Releases, Suspicious Activity, Security Breaches and Terrorist Related Activities" section with the contact information for the National Response Center: 1-800-424-8802 or 202-267-2675. On the right side, there are three vertical navigation menus: "Contacts" (including Nat'l Response Center, Regional Response Teams, and Submit Content Idea), "Quick Links" (including NRT Publications, Nat'l Contingency Plan, National Incident Management System, NIMS Online Training, National Response Plan, NRP Training Course, Chemical Hazards: ORGs and other links (excludes oil), and Biological Hazards: ORGs and other links), and "Responder's Toolbox" (including Logistics, Media & Public Relations, Resources, and Weather). Below these is a "User Assistance" section with links for Download Acrobat and Resolve Technical Issues. The footer of the website displays a row of logos for various partner organizations, including the EPA, DHS, DOI, USDA, and GSA. The browser's taskbar at the bottom shows the Start button, several open applications (MetaFrame Pr..., Kluzinski Buildi..., NRT Home - ..., C:\Bonack\W..., HP Photosmar..., Microsoft Pow...), and the system tray with the time 8:20 AM.

How to Access the Worker Fatigue Technical Assistance Document

The screenshot shows the NRT Home website in a Windows Internet Explorer browser window. The address bar displays <http://www.nrt.org/>. The website header includes the NRT logo and the tagline "U.S. National Response Team Working Together to Protect Against Threats to Our Land, Air and Water". A search bar is located in the top right corner.

The main content area features a welcome message and several sections:

- Hot Topics and Current Events** (with a "more..." link)
- Laws, Regulations & Directives** (with a sub-link "Laws, Regulations, Directives")
- Guidance, Technical Assistance & Planning** (with a sub-link "Counter-Terrorism & Homeland Security, Hazards, ESA MOU, Health & Safety, Environmental Restoration, Risk Communication, Technical Assistance, Incident Command System/Unified Command, Databases & Software Tools, Plans, Grants & Funding")
- Training, Exercises & Lessons Learned** (with a sub-link "Training & Educational Materials, Exercises & Drills, Lessons Learned")
- International Coordination** (with a sub-link "General Information, Canada, Mexico, Panama Canal")

A red arrow points to the "Quicklinks" section on the right side of the page, which contains the following links:

- Nat'l Response Center
- Regional Response Teams
- Submit Content Idea
- NRT Publications** (circled in red)
- Nat'l Contingency Plan
- National Incident Management System
- NIMS Online Training
- National Response Plan
- NRP Training Course
- Chemical Hazards: QRGs and other links (excludes oil)
- Biological Hazards: QRGs and other links

Below the quicklinks are sections for "Responder's Toolbox" (Logistics, Media & Public Relations, Resources, Weather) and "User Assistance" (Download Acrobat, Resolve Technical Issues).

At the bottom of the page, there is a row of logos for various partner organizations, including the USDA, NOAA, and GSA. A footer at the very bottom shows the Windows taskbar with the Start button, several open applications, and the system clock displaying 8:31 AM.

[Home](#) > [About the National Response Team](#) > [NRT Publications](#)

NRT Publications

NRT Publications are divided on the following sub-pages into those produced by the NRT as a whole (i.e. General NRT Publications) or those produced by a specific NRT subcommittee (i.e. Preparedness Committee):

Overview

- [General NRT Publications](#)
- [Preparedness Committee Publications](#)
- [Response Committee Publications](#)
- [Science & Technology](#)

[Laws, Regulations & Directives](#)

[Guidance, Technical Assistance & Planning](#)

[Training, Exercises & Lessons Learned](#)

[International Coordination](#)

[NRT Agency Login](#)

Contacts

- [Nat'l Response Center](#)
- [Regional Response Teams](#)
- [Submit Content Idea](#)

Quick Links

- [NRT Publications](#)
- [Nat'l Contingency Plan](#)
- [National Incident Management System](#)
- [NIMS Online Training](#)
- [National Response Plan](#)
- [NRP Training Course](#)
- [Chemical Hazards: ORGs and other links \(excludes oil\)](#)
- [Biological Hazards: ORGs and other links](#)

Responder's Toolbox

- [Logistics](#)
- [Media & Public Relations](#)
- [Resources](#)
- [Weather](#)

User Assistance

- [Download Acrobat](#)
- [Resolve Technical Issues](#)



NRT Home - Windows Internet Explorer

http://www.nrt.org/production/NRT/NRTWeb.nsf/PagesByLevelCat/Level3GeneralNRTPublications?Opendocument

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NRT Home

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NRT
Working Together to Protect Against Threats to Our Land, Air and Water

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General NRT Publications

Laws, Regulations & Directives

Guidance, Technical Assistance & Planning

Training, Exercises & Lessons Learned

International Coordination

NRT Agency Login

[Anthrax Technical Assistance Document](#) (2005)

This anthrax TAD is intended to be used by various responders. It describes federal plans, roles and responsibilities when responding to an intentional release of anthrax (*Bacillus Anthracis*). It then provides technical information on a wide range of activities – initial actions when a potential anthrax release is discovered, selection of personal protective equipment, evaluation of decontamination technologies, sampling and analysis procedures, collection, treatment and disposal methods, communication with the public, etc. The initial Anthrax TAD was released in 2003.

[National Response Team Brochure](#) (2006)

Provides a general overview of the key components of the National Response System (NRS) which ensures that threats from hazardous chemical releases, oil discharges and other toxic spills are effectively managed.

[National Response Team Brochure](#) (2006)

Provides a general overview of the key components of the National Response System (NRS) which ensures that threats from hazardous chemical releases, oil discharges and other toxic spills are effectively managed.

[Update of Hazardous Materials Emergency Planning Guide \(NRT-1 Update\)](#) (2001)

Update of NRT-1; Addresses outdated information of the 1987 Hazardous Materials Emergency Planning Guide.

Reconciliation Coordination Issues Between the Federal Radiological

Contacts

- [Nat'l Response Center](#)
- [Regional Response Teams](#)
- [Submit Content Idea](#)

Quick Links

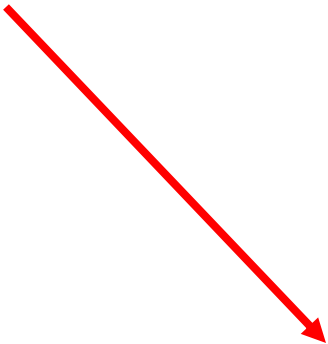
- [NRT Publications](#)
- [Nat'l Contingency Plan](#)
- [National Incident Management System](#)
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- [National Response Plan](#)
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Responder's Toolbox

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start MetaFrame Presen... Kluzinski Building - ... NRT Home - Windo... 2 Windows Explorer Microsoft PowerPoi... 8:24 AM

During a radiological emergency, the FRERP and the NCP apply simultaneously. Consequently, it is necessary to reconcile the overlaps and perceived conflicts that potentially exist between these two plans. This report recommends a mechanism that addresses: (1) the perceived or potential conflicts between these two plans; (2) the solutions to these perceived or potential conflicts; and (3) the methods for implementing these solutions.

[Criteria for Review of Hazardous Materials Emergency Plans \(NRT1a\) \(1998\)](#)

Supplements NRT-1; Recommends criteria to RRTs for reviewing their emergency plans. Criteria is also useful for SERCs and LEPCs during plan revision.

[Federal Natural Resource Trustees and the ICS/UC](#)

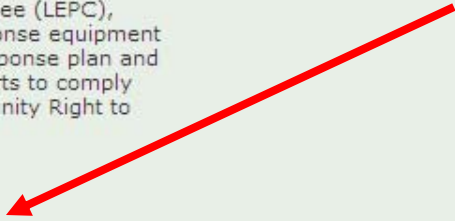
This fact sheet facilitates the integration of federal resource trustees into the ICS/UC command structure; describes resources and assistance that federal trustees can provide; and where the coordination link occurs between Federal trustee response and natural resource damage assessment (NRDA) activities.

[Hazardous Materials Emergency Planning Guide \(NRT-1\) \(1987\)](#)

Describes how to form a local emergency planning committee (LEPC), select a leader, identify and analyze hazards, identify response equipment and personnel, write a hazardous materials emergency response plan and update that plan. Aims to help local authorities in their efforts to comply with Title III of SARA, the Emergency Planning and Community Right to Know Acts of 1986, which mandates creating local plans.

[Effective Coordination in Local Emergency Planning](#)

[Guidance for Managing Worker Fatigue During Disaster Operations](#)



Questions/Comments?

Rob Bonack

OSHA – Region V

312-886-6282

Bonack.Robert@dol.gov

John C. Kluczynski Building

(230 S. Dearborn Street)

32nd Floor

Chicago, IL