

2011
FDA SOUTHEAST
REGION ANNUAL
FOOD SAFETY
SEMINAR

11/09/11
Karen Smallwood, RRHR



So, exactly what does
Radiological Health have to do
with FOOD???



Radiation in Food

- Every year a person consumes a total average dose of 40 millirems of radiation from all of their food intake (1) out of an average total of 360 millirems of radiation from all sources.
- Potatoes, many types of seeds, kidney beans, and a variety of nuts are among the foods emitting the most radiation. Brazil nuts are near the top of the list with 12,000 picocuries per kg (2).

Single Dose Examples

- To put this in perspective with the average dose of 360 millirems of radiation per year, if you ate a banana a day you'd take in 3.6 millirems during that year.

By comparison a chest x-ray is about 10 millirems and a six-hour airplane trip will bombard you with 2 millirems.

There's absolutely no reason to believe that any amount of bananas, or any other food for that matter, is of any threat due to radiation.

Natural Radiation: The Banana Equivalent Dose (BED)

So why is Dr. Oz picking on the banana, which has a long track record of being healthy?

There's actually some precedent. Those in the nuclear power industry use what they call the Banana Equivalent Dose as a way of putting radiation into perspective for the lay person who doesn't know what picocuries or millirems are.

So, for instance, someone wanting to build a new nuclear power plant would explain the risk to residents by saying that living within 50 miles of the new plant will expose them to only 0.09 millirem, or 1.64 "banana units" a year.

Okay, so what about UNnatural
Radiation in food? What do we do
about that??

The Advisory Team for Environment, Food, and Health



The Advisory Team for Environment, Food, and Health



The A-Team History

- The Advisory Team for Environment, Food, and Health (A-Team) was established to assist in international and domestic nuclear emergencies.
- The A-Team concept was initiated at Federal Field Exercise No. 2 in 1987 and incorporated into the Federal Radiological Emergency Response Plan in May 1996.
- In 1997 an Environment, Food, and Health Subcommittee of the Federal Radiological Preparedness Coordinating Committee was established. (44 CFR 351.11)
- The A-Team is **incorporated into the National Response Framework (NRF) via the Nuclear/Radiological Incident Annex (June 2008).**

The Advisory Team for Environment, Food, and Health (A-Team)

The goal of the A-Team is to provide coordinated advice and recommendations to the State, Coordinating Agency, and DHS concerning environmental, food, and health matters.

Membership is comprised principally of :



and other Federal agencies as needed

Advisory Team Duties Overview

Advisory Team provides ***recommendations*** in matters related to

- Environmental assessments (field monitoring) required for developing recommendations;
- Protective Action Guides and their application to the emergency;
- Protective Action Recommendations using data and assessments from FRMAC;

Advisory Team Duties Overview (cont.)

- **Recommendations to prevent or minimize exposure through the ingestion pathway from contaminated milk, food, and water;**
- **Recommendations regarding the disposition of contaminated livestock, poultry, and foods;**
- **Recommendations for minimizing losses of agricultural resources;**

Advisory Team Duties Overview (cont.)

- **Guidance on availability of clean food, animal feed, and water supply inspection programs to assure wholesomeness;**
- **Recommendations on relocation, reentry, and other radiation protection measures prior to recovery;**
- **Recommendations for recovery, return, and cleanup issues;**

Advisory Team Duties Overview (cont.)

- **Estimated effects of radioactive releases on human health and the environment;**
- **Recommendations on the use of radioprotective substances (e.g., thyroid blocking agents);**
- **Health and safety advice or information for the public and for emergency workers; and**
- **Other matters as requested by Incident Command, the coordinating agency, or State and local agencies.**

Advisory Team

- Does not make policy decisions
- Does not make protective action decisions for States and locals, only recommendations
- Provides coordinated technical and scientific advice through the Coordinating Agency not directly to States
- Bases its recommendations on science and best practices



Activation of the Advisory Team

The Nuclear/Radiological Incident Annex (June 2008) summarizes the Advisory Team activation process as follows:

- *“DHS, coordinating agencies, and State, tribal, and local governments may request support from the Advisory Team by contacting the CDC Emergency Operations Center (EOC) at 770-488-7100.”*
- *“DOE will request activation of the Advisory Team whenever the FRMAC is activated.”*

“Remote” Advisory Team

- **Composed of non-deployed members of the Advisory Team.**
- **Goal: established and available to provide advice via phone bridge within 2 hours of initial notification to CDC EOC.**
- **Will establish contact with coordinating agency, state/local agencies, FRMAC/CMHT and others as appropriate.**
- **Will provide support to deployed Advisory Team members throughout the incident.**

“On-Site” Advisory Team

- **Is composed of deployed members of the Advisory Team.**
- **Unless requested otherwise, will initially co-locate with the FRMAC.**
- **As the Incident Command structure is established, will integrate into the Planning Section.**
- **May also provide liaisons to and/or coordinate with the Joint Field Office and State, tribal, and local government Emergency Operation Centers.**

Advisory Team Participation in Outreach Programs and Exercises

- 2008 15 exercises/drills, 8 Outreach programs
- 2009 9 exercises/drills, 5 Outreach programs
- 2010 11 exercises/drills, 6 Outreach programs

**Request Advisory Team participation in exercises, etc.,
by contacting:**

Lynn Evans (CDC)

Phone: (770) 488-3656

Email: gfn6@cdc.gov

**For more information about the
Advisory Team:**

**Go to the Conference of Radiation Control
Program Directors (CRCPD) website**

<http://www.crcpd.org/links/FedAgencies.aspx>

National Response Framework

HHS – ESF #8

EPA – ESF #10

USDA – ESF #11

**Nuclear/Radiologic
al Incident Annex**



**National Response
Framework**

January 2008



**Homeland
Security**

HHS/CDC Roles in Radiological Emergencies



CDC Emergency Operations Center (EOC)
(770) 488-7100
Available 24/7

CDC RESPONSE

- **Deploy Strategic National Stockpile**
- **Evaluate health and medical impact on the public and emergency personnel**
- **Conduct surveillance and epidemiological studies of exposed population**



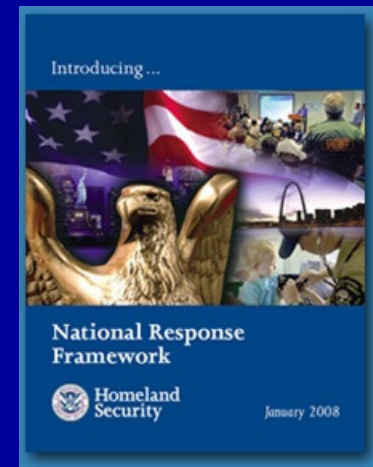
CDC RESPONSE

Advise on:

- Triage
- Patient treatment and decontamination
- Medical intervention recommendations
- Disease control and prevention measures
- Safety and protection of health care providers



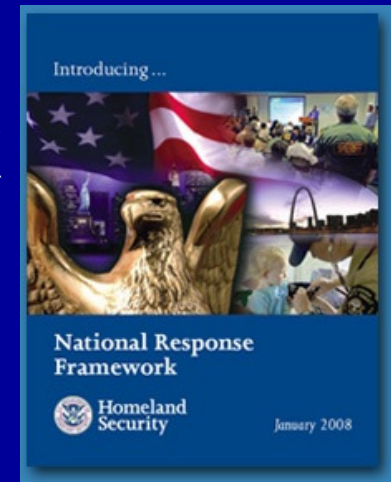
National Response Framework Nuclear/Radiological Incident Annex



**Decontamination and
Population Monitoring are:**

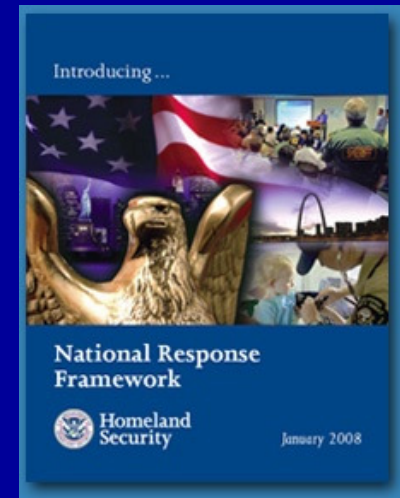
**“the responsibility of State, local, and
tribal governments.”**

National Response Framework Nuclear/Radiological Incident Annex



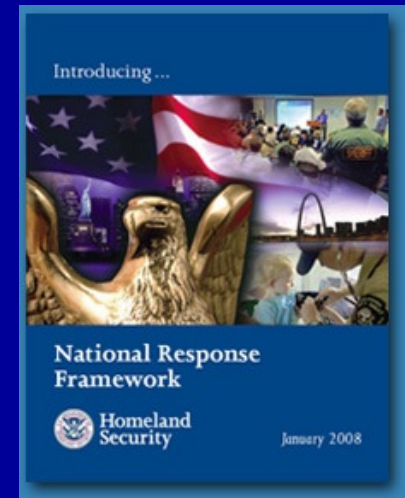
HHS, through ESF #8 and in consultation with the coordinating agency, **coordinates** Federal support for **external monitoring** of people and **decontamination**.

National Response Framework Nuclear/Radiological Incident Annex



HHS assists and supports State, local, and tribal governments in performing monitoring for **internal contamination** and administering available pharmaceuticals for **internal decontamination**, as deemed necessary by State health officials.

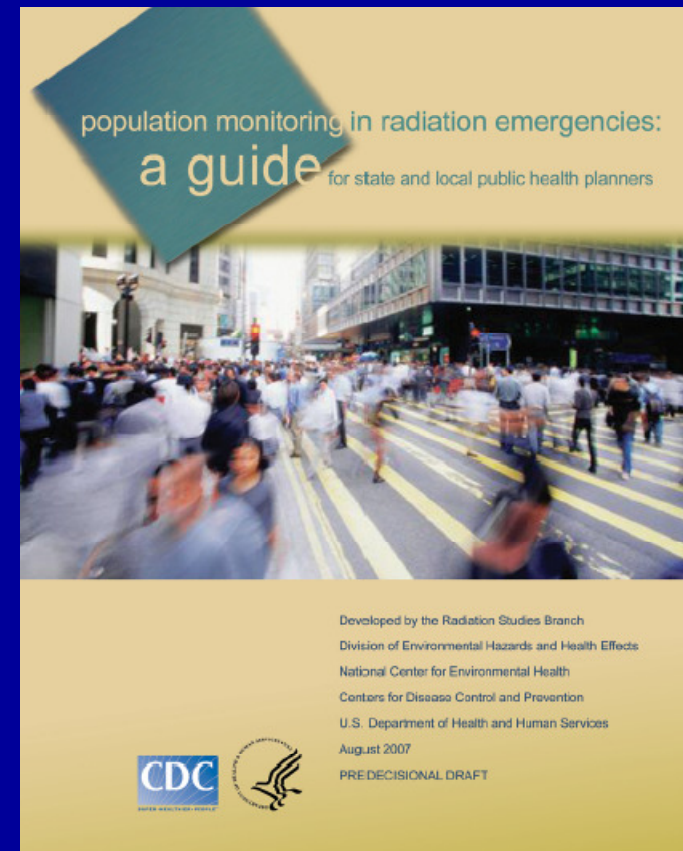
National Response Framework Nuclear/Radiological Incident Annex



HHS assists local and State health departments in establishing a **registry** of potentially exposed individuals, performing **dose reconstruction**, and conducting **long-term monitoring** of this population for potential long-term health effects.

CDC Guidance

- **Target audience:**
 - State and local public health and emergency preparedness personnel
- **Focus**
 - Mass casualty incidents
- **Scope**
 - Assumes local infrastructure is intact
 - Principles apply to all radiation incidents



<http://emergency.cdc.gov/radiation>

CDC Deployment

- **CDC staff may be deployed to onsite locations to serve as**
 - **Population Monitoring Liaison Team**
 - Radiological Subject Matter Expert
 - Epidemiologist
 - Communications liaison
 - **CDC representative to Advisory Team**
 - Radiological Subject Matter Expert
 - **Other HHS/CDC responders**

HHS/FDA Roles in Radiological Emergencies

*Office of Crisis Management
Emergency Operations Center
US Food and Drug Administration
Rockville, Maryland
301-796-8240 (24 hour)*

FDA Mission

The Mission of the FDA prior to and during a radiological emergency is to:

- Protect the public health following a radiological incident by facilitating the development and availability of medical countermeasures
- Enhance the Agency's emergency preparedness and response capabilities
- Ensure the safety and security of FDA regulated products

FDA Regulated Products

- Human Drugs - including radiation countermeasures
- Veterinary Drugs – including radiation countermeasures
- Medical Devices – including ionizing and non-ionizing radiation emitting and screening devices
- Cosmetics
- Biologics – including vaccines, blood and blood products

FDA Regulated Foods

All domestic and imported foods excluding Meat and Poultry

Milk

Butter

Cheese

Eggs

Vegetables

Grains

Shellfish

Seafood

Honey

Dietary supplements

Commercially produced
game

Pet food

Live food animals

Bottled water

Food additives

Food packaging

Wine beverages < 7%
alcohol

A-Team: FDA

- Provides technical health physics support
- Provides consultation on food contamination issues
- Provides advice on FDA regulated products which may be affected by a radiological incident or utilized to mitigate the effects of such an event (i.e., medical and device countermeasures)
- Provides liaison and reach-back to FDA HQ

FDA Organizational Structure

- Office of the Commissioner
- Office of Regulatory Affairs
- FDA Centers
 - Center for Biologics Evaluation and Research
 - Center for Drug Evaluation and Research
 - Center for Devices and Radiological Health
 - Center for Food Safety and Applied Nutrition
 - Center for Veterinary Medicine
 - National Center for Toxicological Research



US Department of Agriculture (USDA)

Roles in

Radiological Emergencies

Office of Homeland Security and Emergency Coordination

USDA Responsibilities During Radiological Emergencies

- Prevent members of the public from ingesting contaminated food
- Ensure safety of food regulated by the USDA
- Minimize damage to agriculture and its markets
- Minimize damage to forests and rangelands from radioactive contamination
- Provide consultation on food contamination issues
- Provide liaison and reach back to USDA HQ

USDA Radiological Emergency Response Structure

- Office of the Secretary
 - Assistant Secretary for Administration
 - Office of Homeland Security and Emergency Coordination
 - Homeland Security Division
 - Emergency Programs Division
 - Continuity of Operations Division
 - Radiation Safety Division
 - » Radiological Emergency Programs Coordinator

USDA

Advisory Team Membership

- Office of Homeland Security and Emergency Coordination
 - Radiation Safety Division
- Animal and Plant Health Inspection Service
- Food Safety Inspection Service
- Agricultural Marketing Service
- Rural Development

USDA Field Emergency Response Capability

- APHIS, ESF-11 Coordinators
 - Assist FEMA Regional Assistance Committees
 - Coordinate Regional Radiological Planning
- APHIS, Area Emergency Coordinators
 - Assist State agricultural/veterinary officials
- FSA, State and County Emergency Boards
 - USDA local disaster management coordination
 - Coordinate disaster and crop damage assessments

ESF-4 Support

USDA is the coordinator for
Emergency Support Function 4: Fire Fighting

- Detecting and suppressing fires on Federal Lands
- Providing personnel, equipment and supplies in support of State, tribal and local agencies involved with rural and urban firefighting operations

ESF-11 Support

USDA is the coordinator for
Emergency Support Function 11: Agriculture and
Natural Resources

- Provision of nutrition assistance by the Food and Nutrition Service
- Animal and plant disease and pest response
- Assurance of safety and security of the commercial food supply
- Protection of Natural Cultural resources and Historic properties

ESF-14 Support

USDA is a primary agency for
Emergency Support Function 14: Long-Term
Community Recovery

- Supports commodity credit programs for agricultural recovery
- Provides available housing for evacuees and first responders
- Provides recommendations for long term community recovery

USDA Roles and Responsibilities under the Nuclear/Radiological Incident Annex of the NRF

- Assist in planning and collection of agricultural samples
- Assess damage to crops, soil, livestock, poultry and processing facilities
- Evaluate the impact of an incident on agriculture
- Provide advice and support on decontamination of pets and farm animals

USDA Roles and Responsibilities (Con't)

- Assist in animal carcasses disposal
- Assist in the collection of samples of crops, meat, poultry and egg products to ensure they are safe for human consumption
- Assist in monitoring the production, processing, storage and distribution of food to eliminate contaminated product and to ensure that levels of contamination are below the FDA derived intervention levels (DILs)

USDA Contacts

John Jensen

Director, Radiation Safety Division, OHSEC

– Office: 301-504-2440

– Email: john.jensen@dm.usda.gov

USDA EOC

– Phone: 877-677-2369

– Email: OpsCenter@usda.gov



US Environmental Protection Agency (EPA)

Roles in

Radiological Emergencies

ESF #10 SUPPORT

The EPA is the Emergency Support Function (ESF)10 Coordinator:

- Lead coordination role to support State, local and tribal response
- Oil and hazardous materials response
- NCP and NRF can be used together

EPA's Radiological Emergency Response Role

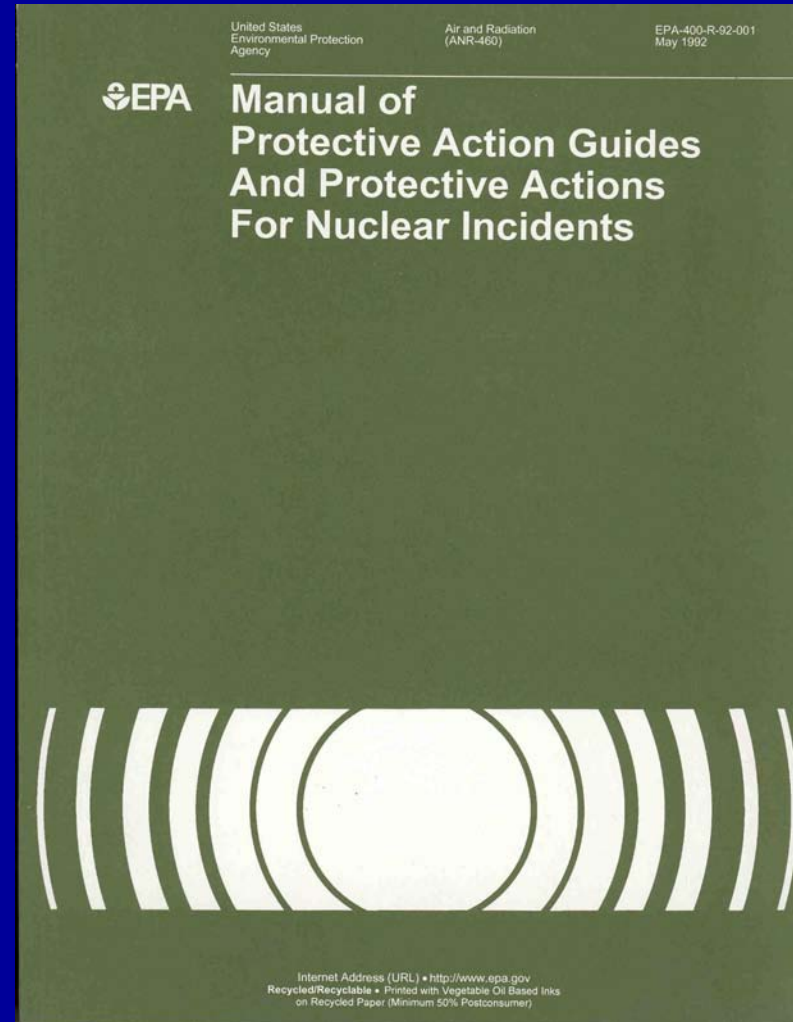
- Emergency preparedness planning
- Development of Protective Action Guides (PAGs)
 - Provide recommendations during emergencies
- Emergency response support (or lead) federal response to radiological emergencies
 - Monitoring and assessment of release impacts
- Recovery, clean-up, & mitigation coordination

Protective Action Guides

- Purpose of Protective Action Guides (PAGs)
- What is a PAG?
- Phases of a radiological emergency
- DHS approach to late phase & the recovery process

Purpose of the PAG Manual

- Provide response guidance for nuclear and/or radiological incidents and accidents
- Provide recommended action levels for protecting the public and emergency workers



What is a PAG?

The projected radiation dose to reference man, or other defined individual, from an accidental release of radioactive material at which a specific protective action to reduce or avoid that dose is warranted.

Early Phase

- Beginning of the incident
- Immediate decisions based on plant conditions and minimal data
- Protective Actions
 - Evacuation -- 1 to 5 rem
 - Sheltering – no minimum
 - Stable iodine (KI) administration – 5 rem child thyroid
 - Access control

Intermediate Phase PAGs

- Population relocation ≥ 2 rem first year
- Apply dose reduction techniques - < 2 rem first year
- Food (FDA Guidance incorporated) – most limiting of:
 - 0.5 rem CEDE first year, or
 - 5 rem CDE to organ or tissue
- Drinking water – 0.5 rem first year

Approach to Late Phase PAGs

- Focus on process for reaching consensus decision on acceptable levels of clean
- Identify stakeholders that need to be included in decision making process
- Identify factors that need to be considered
- Describe protective actions that can be taken during recovery phase

EPA Response Assets

- Radiological Emergency Response Team (RERT)
<http://www.epa.gov/rpdweb00/rert/>
- National Decontamination Team (NDT)
- Environmental Response Team (ERT)
- Mobile laboratories and sample prep vehicles
- On-Scene Coordinators (OSCs)
- Nationwide radiation monitoring system - RadNet
www.epa.gov/narel/radnet/



Radiological Emergency Response Team (RERT)

- EPA's radiological response assets include:
 - Trained responders
 - Team commanders and specialists
 - Equipment and mobile laboratory capabilities
- RERT expertise includes:
 - Radiation monitoring
 - Radionuclide analysis
 - Radiation health physics
 - Risk assessment





US EPA ASPECT

- **Rapid Response —
Wheels-up within one hour**
- **Direct Integration into the Local Incident Command**
- **Standoff Chemical and Radiological Detection**
- **Real Time Collection and Airborne Processing of Data**
- **Aerial Photography/Situational Awareness Capability**
- **Real-Time Data Distribution using Satellite Communication**

ASPECT--Airborne Spectral Photometric Environmental Collection Technology



Radiation Monitoring Network

- RadNet:
 - Approximately one station per state (60)
 - Samples air, precipitation, drinking water, and pasteurized milk
- Upgrades being implemented:
 - Additional stations (140 – 180 stations total)
 - Mobile stations (40 stations)
 - Real time data
 - Better coverage of US population

Summary

- **The Advisory Team provides advice on environment, food, and health matters**
 - Environmental assessments required for developing recommendations
 - PAGs and their application
 - Protective Action Recommendations (PARs) using data and assessment from FRMAC
 - Health and Safety advice
- **Makes protective action recommendations NOT decisions**
- **Provides coordinated advice and recommendations through the Coordinating Agency**
- **Representatives from EPA, CDC, FDA, and USDA**

So, we all work together to address
calamity

Talk about networking! Y'all remember us
RAD folks! WE ARE NOT MUTUALLY
EXCLUSIVE!



You never know what may come next!



Putting a face to FDA



FDA's Regional Radiological Health Representatives



Questions?