Module 03: FRMAC Capability Summary
One Event

Many Pieces

Large Disaster
Earthquakes
Tsunamis
Explosives/bombs

Impacted Zones
Residential
Business
Farms

People
Public health
Worker health

Typical Concerns
Food
Water
Return to home/work
Clearing rubble/debris
Issues are interconnected!

Communication between Responding organizations must exist, or problems will come up!
FRMAC’s job is to coordinate the radiological monitoring components of the response!

- FRMAC *does* do radiological assessment
  - Predictions
  - Measurements
  - In terms of established guidance
- FRMAC *does not* make recommendations
  - State/Local agencies
  - Advisory Team
17 Real World Responses
- Three Mile Island
- Chernobyl
- Numerous NASA Launches
- Fukushima Daiichi

52 Large Scale Exercises
- Northern Lights 16
- Southern Exposure
- Southern Crossing
- Diablo Bravo
- Empire 09
Response Assets From Many Sources

- The pie chart represents a rough approximation of the contribution of responders from each agency to a radiation incident.
- This is a snapshot in time reflecting the point when a full FRMAC has been established.
- Each Asset will be further described during this presentation.
DOE Responders

Department of Energy (DOE) Response Component
National Atmospheric Release Advisory Center (NARAC)

- Transport and diffusion models simulate the release and predict the extent of the hazard.
- 3-D modeling system with continuous representation of terrain.
- Combines the model with data collected from the field and real-time meteorological conditions.
Consequence Management Home Team (CMHT)

- **Remote Sensing Lab (RSL)**
  - Technical and Federal Team Leaders
  - Bridge Line Coordinators
  - Operations Specialists
  - GIS Specialist
  - eFRMAC Home Team Admin
  - AMS HT Scientist
  - Product Scientists
  - Logistics specialists

- **NARAC Representatives**

- **Assessment Scientists from**
  - Sandia National Laboratories
  - Lawrence Livermore National Laboratory
  - Los Alamos National Laboratory
Radiation Emergency Assistance Center/Training Site (REACT/TS)

- Advice and possible medical care in cases of human radiation exposure.
- Facilitating and creating a network of available equipment and staff specializing in human radiopathology.
- Operating the REAC/TS Cytogenetic Biodosimetry Laboratory (REAC/TS CBL)
- Assisting in the development of medical emergency plans to address large-scale radiation incidents.
- Assisting in the preparation of relevant documents and guidelines.
- Maintaining a stockpile and registry of internal dose countermeasures.
- Maintaining a radiation accident registry pertaining to the medical response and treatment of victims.
Consequence Management Response Team (CMRT)

- Assessment scientists to assist in creating data products
- Geographical Information Systems (GIS) equipment and personnel for creating map products
- Health & Safety for supporting the FRMAC responders
- Monitoring & Sampling personnel and equipment to support FRMAC field teams.
- Laboratory Analysis equipment and personnel
- Logistics support for FRMAC teams.
Radiological Assistance Program (RAP)

- Locate and identify radiological materials
- Evaluate data and provide risk assessments
- Provide advice and make recommendations to protect personnel, property and subsequent reentry into a facility
- Translate complex technical data into information that the public can easily understand
- Provide 24-hour communications for technical support and advice
Aerial Measuring System (AMS)

- The fixed-wing aircraft is deployed with the radiation detection system to collect information and determine the location of ground contamination.
- The helicopters are used to perform detailed surveys of ground contamination.
- Scientists are then able to rapidly develop maps of the radiological materials deposited on the ground and the potential radiation exposure to personnel in the affected areas.
Equipment is capable of analyzing samples for:
- Alpha, beta, and gamma-emitting radionuclides
- Low energy beta-emitters such as Tritium.

Able to process multiple matrices including but not limited to:
- Soil, air filters, swipes, and liquid samples
Accident Response Group (ARG)

- The team assists in assessing weapons damage and risk
- Developing and implementing procedures for:
  - Safe weapon recovery
  - Packaging
  - Transportation
  - Disposal of damaged weapons
Advisory Team for Environment, Food and Health (A-Team)

• Provides coordinated advice and recommendations
  – Environment
  – Food and health matters
• Representatives from:
  – EPA
  – FDA
  – CDC
  – USDA
  – Other Federal agencies as needed
Asset Response Timeline

- **0-6**
  - State/Local
  - RAP
  - CST
  - CMHT
  - NARAC
  - Advisory Team
  - REAC/TS
  - CERFP

- **6-12**
  - AMS
  - CMAC
  - REAC/TS

- **12-24**
  - CMRT
  - EPA
  - HRF

- **24-48**
  - Advisory Team
  - Other Agencies

- **Established**
  - FRMAC

**Abbreviations**

- **AMS**: Aerial Measuring System
- **CMAC**: Consequence Management Advance Command
- **CMHT**: Consequence Management Home Team
- **CMRT**: Consequence Management Response Team
- **NARAC**: National Atmospheric Release Advisory Center
- **RAP**: Radiological Assistance Program
- **REAC/TS**: Radiation Emergency Assistance Center/Training Site
- **CERFP**: Nat’l Guard CBRNE Enhanced Response Force Package
- **CST**: National Guard WMD Civil Support Team
- **HRF**: National Guard Homeland Response Force
How to Activate FRMAC Assets

FRMAC

RAP
Regional Contact

FEMA Contact

DOE HQ NIT
(202) 586-8100
Who Pays for FRMAC Services?

- The state/local/tribal jurisdiction is NOT responsible
- Costs are generally absorbed by the Department of Homeland Security
FRMAC Location Considerations*

- Indoor space of 10,000 – 20,000 sq. ft
- Access to major highways/roadways
- Close proximity to airports
- Standard electrical power outlets (several circuits)
- Space for parking mobile labs and numerous vehicles
- Options
  - Schools
  - Hockey rinks
  - Farm centers
  - Armories

* See also FRMAC Operations Manual
FRMAC and the EOC

• It is understood that seating may be limited
• Personnel deployed
  – 1 Liaison and/or
  – 1 Scientific advisor
• EOC(s) will be provided with assistance
  – State? Most likely
  – County? Unlikely but possible
• Travel with
  – Laptop
  – Aircard
  – Phone
  – Reference materials needed
For More Information

FRMAC Program Information and Manuals

http://nnss.gov/pages/programs/FRMAC/FRMAC.html

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Summary

• Responding to an event with a radiological release is complicated
  – Radiological component
  – Everything else!

• FRMAC coordinates the radiological information with various support nodes:
  – Assets can be activated as appropriate for the response needs