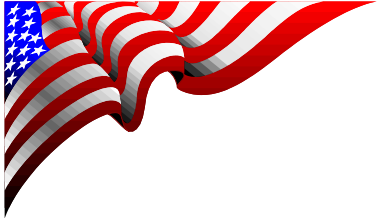




DOE COMBATTING NUCLEAR TERRORISM

**Office of Emergency Operations
National Nuclear Security Administration
U.S. Department of Energy
202.586.8100**



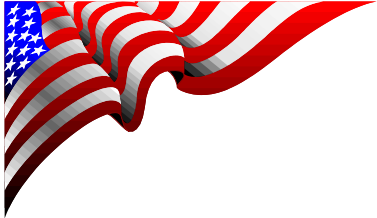


Emergency Response Structure



U.S. DOE Mission

Provide a versatile, capable, worldwide nuclear or radiological emergency response with the technical capability to respond to any radiological/nuclear incident

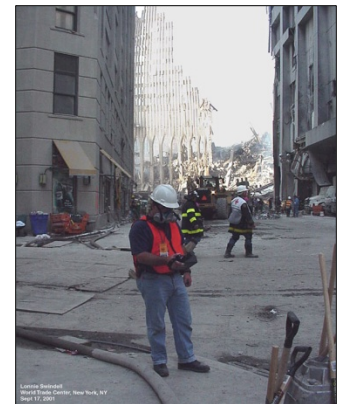


Emergency Response



➤ **Provide Expert Technical Advice From the DOE Complex in Response To:**

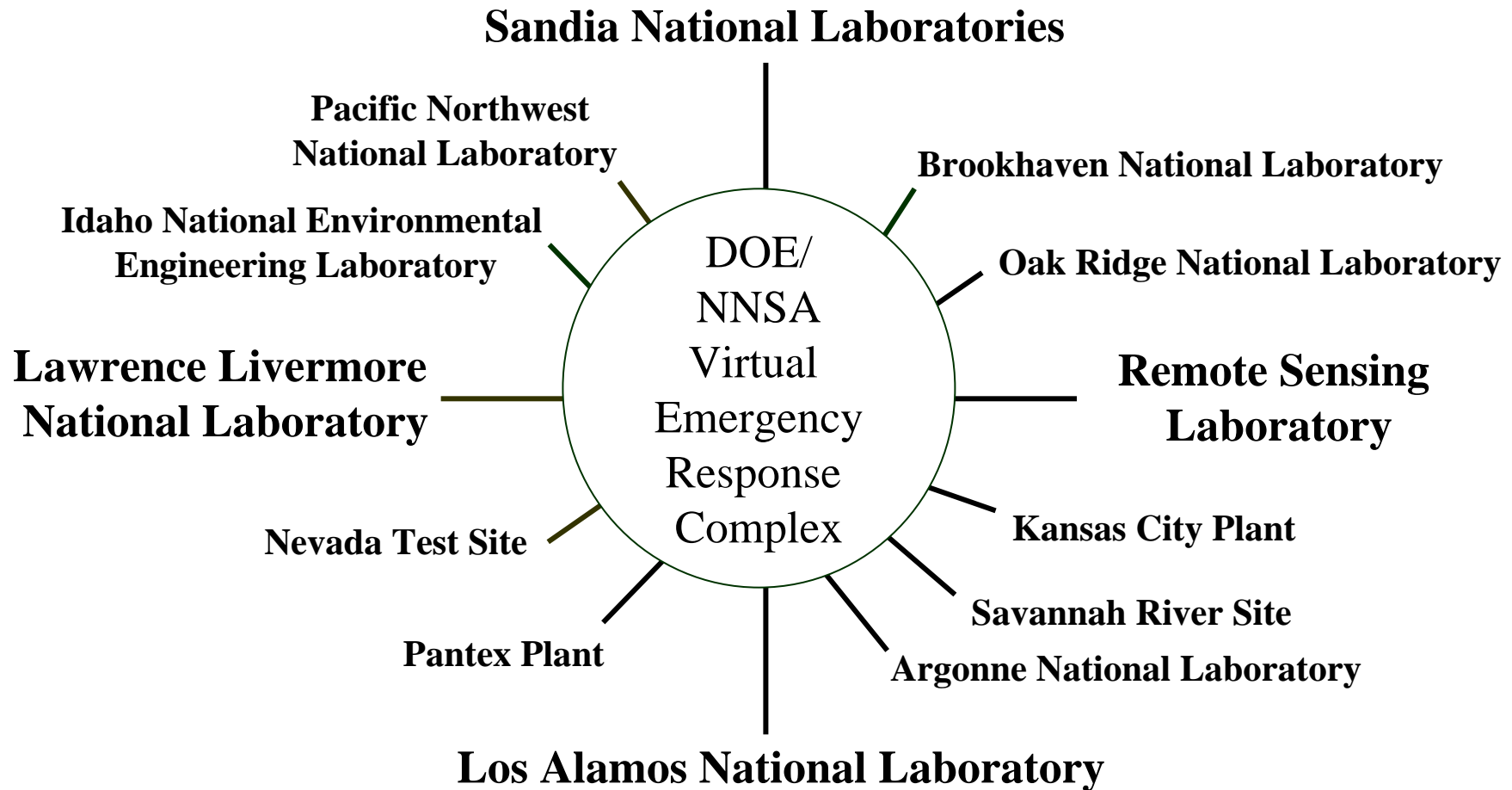
- Acts / Threat of Nuclear Terrorism
- Radiological Accidents
- Lost or Stolen Radioactive Materials
- Nuclear Weapon Accidents and Significant Incidents
- Malevolent Threats or Acts

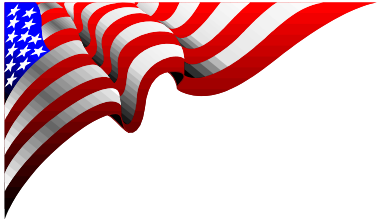


- **Access Nuclear Weapons Design and Production Capabilities**
- **Deploy Capabilities Rapidly**



The Center of Excellence for NNSA Nuclear Radiological Emergency Response





Emergency Response Assets Basic Expectations



- Can provide technical & operational support in coordination with lead agencies



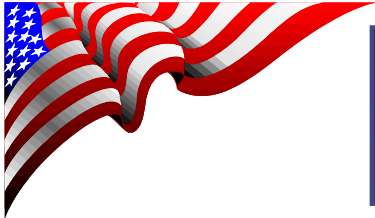
- Can respond quickly to support other agencies in nuclear/radiological accidents or incidents



- Can furnish resources appropriate to the situation



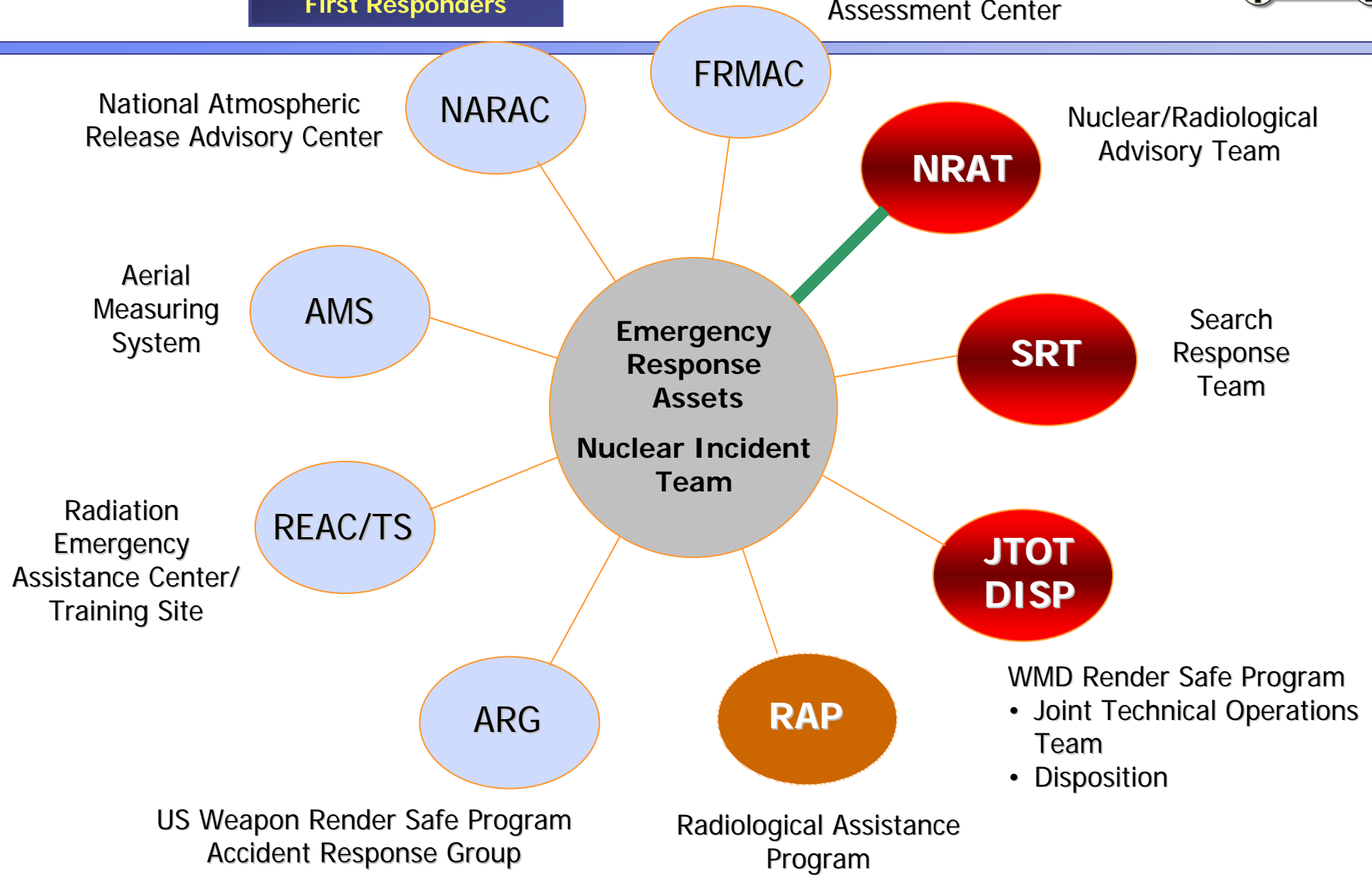
- Will be focused and trained to deal with unusual technical challenges

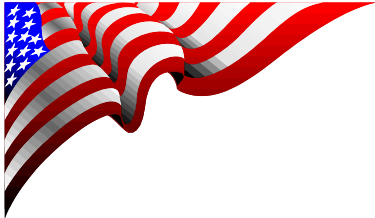


TRIAGE
DATA
Radiological Analysis for First Responders



Federal Radiological Monitoring Assessment Center





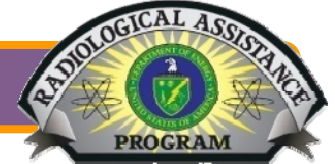
RAP and Radiological Search



Capabilities

Provides first response capability to Federal, State, local governments for incidents involving radiological emergencies

First Responders

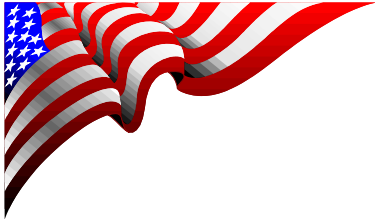


- ★ 2 to 8 member team
- ★ 220 people located at 28 sites
- ★ 2-hour response time during the day
- ★ 4-hour response time at night
- ★ Approximately 400 lbs of equipment

Search for Radiological Material

- ★ Initial Assessment
- ★ Area Monitoring
- ★ Search lost/stolen radioactive material
- ★ Respond to Radioactive intel threats
- ★ 9-RAP regions

RAP may call upon other DOE assets



Radiological Triage



On-call analysis support for nuclear detector data

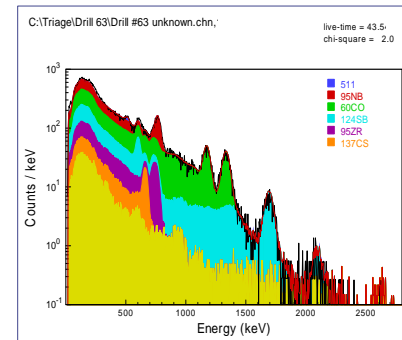
Contact

Call DOE 24-hour 001-202-586-8100
Emergency Response Officer activates Triage
Email data to trriage.data@hq.doe.gov
Or TRIAGE Web at <https://trriage-data.com>



Scientists

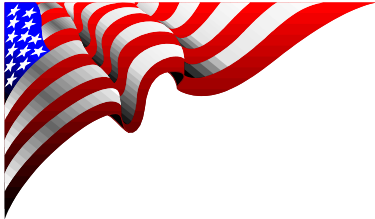
Los Alamos National Laboratory
Livermore National Laboratory
Sandia National Laboratory



Products

Assessment in 1 hour via bridge line
Isotopic identification and activity quantification
Potential risk





National Atmospheric Release Advisory Center (IXP/NARAC)



Real-time computer predictions for atmospheric transport of radioactivity from a nuclear accident or incident

Contact

Request NARAC Support through the IXP program at IAEA

Request scientist assistance

Submit request at IXP Web

<https://ixp.llnl.gov> , results in 10 minutes

Scientists

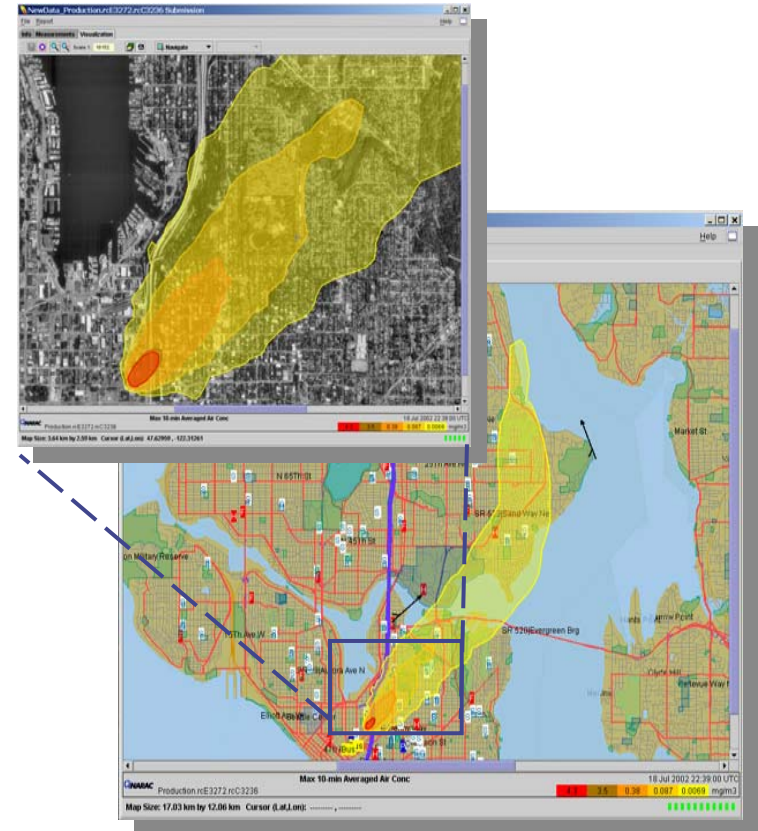
Livermore National Laboratory

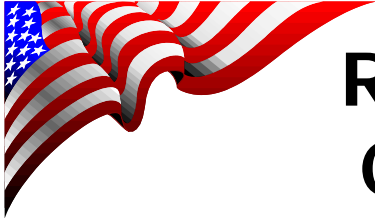
Map Products

Exposure rate and plume deposition

Ground contamination

Protective action recommendations





Radiation Emergency Assistance Center Training Site (REAC/TS)



*Provide medical advice and consultation for rapid assessment
and treatment of a high dose radiation cases*

Contact

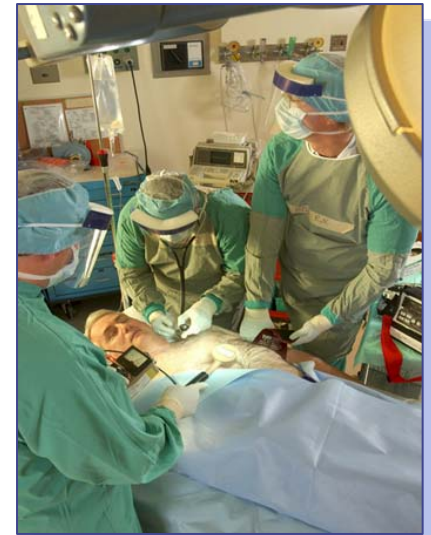
Call DOE 24-hour 001-202-586-810
Request medical assistance

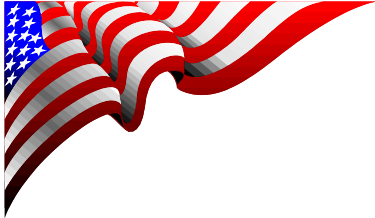
Participant

Oak Ridge Institute for Science and
Education

Products

Advice and consultation
Medical training
Radiation Accident Registry
Cytogenetics biodosimetry laboratory





Aerial Measuring System



Capabilities

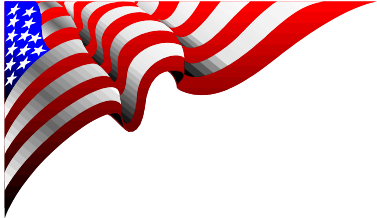
Provides aviation-based equipment to survey large areas in response to radiological emergencies

Fixed-Wing Aircraft

- ◆ All-weather operation
- ◆ Rapid residual fallout pattern
- ◆ Cursory radiological data transmitted during flight
 - Peak exposure rates

Helicopter

- ◆ Visual flight operation
- ◆ Detailed aerial surveys
 - Exposure rate contour maps
 - Dominant isotope gamma spectra
- ◆ Data analysis available 1-3 hours after flight completion



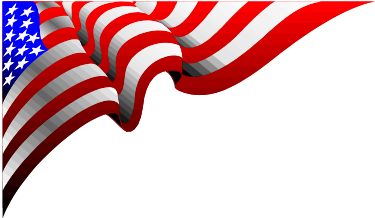
International Support



Nuclear and radiological incidents and emergencies, while infrequent, have shown that:

- Capabilities and resources of any country can be quickly overwhelmed
- Timely response is needed to minimize consequences

Ensuring timely and effective response is a challenge

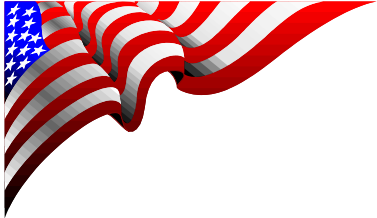


International Support



To address gaps, an international program is needed to ensure that nuclear and radiological response capabilities and resources:

- can be supplemented, as necessary
- are timely, and
- are harmonized



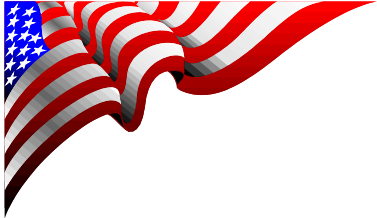
International Support



- **Synergies needed include:**

Identification of existing country capabilities and resources:

- A common understanding of the regional and international emergency response needs
- Sharing and leveraging of capabilities and resources
- Promotion of joint planning and exercises
- Deployable and non-deployable (external based) capabilities and resources



International Support



The international community is developing a National Assistance Capability (NAC) concept to address international assistance.

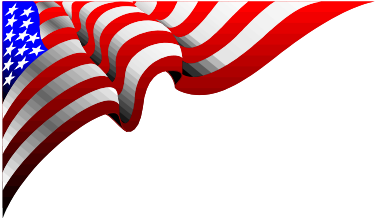
The NAC concept:

Provides for compatible and integrated systems to:

- enable regional and international assistance, and
- minimize actual or potential radiological consequences

Builds on co-operative arrangements defined in:

- bilateral and/or multilateral arrangements and agreements, and
- international arrangements and agreements



International Support

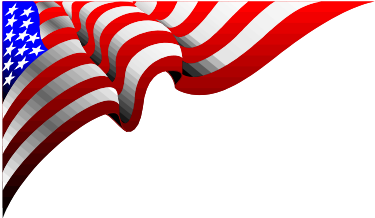


NAC external based support is:

- Provided from a base of operation in the donor country or from another location

Includes the following types of support:

- Expert advice
- Analytical advice
- Modeling capabilities
- Specialized emergency response functions

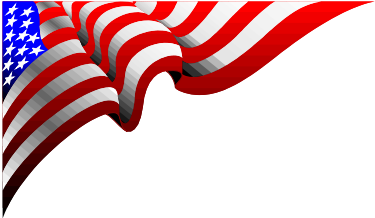


International Support



Response deployment to the scene could include:

- Assessment of radiological or emergency situation
- Technical advise and assistance
- Stabilization activities, including where appropriate source recovery
- Medical advice, consultation and/or medical assistance
- Interpretation of analysis and models
- Monitoring and assessment
- Emergency response and mitigation functions

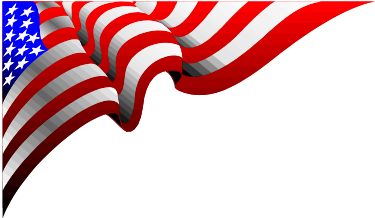


International Support



Responsibilities

- Country providing the resources maintains overall control and direction of all resources and capabilities
- Countries are responsible for ensuring that responding personnel are qualified to perform functions and duties assigned
- Countries ensure that responders are equipped with all items necessary for efficient performance of emergency tasks

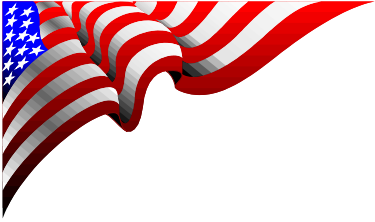


International Support



To be effective, NAC capabilities and resources:

- Must be trained on and be aware of country specific, regional and international guidelines and requirements (bilateral - multilateral - international)
- Must participate in country and regional drills and exercises
- When possible, should participate in international drills and exercises



International Support

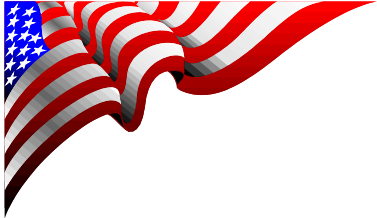


The U.S. Government provides, upon request, nuclear/radiological assistance to the international community.

Assistance can be provided through:

- The Foreign Emergency Support Team (FEST)
- The Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency

In either case, the request must be made through the U.S. Department of State.



International Support



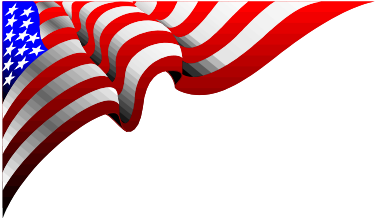
Foreign Emergency Support Team

Mission

ADVISE, ASSIST and ASSESS

Specifically, provide U.S. Chief Of Mission, Host Government Leaders, and Incident Managers guidance concerning U.S. capabilities in resolving terrorist incidents or mitigate the consequences of an incident/attack

Established by White House Memorandum - December 11, 1985

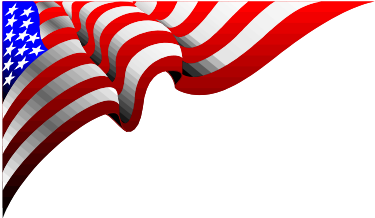


International Support



Conditions for U.S. FEST response:

- U.S. interests are directly or indirectly at stake
- Host Government does not have the expertise or technical capabilities to resolve conflict
- Host Government requests the support for crisis and consequence management

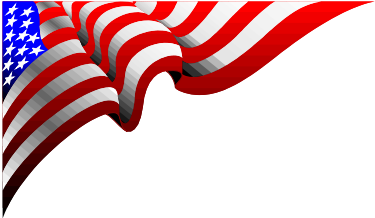


International Support



Request for Assistance under the Assistance Convention:

- Request can be to the IAEA
- Request can be to a State that is a party to the Convention
- Request can be through the IAEA to a State that is a party to the Convention
- Request will activate RANET – Response and Assistance Network



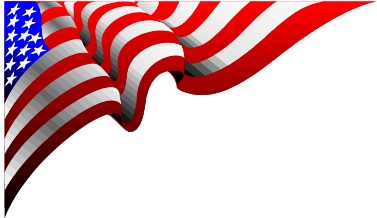
International Support



What is RANET?

RANET is an IAEA system of Competent Authorities capable and willing to provide upon request:

- timely and effective specialized assistance
- appropriately trained, equipped and qualified personnel with the ability to respond to:
 - nuclear accidents or radiological emergencies
 - other nuclear or radiological events



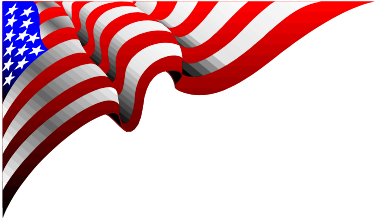
International Support



U.S. DOE resources offered on request through IAEA's RANET are:

- Analytical advice – Radiological Triage
- Modeling capabilities – International Exchange Program (IXP)

In addition, expert advice and specialized emergency response functions can be provided, based on DOE resource availability

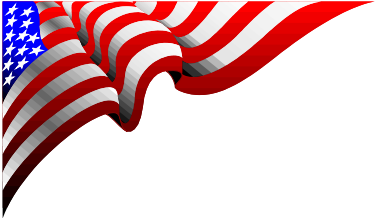


International Support



DOE's nuclear/radiological assistance can be provided in the following areas, based on resource availability:

- Aerial survey
- Radiation monitoring
- Environmental measurements
- Source search/recovery
- Assessment and advice
- Medical support
- Public Health Protection
- Biodosimetry
- Internal dose assessment
- Bioassay
- Histopathology
- Dose reconstruction

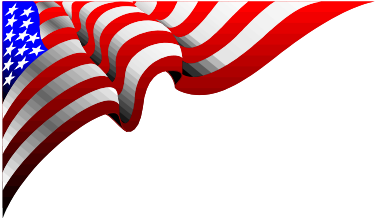


International Support



In summary, Planning for terrorist events involving radioactive materials requires:

- **Establishment of a system at National, Regional and International Levels to ensure that:**
 - Responders are trained and have proper instruments to identify the presence of radiation
 - Radiological specialist are readily available to promptly respond
- **Emergency preparedness and response program included:**
 - Intelligence
 - Plans and Procedures
 - Logistical Support
 - Training, Drills and Exercises
 - Quality Assurance



International Support



Conclusions

An effective International Emergency Management System must:

- be built on practical experience
- provide a common understanding of regional emergency response needs and facilitate enhancement of regional and international capabilities for assistance
- enhance radiation emergency response capabilities worldwide and provide a harmonized and timely response to regional and world wide nuclear and radiological events.
- utilize bilateral, multilateral and international arrangements and agreements, conventions and statutes as its legal basis