



U.S. DEPARTMENT OF ENERGY



NATIONAL NUCLEAR SECURITY ADMINISTRATION



PARTNERS IN

*Emergency*  
RESPONSE

# Protecting people and the environment is our number one concern.



The Department of Energy's (DOE)

National Nuclear Security Administration (NNSA) has the world's leading scientists, engineers and technicians from over 50 years of managing the nation's nuclear weapons program. When the need arises, NNSA is prepared to respond immediately to any type of radiological accident or incident anywhere in the world with seven radiological emergency response assets.



The professional scientists, engineers, pilots, medical personnel, technicians

and other leading nuclear experts that comprise the assets use extremely sophisticated laboratories, detection, measuring, and monitoring equipment.

NNSA has the best people and technology on hand to carry out its critical mission of protecting people and the environment.



DOE's NNSA has the world's leading scientists, engineers and technicians from over 50 years of managing the nation's nuclear weapons program.

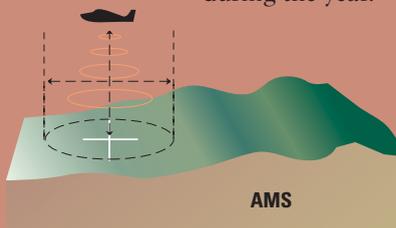
## AERIAL MEASURING SYSTEM (AMS)

AMS is a vital radiation accident assessment tool.

Using fixed-wing aircraft, helicopters and state-of-the-art detectors, AMS can respond quickly to an emergency event at any time of the day or night.

AMS aircraft are equipped to detect and measure radioactive material deposited on the ground, even at extremely low radiation levels, and can conduct real-time air sampling and tracking of airborne radiation. This information helps determine how fast contaminants are moving and in what direction. In addition, AMS provides detailed aerial photographs of an accident site, including multispectral imaging.

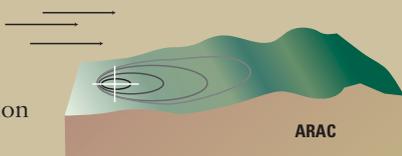
Along with its rapid response to emergencies, AMS surveys DOE sites and other nuclear facilities, and works for other Federal agencies as scheduled during the year.



## ATMOSPHERIC RELEASE ADVISORY CAPABILITY (ARAC)

When an emergency occurs, ARAC predicts the probable spread of nuclear, chemical or hazardous material contamination into the atmosphere to help officials and Federal agencies react quickly. It also assesses natural disasters such as volcanic ash clouds and earthquake-induced hazardous spills, manmade disasters like the Kuwaiti oil fires, and toxic chemical releases.

For ARAC-supported sites, critical information can be delivered as

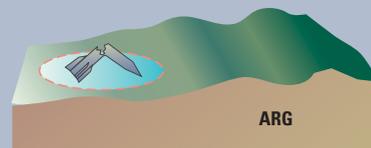


quickly as 5 to 10 minutes after accident information is received. For non-supported sites, it usually takes no longer than 30 minutes to 1 hour.

ARAC

## ACCIDENT RESPONSE GROUP (ARG)

ARG is an integral part of the DOD and NNSA emergency response system. Comprised of more than 250 scientists, engineers, and technicians



from DOE's laboratories and production facilities, the ARG team is ready to respond to any U.S. nuclear weapon accident in the world.

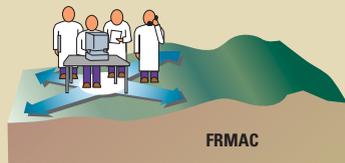
Once at the accident site, ARG focuses on three key areas: assessment, recovery and disposal of damaged nuclear weapons and components. The teams also provide vital health and safety, logistics, communications, and public affairs support.

ARG

## FEDERAL RADIOLOGICAL MONITORING AND ASSESSMENT CENTER (FRMAC)

FRMAC coordinates the Federal radiological monitoring, assessment, and evaluation of data when a radiological emergency has occurred. Established as needed, it is fully operational within 24-36 hours after assistance is requested.

The FRMAC gathers radiological information such as plume and deposition predictions, air and ground concentrations, exposure rates and dose projections, assurance of data quality, and current meteorological conditions and weather forecasts and provides the results of the data collection, sample analysis, evaluations, assessments, and interpretations to the Lead Federal Agency and state officials. Monitoring continues until all of the surrounding areas where radioactivity was released are fully evaluated.



## NUCLEAR EMERGENCY SUPPORT TEAM (NEST)

NEST is NNSA's program for preparing and equipping specialized response teams to deal with the technical aspects of nuclear or radiological terrorism. NEST capabilities include search and identification of nuclear materials, diagnostics and assessment of suspected nuclear devices, technical operations in support of render safe procedures, and packaging for transport to final disposition.



The NEST program provides technical assistance to the Federal Bureau of Investigation (FBI) in conducting, directing, and coordinating search and recovery operations for nuclear materials, weapons, or devices, and assisting in identifying and deactivating an Improvised Nuclear Device (IND) or a Radiological Dispersal Device (RDD).

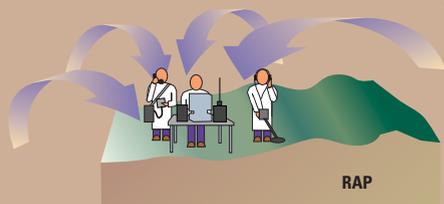
## RADIOLOGICAL ASSISTANCE PROGRAM (RAP)

RAP is capable of providing assistance in all types of radiological incidents. It provides trained personnel, equipment, monitoring and assessment assistance to DOE program elements, other Federal agencies, state, Tribal and local governments. It is usually the first-responding resource in assessing a radiological emergency, and advises on what further steps should be taken to minimize hazards.

RAP teams arrive at the scene within four to six hours after notification of an emergency to conduct the initial radiological

assessment of an affected area and determine,

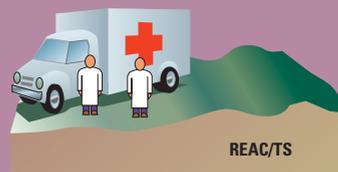
along with the state and LFA, what actions to take and if additional resources are needed.



## RADIATION EMERGENCY ASSISTANCE CENTER/TRAINING SITE (REAC/TS)

REAC/TS has assisted in more than 1,200 incidents involving radiation from local, national, and international incidents. Its physicians, registered nurses, EMT-paramedics, health physicists, radiobiologists, and coordinators are on call 24 hours a day for consultations or direct medical care to people at the REAC/TS facility or the accident site.

This highly trained and qualified team is prepared to conduct medical and radiological triage, decontamination procedures, diethylenetriaminepentaacetic acid (DTAP) chelation therapy, Prussian Blue therapy, diagnostic and prognostic assessments of radiation injuries, and dose estimates that include cytogenetic analysis, bioassay, and in-vivo counting.



NNSA's radiological emergency response assets include the Aerial Measuring System (AMS), the Atmospheric Release Advisory Capability (ARAC), the Accident Response Group (ARG), the Federal Radiological Monitoring and Assessment Center (FRMAC), the Nuclear Emergency Support Team (NEST), the Radiological Assistance Program (RAP), and the Radiation Emergency Assistance Center/Training Site (REAC/TS).

NNSA's assets are ready to respond to any type of radiological accident or incident anywhere in the world.

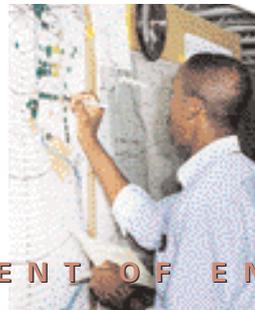
Our job is to protect people and the environment.

Through many years of training and experience, NNSA has perfected a system of emergency response including initial notification, monitoring and assessment of the situation, and working with other agencies to resolve the emergency.



Each asset handles certain aspects of the radiological emer-

gency and performs a comprehensive, integrated response. All of the NNSA assets are designed for rapid response. AMS detects, measures and tracks radioactive material at an emergency to determine contamination levels. ARAC develops predictive plots generated by sophisticated computer models. ARG is deployed to manage



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or support the successful resolution of a U.S. nuclear weapons accident anywhere in the world. FRMAC coordinates Federal radiological monitoring and assessment activities with those of state and local agencies. NEST provides the nation's specialized technical expertise to the Federal response in resolving nuclear/radiological terrorist incidents. RAP is usually the first NNSA responder for assessing the emergency situation and deciding what further steps should be taken to minimize the hazards of a radiological emergency. REAC/TS provides treatment and medical consultation for injuries resulting from radiation exposure and contamination, as well as serving as a training facility.

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MONITOR  
SECURE PR  
OTECT ADV  
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RESPONSE



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